REF for Proposed Local Water Centre

Box Hill North Precinct, New South Wales

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Approval for Issue

Name	Signature	Date
Rob Dwyer	RDwyer	29.03.2016

Terms and Abbreviations

Abbreviation	Meaning
AGWR	*Australian Guideline for Water Recycling 2006*
AHIMS	Aboriginal Heritage Information System
AHIP	Aboriginal Heritage Impact Permit
BCA	*Building Code of Australia*
CEMP	Construction Environmental Management Plan
CLM Act	*Contaminated Land Management Act 1997*
DCP	Development Control Plan
EEC	Endangered Ecological Community
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
Flow Systems	Flow Systems Pty Ltd, the parent company of Flow Systems Operations.
HDPE	High density polyethylene
ISST	Interim sewage storage tanks
SWC	Sydney Water Corporation
Box Hill LWC	Box Hill Local Water Centre
Flow Systems Operations	A private water utility wholly owned by Flow Systems Pty Ltd and operator of the proposal.
HDPE	High density polyethylene
IPART	Independent Pricing and Regulatory Tribunal
ISEPP	SEPP (Infrastructure) 2007
LEP	Local Environment Plan
LGA	Local Government Area
LWC	Local Water Centre
NES	National Environmental Significance

NOW	NSW Office of Water
NPW Act	*National Parks and Wildlife Act 1977*
OEH	Office of Environment and Heritage
POEO Act	*Protection of Environment Operations Act 1997*
PBP	*Planning for Bushfire Protection 2006*
RAP	Remediation Action Plan
REF	Review of Environmental Factors
RMS	Roads and Maritime Services
RWI	Recycled Water Irrigation
RWIMP	Recycled Water Irrigation Management Plan
RWIZ	Recycled Water Irrigation Zones
SEPP	State Environmental Planning Policy
TSC Act	*NSW Threatened Species Conservation Act, 1995*
WRF	Water recycling facility
WICA	*Water Industry Competition Act 2006*
WWTP	Waste Water Treatment Plant

Contents

1.0 INTRODUCTION 7
1.1 Background 7
1.2 Location and Description of Existing Environment 8
2.0 NEEDS AND OPTIONS CONSIDERED 10
2.1 Strategic need for the proposal 10
2.2 Proposal Objectives 10
2.3 Alternatives and options considered 10
2.4 Preferred Option 12
3.0 DESCRIPTION OF PROPOSAL 13
3.1 Introduction 13
3.2 Staging of development 14
3.3 Outline of Construction Works 17
3.4 Construction plant and equipment 17
3.5 Construction Workforce 17
3.6 Construction Hours 18
3.7 Construction Program 18
3.8 Environmental Management Plan – Construction Phase Activities 18
3.9 Outline of Operation Works 18
4.0 KEY LEGISLATION 22
4.1 Environmental Planning and Assessment Act 1979 22
4.2 Environment Protection and Biodiversity Conservation Act 1999 22
4.3 State Environmental Planning Policies 23
4.4 Local Planning Policies 24
4.5 Water Industry Competition Act 2006 and Water Industry Competition (General) Regulation 2008 26
4.6 Other Legislative Requirements 27
4.7 Summary 29
5.0 CONSULTATION 31
6.0 ENVIRONMENTAL ASSESSMENT 32
6.1 Land Capability and Staging 32
6.2 Flora and Fauna 34
6.3 Aboriginal Heritage 38
6.4 Non-Aboriginal Heritage 43
6.5 Stormwater Management Strategy 43
6.6 Noise 46
6.7 Odour and Air Quality 52
6.8 Bushfire Threat 54
6.9 Traffic 55

6.10 Visual Character 56
6.11 Socio-Economics 57
6.12 Waste Management 58
6.13 Risks and Hazards 60
6.14 Cumulative Impacts 61
6.15 Ecologically Sustainable Development 62
7.0 SUMMARY OF MITIGATION MEASURES 63
8.0 CONCLUSIONS 69
8.1 Summary of Beneficial Effects 69
8.2 Summary of Adverse Effects 69
8.3 Conclusion 69
9.0 DECLARATION 71

Tables

Table 1 Chemical types and predicted volumes during ultimate Box Hill LWC operation 19
Table 2 Consultation log with The Hills Shire Council 31
Table 3 Items listed on the State Heritage Inventory 43
Table 4 Measured Rating Background Noise Levels (dBA) 47
Table 5 Project Specific Criteria (dBA) 47
Table 6 Chemical types and predicted volumes during Box Hill LWC operation 60
Table 7 Impact and Mitigation Measures to be Incorporated into the CEMP 63
Table 8 Impact and Mitigation Measures to be incorporated into the OEMP 68

Figures

Figure 1 Location Plan 9
Figure 2 Box Hill North Precinct 16
Figure 3 Areas within the Box Hill North Precinct suitable for irrigation 21
Figure 4 Current Land Use Zoning 25
Figure 5 Vegetation Communities of Box Hill North 36
Figure 6 Registered Archaeological Sites 40
Figure 7 Identified Aboriginal sites within Box Hill North precinct 41
Figure 8 Noise Modelling – Normal Operations Without Back-Up Generator and with Recommended Mitigation Measures Applied 48
Figure 9 Noise Modelling – Abnormal Operation with Back-Up Generator with Recommended Mitigation Measures Applied 49
Figure 10 Odour Modelling - Predicted 99th Percentile Odour Concentration (OU) for the Fully Operational Plant 53

Appendices

Appendix 1	Consideration of the Clause 228 Factors and Matters of National Environmental Significance
Appendix 2	Box Hill LWC – Concept Plan and Architectural Drawings
Appendix 3	Statement of Environmental Effects and notice of determination for DA 1634/2015/ZB
Appendix 4	Planning Proposal
Appendix 5	Questions and Answers Document
Appendix 6	Land Capability and Staging Assessment
Appendix 7	Species Impact Statement
Appendix 8	Vegetation Management Plan
Appendix 9	Dam Dewatering Report
Appendix 10	Heritage Due Diligence
Appendix 11	Cultural Heritage Assessment Report
Appendix 12	Aboriginal Archaeology – Test Excavation Report
Appendix 13	Concept Stormwater Management Strategy
Appendix 14	Geotechnical and Salinity Assessment
Appendix 15	Noise Impact Assessment
Appendix 16	Odour Impact Assessment
Appendix 17	Bushfire Prone Land Map
Appendix 18	Detailed Site Investigation Report
Appendix 19	Remediation Action Plan

1.0 Introduction

This Review of Environmental Factors (REF) has been prepared for the installation of a water recycling facility (WRF) by Flow Systems Operations, Flow Systems Operations a wholly-owned subsidiary of Flow Systems Pty Ltd hereafter referred to as Flow Systems) at Box Hill North to facilitate residential development of the Box Hill North Urban Release development, within The Hills Shire Council (THSC) local government area (LGA). The facility will be known as the Box Hill Local Water Centre (Box Hill LWC) and will be constructed, operated and maintained by Flow Systems Operations.

This REF has been prepared with due regard for the licensing criteria, principles and environmental clauses in the *Water Industry Competition Act 2006* (WICA) and the *Water Industry Competition (General) Regulation 2008".* This assessment under WICA is determined by the Minister for Lands and Water and is a high level threshold to determine that the licensee has the capacity to protect the environment and not to cause significant risk of environmental harm. This can be considered through this assessment in conjunction with the licensee's operational environmental management plan and certified environmental management systems.

This REF has also been prepared for the construction and operation of a *water recycling facility* as defined for the purposes of *State Environmental Planning Policy (Infrastructure) 2007* which is an activity under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).This obliges Flow Systems Operations to assess to the fullest extent possible of all matters affecting, or likely to affect, the environment by the construction and operation of the Box Hill LWC. Sections 111 and 112 of the EP&A Act and Clause 228 of the EPA Regulations identify the factors required to be taken into account by a determining authority when assessing the environmental impact of an activity. This obligation of the proponent survives in legislation regardless of the status of WICA licence approvals and environmental assessments carried out under WICA. Section 6 and **Appendix 1** of this REF provide an assessment of the environmental issues associated with the proposal, in line with those requirements and also those matters of National Environmental Significance under Commonwealth legislation. Assessment of the environmental issues is based upon the Concept Plan and Drawings of the Box Hill LWC as contained in **Appendix 2.**

1.1 Background

The NSW Government introduced WICA as part of its strategy for a sustainable water future to harness the innovation and investment potential of the private sector in the water and wastewater industries. WICA established a licensing regime for new entrants to the industry to ensure the continued protection of public health, consumers and the environment. The private sector is now encouraged to develop and operate water management schemes and the licensing system is governed by IPART.

Planning Proposal 1/2014/PLP gazetted by the NSW Government on 20 February 2015 amended *The Hills Local Environmental Plan* (LEP2012) to rezone land within the Box Hill North Precinct from RU6 Transition to a combination of R1 General Residential, R3 Medium Density Residential, E2 Environmental Conservation, E3 Environmental Management, E4 Environmental Living, B2 Local Centre and RE1 Public Recreation, as well as amendments to Schedule 1 of the LEP 2012 to allow additional uses within zones R3 and RE1.

The objectives of the proposed LEP 2012 amendment are to:

- Facilitate redevelopment of Box Hill North in a coordinated fashion and in doing so achieve the site's highest and best use;
- Accommodate 5,000 dwellings and a 5.5 hectare town centre comprising up to 10,000m^2 of retail/commercial floor space;
- Deliver a design that integrates community, transport, environmental and economic outcomes;

- Create a diverse community that is demographically balanced, responds to changing life cycle, lifestyle and work requirements over time;
- Reserve land for environmental conservation;
- Develop an open space network including active playing fields, and a connecting trail network of passive recreational spaces that capture riparian and amenity qualities; and
- Identify 2.2 hectares of land for a new primary school site.

The location of the Box Hill LWC is within the area identified in the Assessment as suitable for residential uses.

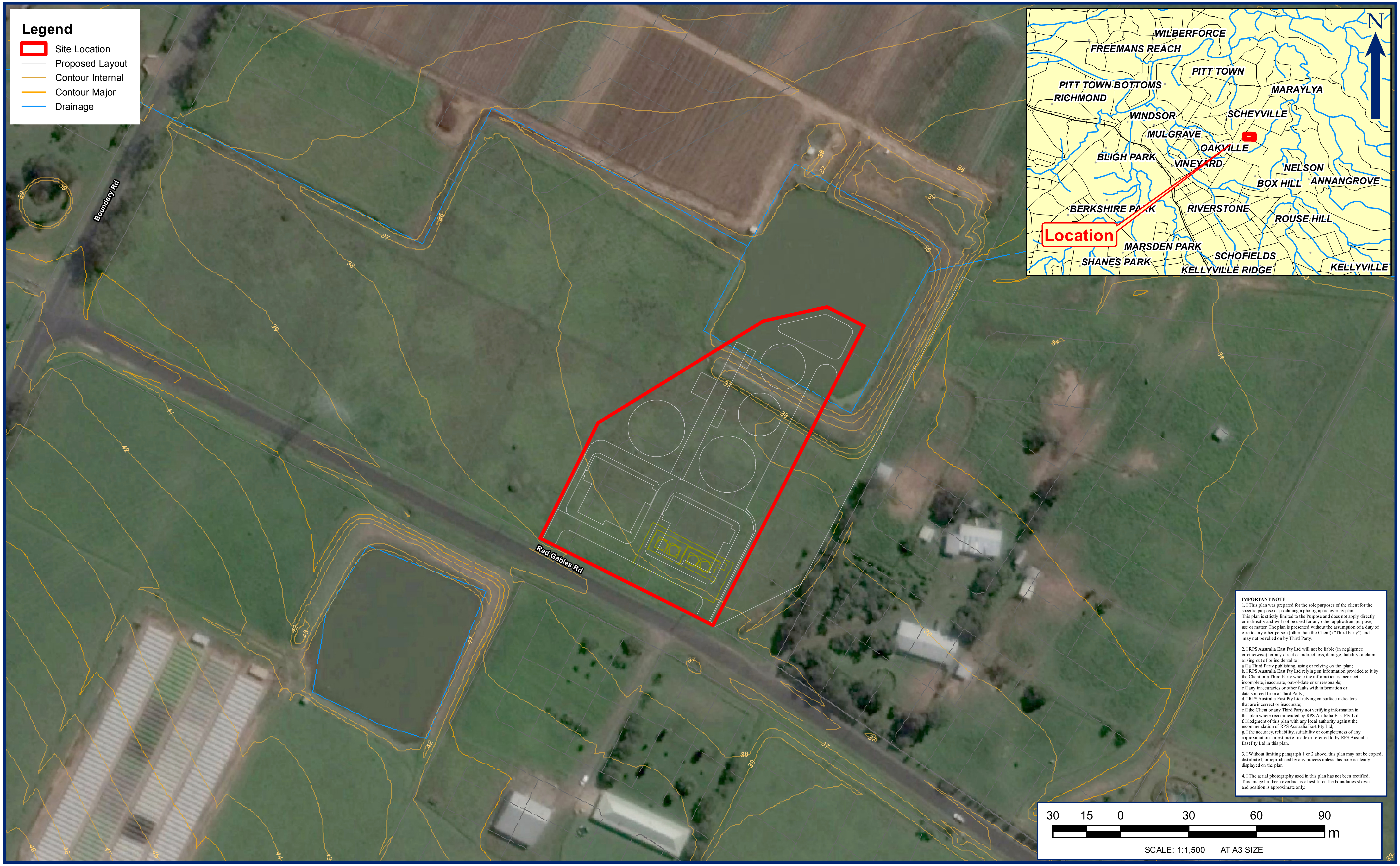
Further, Planning Proposal 3/2016/PLP was submitted by Flow Systems Operations to THSC on 7 September 2015. It proposes to re-zone the LWC site to zone SP2 (Infrastructure).

Development application (DA) 1634/2015/ZB and supporting statement of environmental effects as contained in **Appendix 3** was lodged with THSC on 19 June 2015. The DA is for a 2 lot subdivision, earthworks and dam relocation for the future construction of the Box Hill North LWC. This DA was approved on 20 November 2015. The notice of determination is also contained in **Appendix 3.**

1.2 Location and Description of Existing Environment

A plan showing the location of the site subject of this REF is shown in **Figure 1**. The proposal is to construct the Box Hill LWC to support the development of approximately 5,000 residential allotments, 10,000m^2 of commercial and retail land. The development proposal also includes a school, community facilities, sports fields, public open space, environmental buffers and other improvements including roads and infrastructure.

The Box Hill LWC will be located at 153 Boundary Road, Box Hill upon part of Lot 10 DP 593517, facing Red Gables Road within the Box Hill North residential subdivision, and is 1 hectare. The current study area and its immediate surrounds have primarily been subject to rural farming and grazing. Vegetation clearing including the logging of large native trees occurred across the Cumberland Plain to make way for farming, grazing, cropping and market gardens. The study area has remained rural and still operates as part of a garden market plot.



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TITLE : **FIGURE 1: SITE LOCATION**

LOCATION : **BOX HILL NORTH**

DATUM:GDA 1994

PROJECTION: GDA 1994 MGA Zone 56

DATE : **14/04/2015**

PURPOSE: **REF**

VERSION (PLAN BY): A A3 (Natalie.Wood)

PATH: J:\JOBS\126k\126988 Box Hill North\10 - Drafting\Arcgis Map Documents\Planning\126988 Figure 1 REF A A3 20150414.mxd

CLIENT: **FLOW SYSTEMS**

JOB REF: **PR126988**

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2.0 Needs and Options considered

2.1 Strategic need for the proposal

To address the challenge of meeting the demands of population growth, climate change and community expectations for more liveable, green connected communities, urban populations are transitioning to a low carbon future. They are looking to create resilient communities, “future-proof” facilities and infrastructure, reduce redundancy, remove costs and embed sustainable innovations such as district heating and cooling systems, electric vehicles, micro grids, recycled water and solar. This new infrastructure approach is creating sustainable self-sufficient precincts that use locally produced water and energy, reducing development costs and keeping the benefits within the community. As an example using recycled water is 50 - 70% more efficient than the use of existing centralised utility service models.

Acknowledgement by the Australian Government of the need to create resilient communities is within the *Australian Guidelines for Water Recycling* (2006) (AGWR). It provides a generic framework for management of recycled water quality and use that applies to all combinations of recycled water and end users. It also provides specific guidance on the use of treated sewage and grey water for purposes other than drinking and environmental flows.

The NSW Government introduced WICA in 2006 as part of its strategy for a sustainable water future to harness the innovation and investment potential of the private sector in the water and wastewater industries. WICA established a licensing regime for new entrants to the industry to ensure the continued protection of public health, consumers and the environment.

As with all residential subdivisions wastewater capacity and solutions for disposal are essential. As this area has been identified as a strategic development area, wastewater servicing is essential and furthermore expected by the community. A solution was required to service the 5,000 residential lots (plus a small retail area) within the urban release area.

2.2 Proposal Objectives

The objectives of the proposal are to provide a water recycling facility that:

- Contributes to the efficient provision of essential infrastructure required to service a new residential community;
- Provide financially viable and financially sustainable wastewater treatment services;
- Provide best practice wastewater treatment solutions;
- Can be undertaken without an adverse impact on the environment and at the same time contribute to sustainability;
- Minimise risk to public health; and
- Be provided in accordance with existing Government Policy.

2.3 Alternatives and options considered

New residential development requires the co-ordinated provision of reticulated water and sewerage services. The proposal is seen as the best type of facility because the off-site impacts are limited; and because it is scalable it allows supply to increase in line with the anticipated residential development and the volume of waste to be treated. The Box Hill LWC also makes a significant contribution to sustainability through the provision of recycled water back to the residential area.

The alternative(s) to the proposed Box Hill LWC are to build a traditional local sewage treatment plant with potential discharge to the local waterway, or more expensively to pipe the sewage to an existing sewage treatment plant for treatment and disposal, which may also require an amplification/upgrade of the existing receiving treatment plant. Either alternative would be more expensive, take longer to implement, have greater potential environmental impacts, and fail to achieve sustainability initiatives for water re-use.

Alternative locations for the LWC have been considered during the preparation of this REF. Site selection considered topography, ecological considerations, location relative to housing, loss of residential land, suitability for construction, and elevation for network hydraulics.

Celestino and Flow Systems Operations have worked together to identify the best location for the Local Water Centre. As the Box Hill Local Water Centre will be fed by pressure sewer, the sewage can be pumped to any elevation necessary.

The other locations considered were on Old Pitt Town Road near to the current sales centre and on Old Pitt Town Road near to the proposed zone substation and Mt Carmel Road intersection. The chosen site on Red Gables Road is:

- Central to the development area, meaning reticulation pipe sizes are minimised;
- Located on relatively low value land being relatively low-lying and next to the Transgrid overhead transmission lines
- Located away from the first development precinct, meaning that the LWC will be built and commissioned before houses are built in that location
- In a location where the site is flat. This assists the ability to visually screen and landscape the local water centre site, therefore minimising any visual impact the site may have or be perceived to have.

Traditional sewage treatment plants are usually located at the lowest point of the catchment that it serves as these are usually fed by gravity sewerage systems which must deliver sewer by gravity to those treatment plants. This is not needed for pressure sewer reticulation systems.

The current best practice guidelines regarding site selection for sewage treatment plants, *NSW Best Practice Odour Guideline - Sewerage systems including sewage treatment plants, water recycling facilities, sewage reticulation systems and sewer mining* (Draft April 2010 and herein referred to as the Draft Guidelines) do not identify arbitrary buffer zone widths nor arbitrary distances between plant and residential areas. The Draft Guidelines take the approach that it is the outcome that is key rather than the use of buffer zones around such facilities. The Draft Guidelines recommend that the boundaries of sewage treatment plant lots within a SP2 zone be large enough to mitigate odour emissions not greater than 2OU odour assessment criteria beyond the lot boundary.

The Box Hill North Precinct will be serviced by a pressure sewer reticulation network (a well-established alternative to gravity sewer) linked to the Box Hill LWC. The pressure sewage reticulation system proposed is closed in so far as rainwater, groundwater and stormwater cannot flow into the system and there are no wet weather overflow events discharging into the environment. Significantly, this minimisation and predictability of flow allows for technically advanced treatment technology (membrane bioreactor) to be utilised. Hence the Box Hill LWC will be considerably smaller (six to eight times smaller) than a traditional centralised gravity fed sewage treatment plant. Application of “traditional” buffers and distances between the LWC and residential (future and existing) uses are not relevant having regard for the advanced technology within the LWC.

As documented in Section 6.7 and **Appendix 16** of this REF the predicted odour concentrations have been modelled and show that the 2OU odour assessment criteria is well within the lot boundary and therefore compliant with the Draft Guidelines.

The proposal is a closed pressurised system which is continually monitored. Should a significant leak or any unusual flow occur personnel from Flow Systems Operations are immediately alerted to the fault in the system by alarms connected to pressure monitoring points on the recycled water and pressure sewer networks and level sensors inside each wastewater collection tank. This will ensure any accidental release of sewage or recycled water is minimised and captured on-site.

2.4 Preferred Option

The Box Hill LWC option, delivered, operated and maintained by Flow Systems Operations, was adopted as the preferred option due to limited off-site impacts, economic viability, and scalable platform allowing wastewater servicing to increase in line with the anticipated residential development and the volume of waste to be treated. It also makes a significant contribution to sustainability through the provision of recycled water back to the residential area.

The location of the proposal was identified in consultation with the developer Celestino Developments Pty Ltd (Celestino) as a strategic location within the overall design of the Box Hill North precinct. As demonstrated within this REF the site proposed is not environmentally sensitive nor is it subject to site constraints that represent a significant hazard. Given the need for this type of infrastructure, the type and location of the proposal is assessed as providing the community with the best outcome in terms of type and location.

3.0 Description of Proposal

3.1 Introduction

The Box Hill LWC will utilise sewage from the future residential area to produce high quality water. The sewage will be treated through a multi-stage process. The processes that the LWC will use will meet the strict *Australian Guidelines for Water Recycling 2006* (AGWR). Wastewater is cleaned to the highest Australian standards, undergoing seven filtration and purification processes including Membrane Bioreactor (MBR) and Ultraviolet (UV) treatment. The seven processes are listed below:

- Wastewater Screening - Plastics and rubbish are taken out of the wastewater
- Anaerobic Processing - After the wastewater is screened it enters the biological processing tank for anaerobic processing. Natural bugs break down the wastewater.
- Aerobic Air - Air is added to the wastewater, creating new bugs which continue the break down process.
- Chemicals Added - Four chemicals namely: Sodium Hydroxide, Sodium Hypochlorite, Aluminium Sulphate and Acetic Acid - are added at different stages if required during processing.
- Membrane Fibres - Purified water is sucked through microscopic membranes that block out bugs - removing bacteria, pathogens and all other impurities. The holes in the fibres are so tiny, bacteria and viruses are unable to penetrate and are forced out, further cleaning the recycled water.
- Ultraviolet - Water goes through an Ultraviolet purification process neutralising any remaining impurities.
- Chlorine - Chlorine is added to the water for the final purification process.

The end product is recycled water plumbed into houses and public recreation areas for non-potable uses such as toilet flushing, washing machines, irrigation and car washing, thus reducing potable water demand. The facility, located upon Lot 10 DP 593517, is intended to operate 24 hours, 7 days per week, housed in a low-scale, single level building within an open space setting. The concept layout and architectural drawings for the Box Hill LWC are contained in **Appendix 2**. The layout and architectural drawings have been used in the assessment of the proposal by specialist consultants as detailed in Section 6 of this REF.

The intended biological capacity of the Box Hill LWC is approximately 2,000kL per day, servicing approximately 5,000 dwellings or equivalent, although the facility has been designed to achieve this benchmark over time in line with uptake in the residential area surrounding the development.

The features of the concept layout are as follows:

- The LWC site occupying an area of some 10,000m^2, with external plant and equipment occupying an area of 1,600m^2;
- Two 2.5 megalitre tanks, one 1.2 megalitre tank and associated pump shed for the storage of recycled water;
- One 1.2 megalitre tank and associated pump shed for the storage of drinking water;
- Two operational buildings covering an area of approximately 1,600m^2. These buildings will store equipment and instrumentation for operation of the treatment process. Solar panels will ultimately be installed on the roofs on the two main operational buildings;
- Hardstand areas and a service driveway for vehicles are provided for delivery and maintenance purposes totalling an area of 2,100 m^2. These are located on the western side of the two main operational buildings that will link to Red Gables Road;
- Stormwater detention basin with an area of 360m^2 will be located to the north of the storage tanks;

- External lighting will be provided to the external areas of the building which is configured with movement sensors and light sensors to provide additional deterrent against vandalism and graffiti but directed away from neighbouring buildings where possible;
- CCTV monitoring of external areas will be provided for security;
- All buildings and facilities will be designed and constructed in accordance with *Building Code of Australia* (BCA) requirements;
- Areas of soft landscaping have been provided to complement the architecture of the main operational facility buildings and surrounding residential areas;
- Bushfire management on the site includes the choice of material used in construction and asset protection zones to the west and north; and
- Although housing an industrial type activity, the design of the LWC is nevertheless detailed in a manner that is sympathetic to its location on the margin of a future residential area; i.e. Architectural finishes and treatments range from concrete, glass and expressed steel columns/beams to Colorbond steel for roofs and outbuildings, to provide a robust look to the facility but with architectural detail to integrate the facility into a residential neighbourhood, such that the facility is presented as a community asset; and

All water storage tanks are located to the northern side of the site. Capacity is approximately 1.2ML to 2.5ML each, and each storage tank will range between 19 to 25m in diameter and stand up to 7m high above ground level.

Tanks within the LWC site will be interconnected with pipes, pumps and that link to each other (as applicable), and to the LWC building. Pumps for drinking water and recycled water tanks will be housed in outbuildings of Colorbond material for weather protection and acoustic screening.

General internal access into landscaped areas and areas of retained vegetation will be deterred by low fencing. Overall access will be controlled by security fencing.

The provision and standard facilities within the building and site, such as toilets and external lighting will be provided as required under the BCA, and a detailed independent review and assessment will be carried out prior to commencing construction. Certification will be obtained such that the development of the LWC will comply with the applicable technical provisions of NSW's building law.

3.2 Staging of development

Construction of the Box Hill LWC will occur over 4 stages as illustrated in the concept layout and architectural drawings for the Box Hill LWC contained in **Appendix 2**.

Prior to commissioning and operation of the Box Hill LWC, an interim arrangement for the collection and storage of sewage generated by development within Box Hill North residential subdivision will be in place. This will utilise four temporary collection tanks known as Interim Sewage Storage Tanks (ISST) to collect the sewage from the pressure sewerage network for subsequent collection by a licensed tankering contractor. This component is shown as Stage 1 and will also include the formation of the bitumen access road. A separate REF considering the installation of the ISST and sewage and recycled water reticulation services under WICA and Part 5 of the EP&A Act has been prepared and separate approval has being sought by Flow Systems Operations.

Stage 2 works will include the construction and operation of Local Water Centre Building No 1 and associated access ways, two recycle water storage tanks and recycle water pump shed. Stage 3 works will include the construction and operation of Local Water Centre Building No 2, the removal of the ISST and an additional recycle water storing tank. Stage 4 works will include on additional storage tank, additional pump shed and RO unit.

Apart from aesthetic amenity, the two main areas of potential impact from the location of the LWC are odour and noise.

The potential sources of odour from the LWC are the screens used to remove inorganic material larger than 3mm in size prior to treatment of the liquid flow, which are entirely enclosed.

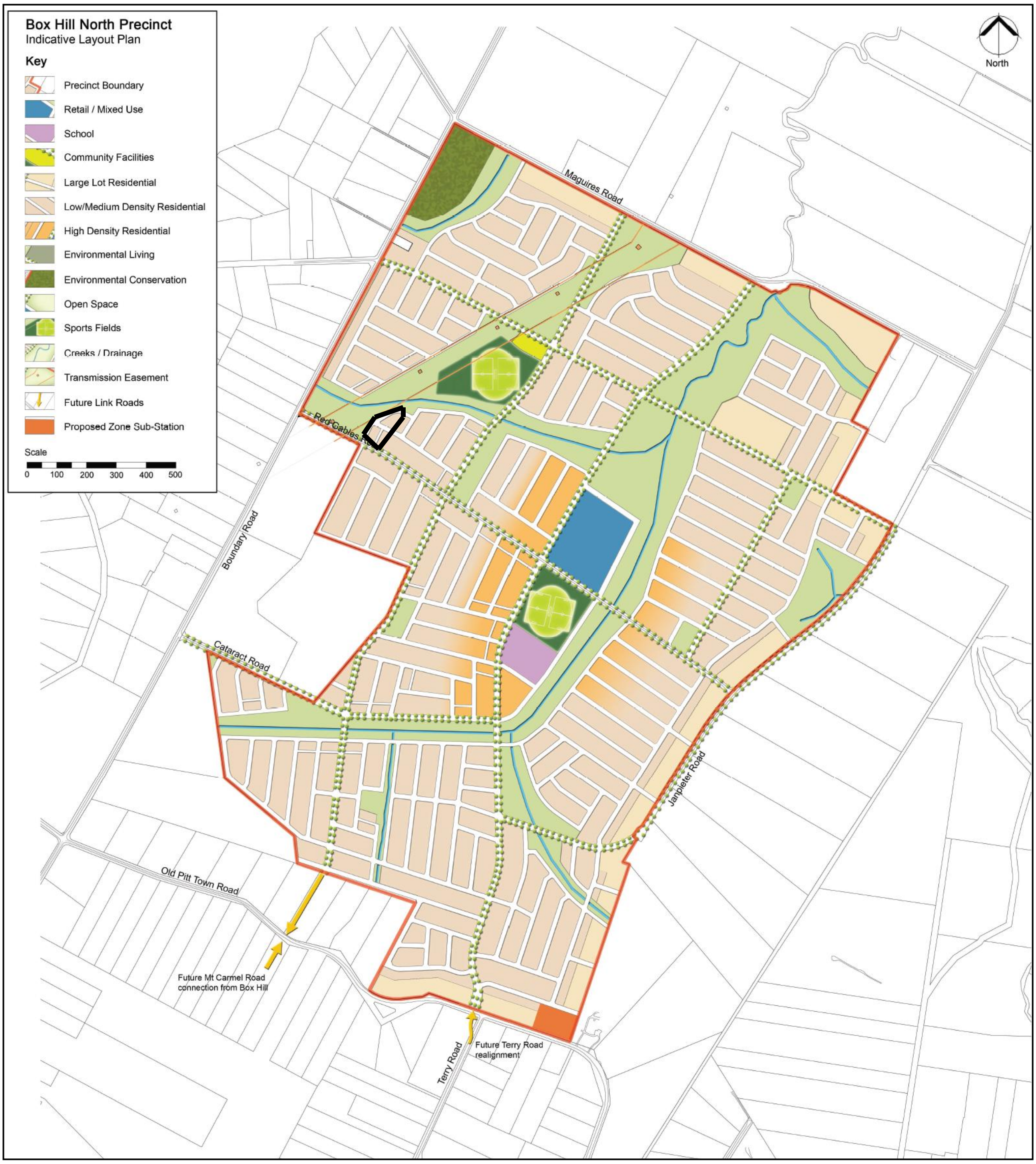
The potential sources of noise from the LWC are from:

- The various pumps, blowers, compressors etc; and
- The emergency back-up power supply (diesel generator).

The current best practice guidelines regarding siting of sewage treatment plants, *NSW Best Practice Odour Guideline - Sewerage systems including sewage treatment plants, water recycling facilities, sewage reticulation systems and sewer mining* (Draft April 2010 and herein referred to as the Draft Guidelines) do not identify arbitrary buffer zone widths nor arbitrary distances between plant and residential areas. The Draft Guidelines recommend that the boundaries of sewage treatment plant lots within a SP2 zone be large enough to mitigate odour emissions not greater than 2OU odour assessment criteria beyond the lot boundary. Given the need for this type of infrastructure, the type and location of the proposal is assessed as providing the community with the best outcome in terms of type and location. A project specific Noise Impact Assessment and a project specific Odour Impact Assessment have been prepared and are contained in **Appendix 15** and **Appendix 16** respectively. Both of these Assessments have been prepared having due regard for current NSW Environmental Protection Authority (EPA) guidelines.

A plan showing the residential and street layout for the Box Hill North precinct to which the proposal will service is shown within **Figure 2**.

Figure 2 Box Hill North Precinct



Box Hill LWC Site

3.3 Outline of Construction Works

The Box Hill LWC is to be located at 153 Boundary Road, Box Hill on part of Lot 10 DP 593517 facing Red Gables Road which is land in the western portion of the Box Hill North Residential Precinct. The site will be accessed via Red Gables Road.

The LWC will be constructed once detailed designs are complete and a suitable quantity of sewage is available for commissioning of the LWC. Works on the first operational facility building is anticipated to begin in early 2017 and finish in early 2018. The second operational facility building will follow when demand, through the development of the Box Hill North Residential Precinct, requires it and this is anticipated to be in 2024.

The construction of the LWC will commence with detailed excavation and installation of under slab pipe work and conduits followed by traditional form, reinforcement and pouring of concrete floors and walls. The concrete tanks will be hydraulically tested and the building finished with architectural finishes. The steel storage tanks will be constructed on concrete ring beam foundations. Spoil from the construction of the facility is expected to be minimal and will be managed in accordance with a Construction Environmental Management Plan (CEMP) for the proposal. It is likely that all spoil will be used for re-contouring of the land surrounding the building and facilities.

Once the buildings and tanks are substantially complete, it will be equipped with mechanical, electrical and control equipment including pumps, mixers, inlet screens, odour control unit, membranes, UV disinfection and chemical dosing tanks as well as potentially reverse osmosis treatment units and solar photovoltaic cells.

3.4 Construction plant and equipment

The following plant and equipment would be required to undertake the proposed works:

- Front end loader / Chainsaws / Mulcher;
- Small tipper trucks;
- Rigid and articulated delivery trucks;
- Excavator;
- Concrete trucks;
- Cranes;
- Grader;
- Portable generators;
- Scaffold;
- Elevated work platforms; and
- General construction / building tools.

3.5 Construction Workforce

It is anticipated that the construction works would be undertaken by a work crew of 5 – 6 people over a twelve month period. All contractors and machine operators will be inducted on the environmental sensitivities of the work and relevant safeguards.

3.6 Construction Hours

The Box Hill LWC will be constructed during the following hours:

- Monday to Friday 7am to 6pm; and
- Saturday 8am to 1pm (with deliveries from 8am to 6pm).

3.7 Construction Program

Construction, equipping and commissioning of the initial main operational facility building is expected to take approximately 12 months. Works on the first operational facility building is anticipated to begin in early 2017 and finish in early 2018. The second operational facility building will follow as demand requires.

3.8 Environmental Management Plan – Construction Phase Activities

During construction environmental safeguards referred to in this REF shall be implemented. The contractor shall prepare a CEMP covering the construction phase prior to the commencement of construction.

3.9 Outline of Operation Works

The operation of the Box Hill LWC will be undertaken by Flow Systems Operations on the following basis:

- The facility will operate 24 hours a day, 7 days per week;
- The goods to be stored are recycled water and drinking water, which are transported by pipe system to the customers;
- Chemicals used for treatment and dosing will also be stored on site; and
- Any waste water screenings will be collected and disposed by way of an authorised waste disposal contractor.

Once operational the plant and equipment used in the facility will include:

- Screens;
- Pumps;
- Blowers;
- Mixers;
- Compressors;
- Chemical dosing systems;
- Tanks;
- Electrical cabinets;
- Instrumentation;
- Valves and pipe work; and
- Back-up generator.

During the operation of the LWC a number of chemicals will be used. The chemical types and predicted volumes are provided in **Table 1**.

Table 1 Chemical types and predicted volumes during ultimate Box Hill LWC operation

Chemical	Function	Approx. Consumption (L/year)	Total Storage (L)
Alum	Phosphorous removal	20,000	2x3,000 and 2x4,500
Sulphuric Acid	Lower pH of Reverse Osmosis (RO) feed water	Nil	530
Antiscalant	Reduce fouling of RO membranes	1,600	530
Sodium Hypochlorite	Water disinfection and mbr membrane cleaning	16,000	1x32x3,000 and 1x42x4,500
Magnesium Hydroxide	pH correction of mbr feed water and final water	40,000	1x32x3,000 and 1x42x4,500
Citric Acid	Mbr membrane cleaning	1,200	7,000
Sodium Metabisulphate (SMBS)	Dechlorination of RO feed water	2,000	530
RO cleaning chemicals	Cleaning	600	530

These chemicals and potentially hazardous substances will be used and stored according to manufacturers' directions and regulatory requirements including the *Work Health and Safety Act 2011, AS 3780 The storage and handling of corrosive substances* and relevant guidelines.

The Box Hill LWC will produce high quality recycled and disinfected water with very low concentrations of pathogens and nutrients. Therefore it is anticipated that the nutrient loads in the recycled water from the Box Hill LWC will have no appreciable impact on environmental and/or public health. In relation to public health, relatively few restrictions need to be placed on non-drinking water uses of tertiary treated and disinfected recycled water due to the high quality and low risk for direct human contact. End use controls and onsite constraints can also be used to minimise both human exposure to hazards and the impact on receiving environments; such as signage, use of buffer zones, and control of plumbing and distribution systems. A plan showing the areas suitable for irrigation (RWIZs) within the Box Hill North precinct and buffers to them is provided as **Figure 3**. Suitable areas are those areas outside the watercourse buffers, outside the groundwater buffers and outside the transmission corridor. Irrigation will be outside archaeological sites (Aboriginal Heritage Information Management System (AHIMS) identifier) 45-5-4297, 45-5-4300 and 45-5-4299).

Tankering of recycled water to an end use remote from the development may need to be considered if uses cannot be identified nearby. Any use of the recycled water outside of the Box Hill North Precinct will not be required for some 10-15 years (after Stage 8 of 12 of the development) and so specific customers cannot be identified. Uses outside of the development, including discharge to waterways would be subject to further environmental assessment and approval by the NSW Environment Protection Authority (EPA).

Very little sludge wasting will occur in the early stages of the LWC. When sludge wasting is needed, it will be drawn directly from a bioreactor to a tanker for offsite treatment and disposal using an authorised waste management contractor. As the catchment population increases, the second stage plant of the LWC will be placed into operation once again allowing very little sludge to occur.

In the later stages of the LWC once the catchment population of the Box Hill North Precinct increases, a sludge dewatering system will be installed and commissioned to convert the liquid sludge to a sludge cake. The cake will be transported via a conveyor to a suitable bin or skip. The cake will be sampled and classified for reuse applications. The bin will be collected and replaced on a weekly basis via a certified organic waste collection vehicle and taken to an organic waste management facility for processing and ultimate beneficial reuse such as landscaping. Grit and screening debris will be collected in a bin and disposed to authorised landfill. The storage and disposal of sludge wastings, sludge cake and grit and screen debris will be carried out in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (DECCW 2009) and the EPA *Environmental Guidelines: Use and Disposal of Biosolids Products (2000).*

It is noted that Flow Systems Operations will address each of the twelve (12) elements associated with recycled water in the *Australian Guidelines for Water Recycling : Managing Health and Environmental Risks (Phase 1) 2006* and the 12 elements are identified below.

- Commitment to responsible use and management of recycled water
- Assessment of the recycled water system
- Preventive measures for recycled water management
- Operational procedures and process control
- Verification of recycled water quality and environmental performance
- Management of incidents and emergencies
- Operator, contractor and end user awareness and training
- Community involvement
- Validation, research and development
- Documentation and reporting
- Evaluation and audit
- Review and continual improvement

Flow Systems Operations' parent company Flow Systems Pty Ltd and its various subsidiaries (e.g. Pitt Town Water, Central Park Water and Discovery Point Water), have demonstrated previously that it has the capacity to implement and maintain the 12 element approach.

Pitt Town Water, Central Park Water and Discovery Point Water are sister companies and are wholly owned subsidiaries of Flow Systems Pty Ltd. Flow Systems will assist Flow Systems Operations to develop and implement the Water Quality Plan – Recycled Water documentation that embodies the 12 element approach.

Figure 3 Areas within the Box Hill North Precinct suitable for irrigation

Box Hill LWC Site

4.0 Key Legislation

4.1 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the statutory framework for planning and environmental assessment in New South Wales. Implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils. The EP&A Act contains two parts which impose requirements for planning approval, namely:

- Part 4 generally provides for the control of local 'development that requires development consent from the local Council. Part 4 now also provides for State Significant Development; and
- Part 5 provides for the control of 'activities' that do not require development consent under Part 4 and are undertaken or approved by a public authority.

The applicable approval process is generally determined by reference to the relevant environmental planning instruments and other controls. These include local environmental plans (LEPs) and State Environmental Planning Policies (SEPPs). Pursuant to Section 36 of the EP&A Act there is a general presumption that a SEPP prevails over a LEP in the event of an inconsistency.

This REF has been prepared pursuant to two pieces of legislation, WICA and for the construction and operation of a *water recycling facility* as defined for the purposes of Clause 106(2) of *State Environmental Planning Policy (Infrastructure) 2007* which is an activity under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The land proposed for the Box Hill LWC is not currently a prescribed zone as defined in the SEPP (Infrastructure) 2007. Application (Planning Proposal 3/2016/PLP) has been made by Flow Systems Operations to THSC to re-zone this land to a prescribed zone (SP2 Infrastructure). This will then permit development without development consent by Flow Systems Operations as a holder of a WICA licence. Flow Systems Operations is however required to consider a REF for water recycling facilities under Part 5 of the EP&A Act. Accordingly this REF has been prepared in accordance with Part 5 of the EP&A Act in accordance with Sections 111 and 112 of the EP&A Act and clause 228 of the *Environmental Planning and Assessment Regulation 2000*. It examines and takes into account to the fullest extent possible all matters affecting or likely to affect the environment as a result of the activities associated with this project.

A separate REF has been prepared for the construction and operation of a *sewage reticulation system* as defined for the purposes of Clause 106(3) of *State Environmental Planning Policy (Infrastructure) 2007,* for the installation of ISST on the site as well as sewage, recycled water and drinking water reticulation services for the Box Hill North residential subdivision, under Part 5 of the EP&A Act has been prepared.

4.2 Environment Protection and Biodiversity Conservation Act 1999

The *Commonwealth Environment Protection and Biodiversity Conservation* (EPBC) *Act 1999* requires the approval of the Commonwealth Minister for the Environment and Heritage for actions that may have a significant impact on matters of National Environmental Significance (NES). The Matters of NES under this Act are:

- World Heritage properties.
- National heritage places.
- Wetlands of international importance (Ramsar wetlands).
- Threatened species and ecological communities.

- Migratory species.
- Commonwealth marine areas.
- Great Barrier Reef Marine Park
- Nuclear actions (including uranium mining).
- Water resource, in relation to coal seam gas development and large coal mining development.

The REF has assessed the above matters with respect to the proposal as contained in **Appendix 1** and it is concluded that the proposal will not result in a significant impact on any matters of NES and, as such, does not require a referral to the Minister for the Environment.

No nationally listed threatened species under the EPBC Act 1999 have been recorded within the land upon which the Box Hill LWC is proposed to be constructed.

4.3 State Environmental Planning Policies

4.3.1 State Environmental Planning Policy (Infrastructure) 2007

The SEPP (Infrastructure) 2007 (ISEPP) provides a planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The ISEPP supports greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency. The following clause of the ISEPP is applicable to the construction of the Box Hill LWC.

106 Development permitted with or without consent

Clause 106 of the ISEPP addresses development permitted with or without consent. Subclause (2) states the following:

(2) Development for the purpose of water recycling facilities may be carried out:

(a) *by or on behalf of a public authority or any person licensed under the Water Industry Competition Act 2006 without consent on land in a prescribed zoned, and*

(b) *by any other person with consent on any land in a prescribed zoned or on any land where the development is ancillary to an existing land use.*

However, such development may be carried out on land reserved under the National Parks and Wildlife Act 1974 only if the development is authorised by or under that Act.

It is noted that the definition of ‘water recycling facility’ as defined includes associated irrigation schemes. The land proposed for the Box Hill LWC is not currently a ‘prescribed zone’ as defined in the ISEPP. Application (Planning Proposal 3/2016/PLP) has been made by Flow Systems Operations to THSC to re-zone this land to a prescribed zone, namely SP2 Infrastructure. This will then permit development without development consent by Flow Systems Operations as a holder of a WICA licence. Flow Systems Operations is however required to consider a REF for water recycling facilities under Part 5 of the EP&A Act. Hence the operation of the Box Hill LWC will be undertaken by Flow Systems Operations who will be licensed under the WICA. The land is not reserved under the *National Parks and Wildlife Act 1974*.

Division 24 of ISEPP provides criteria for development for the purpose of water reticulation systems that may be carried out by or on behalf of a public authority without consent on any land, or in the case of “water storage facilities” and “water treatment facilities” land in a number of specifically nominated zones. Importantly the Division does not currently allow for development without consent for drinking water infrastructure by a WICA licence holder. Hence as indicated in Section 4.1 Flow Systems Operations will be preparing a development application and associated supporting documentation for submission to THSC in order to obtain development consent under Part 4 of the EP&A for drinking water infrastructure. Permissibility of the proposed irrigation scheme using recycled water is discussed within a separate REF prepared and lodged with IPART for the pressure sewerage reticulation system and recycled water reticulation system for the entire Box Hill North precinct.

4.4 Local Planning Policies

4.4.1 The Hills Local Environmental Plan 2012

The *Hills Local Environmental Plan 2012* (LEP 2012) is a legal document that provides rules and guidelines for development within The Hills LGA to control the use of private and public land through zoning. On February 20 2015, via publication on the NSW Government Gazette website, the site was rezoned to R3 Medium Density Residential in accordance with the Planning Proposal contained in **Appendix 4**.

The land use zoning is shown as **Figure 4**.

The objectives and permitted and prohibited uses of Zone R3 Medium Density Residential are provided below.

Zone R3 Medium Density Residential

1 Objectives of zone

- To provide for the housing needs of the community within a medium density residential environment.
- To provide a variety of housing types within a medium density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To encourage medium density residential development in locations that are close to population centres and public transport routes.

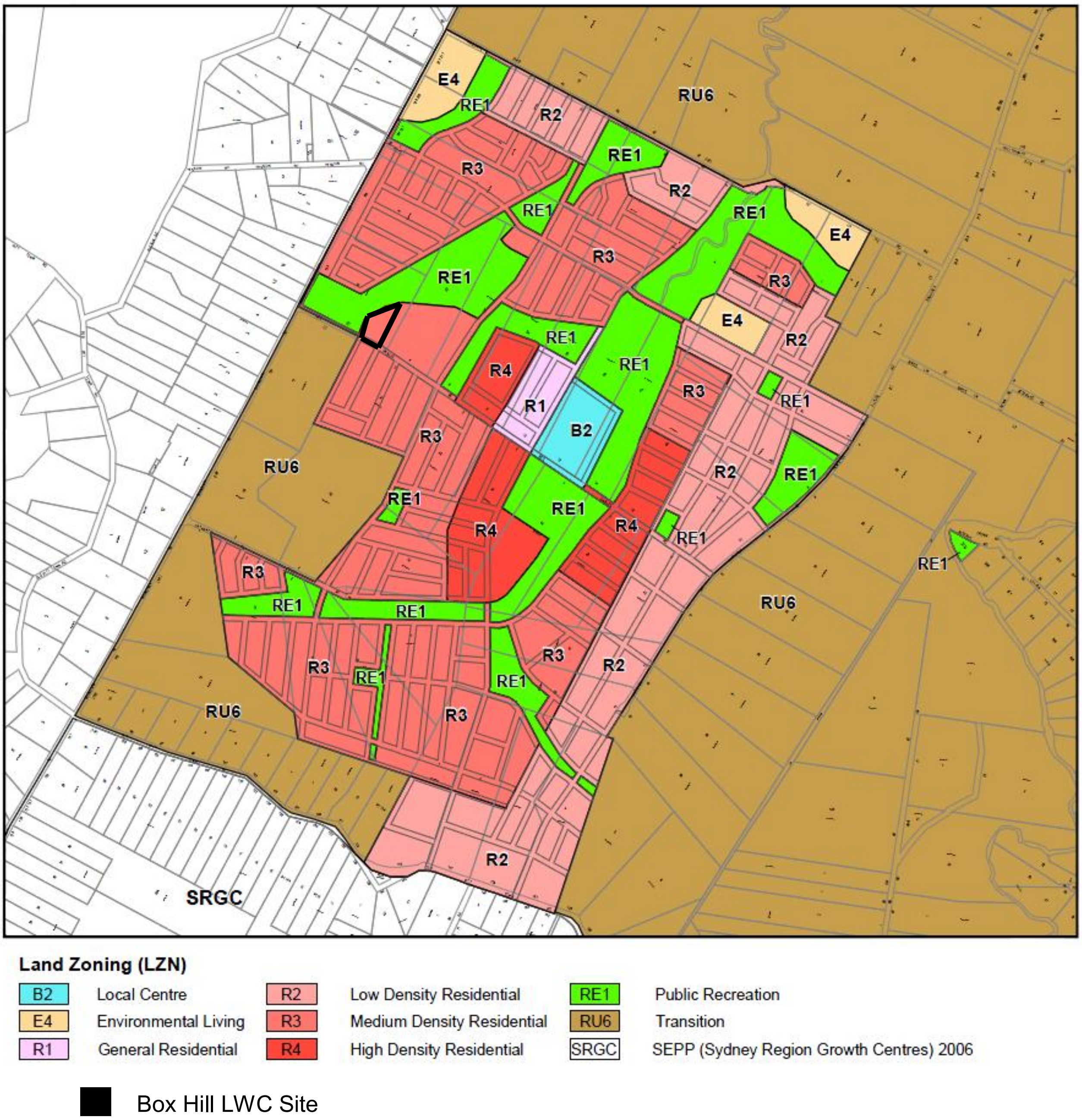
2 Permitted without consent

Home businesses; Home occupations;

3 Permitted with consent

Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Home-based child care; Multi dwelling housing; Neighbourhood shops; Places of public worship; Respite day care centres; Roads; Seniors housing; Any other development not specified in item 2 or 4.

Figure 4 Current Land Use Zoning



4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Environmental facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential accommodation; Restricted premises; Rural industries;

Service stations; Sewerage systems; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water supply systems; Wharf or boating facilities; Wholesale supplies.

Under LEP 2012 the Box Hill LWC is defined as a "water recycling facility" which is a type of "sewerage system" which is not permissible within the R3 Medium Density Residential zone. Flow Systems has made application (Planning Proposal 3/2016/PLP) has been made to THSC to amend LEP 2012 to rezone the subject land to SP2 Infrastructure.

4.4.2 Development Control Plan, Voluntary Planning Agreement and Section 94 Contributions Plan to Support the Rezoning of Land within the Box Hill North Precinct

There is a Draft Development Control Plan (DCP), Voluntary Planning Agreement and Section 94 Contributions Plan that support the rezoning of land within the Box Hill North Precinct (1/2014/PLP) for urban purposes.

The DCP provides guidance and detailed development requirements for activities within zones and localities. The DCP makes detailed provision with respect to development to achieve the purpose of an environmental planning instrument applying to the land concerned. A DCP becomes part of the development assessment process under the *Environmental Planning and Assessment Act 1979*, by virtue of Section 79(C).

The vision of the Box Hill North precinct is to create a high quality, integrated and ecologically sustainable urban environment integrated with good public transport accessibility, open space, community facilities and employment opportunities. The DCP provides specific objectives for development within Box Hill North and relevant controls to ensure the vision and objectives are achieved.

The rezoning of the Box Hill North Precinct for urban development also requires a full range of urban support infrastructure such as recreation facilities, water management facilities, and transportation facilities. The required infrastructure will be delivered through the combination of a Voluntary Planning Agreement and a Section 94 Contributions Plan.

4.5 Water Industry Competition Act 2006 and Water Industry Competition (General) Regulation 2008

WICA, as part of its strategy for a sustainable water future aims to harness the innovation and investment potential of the private sector in the water and wastewater industries. WICA established a licensing regime for new entrants to the industry to ensure the continued protection of public health, consumers and the environment. The private sector is now encouraged to develop and operate water management schemes and the licensing system is governed by IPART and the Minister for Lands and Water. As mentioned in **Section 3** of this REF the construction and operation of the Box Hill LWC will be undertaken by Flow Systems Operations who will be licensed under the WICA.

It is noted that the activities covered by this proposal are contingent on development works associated with the Box Hill North Residential Precinct, subject to separate approval under the EP&A Act, and therefore cannot commence until that further approval is granted.

IPART assesses WICA licence applications based on licensing criteria and principles in WICA, including the following environmental sections/ clauses within WICA and the Water Industry Competition (General) Regulation 2008.

Water Industry Competition Act 2006

“7 Licensing principles

(1) In considering whether or not a licence is to be granted under this Part and what conditions are to be imposed on such a licence, regard is to be had to the following principles:

(a) the protection of public health, the environment, public safety and consumers generally.” [Emphasis added]

Water Industry Competition (General) Regulation 2008

“7 Matters as to which Minister must be satisfied in relation to licence applications: section 10 (4) (e)

Before granting a network operator’s licence, the Minister must be satisfied that the applicant has the capacity to carry out the activities that the licence (if granted) would authorise in a manner that does not present a significant risk of harm to the environment.”

In considering licence applications the Minister administering the WICA must be satisfied of such other matters that he/she considers relevant, having regard to the public interest.

This REF has been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA. This assessment under WICA is determined by the Minister for Lands and Water and is a high level threshold to determine that the licensee has the capacity to protect the environment and not to cause significant risk of environmental harm. This can be assessed through this assessment in conjunction with the licensee’s operational environmental management plan and certified environmental management systems.

4.6 Other Legislative Requirements

Other state legislation relevant to the assessment of environmental impacts on the Box Hill LWC have been considered and are outlined below.

Water Management Act 2000

The *Water Management Act 2000* is administered by the NSW Department of Primary Industries - Water The objective of this Act is to protect watercourses from any deleterious effects as a result of works within or near such watercourses. Part 3A of the Act requires any persons undertaking works within 40 metres of a watercourse to obtain a permit. The proposal does not require a “Controlled Activity Approval” under the *Water Management Act 2000.*

Contaminated Land Management Act 1997

The Contaminated Land Management Act 1997 (CLM Act) is administered by the NSW EPA and local councils. It provides a regime for investigating and, where appropriate, remediating land affected by contamination which represents a significant risk of harm to human health or the environment. The CLM Act specifies responsibilities for managing contaminated land and the role of the EPA in the assessment of contamination and the supervision of the investigation, remediation and management of contaminated sites.

The site contains an area of environmental concern due to the presence of heavy metals and asbestos containing material. DA 1634/2015/ZB was lodged in June 2015 and approved in November 2013, refer to **Appendix 3**. The approved DA is for a 2 lot subdivision, earthworks, dam relocation and remediation of the land as part of the earthworks prior to the construction of the Box Hill LWC. A Remediation Action Plan for the entire Box Hill North precinct, including the LWC site, has been prepared and was used to inform the approval of DA 1634/2015/ZB. Hence the site will be remediated in accordance with the Remediation Action Plan and construction, which will commence after the remediation, will not disturb or generate known contaminated sites.

Threatened Species Conservation Act 1995

Developments requiring approval from a consent authority under Part 4 of the EPA Act or activities requiring determination or approval by a determining authority under Part 5 of the EPA Act, are required to be assessed in accordance with the *Threatened Species Conservation Act 1995* (TSC Act).

Section 111(4) of the EPA Act requires a determining authority to consider the effects of an activity on the following:

(a) critical habitat, and

(b) in the case of threatened species, populations and ecological communities, and their habitats, whether there is likely to be significant effect on those species, populations or ecological communities, or those habitats, and

(c) any other protected fauna or protected native plants within the meaning of the *National Parks and Wildlife Act 1974*."

Section 5A of the EP&A Act outlines seven points which must be considered in order to determine the significance of the impact of a development or activity on the habitat of threatened species, population and ecological communities, known or considered likely to occur in the study area and environs. This assessment is commonly referred to as the 'seven part test'.

An appraisal of the impact of the proposal upon those potentially occurring TSC Act-listed species and communities was conducted and as summarised in **Section 6** of this REF, indicate that the proposal will have no significant impact on threatened species, populations and ecological communities listed pursuant to the TSC Act. Further discussion of the impact of the proposal on flora and fauna is contained in **Section 6** of this REF.

Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is concerned with the protection of scheduled heritage items, sites and relics. The NSW Heritage Office administers this Act. It is an offence under the Heritage Act to disturb any relics. Relics, as defined in the *Heritage Act 1977* means any deposit, artefact, object or material evidence that:

- Relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- Is of State or local heritage significance.

There are no known European heritage items identified within the study area.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) is relevant to the protection of Aboriginal artefacts and the protection of native flora and fauna. Consent is required under Section 90 (2) of the NPW Act to destroy an Aboriginal artefact.

An Aboriginal Due Diligence Report has been completed for the proposal and is discussed further in **Section 6** of this REF. The report concludes that no Aboriginal objects or places are within the study area and therefore an Aboriginal Impact Permit (AHIP) is not required for the proposed activity.

Protection of Environment Operations Act 1997

One of the aims of the *Protection of Environment Operations Act 1997* (POEO Act) is to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote the following:

- Pollution prevention and cleaner production,
- The reduction to harmless levels of the discharge of substances likely to cause harm to the environment,
- The elimination of harmful wastes,
- The reduction in the use of materials and the re-use, recovery or recycling of materials,
- The making of progressive environmental improvements, including the reduction of pollution at source, and
- The monitoring and reporting of environmental quality on a regular basis.

Under Schedule 1, clause 36 of the POEO Act, activity sewage treatment system is declared to be a scheduled activity if the operation of sewage treatment systems (including the treatment works, pumping stations, sewage overflow structures and the reticulation system) that involve the discharge or likely discharge of wastes or by-products to land or waters and has a processing capacity that exceeds:

- 2,500 persons equivalent, as determined in accordance with guidelines established by the EPA Gazettal notice, or
- 750 kilolitres per day.

The proposal is designed with ultimate capacity for 2,000kL per day of sewage treatment, and to provide wastewater services to approximately 15,000 equivalent persons (EP) which exceeds the threshold however as all of the treated water will be delivered to end customers for licensed end uses under WICA (and not applied to lands or water as waste), the activity is not a scheduled activity. It is noted that this position is contrary to the EPA's submission to the proponent's licence application which states that an EPL will be required. Flow Systems Operations will liaise with the EPA to come to an agreed position prior to the water recycling facility needing to be fitted out to a stage where it will exceed the POEO Act threshold processing capacities.

Although the proposal is not a scheduled activity for the purposes of the POEO Act, Clause 120 (Prohibition of pollution of waters) identifies that a person who pollutes any waters is guilty of an offence. Clause 148 (Pollution incidents causing or threatening material harm to be notified) identifies the kinds of pollution incidents that must be notified to the EPA and the duties that persons, employees, employers and agents must take in respect of a pollution incident.

Flow Systems Operations will ensure that in the unlikely event of a pollution incident all remedial actions are in accordance with the POEO Act.

4.7 Summary

The proposal has been assessed pursuant to two pieces of legislation:

- *Water Industry Competition Act 2006* (WICA); and
- *Environmental Planning and Assessment Act 1979* (EP&A Act), particularly environmental assessment under Part 5 and the *Environmental Planning and Assessment Regulation 2000*.

No requirement in any other legislation has identified the need for further approval or licences to be obtained.

The assessment of environmental impact under WICA is made by the Minister for Land and Water in issuing a network operator's licence.

Once Flow Systems Operations is issued with a network operator's licence under WICA, no further approval is required for it to undertake its activities and therefore section 110 of the EP&A Act does not identify any determining authority for Flow Systems Operations' environmental assessment pursuant to sections 111 and 112 of the EP&A Act and clause 228 of the *Environmental Planning and Assessment Regulation 2000*. In accordance with Flow Systems Operations' Operational Environmental Management Plan and Approvals Management Procedure, Flow Systems Operations will submit future subsequent environmental assessments for third party review by IPART or a consultant approved by IPART at Flow Systems Operations' own cost.

The development of a sewage reticulation system is an activity under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This obliges Flow Systems Operations to assess to the fullest extent possible all matters affecting, or likely to affect, the environment by the construction and operation of the proposal. This obligation of the proponent survives in legislation regardless of the status of WICA licence approvals and environmental assessments carried out under WICA.

Section 6 and **Appendix 1** of this REF provide an assessment of the environmental issues associated with the proposal, in line with the requirements of the EP&A Act and relevant Commonwealth legislation.

This REF has been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA. This assessment under WICA is determined by the Minister for Lands and Water and is a high level threshold to determine that the licensee has the capacity to protect the environment and not to cause significant risk of environmental harm. This can be considered through this assessment in conjunction with the licensee's operational environmental management plan and certified environmental management systems.

5.0 Consultation

Celestino and Flow Systems Operations have undertaken detailed consultation with THSC regarding this proposal and Flow Systems Operations Planning Proposal to amend The Hills LEP to re-zone the proposed LWC land to SP2 (Infrastructure) as outlined in **Table 2.**

Table 2 Consultation log with The Hills Shire Council

Date	Description of consultation
10/07/15	Pre-lodgement meeting between Council, the developer and Flow Systems Operations
12/10/15	Council staff site inspection of the Pitt Town Local Water Centre
29/10/15	Meeting between Council, the developer and Flow Systems Operations
29/10/15	Council's submission to IPART in relation to Flow Systems Operations network operator's licence application
06/11/15	Issue of Q&A document consolidating all queries and correspondence regarding the proposal to date as contained in **Appendix 5**.

Consultation obligations under ISEPP and WICA will be carried out in due course and submissions considered as required under ISEPP and WICA.

The public exhibition of Flow Systems Operations' application for a network operator's licence elicited responses from:

- THSC;
- Sydney Water;
- NSW Health;
- Minister for Primary Industries, Lands and Water; and
- Environment Protection Authority.

6.0 Environmental Assessment

This section of the REF provides a detailed description of the potential environmental impacts associated with the proposal during both construction and operation, and provides site-specific mitigation measures to ameliorate the identified potential impacts. All aspects of the environment potentially impacted upon by the proposal are considered.

Specialist studies relating to land capability, ecology, cultural heritage, stormwater, noise, odour and bushfire have informed the preparation of the REF and appear in full within the appendices. A number of these specialist studies also consider the associated impact of the installation of ISST on the site. However for the purpose of this REF the consideration of these impacts is not required as separate approval under Part 5 of the EP&A for installation of ISST as well as sewage, recycled water and drinking water reticulation services has being sought by Flow Systems Operations.

6.1 Land Capability and Staging

Whitehead and Associates Pty Ltd were engaged to prepare a Land Capability and Staging Assessment. The Assessment focuses on the site's capacity to sustainably accommodate recycled water once the proposed LWC is commissioned and operating. Findings and recommendations from the Assessment are summarised below and the Assessment (incorporating Land Capability Report and Staging Assessment Report) is contained in **Appendix 6**.

6.1.1 Existing Environment

The Box Hill LWC will supply the subdivision with a reticulated recycled water supply, with 'excess' recycled water being irrigated on managed pasture set aside for the subsequent stages of the subdivision.

An on-site soil assessment was conducted on 4th December 2014, in accordance with the *Australian Guidelines for Water Recycling (2006)* under the requirements of the WICA, to determine the limitations (if any) for the overall Box Hill North site. Site constraints for recycled water irrigation application do exist over the site and relate to soil sodicity and soil permeability. However it is considered that these matters can be overcome through the implementation of appropriate mitigation measures.

For the purposes of the Land Capability Assessment design household (ET) water demands and wastewater generation rates were determined in accordance with the Building Sustainability (BASIX) and Water Efficiency Labelling Scheme) WELS requirements. The household water demands have been conservatively estimated as 741L/ET/day based on the determined occupancy data and 'pre BASIX' benchmark home condition. Each design household was conservatively assumed to offset approximately 40% of the total potable water demand using recycled water, on an annual basis.

Monthly water and nutrient balances as well as daily-time step modelling were undertaken to determine sustainable irrigation rates for community land in the subdivision and ultimate irrigation capacity to determine the maximum development potential of the subdivision before an alternative end-use must be found for the recycled water.

Groundwater bore data indicates relatively shallow surface soils comprising sandy clay and sand to depths between 0.5 m and 13 m below ground surface overlying sandstone and shale bedrock.

6.1.2 Potential Impacts

The Assessment demonstrates that the hydraulic load is limiting across the site and daily modelling indicates that irrigation of recycled water can be sustainably managed on site for the first five stages of the development. This assumes that stages will be developed in approximately the order in which they are listed in the Land Capability Assessment and Staging Assessment.

The Assessment also included the consideration of data provided by Flow Systems Operations. Modelling using the Flow Systems Operations data found that irrigation of recycled water can be sustainably managed on site for the first six stages of the development. The Assessment notes that the analysis used to estimate the amount of land required is in accordance with standard practice and conservative (risk-averse) by nature. It also notes that it is possible that further field testing to confirm / refine the estimated soil infiltration rates would result in a lower estimate of the amount of required irrigation area. Alternatively, a different customer for the excess recycled water may be found at build out stage, or the excess recycled water could be discharged to sewer or the environment in compliance with the environmental protection legislation in force at that time.

Model results indicate that nutrient loads in surface surcharge and deep drainage of recycled water represent <1% increase on the background nutrient loads in runoff from the site. This is considered to be relatively insignificant. It is assumed that further attenuation rates for nutrients in soil are more than sufficient to capture these minor nutrient contributions.

It is anticipated that the nutrient loads in the recycled water will have no appreciable impact on environmental and/or public health. The Box Hill LWC will produce high quality recycled and disinfected water with very low concentrations of pathogens. Groundwater and surface waters would be protected through appropriate scheduling/application of irrigation in accordance with a Recycled Water Irrigation Plan that will be prepared in accordance the AGWR.

6.1.3 Proposed Mitigation Measures

Mitigation measures suggested by the Assessment are applicable to soil improvement, and vegetation establishment and management of the preferred recycled water irrigation zones as development proceeds.

A Recycled Water Irrigation Management Plan, prepared in accordance with the AGWR is to be developed once further details of the irrigation of recycled water is established. The Recycled Water Irrigation Management Plan is to detail the vegetation cover required, the maintenance of vegetated areas to be irrigated and details of irrigation preparation works for forested areas. The Recycled Water Irrigation Management Plan will also detail soil improvement methods for the irrigated areas.

The following mitigation measures are likely to form part of this Recycled Water Irrigation Management Plan:

- Recycled Water Irrigation Zones are to be identified and a complete vegetation cover is to be established within these zones prior to application to reduce erosion hazard and optimise water and nutrient uptake.
- Maintenance of the Recycled Water Irrigation Zones will be in accordance with the AGWR.
- Soil improvement methods for the irrigated areas, such as the application of gypsum, are to be identified in accordance with AGWR and best practice.
- Comprehensive investigation of soil dissolved salt content is to be undertaken prior to the commissioning of each recycled water irrigation zone.
- Erection of signage on the perimeter of the Recycled Water Irrigation Zones.

6.2 Flora and Fauna

Existing ecological reports were reviewed to determine the presence of threatened flora and fauna on and surrounding the LWC site, and to outline any potential impacts as a result of the proposed development.

An initial Biodiversity Assessment was undertaken by NGH Environmental (2013) to evaluate the overall biodiversity values present within the Box Hill North precinct to highlight potential ecological constraints to proposed developments. This biodiversity assessment was subsequently reviewed by Cumberland Ecology (2013) to build upon the preliminary findings. Subsequently Cumberland Ecology was engaged to prepare a Species Impact Statement (SIS) to inform the Master Plan DA for the entire Box Hill North Precinct (DA 1397/2015/JP). A Vegetation Management Plan by Cumberland Ecology was also prepared to inform the DA for the subdivision of Stage 2 of Precinct A of Box Hill North and the Vegetation Management Plan.

These assessments are based on the overall Box Hill North residential precinct, including the Box Hill LWC site. Findings and recommendations from these assessments are summarised below and the SIS is contained in **Appendix 7.**

6.2.1 Existing Environment

6.2.1.1 Vegetation

The majority of the subject site (overall Box Hill North residential precinct) has been highly disturbed from agricultural activities such as cropping and pasture improvement and rural residential development. Native vegetation across the majority of the subject site is restricted to mature scattered paddock trees that were left presumably as shade trees for stock when the rest of the vegetation was cleared. Pasture improvement has resulted in the understorey in these areas being dominated by exotic pasture grasses and common weeds.

The vegetation within the Box Hill North Precinct before European settlement would have comprised of Cumberland Plain Woodland (CPW) and Shale Sandstone Transition Forest (SSTF) both are listed as Commonwealth Endangered Ecological Communities (EEC's). These communities now exist in various degrees of degradation, and none of the communities are represented in a remnant formation. The SIS identifies 5 types of vegetation communities as well as non-vegetated areas across Box Hill North. These include:

- Cleared land including driveways, farm dams, houses and associated yards, sheds, and market gardens;
- Exotic Vegetation: Planted and/or heavily degraded vegetation, which includes a mix of natives, exotic garden species and weeds. This area contains no native canopy or mid-storey and only very limited native ground cover, dominated by weeds and/or lawns;
- Scattered Trees: Native trees which have no native shrub layer or understorey and largely exist as single trees scattered across the study area;
- Acacia Regrowth: *Acacia parramattensis* (Parramatta Wattle) regrowth along a man made drainage line with an exotic groundcover;
- Cumberland Plain Woodland (CPW) in moderate condition with no mid-storey and a weedy ground-cover with less than 50% native foliage cover; and
- Shale Sandstone Transition Forest (SSTF) in moderate condition with a native canopy, no mid-storey and a weedy ground-cover with less than 50% native foliage cover.

All five communities are present within future development areas (i.e. areas that will be cleared) across Box Hill North. A plan detailing the delineated vegetation communities is shown in **Figure 5**.

6.2.1.2 Flora

The following fauna species have not been recorded within the Box Hill North Precinct, but have the potential to use the site as vagrants for foraging or roosting habitat. The habitats within the Precinct do not provide significant habitat for these species. They will experience a potential loss of foraging habitat to a relatively minor degree. For this reason the following fauna species have been considered to be minor affected species and includes mammals such as Greater Broad-nosed Bat (*Scoteanax rueppellii*), Eastern False Pipistrelle (*Falsistrellus tasmaniensis*), and Yellow-bellied Glider (*Petaurus australis*). Threatened birds with the potential to occur in the Precinct include Diamond Firetail (*Stagonopleura guttata*), Flame Robin (*Petroica phoenicea*), Scarlet Robin (*Petroica boodang*), Turquoise Parrot(*Neophema pulchella*), Swift Parrot (Lathamus discolor), Little Eagle (Hieraaetus morphnoides), Little Lorikeet (Glossopsitta pusilla), Black Falcon (*Falco subniger*), Varied Sittella (*Daphoenositta chrysoptera*), Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*), Speckled Warbler (*Chthonicola sagittata*), Glossy Black-Cockatoo (*Calyptorhynchus lathami*), Gang-gang Cockatoo (*Callocephalon fimbriatum*), Regent Honeyeater (*Anthochaera phrygia*), Sooty Owl (*Tyto tenebricosa*), Masked Owl (*Tyto novaehollandiae*), Powerful Owl (*Ninox strenua*) and Barking Owl (*Ninox connivens*).

6.2.1.3 Fauna Species

A total of 84 fauna species were recorded across the precinct by NGH (2013) during the field surveys including four amphibian, 61 bird, 18 mammal and one fish species. Of these species, four are listed under the TSC Act. These species include:

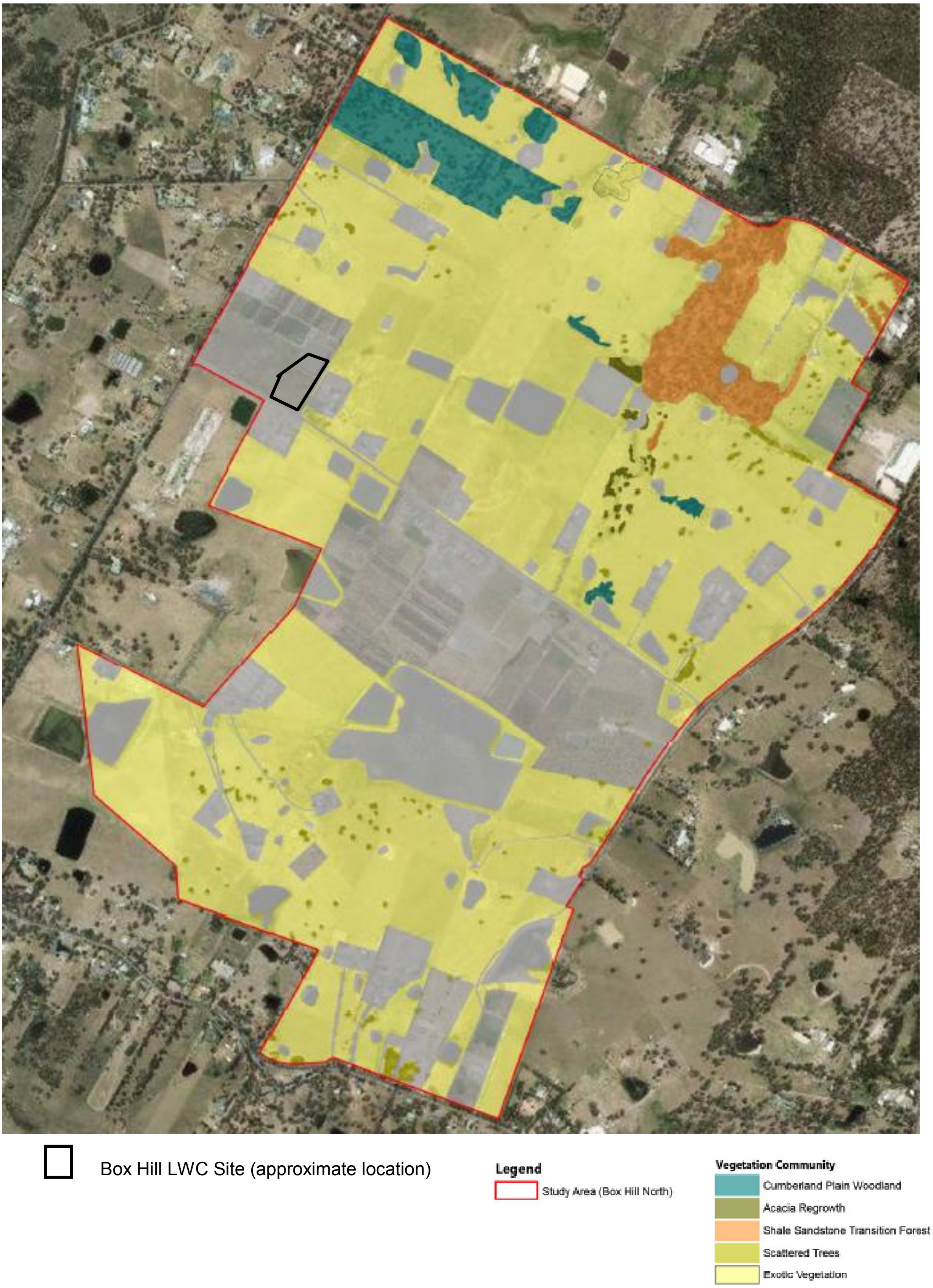
- Spotted Harrier (*Circus assimilis*) (Vulnerable under the TSC Act);
- Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) (Vulnerable under the TSC Act);
- Eastern Freetail-bat (*Mormopterus norfolkensis*) (Vulnerable under the TSC Act); and
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*) (Vulnerable under the TSC Act).

Cumberland Ecology (2013) also recorded the above threatened species, in addition to the following EPBC Act listed migratory species:

- White-bellied Sea-eagle (*Haliaeetus leucogaster*); and
- Cattle Egret (*Ardea ibis*).

None of these species were recorded within the Box Hill LWC site.

Figure 5 Vegetation Communities of Box Hill North



6.2.1.4 Fauna Habitat

The majority of habitat available for terrestrial fauna is provided within patches of woodland (both CPW and Shale/Sandstone Transition Forest) in the north-east and north-west of the subject site. These areas comprise a total area of 25 ha and provide an abundance of leaf litter, dead wood, and hollow-bearing trees. The presence of a shrubby mid-storey is generally lacking from the site, most likely due to a history of grazing.

Cataract Creek and the dams and waterbodies distributed across the site provide extensive habitat for a range of avifauna including the Dusky Moorhen (*Gallinula tenebrosa*), Eurasian Coot (*Fulica atra*), Yellowbilled Spoonbill (*Platalea flavipes*) and Australian Wood Duck (*Chenonetta jubata*). They also provide habitat for amphibians, with some dams containing bulrushes (Typha sp.), which are known to provide optimal habitat for the Green and Golden Bell Frog (*Litoria aurea*). Of the 17 dam / waterbody locations assessed, seven contained Typha and may provide potential habitat for the Green and Golden Bell Frog. Suitable habitat also exists at various stages along Cataract Creek.

The Cumberland Plain Land Snail was not recorded within the patch of CPW to the north-west of the subject site however conditions prior to the field survey were not ideal for detecting this species. This patch of CPW is assessed as providing potential habitat for this species which is listed as endangered under the TSC Act.

6.2.2 Potential Impacts

The ecological value of the LWC site is considered low given that no existing remnant vegetation persists on site, habitat features are highly restricted, no threatened flora and/or fauna were detected within the LWC site and no Endangered Ecological Communities were detected. Hence the carrying out of a seven part test under Section 5A of the EP&A was not deemed necessary for the proposed activity. On this basis it is unlikely that a significant impact will arise from the development of the Box Hill LWC.

Potential impacts associated with the use of recycled water for irrigation on land containing Cumberland Plain Woodland and Shale Sandstone Transition Forest have been considered. Whilst impacts on the Commonwealth EECs are likely to be extremely low a precautionary approach should be applied with the exclusion of irrigation of these areas.

Dewatering of the dam on site will occur as part of the works associated with the approved DA 1634/2015/ZB for the 2 lot subdivision, earthworks, dam relocation and remediation of the LWC site. The approved DA includes the relocation of the existing farm dam further north to maintain the detention requirements for the watercourse outside the site. The existing dam is proposed to be relocated approximately 65m towards the northern boundary of the parent lot so it is not impacted upon by the LWC. The process of dam relocation, including dewatering and infilling will be carried out in accordance with the NSW Office of Water guidelines and conditions of consent of DA 1634/2015/ZB. The relocation of the existing farm dam will offset the impacts of filling in the floodplain to create a development platform for the LWC. Measures for dewatering of the dam are contained within the Vegetation Management Plan appended to the Statement of Environmental Effects for DA 1634/2015/ZB, as contained in **Appendix 8**. A Dam Dewatering Report was also prepared for DA 1634/2015/ZB and is contained in **Appendix 9**.

6.2.3 Proposed Mitigation Measures

The following mitigation measures are recommended to minimise the impact of ecological issues.

- The clearing extents are to be clearly demarcated with temporary fencing before commencement of works.
- Materials/ equipment lay-down areas will be shown in the CEMP and located in cleared or degraded areas to prevent any damage to the surrounding vegetation or habitat.

- Materials, plant and equipment will not be stored within the drip-lines of any trees to be retained within the site.
- Areas containing Cumberland Plain Woodland and Shale Sandstone Transition Forest are to be excluded from irrigation using recycled water.
- To prevent damage to vegetation outside the boundaries of the site (if any), vehicles and machinery will be restricted to designated work areas.
- All temporary erosion and sediment control devices such as silt-stop fencing will be removed from the site at the completion of the works or when the site is stabilised.
- Weed management is to be undertaken in accordance with Section 6 of the Vegetation Management Plan contained in **Appendix 8.**
- In the event that the dam on site is not dewatered and in-filled as per conditions of consent of DA 1634/2015/ZB prior to commencement of the LWC construction the following measures, consistent with the Vegetation Management Plan (Section 4.5.2) and condition of consent 8 of DA 1634/2015/ZB will be implemented:
  - Dewatering is only to be carried out when an ecologist is present. As water is pumped out the supervising ecologist will catch aquatic fauna. Aquatic fauna species, including amphibians, reptiles and fish, are to be captured and released into suitable aquatic habitat nearby. If any exotic fish such as Gambusia are captured during dewatering then they will not be translocated but will be humanely euthanized.
  - Dewatering can occur at any time of day as long as an ecologist is present. The Site Manager will be responsible for ensuring an ecologist is present when dewatering commences.
  - All species captured during dewatering will be recorded. Documentation of all threatened species captured and released will be kept. Any pest species such as Gambusia that are euthanized will also be recorded.
  - The recommendations of the Dam Dewatering Report, refer to **Appendix 9** of this REF, are to be implemented in particular ensuring the dam water discharge rate of 75m³/ day via surface irrigation over a 3.2 hectare area on the site is complied with. All practical measures to ensure water pollution does not occur are to be implemented. Testing of the sediment is to occur prior to removal. If the testing indicates elevated levels of any chemical tested, an assessment is to be provided to THSC's Environmental Health Section advising on whether the material is suitable for reuse or is to be disposed off-site to an approved facility. If material is removed off site receipts are to be retained and provided to THSC's Environmental Health Section upon request.

6.2.4 Conclusion

The Assessment found that the proposal is unlikely to have a significant impact on any threatened species, populations, ecological communities or migratory species in the locality. Each of the above matters will be incorporated into the CEMP for the site to ensure that the impact of the proposal on the environment is minimised.

6.3 Aboriginal Heritage

RPS was engaged by Flow Systems Operations to prepare a Heritage Due Diligence Assessment Report for the Box Hill LWC site. Findings and recommendations from the Report are summarised below and the Heritage Due Diligence Assessment Report is contained in **Appendix 10**.

In relation to the entire Box Hill North precinct a Cultural Heritage Assessment Report (CHAR) was undertaken by Kelleher Nightingale Consulting Pty Ltd in 2013 to inform the Planning Proposal for the precinct and the Master Plan DA for the entire area (DA 1397/2015/JP). The Cultural Heritage Assessment

Report is contained in **Appendix 11**. An Aboriginal Archaeological Assessment Test Excavation Report was also prepared by Kelleher Nightingale Consulting Pty Ltd and is contained in **Appendix 12**. Relevant information from these two documents is also provided below.

6.3.1 Existing Environment

The study area is located along the Cumberland Plain, which is low-lying and characterised by a gently undulating landscape within the Sydney Basin. The Cumberland Plain is a Sydney bio-region that has been extensively cleared and disturbed through farming and urban development activities.

The study area is underlain by the Middle Triassic Wianamatta Group (MTWG). This geological unit is overlain by the Ashfield Shale lithology which is made up of undifferentiated dark grey to black claystone siltstone and fine sandstone-siltstone laminate.

The dominant soil landscape of the Box Hill area is the Blacktown soil landscape, which underlies the study area. The residual Blacktown soil landscape is characterised by shallow to moderately deep (<100cm) red and brown podzolic soils on crests, upper slopes and well drained areas, and deep yellow Podzolic soils and soloths on lower slopes and in areas of poor drainage

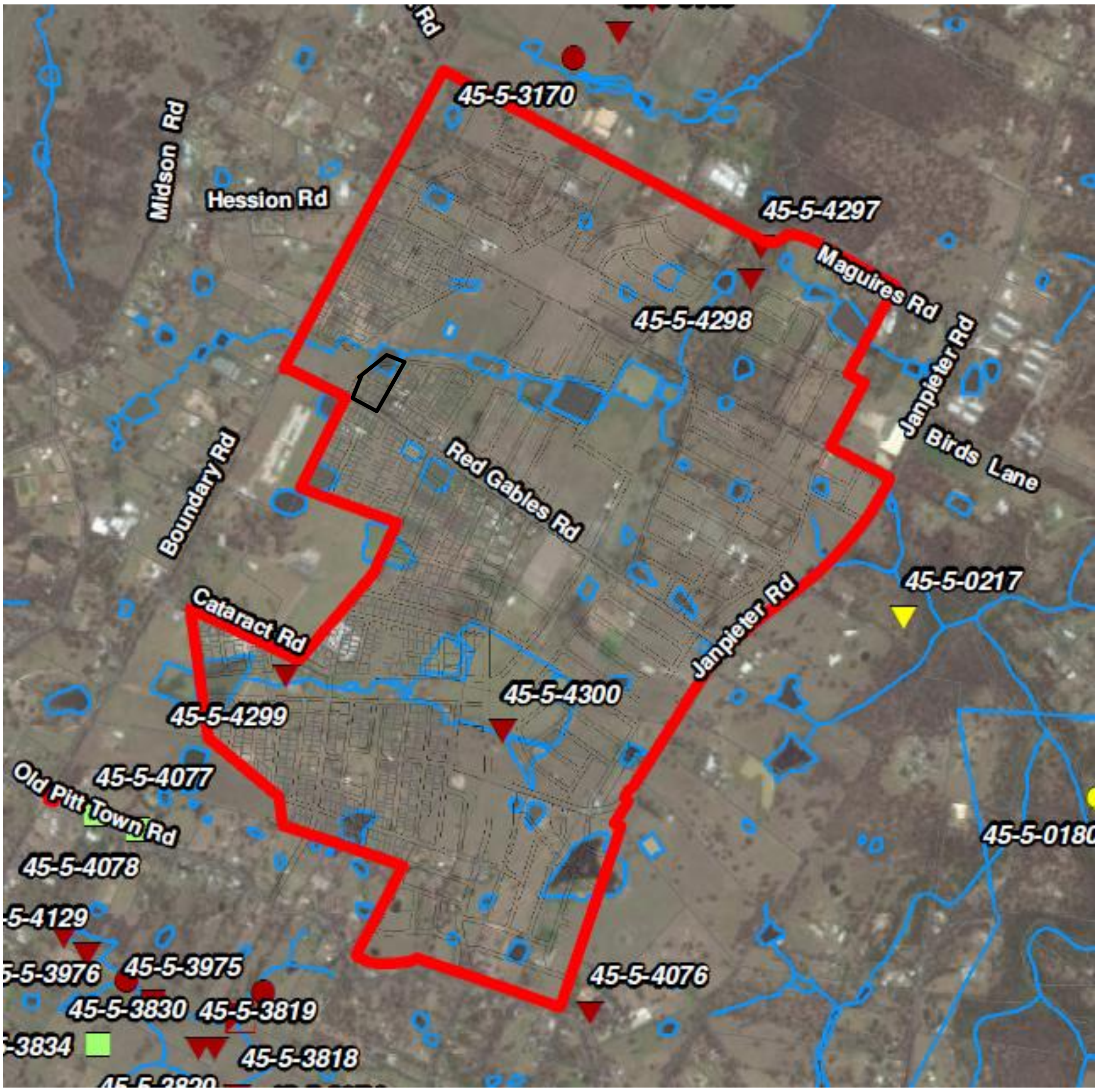
A search was undertaken of the Aboriginal Heritage Information Management System (AHIMS) of the site. The parameters for this AHIMS search were GDA Zone 56, Eastings 302000 to 310000 and Northings 6272900 to 6280900.

The search revealed that there were 111 previously recorded Aboriginal sites within these coordinates. These sites are shown on **Figure 6** and establish that no Aboriginal sites have been recorded on the LWC site.

The Cultural Heritage Assessment Report was prepared with inputs from the Aboriginal community, archaeological field survey and archaeological test excavations and identified seven Aboriginal archaeological sites within the Box Hill North Precinct as identified in **Figure 7**. These sites included four sites previously recorded along with a further three sites identified during the field survey. It is noted that all seven sites are outside the LWC site.

The visual inspection of the LWC site was conducted on 9 December 2014 and undertaken by Joshua Madden, RPS Cultural Heritage Consultant. The visual inspection was conducted on foot (pedestrian) and did not locate any Aboriginal objects or sites on the site.

Figure 6 Registered Archaeological Sites

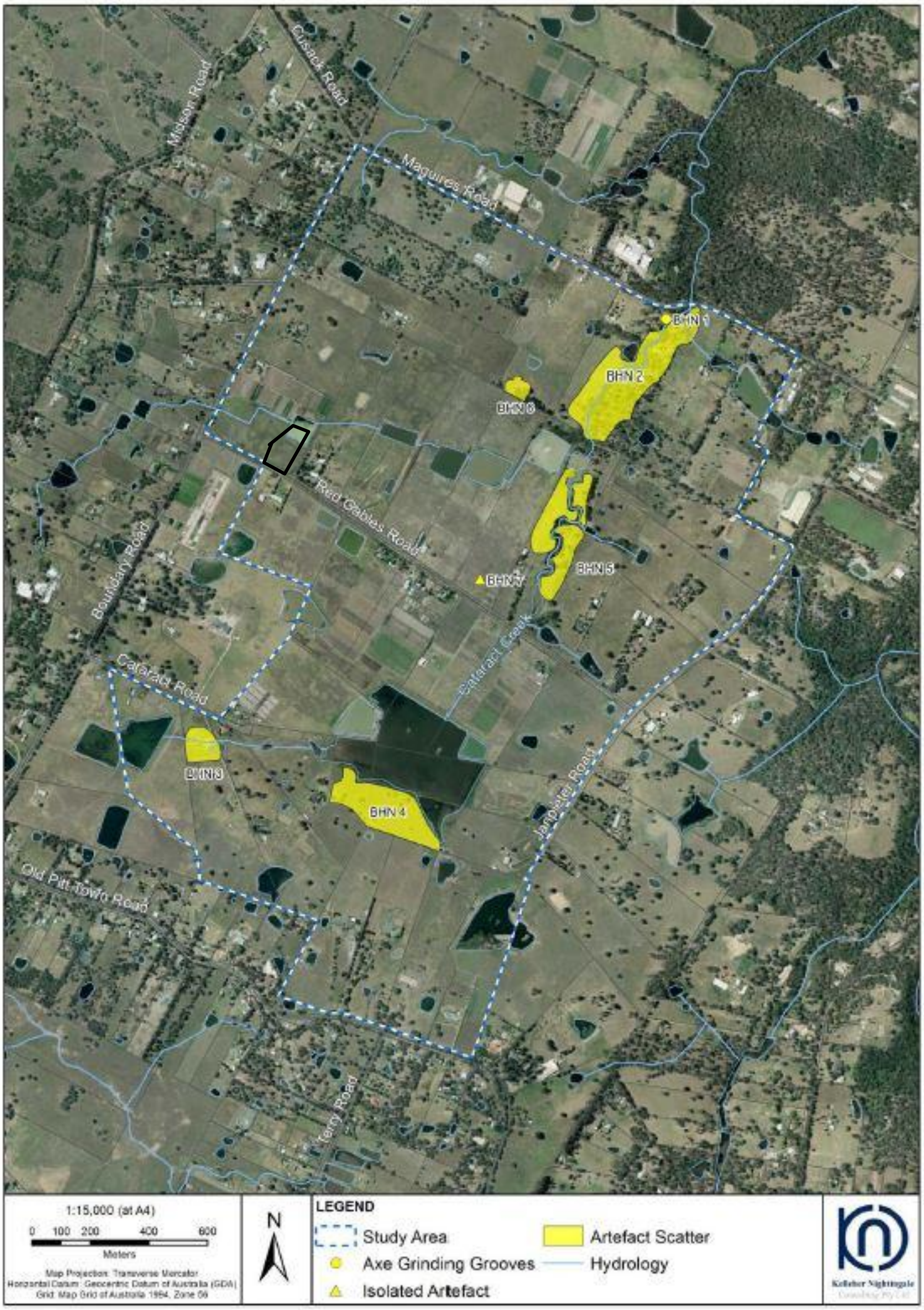


Legend

Boundary
Drainage
Isolated Find
Box Hill LWC Site (approximate location)

The Study area is located along a natural flat landform unit within the rolling landscape of the Cumberland Plain. The Study area is bordered by an artificial drainage channel to the east and by a dam to the north. The rural allotment has been subject to extensive landform modification with soil grading, cutting and mounding evident along the southern boundary, along the artificial drainage channel and around the dam. The study area has been subject to moderate to high historical disturbances associated with market gardening, sub-surface irrigation systems and ploughing.

Figure 7 Identified Aboriginal sites within Box Hill North precinct



Box Hill LWC site (approximate location)

6.3.2 Potential Impacts

Within areas of low Aboriginal heritage sensitivity, the potential for impact to Aboriginal heritage is low. As such, the Aboriginal cultural heritage due diligence assessment has confirmed that, no Aboriginal sites or areas likely to have archaeological material will be impacted upon by the proposed works.

A plan showing the areas suitable for irrigation (RWIZs) within the Box Hill North precinct and buffers to them is provided as **Figure 3**. It is noted that BHN 1 (AHIMS Identifier 45-5-4297 as shown in **Figure 6**) is located within the water course buffer and hence will be excluded from irrigation.

6.3.3 Proposed Mitigation Measures

The Due Diligence Assessment Report considered the available environmental and archaeological information for the area, the land condition, as well as, the nature of the proposed activities. The Due Diligence Assessment Report Assessment states that no Aboriginal objects or places have been identified within the study area as a result of the visual inspection and as such an AHIP is not required for construction works to proceed.

However the Due Diligence Assessment Report provides the following recommendations for the proposal.

<u>Recommendation 1</u>

The proponent may proceed with the proposed LWC works within the study area, with caution.

<u>Recommendation 2</u>

All relevant personnel should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act* 1974 and the *Heritage Act* 1977, which may be implemented as a heritage induction prior to the commencement of the proposed activity.

<u>Recommendation 3</u>

This due diligence assessment must be kept by the proponent so that it can be presented, if needed, as a defence from prosecution under s86 (2) of the *National Parks and Wildlife Act* 1974.

<u>Recommendation 4</u>

If unrecorded Aboriginal object/s are identified on the site during works, then all works in the immediate area must cease and the area should be cordoned off. OEH must be notified by ringing the Enviroline 131 555, so that the site can be adequately assessed and managed.

<u>Recommendation 5</u>

In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area must be cordoned off. The proponent must contact the local NSW Police who will make an initial assessment as to whether the remains are part of a crime scene or possible Aboriginal remains. If the remains are thought to be Aboriginal, OEH must be contacted by ringing the Enviroline 131 555. An OEH officer will determine if the remains are Aboriginal or not; and a management plan must be developed in consultation with the relevant Aboriginal stakeholders before works recommence.

6.3.4 Conclusion

No Aboriginal objects or places have been identified within the area and therefore an Aboriginal Impact Permit (AHIP) is not required for construction and ultimately operation of the proposal.

6.4 Non-Aboriginal Heritage

6.4.1 Existing Environment

The State Heritage Inventory is maintained by the Heritage Branch of the Office of Environment & Heritage (NSW). It contains State non-Indigenous heritage information including:

- State Heritage Register
- Section 170 Heritage Items
- Locally significant items

A search of the State Heritage Inventory database on 19 January 2015 identified four items in the Box Hill North locality which are listed on the State Heritage Inventory. Both the local and state historic items were located over 4km away from the site. While no historic heritage items were identified within the proposed LWC site, the items listed below in **Table 3** are in the vicinity of the wider Box Hill North precinct.

Table 3 Items listed on the State Heritage Inventory

Item	Address	Heritage Listing	Significance	Proximity to Project Area
Hunting Lodge	The Water Lane Rouse Hill	State Heritage Inventory	State	5.2km
"Marklye"	18 Nelson Road, Box Hill	Local Environment Plan	Local	4.8km
Box Hill House in grounds of McCall Garden Colony	10-32 Terry Road	Local Environment Plan	State	4km
House	489-491 Boundary Road, Maraylya	Local Environment Plan	Local	4.5km

Accordingly, all items are considered to be located at a sufficient distance that they do not place constraints for the proposed activity.

Therefore, the proposal is unlikely to impact on non-Aboriginal heritage at either the construction or the operational stage, and hence mitigation measures for non-aboriginal heritage are not necessary.

6.4.2 Conclusion

There are no non-Aboriginal heritage items located within the area to be disturbed. The proposal is unlikely to affect identified heritage listed items in the broader vicinity.

6.5 Stormwater Management Strategy

Northrop was engaged to prepare a Concept Stormwater Management Strategy for the proposal and for inclusion within this REF. Findings and recommendations from the Strategy are summarised below and the Strategy is contained in **Appendix 13**.

6.5.1 Existing Environment

The landscape has been previously modified by vegetation clearing, the construction of fences, market gardens and a small dam. The farm dam will be filled in as part of the subdivision works. The site is located within the Cataract Creek Catchment of the Box Hill North residential precinct.

The proposed allotments will be 1ha and, at full capacity, will have the following features:

- The LWC buildings occupy an area of approximately 1600m^2;
- The external hardstand occupies and area of approximately 2100m^2;
- The external plan and equipment (e.g. tanks) occupies an area of approximately 1600m^2;
- Significant areas of soft landscaping have been provided in and around the facility; and
- The site is proposed to have permanent vehicle access from the existing Red Gables Road.

A first order stream enters into the dam that exists on the northern extents of the LWC site. The subdivision, dam relocation and earthworks (approved DA 1634/2015/ZB) have been designed having close consideration of THSC requirements.

6.5.2 Potential Impacts

In line with the *"Box Hill North Precinct Water Cycle & Flood Management Strategy Report"*, compiled by J. Wyndham Prince (Ref# 9720Rpt1D, July 2013); the site is located within the Cataract Creek Catchment. The stormwater analysis undertaken by J. Wyndham Prince considered the allotment as residential zoning, which was delegated a percentage impervious of 80% in accordance with The Hills Shire Council Design Guidelines Subdivision and Development.

The Strategy notes that the proposal does not exactly conform to the land use associated with the residential development envisaged by the Stormwater Assessment undertaken by J. Wyndham Prince. The Strategy compares the roof area, road and car park area and landscape area of the proposal against the same predicted by the Stormwater Assessment and concludes that the runoff regime from the proposal is considered to be less than that produced from an equivalent residential development. Accordingly the proposal is compliant with, albeit much lower than, the anticipated runoff regime of the residential zoning which is the basis of the regional stormwater management modelling/design carried out by J. Wyndham Prince.

A Flood Impact Assessment for the proposed LWC was prepared as part of approved DA 1634/2015/ZB. The Assessment demonstrated that impacts of the LWC on the flooding regime can be managed to acceptable levels. The relocation/retention of the existing farm dam within the northern extents of the site will offset the impacts of filling in the floodplain to create a development platform.

Construction of the LWC may generate dust and surface water from site preparation activities and from vehicles driving in and out of the site. It is noted that the construction is unlikely to require excavation below 1 metre in depth due to the approved works that will be carried in accordance with DA 1634/2015/ZB. These works will create a development platform for the LWC.

In terms of water quality, irrigation using recycled water has the potential to impact on surface and ground waters through increased nutrient loads, pathogens, sodium and hydraulic loading. However the water from the Box Hill LWC will be tertiary treated and disinfected and therefore represents a low risk for direct human contact. As a result it is considered that the proposal is unlikely to have significant impacts on water quality in the vicinity.

There are several levels of contingency available in the event of electricity outages, which are designed to manage a range of durations. These are provided for at both the LWC and also in the way that services will be provided to homeowners. Flow Systems Operations has taken a conservative approach in this design, which has been assessed as part of the network operator's licence application made to IPART. Back-up generators will be permanently located at the Local Water Centre and water reservoirs, which will be sized to run all the critical equipment at these locations and will start up automatically upon power outage. This enables the LWC to run normally and continue to treat and distribute recycled water to the homes regardless of the duration of the power outage.

Flow Systems Operations will ensure that in the unlikely event of a pollution incident all remedial actions are in accordance with the POEO Act. In accordance with Section 148 of the POEO Act pollution incidents causing or threatening material harm will be notified immediately with the EPA.

6.5.3 Proposed Mitigation Measures

The Concept Stormwater Management Strategy incorporates a range of water sensitive and industry best practice management measures with the endeavour of further improving water quality onsite whilst harnessing the synergy of providing water quality treatment, flow retention and passive irrigation. Onsite detention is required for the Box Hill LWC, and will provide additional flow retention over and above that required. The Concept Stormwater Management Strategy has been compiled in accordance with the *Landcom Managing Urban Stormwater – Soils and Construction* (the Blue Book).

Furthermore, loading areas or areas where potential spillage could occur will be isolated and additional treatment measures will be employed. Such system will be incorporated in to the detailed design to reflect the sites handling and operational procedures.

A range of control measures to eliminate, limit or mitigate impacts from construction activities are proposed. These measures which include consideration and where relevant inclusion of measures from the Geotechnical and Salinity Assessment contained in **Appendix 14** will be contained in the CEMP for the works and will include the following:

- Sediment and nutrient controls will be implemented to reduce the impacts of stormwater, erosion and sedimentation on water quality.
- All erosion and sediment control measures will be established before excavation and vegetation clearance begins. Control measures are to remain in place until all surfaces have been fully restored and stabilised.
- Sandbags will be placed at the entry points to any culverts and stormwater channels to prevent sediment entering the stormwater system.
- Sediment control devices (e.g. silt fences, straw bales wrapped in geotextile etc) will be installed parallel with the contours of the site and immediately down slope of any areas where the natural ground surface has been disturbed.
- Any spoil storage areas or temporary stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation.
- Sediment and erosion control devices will be inspected regularly, maintained to ensure effectiveness over the entire duration of the project, and cleaned out before 30% capacity is reached.
- Upslope surface runoff will be redirected around work areas by using diversion drains or other methods.
- Disturbed areas will be stabilised by revegetation within 10 days after completion of construction.
- The natural landform of the site will be restored as closely as possible to the pre-works condition.
- Site disturbance will be minimised by containing machinery access to site areas required for approved

construction works.

- Erosion potential would be limited by managing runoff fetches and velocities, with measures such as contour drains, silt fences and level spreaders.
- Construction materials and techniques suitable for a mildly aggressive site are to be used.
- Soil importation is not allowed unless the imported soil is thoroughly tested for salinity and is assessed as Virgin Excavated Natural Material) by an Environmental Consultant in accordance with EPA Guidelines. Any imported soil should have a maximum salinity of 4dS/m (non to slightly saline soil) and used in the top 1.5 m to minimise the effect of saline soils on utilities and footings.
- Controlled fill, if required, should preferably comprise non-reactive fill (e.g. crushed sandstone) with a maximum particle size not exceeding 75mm, or low plasticity clay. Natural soils and bedrock and bedrock obtained from the excavations within the site may be used in controlled fill after removal of unsuitable materials, if any, crushing to sizes finer than 75mm, proper mixing and moisture conditioning.
- The storage and handling of fuels and chemicals shall comply with Australian Standard AS1940.
- No chemicals, fuels, and/or waste will be stored or collected for disposal within or adjacent to drainage lines or unsealed surfaces.
- A 'spill kit' will be kept on site at all times for potential chemical or fuel spills.
- An Incident Management Plan (IMP) will be prepared as part of the CEMP and will include a contingency plan and emergency procedures for dealing with the potential spillage of fuel or other environmental incidents that may occur on the work site. The IMP should also contain procedures dealing with the unexpected onset of rainfall during the work period.
- Drainage systems will be checked at regular intervals and maintained to ensure they are operating at full capacity (e.g. clearance of debris from drainage lines).

6.5.4 Conclusion

The Concept Stormwater Management Strategy for the site has been prepared in line with the overarching stormwater management strategy for the Box Hill North Residential Precinct and industry best practice. The Concept Stormwater Management Plan will provide adequate treatment of runoff from both construction and ongoing operations for the proposed Box Hill North Local Water Centre. Each of the mitigation measures outlined above will be incorporated into the CEMP for the site to ensure that the impact of the proposal on the environment is minimised. Operational mitigation measures will be carried out in accordance with the approved DA 1634/2015/ZB.

6.6 Noise

Wilkinson Murray Pty Ltd was engaged to prepare an Operational and Construction Noise Assessment of the proposal and for inclusion within this REF. Findings and recommendations from the Assessment are summarised below and the Assessment is contained in **Appendix 15**.

6.6.1 Existing Environment

The proposed location of the site is at western portion of the development adjacent to Red Gables Road and Boundary Road. The land surrounding the site will facilitate a new residential community. Existing residential areas or noise catchment areas are currently located approximately 150m to the west, 100m to the east and 285m to the west of the site and more than 500m to the east of the site. **Figure 8** and **Figure 9** show the subject area, noise contours and the nearest existing and future residential areas in relation to the proposed activity.

The noise monitoring equipment used for the unattended measurements consisted of an ARL-NGARA Environmental Noise Logger set to A-Weighted, Fast response continuously monitoring over 100ms sampling periods. This equipment is capable of remotely monitoring and storing noise level descriptors for later detailed analysis. The equipment calibration was checked before and after the survey and no significant drift occurred.

Both amenity and intrusiveness criteria were adopted by the Assessment. Background noise levels were measured and determined by the Assessment Report as detailed in **Table 4**.

Table 4 Measured Rating Background Noise Levels (dBA)

Location	Day (7am – 6pm)	Evening (6pm – 10 pm)	Night (10 pm – 7 am)
180 Boundary Road	36	38	36

Table 5 below presents a summary of the noise criteria for the existing residential receivers surrounding the proposed site using the background noise levels established by the Assessment.

Table 5 Project Specific Criteria (dBA)

Time Period[1]	Intrusiveness Criterion $L_{Aeq,15min}$	Amenity Criterion $L_{Aeq,period}$
Daytime	**41**	55
Evening	**41**	45
Night time	**41**	40

Note: 1) Daytime 7.00am–6.00am; Evening 6.00pm–10.00pm; Night 10.00pm-7.00am
2) Noise criteria applicable to this assessment are highlighted in bold

The Assessment notes that the noise will be constant and not varying in level and hence the lower criterion for each period will apply as highlighted in **Table 5**. For assessing the back-up generator, a positive adjustment of 5dB will apply to the daytime acceptable level of 41 dBA

Noise levels were calculated using the Bruel and Kjaer Predictor computer modelling program based on ISO 9613 algorithms. Using Predictor it is possible to build a model of the facility noise sources and the surrounding area. The model is capable of taking account of the following parameters:

- Noise source levels;
- Topography between the facility and the residences;
- Any shielding by buildings between noise sources and receivers; and
- Meteorological effects which could change noise propagation.

Because the Box Hill LWC is well within 300m of the nearest residences, meteorological enhancement of noise propagation are not significant and have not been considered in the assessment. The results of the modelling for all equipment operating (except for back-up generator) are presented in graphical form as noise contour maps in Appendix B of the Assessment.

Figure 8 Noise Modelling – Normal Operations Without Back-Up Generator and with Recommended Mitigation Measures Applied

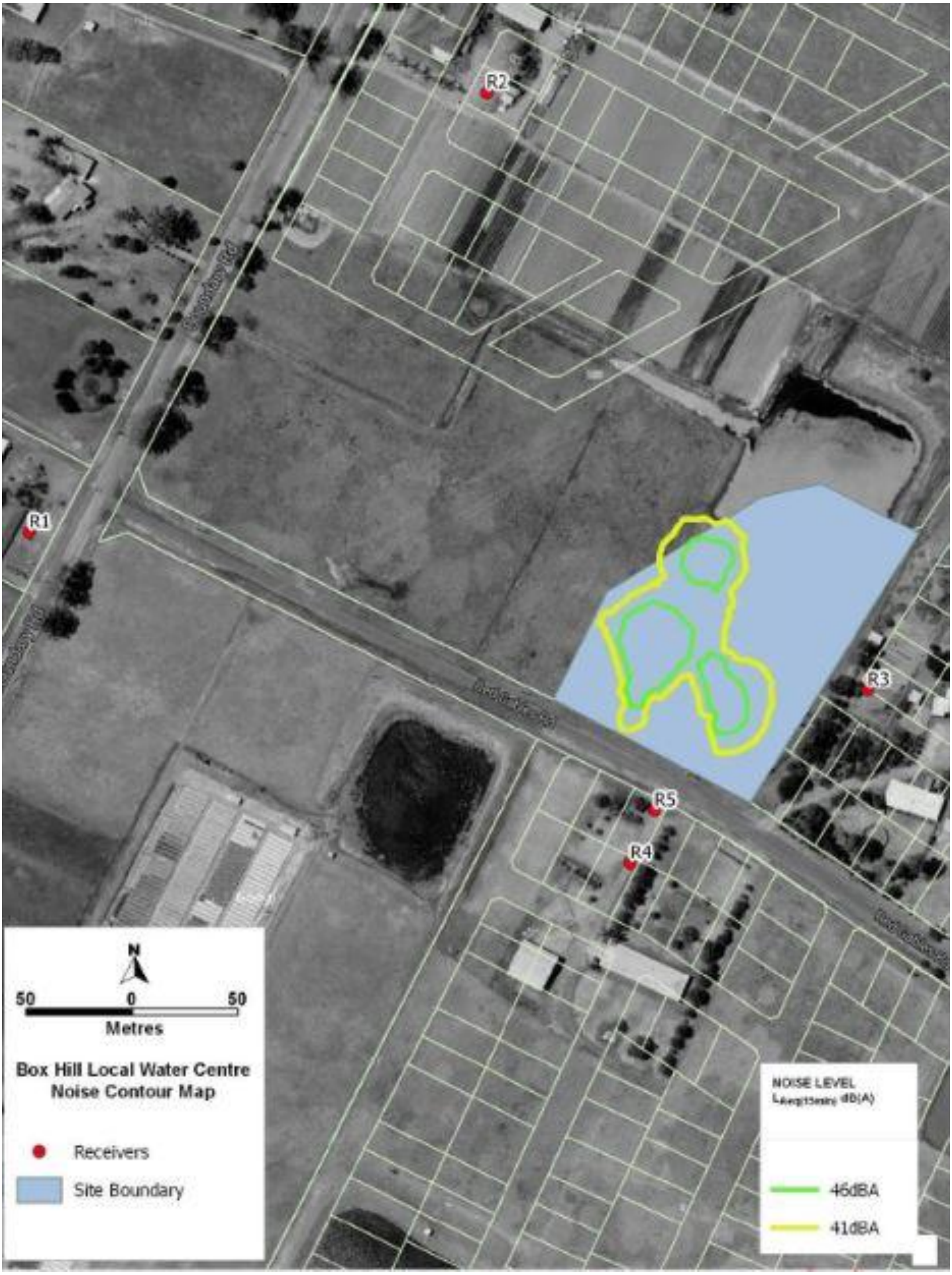
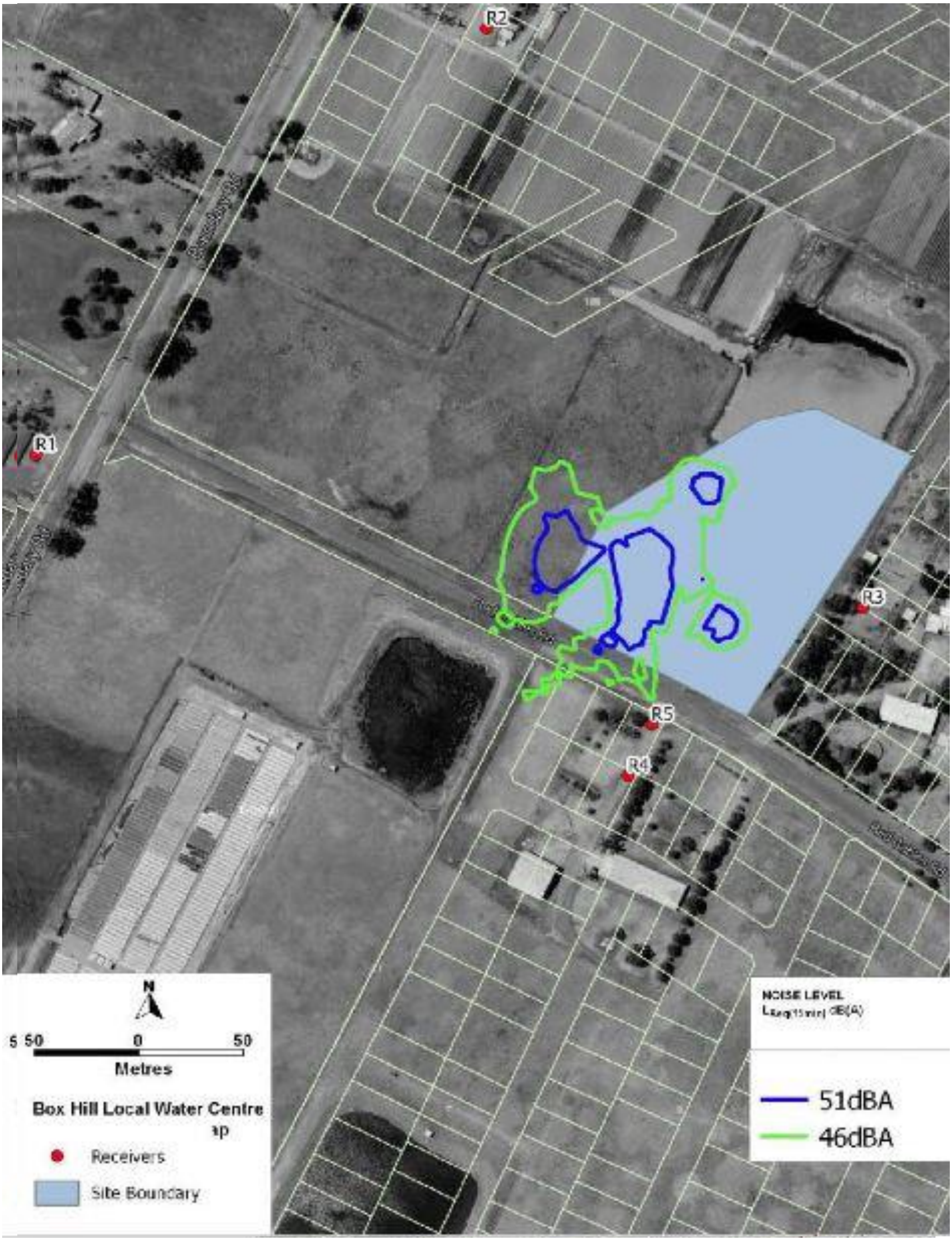


Figure 9 Noise Modelling – Abnormal Operation with Back-Up Generator with Recommended Mitigation Measures Applied



6.6.2 Potential Impacts

Construction noise has been assessed with reference to the NSW Interim Construction Noise Guideline (ICNG). For residences, the basic daytime construction noise goal is that the LAeq, 15min noise management level should not exceed the Rating Background Noise Levels by more than 10dBA. This is for standard hours being Monday to Friday 7.00am-6.00pm, and Saturday 8.00am-1.00pm. Outside the standard hours, where construction is justified, the noise management level would be background + 5dBA.

Based upon the Rating Background Noise Levels the following applicable noise management levels (NML's) for construction activities at surrounding residential receivers were adopted by the Noise Assessment:

- Monday-Friday 7.00am-6.00pm LAeq,15min 46 (36+10) dBA;
- Saturday 7.00am to 1.00pm LAeq,15min 46 (36+10) dBA; and
- Highly noise affected LAeq,15min 75 dBA.

With respect to vibration the Noise Assessment notes that the distance from vibration intensive plant to the nearest residential receiver is considered to be large (approximately 70m) and ground vibration at surrounding residential receivers would be low. On this basis, the recommended safe working distances for vibration intensive plant suggested in the *Transport Construction Authority's Construction Noise Strategy* (2012) were adopted in the Assessment to evaluate vibration impacts. The Assessment concludes that no further vibration consideration is required.

Calculation of likely construction noise at surrounding receivers was undertaken and site-related noise emissions were modelled with the "CadnaA" noise prediction software using the ISO 9613 noise prediction algorithms. Factors that are addressed in the noise model are:

- Equipment sound level emissions and location;
- Screening effects from barriers;
- Receiver locations;
- Ground topography;
- Noise attenuation due to geometric spreading;
- Ground absorption; and
- Atmospheric absorption.

Noise predictions were made based on the possible worst-case impacts taking into consideration the most likely construction scenarios. As a worst-case scenario, this assumes that most of the relevant plant would be operating during most of the 15-minute assessment period. The following have been assumed for each of the noise significant scenarios:

- Site Clearing / Grubbing - As the site has no large trees the noisiest activity in this scenario would be from the use of a front end loader to clear land. LAeq,15min noise level for this activity would be 108dBA.
- Bulk Earthworks - Noisiest activity in this scenario would be from excavation works carried out by a 15t excavator, tipper trucks and articulated trucks working at the same time. LAeq,15min noise level for this activity would be 113dBA.
- Foundation Construction - Noisiest activity in this scenario would be from the pouring of concrete floors and walls. This would be carried out by a concrete agitator truck idling on site and a concrete pump transferring liquid concrete to the designated areas. LAeq,15min noise level for this activity would be 107dBA.
- Superstructure Construction - Noisiest activity in this scenario would be from the steel cage installation

that would involve lifting of heavy loads using a 50t crane, an 8 wheel crane truck with delivery truck idling on site. LAeq,15min noise level for this activity would be 108dBA.

- General Construction / Scaffolding - Noisiest activity in this scenario would be from the use of power hand tools. LAeq,15min noise level for this activity would be 105dBA.

The Assessment concludes the following:

- During the land clearing stage, exceedances of up to 20 dBA are predicted during standard hours at the nearby existing residences at Receivers 3 and 4. This magnitude of exceedance is consistent with similar sites where residences overlook development sites; and
- During the structure stage exceedances of up to 25 dBA are predicted during standard hours at the nearby existing residences at Receivers 3 and 4. Fit-out works are less noise intensive and this would result in general compliance at residences during this stage.

Operational noise associated with the proposed blowers and compressors room, recycled water pumps, drinking water pumps and back-up generator has been assessed against noise criteria set out in the NSW Environmental Protection Authority (EPA) NSW Industrial Noise Policy (INP).

Predicted noise levels from the proposed blowers and compressors room, recycled water pumps and potable water pumps indicate compliance with all criteria on all occasions at the closest identified noise sensitive provided that a number of minor modifications to the building construction / treatment are implemented. The Assessment noted that the predicted noise level from the back-up generator complies with the adjusted acceptable daytime noise level on all occasions at the nearest existing residential and future residential receivers.

6.6.3 Proposed Mitigation Measures

The following mitigation measures will be applied to the design of the Box Hill LWC to enable the operation of the proposal to comply with the noise criteria established.

- Additional lining of colorbond on the internal face of the plant room with appropriate air gap to accommodate 50mm thick polyester insulation of density 14kg/m3.
- Internal walls of the pump house should be lined with minimum 50mm thick polyester or glasswool insulation of density 30kg/m3.

In line with industry best practice the following mitigation measures are recommended to minimise the impact of construction noise from the proposal upon residential receivers.

- Selection of the quietest feasible construction equipment.
- Localised treatment such as barriers, shrouds and the like around fixed plants such as pumps, generators and concrete pumps.
- Provision of respite periods.

The Assessment also recommends the following measures to be included in a Noise and Vibration Management Plan:

- Plant Noise Audit – Noise emission levels of all critical items of mobile plant and equipment should be checked for compliance with noise limits appropriate to those items prior to the equipment going into regular service. To this end, testing should be established with the construction contractor.
- Environmental Inductions – It is important that an induction is provided to all site personnel with an emphasis on understanding and managing noise impacts.
- Equipment Selection – All fixed plant at the work sites should be appropriately selected, and where

necessary, fitted with silencers, acoustical enclosures and other noise attenuation measures in order to ensure that the total noise emission from each work site complies with EPA guidelines.

- Site Noise Planning – Where practical, the layout and positioning of noise-producing plant and activities on each work site should be optimised to minimise noise emission levels.
- An effective community relations programme should be put in place to keep the community that has been identified as being potentially affected appraised of progress of the works, and to forewarn potentially affected groups. Close liaison should be maintained between the communities overlooking work sites and the parties associated with the construction works to provide effective feedback in regard to perceived emissions. In this manner, equipment selections and work activities can be coordinated where necessary to minimise disturbance to neighbouring communities, and to ensure prompt response to complaints, should they occur.

6.7 Odour and Air Quality

Pacific Environment was engaged to prepare an Odour Impact Assessment of the proposal and for inclusion within this REF. Findings and recommendations from the Assessment are summarised below and the Assessment is contained in **Appendix 16**.

6.7.1 Existing Environment

The Assessment provides a discussion of air quality issues with respect to odour and reviews the dispersion meteorology in the area. The Assessment then evaluates potential odour impacts for two operational scenarios.

To characterise the potential odour impacts of the proposed development, odour sampling was done at a similar facility in Pitt Town, NSW. The purpose of the monitoring was to characterise the odour from the existing facility and use the data to derive odour emission rates (OERs) for use in odour impact assessments for the proposed facility.

The overall approach to the assessment follows the *Approved Methods and Guidance for the Modelling and Assessments of Air Pollutants in NSW* (NSW EPA Approved Methods) using the Level 2 assessment methodology. The NSW EPA Approved Methods specify how assessments based on the use of air dispersion models should be completed. They include guidelines for the preparation of meteorological data to be used in dispersion models and the relevant air quality criteria for assessing the significance of predicted concentration and deposition rates from the project. The approach taken in this assessment follows as closely as possible the approaches suggested by the NSW EPA Approved Methods.

The air dispersion modelling conducted for this assessment is based on an advanced modelling system using the AERMET/AERMOD model. AERMOD was chosen as the most suitable model due to the source types, location of nearest receptors and nature of local topography.

6.7.2 Potential Impacts

Ambient air quality may be temporarily affected as a result of particulate (dust) and exhaust emissions during the construction of the LWC. Dust-generating activities would include loading of aggregate materials onto trucks, operation of bulldozers, scrapers and excavators and wind erosion from exposed surfaces and stockpile sites. The amount of dust generated during each of these activities would depend on soil properties (silt and moisture content); dust emissions would generally be greater during unfavourable weather conditions (such as dry, windy conditions).

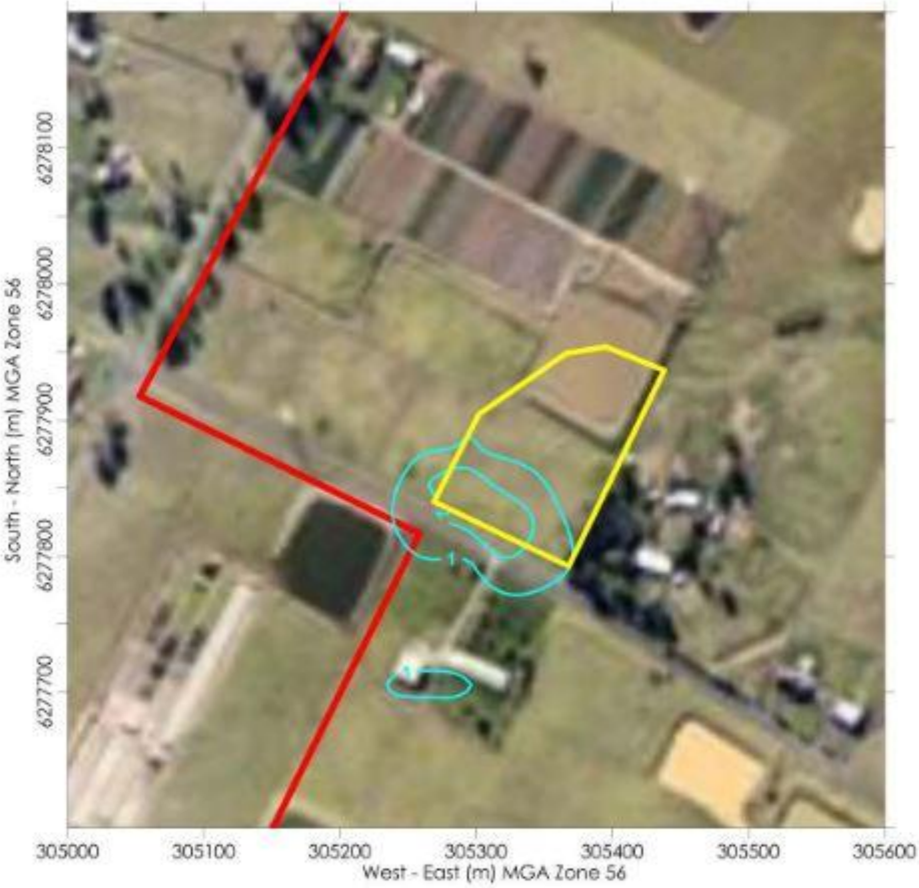
Exhaust emissions during construction would be associated with the combustion of fuel in both diesel and petroleum-powered vehicles. The operation of on-site machinery during the construction works and general site operations would generate carbon monoxide (CO), nitrous oxides (NOx), sulphur dioxide (SO2), PM10 (particles with a size of 10 micrometres or less) and trace amounts of non-combustible hydrocarbons.

Air quality impacts would be greatest at locations where dust-generating activities are proposed to be undertaken in proximity to sensitive land uses being the existing residence to the east and south. It should be noted, however, that any impact would be temporary in nature and is anticipated to be manageable through the application of standard mitigation measures.

Air quality impacts associated with exhaust emissions are likely to be minor. While the operation of petrol/diesel powered machinery could temporarily reduce local air quality at some sensitive receivers, it should be noted that these receivers are already exposed to exhaust emissions from vehicles currently using Red Gables Road. As such, the construction of the proposal is not likely to result in a significant decline in air quality at these receivers relative to that already experienced as a result of traffic associated with the existing road network.

The odour impacts for the fully operational plant were assessed and modelling output is illustrated in **Figure 10**. The predicted odour concentrations show that the 2 OU or 99th percentile threshold (the theoretical level at which odour becomes detectable but not necessarily distinguishable), not predicted to be exceeded at any of the nearest sensitive receptors and is considered to comply with the NSW EPA odour assessment criterion.

Figure 10 Odour Modelling - Predicted 99th Percentile Odour Concentration (OU) for the Fully Operational Plant



There will be no air quality impact with respect to aerosols as the sewage recycling process proposed to be employed does not produce aerosols.

6.7.3 Proposed Mitigation Measures

Based upon the findings of the Assessment specific mitigation measures relating to odour at the operational phase of the proposal have not been suggested by Pacific Environment Pty Ltd. However, the following mitigation measures are recommended to minimise the impact of more general air quality issues.

- All vehicles and machinery will be fitted with approved exhaust systems to maintain exhaust emissions within accepted standards.
- Machinery and vehicles will not be left running or idling when not in use for long periods.
- Odour or air pollutant emission complaints will be dealt with promptly and the source will be eliminated wherever practicable.
- All loads of excavated material, soil, fill and other erodible matter that are transported to or from the work site will be kept covered at all times during transportation and will remain covered until they are unloaded either for use at the work site, reuse or disposal at a EPA licensed waste disposal facility.
- All work sites, general work areas and stockpiles will be closely monitored for dust generation and watered down (with clean water) or covered (via seeding or tarpaulins) in the event of dry and/or windy conditions.
- Rehabilitation of disturbed surfaces would be undertaken within 20 days of completion of construction on site.
- An Odour Management Plan should be prepared in accordance with the *Draft NSW Best Practice Odour Guidelines)* and include operational complaints procedures.

6.7.4 Conclusion

The Odour Impact Assessment Report assessed the air quality impacts of the proposed Local Water Centre at Box Hill North. The odour assessment was based on odour emission rates derived from measurements at a similar facility and combined with local meteorological data and computer-based dispersion modelling to determine air quality impacts on the proposed residential areas in the vicinity of the plant.

Results from the dispersion modelling indicated that predicted odour concentrations from the proposed facility would comply with the most stringent assessment criterion of 2 OU (99th percentile) at all sensitive receivers outside the plant boundary. The predicted odour concentrations are at or below 1 OU, the theoretical level at which odour becomes detectable but not necessarily distinguishable, at all receivers.

6.8 Bushfire Threat

RPS has reviewed the bushfire threat to the site and proposed development. Summarised an extract of the Bushfire Prone Land Map as contained in the LEP 2012 is contained in **Appendix 17**.

6.8.1 Existing Environment

The site is situated within an area that is classified as Bushfire Prone Land (vegetation buffer) as mapped by THSC (2012), and the vegetation to the west may represent a potential threat to the proposal. The preliminary assessment considered the bushfire hazard and associated potential threats relevant to the proposal.

The minimum mitigative measures that would be required in accordance with *Planning for Bush Fire Protection 2006 (*PBP 2006), which has been adopted by the *Environmental Planning & Assessment Amendment* (Planning for Bush Fire Protection) *Regulation 2007* & the *Rural Fires Amendment Regulation 2007.* Additionally the Assessment addresses the requirements of Section 79BA of the *Environmental Planning & Assessment Act 1979*.

Buildings as contained in the proposal are classified as Class 5 – 8 within the BCA. Therefore, the provisions of PBP 2006 do not strictly apply. As mentioned above the site is however within an area that is classified as Bushfire Prone Land, and the surrounding vegetation may represent a potential threat to the proposed development. On this basis the preliminary assessment is based on the classification of the LWC as industrial development. Accordingly the aims and objectives of PBP 2006 were considered in the preparation of the preliminary assessment.

6.8.2 Potential Impacts

The preliminary assessment found the land surrounding the site to be actively managed rural properties, with no vegetation threat to the site (no vegetation within a 140m buffer of the site). The preliminary assessment reviewed the site conditions and the proposed development layout and concluded that compliance with PBP 2006 can be achieved or practically implemented without change to the proposed layout or construction methodology.

6.8.3 Proposed Mitigation Measures

Based upon the findings of the preliminary assessment specific mitigation measures have been developed to enable the proposal to comply with the PBP 2006 and are as follows:

- All new buildings and structures are to be constructed in accordance with AS3959 – 2009.
- Internal road networks should be designed and constructed in accordance with Section 4.1.3 of PBP 2006.
- Any proposed development is to be linked to the existing mains pressure water supply and that suitable hydrants be clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure should comply with AS2419.1, 2005. Alternative water supplies may be considered where the proponent accepts that an adequate supply of water for firefighting operations can be provided.

6.8.4 Conclusion

The implementation of the mitigation measures provided above will enable the proposal to comply with PBP 2006 and will contribute to the amelioration of the potential impact of any bushfire upon the development, but they do not and cannot guarantee that the area will not be affected by bushfire at some time.

6.9 Traffic

6.9.1 Existing Environment

The site is located immediately north of Red Gables Road (local road) of which access to the site will be connected. A traffic investigations report was prepared for the Box Hill North Planning Proposal by GTA Consultants, however the report related to traffic and transport resulting from eventual residential occupation of the Box Hill North precinct. Initial access to and from the site during construction will be along the existing road network including Red Gables Road.

6.9.2 Potential Impacts

Vehicle movements during construction will mostly consist of the floating of earthmoving equipment and concrete agitator trucks delivering concrete during scheduled pours. Concrete truck movements will occur at various stages throughout the construction period and will peak at around five concrete trucks per day at the peak of the construction. In addition, there will be an average of two truck movements per day for the delivery of other plant, materials and equipment. No access restrictions or diversions are anticipated on public roads.

During operation, there will be up to ten tankers visiting the site per day for up to an hour each, and for 7 days per week and potentially sometimes at night when the interim sewage servicing tanks is fully operational, up until such time as the LWC is fully operational in 2018 .Vehicle movements will also occur during operation on an as required basis to undertake maintenance and repair works.

The interim sewage servicing tanks will be located approximately 270 metres from the closest existing resident (170 Boundary Road) that is not located on land controlled by the developer. New homes will be constructed approximately 30 metres from the proposed Box Hill LWC site but not until after the interim sewage servicing tanks have been decommissioned in 2018 and replaced with the Box Hill LWC.

During the interim servicing period, tankers will collect raw sewage from the interim flow balance tanks and transport it to Pitt Town Water's Local Water Centre which is located approximately 10 kms via road to the northwest. Laden tanker trucks will exit the Box Hill LWC site, turn right onto Red Gables Road and travel approximately 10 km via Boundary Road, Dunns Road, Scheyville Road, Pebbly Hill Road, Pitt Town Dural Road, Mitchell Road Redfern Place and Bootles Lane. Travelling time for the one way journey would be approximately 14 minutes. Due to the sealed nature of the tankers it is unlikely that there will be any odour impacts to local residents associated with the movement of tankers through the various road systems.

Once the facility is fully operational, truck movements will be limited to chemical deliveries and is estimated at 4-6 trucks per month. Operator(s) will visit the site 2-3 times per week in standard utilities or passenger vehicles.

The proposal is unlikely to have significant impacts on the existing environment due to the temporary nature of the works, including the temporary nature of the interim sewage servicing tanks which will be decommissioned once the Box Hill LWC commences operation in 2018.

6.9.3 Proposed Mitigation Measures

The contractors constructing the proposal will employ all measures to ensure that the proposal does not significantly reduce road capacity or disturb traffic flows. Appropriate exclusion barriers, signage and site supervision will be employed at all times to ensure that the work site is controlled and that unauthorised vehicles and pedestrians are excluded from the works area. The following mitigation measures will be applied throughout the duration of the works:

- Any impact upon Red Gables Road associated with the works will be remediated to their original condition.
- The Contractor will maintain a complaints register. Any complaints received will be responded to as soon as possible.
- A traffic control plan prepared by a suitably qualified person will be submitted to Flow Systems Operations for approval prior to commencement of work on the site.

6.10 Visual Character

6.10.1 Existing Environment

The proposal will be located on a rural allotment that is adjacent to Red Gables Road. The current road verge landscape comprises of established lawn, grass vegetation, road signs and overhead power lines. The Box Hill LWC site is a grassed landscape. The visual quality of both of these landscapes is considered to be low.

6.10.2 Potential Impacts

Visual impacts will be short ones. Potential short term construction impacts include the presence of mobile plant machinery, warning / flashing lights, barriers, signage and construction machinery, minor stripping of soil and the occurrence of temporary stockpiles during excavation and filling and presence of temporary environmental management devices such as silt fences and perimeter fencing.

The design of the Box Hill LWC although housing an industrial type of activity is nevertheless detailed in a manner that is sympathetic to its location on the margin of a future residential area. Architectural finishes and treatments range from concrete and glass with aluminium trim to colour bond steel for roofs and tanks, to provide a robust look to the facility but with architectural detail to integrate the facility into a residential neighbourhood. The facility is intended to present as a community asset. Architectural drawings illustrating these features are contained in **Appendix 2**.

The proposal will include a combination of hard and soft landscaping features to provide an effective screening of the development from future residential development.

6.10.3 Proposed Mitigation Measures

The following mitigation measures will be applied throughout the duration of the works:

- On completion of the works, all vehicles, construction equipment, materials, and refuse relating to the works will be removed from the work site(s) and any adjacent affected areas.
- Work sites will be restored as close to their original condition as possible following the completion of the proposed works.

6.11 Socio-Economics

6.11.1 Existing Environment

The proposal is located within The Hills Shire LGA. Nearest existing residences are located immediately adjacent the site on the western side of Boundary Road at a distance of less than 100m from the LWC site.

6.11.2 Potential Impacts

Construction of the Box Hill LWC is likely to take approximately twelve months. There will be minor short term constructional impacts on existing local residents including the presence of machinery and associated traffic movements, and the minor visual impacts of these.

These impacts will be for a short period of time and will not create any long term socio-economic issues. There will be no impacts regarding the socio-economic setting of the community once the Box Hill LWC is in operation.

6.11.3 Conclusion

Provided that the mitigation measures documented in this REF are implemented there will be no significant socio-economic impacts other than the positive impact of enabling an identified growth area to be adequately serviced by the necessary sewer infrastructure.

6.12 Waste Management

6.12.1 Potential Impacts

JBS Environmental Pty Ltd was engaged to undertake an assessment of the site specific geotechnical opportunities and constraints for the Box Hill North investigation area in 2013 to inform investigations for the entire rezoning of the Box Hill North precinct. JBS Environmental Pty Ltd was also engaged to prepare a Detailed Site Investigation Report to inform the Master Plan DA for the entire Box Hill North Precinct (DA 1397/2015/JP) as well as the DA for the 2 lot subdivision, earthworks, dam relocation and remediation of the LWC site (1634/2015/ZB). The Detailed Site Investigation Report is contained in **Appendix 18.** As recommended in the Detailed Site Investigation Report, a Remediation Action Plan was prepared and is contained in **Appendix 19.**

The site contains an area of environmental concern due to the presence of heavy metals and asbestos containing material however these will be remediated, via successful implementation of the measures detailed in the Remediation Action Plan, prior to the construction of the LWC. Nevertheless and despite successful implementation of measures detailed in the Remediation Action Plan the possibility will still exist for hazards other than those identified and expected based on previous investigations.

During construction of the Box Hill LWC, soil (free of contamination due to prior remediation) will be stockpiled to one side and back filled. The soil stockpile will be protected from dispersion by runoff during storm events through the implementation of best practice Erosion and Sediment Control measures.

Any excess spoil will be utilised within the Box Hill LWC site. Construction waste (concrete, off cuts and general waste etc) will be stored and disposed of in accordance with waste disposal safeguards.

Waste materials likely to be generated by the proposal include:

- Green waste from clearing vegetation;
- Off-cuts of piping from construction works;
- Timber and other material off-cuts from construction of the Box Hill LWC;
- Domestic waste such as paper, aluminium cans and material generated by workers.

As stated in Section 3.9 of this REF very little sludge wasting will occur in the early stages of the LWC. When sludge wasting is needed, it will be drawn directly from a bioreactor to a tanker for offsite treatment and disposal using an authorised waste management contractor. As the catchment population increases, the second stage plant of the LWC will be placed into operation once again allowing very little sludge to occur.

In the later stages of the LWC once the catchment population of the Box Hill North Precinct increases, a sludge dewatering system will be installed and commissioned to convert the liquid sludge to a sludge cake. The cake will be transported via a conveyor to a suitable bin or skip. The cake will be sampled and classified for reuse applications. The bin will be collected and replaced on a weekly basis via a certified organic waste collection vehicle and taken to an organic waste management facility for processing and ultimate beneficial reuse such as landscaping. Grit and screening debris will be collected in a bin and disposed to authorised landfill. The storage and disposal of sludge wastings, sludge cake and grit and screen debris will be carried out in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (DECCW 2009) and the EPA *Environmental Guidelines: Use and Disposal of Biosolids Products (2000).*

6.12.2 Proposed Mitigation Measures

Site contamination and waste generated would be managed in accordance with the CEMP for the works. The following mitigation measures will be applied throughout the duration of the works:

- No excavation or ground disturbance works are to commence unless site remediation of the site has been undertaken in accordance with the Remediation Action Plan (JBS&G, April 2015) and an appropriate validation report of the remediation works has been prepared.
- Should any potential hazards be identified (or any other unexpected potentially hazardous substance), the unexpected finds protocol summarised in Flowchart 9.1 of the Remediation Action Plan (JBS&G, April 2015) is to be followed.
- An enlarged version of the unexpected finds protocol, suitable for use on site, should be posted in the LWC construction site office and referred to during the site specific induction by the principal construction contractor.
- If works on the LWC site are to commence prior to the bulk earthworks, dam relocation and remediation works (subject of DA 1634/2015/ZB) the principal construction contractor must undertake all site remediation in strict accordance with the Remediation Action Plan (JBS&G, April 2015) and approved conditions of DA 1634/2015/ZB.
- In the event that the dam on site is not dewatered and in-filled as per conditions of consent of DA 1634/2015/ZB prior to commencement of the LWC construction the recommendations of the Dam Dewatering Report, refer to **Appendix 9** of this REF, are to be implemented in particular ensuring the dam water discharge rate of $75m^3$/ day via surface irrigation over a 3.2 hectare area on the site is complied with. All practical measures to ensure water pollution does not occur are to be implemented. Testing of the sediment is to occur prior to removal. If the testing indicates elevated levels of any chemical tested, an assessment is to be provided to THSC's Environmental Health Section advising on whether the material is suitable for reuse or is to be disposed off-site to an approved facility. If material is removed off site receipts are to be retained and provided to THSC's Environmental Health Section upon request.
- All waste generated during the course of the works will be reused or removed from the work areas as soon as practicable and disposed of in accordance with the waste disposal safeguards.
- All vessels used for contaminated or hazardous waste should be sealed, labelled according to their contents, and stored within bunded areas until their removal from the work site.
- Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at an EPA licensed waste depot.
- The work site will be left clean and free of weeds, debris and other rubbish at the end of works.
- All hazardous wastes on site will be removed and disposed in accordance with the state and national regulations and guidelines and best practice for the removal of these materials.
- The Contractor's recycling and reuse proposal will be detailed in the CEMP.
- Green waste from vegetation clearing will be either chipped for reuse, retained for rehabilitation; or mulched and spread immediately after the trench has been covered to prevent encroachment by weed species and minimise erosion. NB: where mulched vegetation is to be used measures to prevent organic material entering the local waterway shall be installed.
- Off-cuts of piping and other materials used in the construction of the Box Hill LWC will be recycled where possible.
- During the operation of the LWC the disposal of sludge wastings, sludge cake and grit and screen debris will be carried out in accordance with the *EPA Environmental Guidelines: Use and Disposal of Biosolids Products (2000).*

6.12.3 Conclusion

The extent of the potential waste impacts is low due to the relatively small amounts of waste to be generated and the short time-frame for construction. There will be no onsite maintenance of vehicles and machinery. Refuelling of vehicles and machinery would be undertaken at designated refuelling stations off site.

In conclusion, the potential waste impact from the construction of the proposal will be low as the mitigation measures detailed above would be employed at all stages of construction works.

6.13 Risks and Hazards

6.13.1 Potential Impacts

During construction of the Box Hill LWC there is a possibility that fuels, oils and greases may be discharged to the storm water system if they are inappropriately stored. Storage and handling of hazardous materials will be in accordance with the state and national regulations and guidelines and best practice for the storage and removal of these materials.

In relation to public health, relatively few restrictions need to be placed on non-drinking water uses of tertiary treated and disinfected recycled water due to the high quality and low risk for direct human contact. End use controls and onsite constraints can also be used to minimise both human exposure to hazards and the impact on receiving environments; such as signage, use of buffer zones, and control of plumbing and distribution.

During the operation of the LWC a number of chemicals will be used within the building. The chemical types and predicted volumes are provided in **Table 6**.

Table 6 Chemical types and predicted volumes during Box Hill LWC operation

Chemical	Function	Approx. Consumption (L/year)	Total Storage (L)
Alum	Phosphorous removal	20,000	2x3,000 and 2x4,500
Sulphuric Acid	Lower pH of Reverse Osmosis (RO) feed water	Nil	530
Antiscalant	Reduce fouling of RO membranes	1,600	530
Sodium Hypochlorite	Water disinfection and mbr membrane cleaning	16,,000	2x3,000 and 2x4,500
Magnesium Hydroxide	pH correction of mbr feed water and final water	40,000	2x3,000 and 2x4,500
Citric Acid	Mbr membrane cleaning	1,200	7.000
Sodium Metabisulphate (SMBS)	Dechlorination of RO feed water	2,000	530
RO cleaning chemicals	Cleaning	600	530

These chemicals and potentially hazardous substances will be used and stored according to manufacturers' directions and regulatory requirements including the *Work Health and Safety Act 2011, AS 3780 The storage and handling of corrosive substances* and relevant guidelines.

In regards to public health, relatively few restrictions need to be placed on non-drinking water uses of tertiary treated and disinfected recycled water due to the high quality and low risk for direct human contact. End use controls and onsite constraints can also be used to minimise both human exposure to hazards and the impact on receiving environments; such as signage, use of buffer zones, and control of plumbing and distribution systems.

6.13.2 Proposed Mitigation Measures

Provided that the mitigation measures documented below are implemented the potential for the occurrence of environmental hazards and risks is considered to be a low risk and low hazard activity.

- Chemicals and potentially hazardous substances will be used and stored according to regulatory requirements including the *Work Health and Safety Act 2011*, *AS 3780 The storage and handling of corrosive substances* and relevant guidelines.
- The management of waste, including its transport will comply with the POEO Act and POEO (Waste) Regulation.
- The use of low-throw sprinklers, 180 degree inward-throwing sprinklers and/or tree or shrub screens will be considered to prevent off-lot discharge.
- Waste materials will be separated, classified and managed in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (DECCW 2009).
- All staff and contractors will be made aware of waste management procedures.
- Chemical, fuel and oil containers will be managed according to manufacturers' directions to avoid potential impacts to the environment or human health.
- Flow Systems Operations will ensure that in the unlikely event of a pollution incident all remedial actions are in accordance with the POEO Act.
- Flow Systems Operations will submit to IPART an Infrastructure Operating Plan and a Water Quality Plan which is consistent with the AGWR and address the *Framework for Management of Recycled Water Quality and Use*.
- Signage and buffer zones will be employed at recycled water reuse areas as appropriate to the relevant end use.
- All pollution notifications, if any, will comply with the POEO Act and POEO (Waste) Regulation.

6.14 Cumulative Impacts

6.14.1 Description of Impact

The impacts on the environment due to the construction of the proposal are considered to be minor. There will be a minor increase regarding traffic, mainly due to work trucks and employee vehicles. The construction of the interim flow balance tanks and the Box Hill LWC will occur simultaneously with development of the subdivision and associated construction traffic.

Construction of the proposal will allow the provision of reticulated sewer services to the approved development and other residential areas. The proposal will not affect any likely future activities.

Due to the extent of future development in the area, a cumulative increase in traffic is possible should all development occur concurrently whereby construction noise and dust could be exacerbated by dual operations. However provided that the mitigation measures as identified within this REF are adhered to the cumulative impact will be reduced to a minimum.

Positive cumulative environmental and social impacts will result from the operation of the Box Hill LWC as it will service future stages of subdivision associated with the Precinct

The assessment under this section shows that the activity is not likely to have a significant effect on the environment. A range of environmental factors as listed in Clause 228 of the Environmental Planning and Assessment Regulation (as amended) and Commonwealth Matters of National Environmental Significance have been considered as contained in **Appendix 1**.

6.14.2 Mitigation Measures/Safeguards

Implementation of the mitigation measures and safeguards identified above will minimise the risk of any impact and therefore further reduce the significance of any effect of cumulative impacts.

If unexpected construction works are being undertaken within close proximity to the construction of the Box Hill LWC, noise and dust generating activity will be ceased until such time that it is considered suitable to proceed, thereby not increasing noise and dust impacts in the area.

6.15 Ecologically Sustainable Development

6.15.1 Description of ESD

Ecologically Sustainable Development involves the conservation and enhancement of a community's resources, so that the overall quality of life can be increased now and in the future. The aim is to meet the needs of a community and to conserve surrounding ecosystems for the benefit of future generations.

Ecologically Sustainable Development means changes to the use of resources, and includes improvements in the quality of air, land and water, and in the development of environmentally friendly products and processes.

The construction of the proposal will not pose any significant ecological impacts, and will provide benefits for current and proposed residential subdivisions in the area.

6.15.2 The Proposal and Principles of ESD

The proposal involves the construction and operation of a water recycling facility at Box Hill North.

The construction of the Box Hill LWC has been designed to provide sewer services to support the development of all stages within the Precinct. This construction will benefit the current and future community in providing ready access to a sewage disposal scheme.

Ecologically Sustainable Development involves the conservation of resources and providing benefits for local communities. This proposal complies with all principles of ESD including conserving the community's resources. This proposal will enhance both current and future residents within the area.

7.0 Summary of Mitigation Measures

Mitigation measures outlined in this document will avoid or reduce the potential impacts of the proposal. These mitigation measures have been designed to minimise and or mitigate, as far as practical, the potential impacts. All mitigation measures described in this REF will be incorporated into the site's CEMP and / or the Operational Environmental Management Plan (OEMP) / Licence Plans. The CEMP will be prepared prior to construction of the Box Hill LWC and the OEMP prior to the operation of the LWC and both are to be reviewed and approved by IPART prior to the commencement of relevant on-site works.

A summary of the mitigation measures (Construction and Operations) can be viewed in **Table 7** and **Table 8**. Common mitigation measures between key environmental issues have been amalgamated.

Table 7 Impact and Mitigation Measures to be Incorporated into the CEMP

Impact	Mitigation Measures
General	All contractors and machine operators will be inducted on the environmental sensitivities of the work site(s) and relevant safeguards.
Soils and landform	Sediment and nutrient controls will be implemented to reduce the impacts of stormwater, erosion and sedimentation on water quality. Specific erosion and sediment controls are to be contained within the site CEMP.
	All erosion and sediment control measures will be established before excavation and vegetation clearance begins. Control measures are to remain in place until all surfaces have been fully restored and stabilised.
	Sandbags will be placed at the entry points to any culverts and stormwater channels to prevent sediment entering the stormwater system.
	Any spoil storage areas or temporary stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation.
	Sediment control devices (e.g. silt fences, straw bales wrapped in geotextile etc will be installed parallel with the contours of the site and immediately down slope of any areas where the natural ground surface has been disturbed.
	Any spoil storage areas or stockpiles will have appropriate erosion control devices installed to control runoff and prevent sedimentation.
	Sediment and erosion control devices will be inspected regularly, maintained to ensure effectiveness over the entire duration of the project, and cleaned out before 30% capacity is reached.
	Disturbed areas will be stabilised by revegetation within 10 days after completion of construction.
	The natural landform of the site will be restored as closely as possible to the pre-works condition.
Flora and fauna	The full extent of any vegetation clearance will be clearly documented and mapped in the site's CEMP. The CEMP will be prepared by the Box Hill LWC principal construction contractor prior to the commencement of construction.
	The clearing extents are to be clearly demarcated with temporary fencing before commencement of works.
	Materials/equipment lay-down areas will be shown in the CEMP and located in cleared or degraded areas to prevent any damage to the surrounding plants or habitat.
	Materials, plant and equipment will not be stored within the drip-lines of any trees at the site.
	To prevent damage to vegetation outside the boundaries of access tracks, vehicles and machinery will be restricted to designated access tracks.
	Where access tracks run alongside areas of natural bushland, protective fencing or paraweb fencing is to be installed along the boundaries of the track to prevent vehicles from inadvertently entering/damaging bushland.
	Degradation or disturbance to areas of water-side (riparian) vegetation will be avoided to the greatest possible extent. Any such areas will be clearly identified in the CEMP.
	Where excavated soil is to be used in site restoration, it will be excavated and stockpiled in sequential layers corresponding to the existing soil profile. Topsoil and leaf litter is to be removed

Impact	Mitigation Measures
	first and windrowed in separate stockpiles of less than 1m in height on the upslope side of excavations. Soil layers will be replaced sequentially so that the soil profile is restored as closely as possible to its pre-work status.
	All temporary erosion and sediment control devices such as silt-stop fencing will be removed from the site at the completion of the works or when the site is stabilised.
	Weed management is to be undertaken in accordance with Section 6 of the Vegetation Management Plan contained in **Appendix 8**.
	In the event that the dam on site is not dewatered and in-filled as per conditions of consent of DA 1634/2015/ZB prior to commencement of the LWC construction the following measures, consistent with the Vegetation Management Plan (Section4.5.2) and condition of consent 8 of DA 1634/2015/ZB will be implemented: ▪ Dewatering is only to be carried out when an ecologist is present. As water is pumped out the supervising ecologist will catch aquatic fauna. Aquatic fauna species, including amphibians, reptiles and fish, are to be captured and released into suitable aquatic habitat nearby. If any exotic fish such as Gambusia are captured during dewatering then they will not be translocated but will be humanely euthanized. ▪ Dewatering can occur at any time of day as long as an ecologist is present. The Site Manager will be responsible for ensuring an ecologist is present when dewatering commences. ▪ All species captured during dewatering will be recorded. Documentation of all threatened species captured and released will be kept. Any pest species such as Gambusia that are euthanized will also be recorded. ▪ The recommendations of the Dam Dewatering Report, refer to **Appendix 9** of this REF, are to be implemented in particular ensuring the dam water discharge rate of $75m^3$/ day via surface irrigation over a 3.2 hectare area on the site is complied with. All practical measures to ensure water pollution does not occur are to be implemented. Testing of the sediment is to occur prior to removal. If the testing indicates elevated levels of any chemical tested, an assessment is to be provided to THSC's Environmental Health Section advising on whether the material is suitable for reuse or is to be disposed off-site to an approved facility. If material is removed off site receipts are to be retained and provided to THSC's Environmental Health Section upon request.
Heritage (Aboriginal and non-Aboriginal)	All relevant Flow Systems Operations staff and contractors should be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*, which may be implemented as a heritage induction.
	This Due Diligence Assessment Report (**Appendix 10** of the REF) must be kept by Flow Systems Operations so that it can be presented, if needed, as a defence from prosecution under Section 86(2) of the *National Parks and Wildlife Act 1974*.
	If unrecorded Aboriginal object/s are identified on the site during works, then all works in the immediate area must cease and the area should be cordoned off. OEH must be notified by ringing the Enviroline 131 555, so that the site can be adequately assessed and managed.
	In the unlikely event that skeletal remains are identified, work must cease immediately in the vicinity of the remains and the area must be cordoned off. The proponent must contact the local NSW Police who will make an initial assessment as to whether the remains are part of a crime scene or possible Aboriginal remains. If the remains are thought to be Aboriginal, OEH must be contacted by ringing the Enviroline 131 555. An OEH officer will determine if the remains are Aboriginal or not; and a management plan must be developed in consultation with the relevant Aboriginal stakeholders before works recommence.
	If, during the course of development works, suspected historic cultural heritage material is uncovered, work should cease in that area immediately. The OEH (Enviroline 131 555) should be notified, and works are only to recommence when an approved management strategy has been developed.

Impact	Mitigation Measures
Stormwater and water quality	Mulch bunds up slope of the proposed disturbance areas.
	Coir logs are placed within the proposed drainage channel.
	Sediment fences down slope of all disturbed areas and material stockpile areas.
	Disturbed areas will be stabilised by revegetation within 10 days after completion of construction.
	Site disturbance will be minimised by containing machinery access to site areas required for approved construction works.
	Erosion potential would be limited by managing runoff fetches and velocities, with measures such as contour drains, silt fences and level spreaders
	Construction materials and techniques suitable for a mildly aggressive site are to be used.
	Soil importation is not allowed unless the imported soil is thoroughly tested for salinity and iss assessed as Virgin Excavated Natural Material) by an Environmental Consultant in accordance with EPA Guidelines. Any imported soil should have a maximum salinity of 4dS/m (non to slightly saline soil) and used in the top 1.5 m to minimise the effect of saline soils on utilities and footings.
	Controlled fill, if required, should preferably comprise non-reactive fill (e.g. crushed sandstone) with a maximum particle size not exceeding 75mm, or low plasticity clay. Natural soils and bedrock and bedrock obtained from the excavations within the site may be used in controlled fill after removal of unsuitable materials, if any, crushing to sizes finer than 75mm, proper mixing and moisture conditioning.
	Sediment filters such as silt fences, coir logs, or turf strips will be located downstream of disturbed areas.
	The storage and handling of fuels and chemicals shall comply with Australian Standard AS1940.
	No chemicals, fuels, and/or waste will be stored or collected for disposal within or adjacent to drainage lines or unsealed surfaces.
	A 'spill kit' will be kept on site at all times for potential chemical or fuel spills.
	Refuelling, fuel decanting and vehicle maintenance work will take place in a designated sealed and bunded area.
	An Incident Management Plan (IMP) will be prepared as part of the CEMP and will include a contingency plan and emergency procedures for dealing with the potential spillage of fuel or other environmental incidents that may occur on the work site. The IMP should also contain procedures dealing with the unexpected onset of rainfall during the work period.
	Drainage systems will be checked at regular intervals and maintained to ensure they are operating at full capacity (e.g. clearance of debris from drainage lines).
Noise	Additional lining of colorbond on the internal face of the plant room with appropriate air gap to accommodate 50mm thick polyester insulation of density 14kg/m3
	Internal walls of the pump house should be lined with minimum 50mm thick polyester or glasswool insulation of density 30kg/m3.
	All equipment used will comply with AS2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.
	Work and deliveries will only occur during the following times: Monday to Friday 7am to 6pm, Saturday 7am to 6pm. No construction work or deliveries will occur on Sundays or public holidays.
	Regular and effective maintenance of all equipment, including vehicles moving on and off the site, will be conducted.
	Plant and equipment which is used intermittently will either be shut down in the intervening periods between works or throttled down to a minimum.
	Any portable equipment with the potential to create high levels of noise (e.g. compressors, generators) will only be selected for use if it incorporates effective noise control. This equipment should be located, where practical, so that natural ground barriers are between it and the nearest potentially affected receivers.
	To minimise the impact of construction noise from the proposal upon residential receivers the following will occur:

<table>
<tr><th>Impact</th><th>Mitigation Measures</th></tr>
<tr><td rowspan="3"></td><td>Selection of the quietest feasible construction equipment;
Localised treatment such as barriers, shrouds and the like around fixed plants such as pumps, generators and concrete pumps; and
Provision of respite periods.</td></tr>
<tr><td>A Construction Noise and Vibration Management Plan for the site should be prepared and include:
Plant Noise Audit – Noise emission levels of all critical items of mobile plant and equipment should be checked for compliance with noise limits appropriate to those items prior to the equipment going into regular service. To this end, testing should be established with the principal construction contractor;
Environmental Inductions – It is important that an induction is provided to all site personnel with an emphasis on understanding and managing noise impacts;
Equipment Selection – All fixed plant at the work sites should be appropriately selected, and where necessary, fitted with silencers, acoustical enclosures and other noise attenuation measures in order to ensure that the total noise emission from each work site complies with EPA guidelines;
Site Noise Planning – Where practical, the layout and positioning of noise-producing plant and activities on each work site should be optimised to minimise noise emission levels.</td></tr>
<tr><td>An effective community relations programme shall be put in place to keep the community that has been identified as being potentially affected appraised of progress of the works, and to forewarn potentially affected groups. Close liaison should be maintained between the communities overlooking work sites and the parties associated with the construction works to provide effective feedback in regard to perceived emissions. In this manner, equipment selections and work activities can be coordinated where necessary to minimise disturbance to neighbouring communities, and to ensure prompt response to complaints, should they occur.</td></tr>
<tr><td rowspan="6">Odour and Air Quality</td><td>All vehicles and machinery will be fitted with approved exhaust systems to maintain exhaust emissions within accepted standards.</td></tr>
<tr><td>Machinery and vehicles will not be left running or idling when not in use for long periods.</td></tr>
<tr><td>Odour or air pollutant emission complaints will be dealt with promptly and the source will be eliminated wherever practicable</td></tr>
<tr><td>All loads of excavated material, soil, fill and other erodible matter that are transported to or from the work site will be kept covered at all times during transportation and will remain covered until they are unloaded either for use at the work site, reuse or disposal at a OEH licensed waste disposal facility.</td></tr>
<tr><td>All work sites, general work areas and stockpiles will be closely monitored for dust generation and watered down (with clean water) or covered (via seeding or tarpaulins) in the event of dry and/or windy conditions.</td></tr>
<tr><td>Rehabilitation of disturbed surfaces would be undertaken within 10 days of completion of construction on site.</td></tr>
<tr><td rowspan="3">Bushfire</td><td>All new buildings and structures are to be constructed in accordance with AS3959 – 2009.</td></tr>
<tr><td>Internal road networks should be designed and constructed in accordance with Section 4.1.3 of PBP 2006.</td></tr>
<tr><td>Any proposed development is to be linked to the existing mains pressure water supply and that suitable hydrants be clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure should comply with AS2419.1, 2005. Alternative water supplies may be considered where the proponent accepts that an adequate supply of water for firefighting operations can be provided.</td></tr>
<tr><td rowspan="2">Traffic and access</td><td>Any impact upon Red Gables Road associated with the works will be remediated to their original condition.</td></tr>
<tr><td>A traffic control plan prepared by a suitably qualified person will be submitted to Flow Systems Operations for approval prior to commencement of work on the site.</td></tr>
</table>

Impact	Mitigation Measures
Visual character	On completion of the works, all vehicles, construction equipment, materials, and refuse relating to the works will be removed from the work site(s) and any adjacent affected areas.
	Work sites will be restored as close to their original condition as possible following the completion of the proposed works.
Waste generation	No excavation or ground disturbance works are to commence unless site remediation of the site has been undertaken in accordance with the Remediation Action Plan (JBS&G, April 2015) and an appropriate validation report of the remediation works has been prepared.
	Should any potential hazards be identified (or any other unexpected potentially hazardous substance), the unexpected finds protocol summarised in Flowchart 9.1 of the Remediation Action Plan (JBS&G, April 2015) is to be followed.
	An enlarged version of the unexpected finds protocol, suitable for use on site, should be posted in the LWC construction site office and referred to during the site specific induction by the principal construction contractor.
	If works on the LWC site are to commence prior to the bulk earthworks, dam relocation and remediation works (subject of DA 1634/2015/ZB) the principal construction contractor must undertake all site remediation in strict accordance with the Remediation Action Plan (JBS&G, April 2015) and approved conditions of DA 1634/2015/ZB.
	In the event that the dam on site is not dewatered and in-filled as per conditions of consent of DA 1634/2015/ZB prior to commencement of the LWC construction the recommendations of the Dam Dewatering Report, refer to **Appendix 9** of this REF, are to be implemented in particular ensuring the dam water discharge rate of 75m³/ day via surface irrigation over a 3.2 hectare area on the site is complied with. All practical measures to ensure water pollution does not occur are to be implemented. Testing of the sediment is to occur prior to removal. If the testing indicates elevated levels of any chemical tested, an assessment is to be provided to THSC's Environmental Health Section advising on whether the material is suitable for reuse or is to be disposed off-site to an approved facility. If material is removed off site receipts are to be retained and provided to THSC's Environmental Health Section upon request.
	All waste generated during the course of the works will be reused or removed from the work areas as soon as practicable and disposed of in accordance with the waste disposal safeguards.
	All vessels used for contaminated or hazardous waste should be sealed, labelled according to their contents, and stored within bunded areas until their removal from the work site.
	Any fuel, lubricant or hydraulic fluid spillages will be collected using absorbent material and the contaminated material disposed of at an EPA licensed waste depot.
	The work site will be left clean and free of weeds, debris and other rubbish at the end of works.
	All hazardous wastes on site will be removed and disposed in accordance with the state and national regulations and guidelines and best practice for the removal of these materials.
	The Contractor's recycling and reuse proposal will be detailed in the CEMP.
	Excess spoil material that cannot be reused on site will be utilised in the ongoing earthworks as part of the adjacent subdivision works.
	Green waste from vegetation clearing will be either chipped for reuse; retained for rehabilitation; or mulched and spread immediately after the trench has been covered to prevent encroachment by weed species and minimise erosion. NB: where mulched vegetation is to be used measures to prevent organic material entering the local waterway shall be installed.
	Off-cuts of piping and other construction material will be recycled where possible.
Amenity and public information	The Contractor will maintain a complaints register. Any complaints received will be responded to as soon as possible.
	Accurate public information signs will be displayed while work is in progress and maintained in presentable manner.

Table 8 Impact and Mitigation Measures to be incorporated into the OEMP

Impact	Mitigation Measures
General	An Infrastructure Operating Plan, Odour Management Plan (prepared in accordance with the *Draft NSW Best Practice Odour Guidelines)* and a Water Quality Plan prepared in accordance with the *Australian Guideline for Water Recycling (2006*) and addressing the *Framework for Management of Recycled Water Quality and Use* are to be prepared prior to operation of the Box Hill LWC.
Land Capability	A Recycled Water Irrigation Management Plan, prepared in accordance with the *Australian Guideline for Water Recycling (2006*) is to be developed once further details of the irrigation of recycled water is established. The Recycled Water Management Plan is to detail the vegetation cover required, the maintenance of vegetated areas to be irrigated and details of irrigation preparation works for forested areas. The Recycled Water Management Plan will also detail soil improvement methods for the irrigated areas including the parameters for the use of gypsum.
Waste generation	During the operation of the LWC the disposal of sludge wastings, sludge cake and grit and screen debris will be carried out in accordance with the EPA *Environmental Guidelines: Use and Disposal of Biosolids Products (2000).*
	The management of waste, including its transport will comply with the POEO Act and POEO (Waste) Regulation.
	Waste materials will be separated, classified and managed in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (DECCW 2009)
	All staff and contractors will be made aware of waste management procedures.
Risks and Hazards	Chemicals and potentially hazardous substances will be used and stored according to regulatory requirements including the *Work Health and Safety Act 2011* and *AS 3780 The storage and handling of corrosive substances.* Chemical, fuel and oil containers will be managed according to manufacturers' directions to avoid potential impacts to the environment or human health.
	Flow Systems Operations will ensure that in the unlikely event of a pollution incident all remedial actions are in accordance with the POEO Act. In accordance with Section 148 of the POEO Act pollution incidents causing or threatening material harm will be notified immediately with the EPA.
	No chemicals, fuels, and/or waste will be stored or collected for disposal within or adjacent to drainage lines or unsealed surfaces.
	A 'spill kit' will be kept on site at all times for potential chemical or fuel spills.
	Signage and buffer zones will be employed at recycled water reuse areas as appropriate to the relevant end use.

8.0 Conclusions

8.1 Summary of Beneficial Effects

Construction of the Box Hill LWC will allow the provision of reticulated sewer and recycled water services to the approved Box Hill North residential precinct. All construction works are to be completed in accordance with the controls outlined in this document.

The proposal will reticulate to all new homes and retail uses within the site recycled water produced by the Box Hill LWC. The recycled water will be used for toilet flushing and washing machines and externally for irrigation and car washing. The Box Hill LWC will produce high quality and disinfected recycled water thus providing a higher level of security than other methods used for recycling water. Smaller infrastructure also means it is more easily repaired in the instance of a fault or emergency. Construction of the proposal will benefit the current and future community in providing ready access to a sewage disposal and recycled water scheme that makes a significant contribution to sustainability.

Given the essential need for this infrastructure, the type and location of the proposal is assessed as providing the community with the best outcome in terms of type, operation and location.

8.2 Summary of Adverse Effects

The proposal will result in minimal adverse effect upon the environment. Various minor environmental impacts have been identified in this REF and these are generally temporary in nature. Specifically, the proposal will not have a significant impact on threatened species, populations and ecological communities listed pursuant to the TSC Act, or impact on matters of National Environmental Significance pursuant to the EPBC Act. There are no long term adverse effects created by the construction of the proposal.

Operational impacts will be minor and minimised through appropriate mitigation and management therefore there are no long-term operational impacts from the proposed activity.

8.3 Conclusion

Construction of the proposal will provide a service essential for the development of the approved residential subdivision which greatly benefits the community by ensuring supply of affordable housing for The Hills Shire area and through the provision of recycled water to the new development.

The minor adverse effects that have been identified are considered minor and only short term.

The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposal. A number of potential environmental impacts from the proposal have been avoided or reduced during the concept design development. The proposal as described in the REF best meets the project objectives. The proposal will result in beneficial impacts by providing a service essential for the development of the area which greatly benefits the community.

This REF has been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA and the *Water Industry Competition (General) Regulation 2008.* It is considered that the proposal is unlikely to present a significant risk of harm to the environment and approval of network operator's licence under the WICA and the *Water Industry Competition (General) Regulation 2008* would be in the public interest.

This REF has also been prepared in accordance with Part 5 of the EP&A Act. It has concluded that the proposal is unlikely to significantly affect the environment and hence an EIS is not required to be prepared under section 112 of the EP&A Act. The proposal is also unlikely to affect Commonwealth land or have an impact on any matters of National Environmental Significance.

9.0 Declaration

I certify that I have prepared the contents of this Review of Environmental Factors and to the best of my knowledge:

- It is in accordance with Section 111 of the Environmental Planning and Assessment Act 1979 and clause 228 of the Environmental Planning and Assessment Regulation 2000;
- It examines and takes into account to the fullest extent possible all matters affecting or likely to affect the environment as a result of the activities associated with this project;
- It is true in all material particulars and does not, by its presentation or omission of information, materially mislead; and
- has been prepared with due regard for the licensing criteria, principles and environmental clauses in the WICA and the *Water Industry Competition (General) Regulation 2008.*

The proposal is not likely to significantly affect the environment and may be approved subject to mitigation measures detailed in this document. No EIS is required.

The proposal is unlikely to present a significant risk of harm to the environment and approval of network operator's licence under the WICA and the *Water Industry Competition (General) Regulation 2008* would be in the public interest.

Signed:

Name: Rob Dwyer

Position: Planning Manager

Date: 29 March 2016

Appendix 1

Consideration of the Clause 228 Factors and Matters of National Environmental Significance

The following factors, listed in Clause 228(2) of the Environmental Planning and Assessment Regulation 2000, are required to be considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
1. Any environmental impact on a community? The proposal involves the construction and operation of water recycling facility (known as the Box Hill North Local Water Centre (Box Hill LWC)) to service the Box Hill North residential subdivision which will contain approximately 5,000 dwellings. The environmental impact on the community will result in the efficient and hygienic removal of sewage from residential development. There may be temporary impacts from increase in traffic and noise during the construction of the Box Hill LWC. Deliveries and vehicle movements will only occur during the following times: Monday to Friday 7am to 6pm and Saturday 8am to 1pm. No construction work or deliveries will occur on Sundays or public holidays. A CEMP will be prepared prior to commencement of works.	Positive long-term benefits. Principal construction contractor will manage short-term negative impacts.
2. Any transformation of a locality? The area will be undergoing gradual transformation due to the progressive development of the Box Hill North site. The proposal is an essential element of the residential development. The Architectural Drawings provided in the REF show a building that will be sympathetic to its location on the margin of a future residential area.	Positive – long term impacts that will accommodate existing and future development.
3. Any environmental impact on the ecosystems of the locality? Construction related impacts on biodiversity would be largely temporary and limited in scale due to the modified and disturbed nature of the local environment. The vast majority of disturbance will be isolated to grass. These areas will be disturbed by clearing and earthworks. Post-construction cleared areas will be landscaped. The REF concludes that no significant impacts are likely to occur upon any threatened species, populations or ecological communities as a result of the construction and operation of Box Hill LWC. Impacts on ecosystems will be reduced by implementing erosion and sediment controls, appropriate stormwater and nutrient control systems to reduce the effects of runoff and ensure water flowing off the proposal area is of a suitable quality and ensuring that there are no accidental incursions into areas which are not subject to the proposal.	Long term negative impacts of vegetation removal have been determined to be minor. Implementing these recommendations will reduce environmental impact on ecosystems.
4. Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? The proposal is unlikely to reduce the aesthetic values of the site. The LWC building design contains architectural detail to integrate the facility into a residential neighbourhood. The proposal will include a number of soft landscaping features to provide an effective screening of the development from future residential development.	Neutral impact – consistent with existing and desired future values.
5. Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations? The proposal does not impact on any identified areas of anthropological, archaeological, cultural, historical, scientific or social significance.	No impact identified.
6. Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974*)? The proposal does not impact on the habitat of protected fauna (within the meaning of the NPWS Act).	No impact identified within the meaning of the NPW Act 1974.
7. Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? The REF concludes that it is unlikely that the proposal will have a significant impact on threatened species, populations and ecological communities listed pursuant to the TSC Act, or impact on matters of National Environmental Significance pursuant to the EPBC Act.	Minor impact identified but not endangering of any species.

Factor	Impact
8. Any long-term effects on the environment? The development of the Box Hill LWC will not result in any long term effects on the environment additional to those which will have been addressed during the assessment of the Box Hill North site. Long term effects for the remaining areas subject of this REF have been assessed and it is concluded that it is unlikely to be any long term effects.	Unlikely to be any long-term impacts. Short-term impacts will be reduced through appropriate mitigation and management.
9. Any degradation of the quality of the environment? The clearing of vegetation is limited to grass only. The construction of the Box Hill LWC may temporarily degrade the quality of the existing environment. This impact is to be mitigated through erosion, sediment and weed controls and landscaping.	Degradation will be mitigated through appropriate management.
10. Any risk to the safety of the environment? The proposal involves the construction and operation of a water recycling facility which poses a risk to the environment if the necessary use of fuels, oils, greases and chemicals are discharged into the stormwater system if they are inappropriately stored. This risk is considered minimal and the occurrence of environmental hazards is considered to be extremely low. Impacts on the environment will be reduced by implementing effective storage of hazardous materials, erosion and sediment controls, appropriate stormwater and nutrient control systems to reduce the effects of runoff and ensure water flowing off the proposal area is of a suitable quality, ensuring that there are no accidental incursions into areas which are not subject to the proposal.	Risks will be managed through appropriate controls.
11. Any reduction in the range of beneficial uses of the environment? As the proposal is to be built in unison with the orderly development of the Box Hill North residential subdivision no reductions in the range of beneficial uses of the environment are likely.	No significant reduction identified.
12. Any pollution of the environment? The proposal involves the construction and operation of a water recycling facility which poses a risk to the environment if the necessary use of fuels, oils, greases and chemicals are discharged into the stormwater system if they are inappropriately stored. This risk is considered minimal and the occurrence of environmental hazards is considered to be extremely low.	The risk will be managed through appropriate controls.
13. Any environmental problems associated with the disposal of waste? The Box Hill LWC will be constructed to service development within the Box Hill North residential subdivision. No environmental problems associated with the disposal of waste are likely to result from the proposal.	No waste disposal issues likely.
14. Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? The proposal will not increase demands on resources, natural or otherwise that are or are likely to become in short supply in the future.	No impact identified.
15. Any cumulative environmental effect with other existing or likely future activities? Construction of the Box Hill LWC will allow the provision of recycled water to the Box Hill North residential subdivision. The proposal will contribute to smooth operation of the overall subdivision. A minor increase in the movement of vehicles during the construction phase of the Box Hill LWC will be noticed by residences however these will be tempered by the increased vehicle activities associated with progressive development within the Box Hill North Residential Precinct.	Long term positive impact.

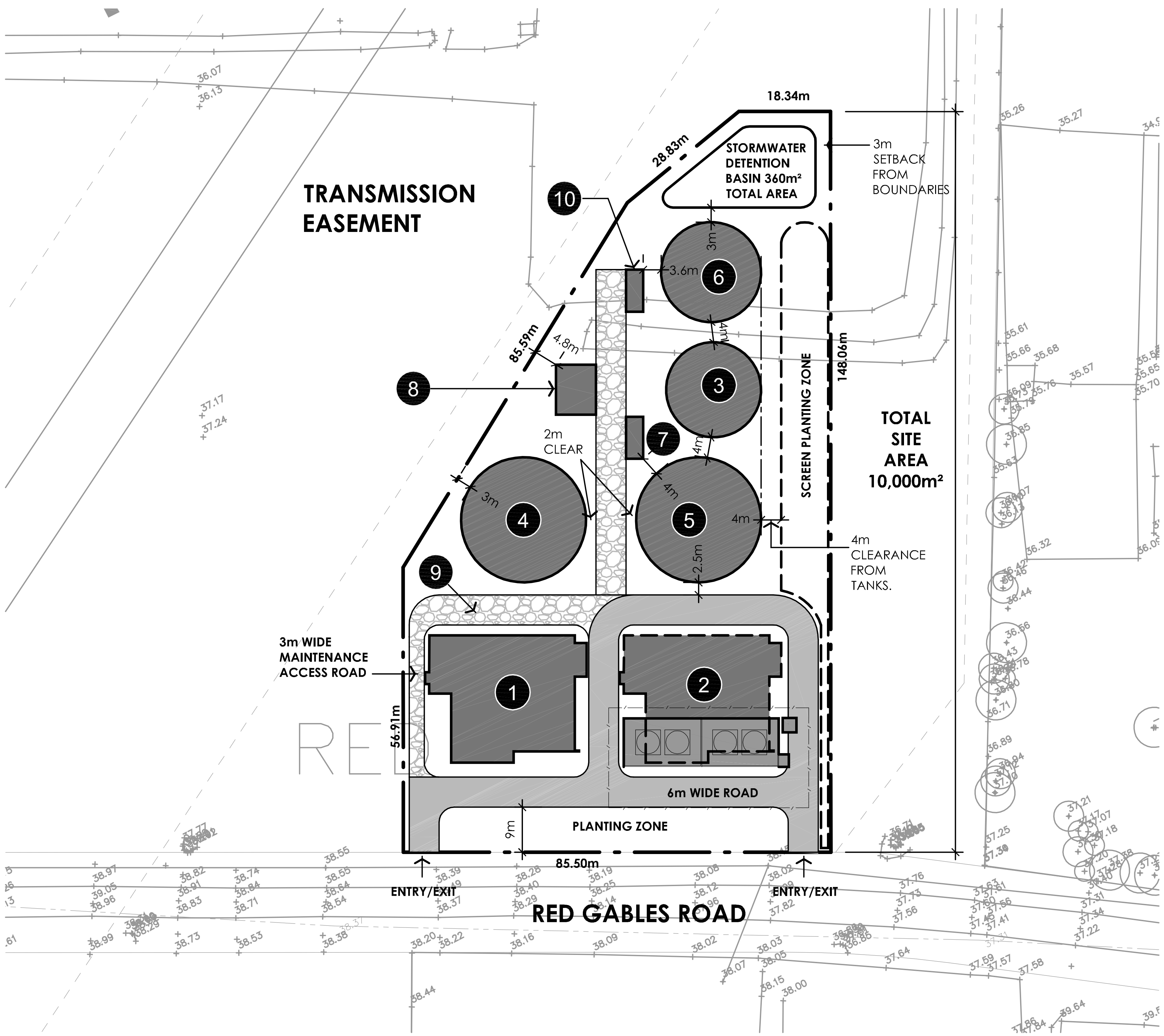
Matters of National Environmental Significance

Under the environmental assessment provisions of the *Environment Protection and Biodiversity Conservation Act 1999*, the following Matters of National Environmental Significance are required to be considered to assist in determining whether the proposal should be referred to the Australian Government Department of the Environment and Water Resources.

Factor	Impact
1. Any impact on a World Heritage property?	
There are no world heritage properties within the vicinity of the proposal.	Nil
2. Any impact on a National Heritage place?	
There are no National Heritage places within the vicinity of the proposal.	Nil
3. Any impact on a wetland of international importance?	
There are no wetlands of international importance located within 5km of the proposal.	Nil
4. Any impact on a listed threatened species or communities?	
As described in the REF, it is not anticipated that there would be any negative impact on a Commonwealth listed threatened species or ecological communities.	Nil
5. Any impacts on listed migratory species?	
Due to the small scale of the proposed vegetation clearing, the activity is not considered likely to result in a significant environmental impact on any Commonwealth listed migratory species provided mitigation measures are implemented.	Nil
6. Any impact on a Commonwealth marine area?	
No Commonwealth marine areas are located within 10km of the Proposal.	Nil
7. Any impact on the Great Barrier Reef Marine Park?	
The Proposal will not have a significant adverse effect on the Great Barrier Reef Marine Park, as this area is not within the region.	Nil
8. Does the proposal involve a nuclear action (including uranium mining)?	
The Proposal will not involve a nuclear action.	Nil
9. Water resource, in relation to coal seam gas development and large coal mining development.	
The Proposal is not considered to significantly impact upon a water resource, and thus does not contribute to this MNES.	Nil
Additionally, any impact (direct or indirect) on Commonwealth land?	
No Commonwealth Land is located in proximity to the study area.	Nil

Appendix 2

Box Hill LWC – Concept Plan and Architectural Drawings



KEY & LEGEND

1 LOCAL WATER CENTRE 1

2 LOCAL WATER CENTRE 2 & LOCATION OF INTERIM STORAGE TANKS

3 RECYCLED WATER STORAGE TANK 19mØ, 3.6m HIGH

4 5 RECYCLED WATER STORAGE TANK 25mØ, 5m HIGH

6 ADDITIONAL STORAGE TANK 20mØ, 3.6m HIGH

7 RECYCLED WATER PUMP SHED

8 RO UNIT

9 COMPACTED GROUND FOR MAINTENANCE ACCESS ONLY

10 ADDITIONAL PUMP SHED

SITE BOUNDARY

INTERIM STORAGE TANKS

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5	16.03.15	VC	AC	**	ISSUED FOR COMMENT
4	19.12.14	VC	AC	**	ISSUED FOR COMMENT

CLIENT

flow systems

NAME:	BOX HILL NORTH
PROJECT:	LOCAL WATER CENTRE

Design	Date	Drafting	Date
AJC	17-Mar-15	MDP	17-Mar-15

TITLE:	SITE PLAN	
SCALE	PERMEATE PROJECT # C14121	PERMEATE DRAWING # C14121-100
SHEET A3	CLIENT PROJECT # TBA	CLIENT DRAWING # TBA

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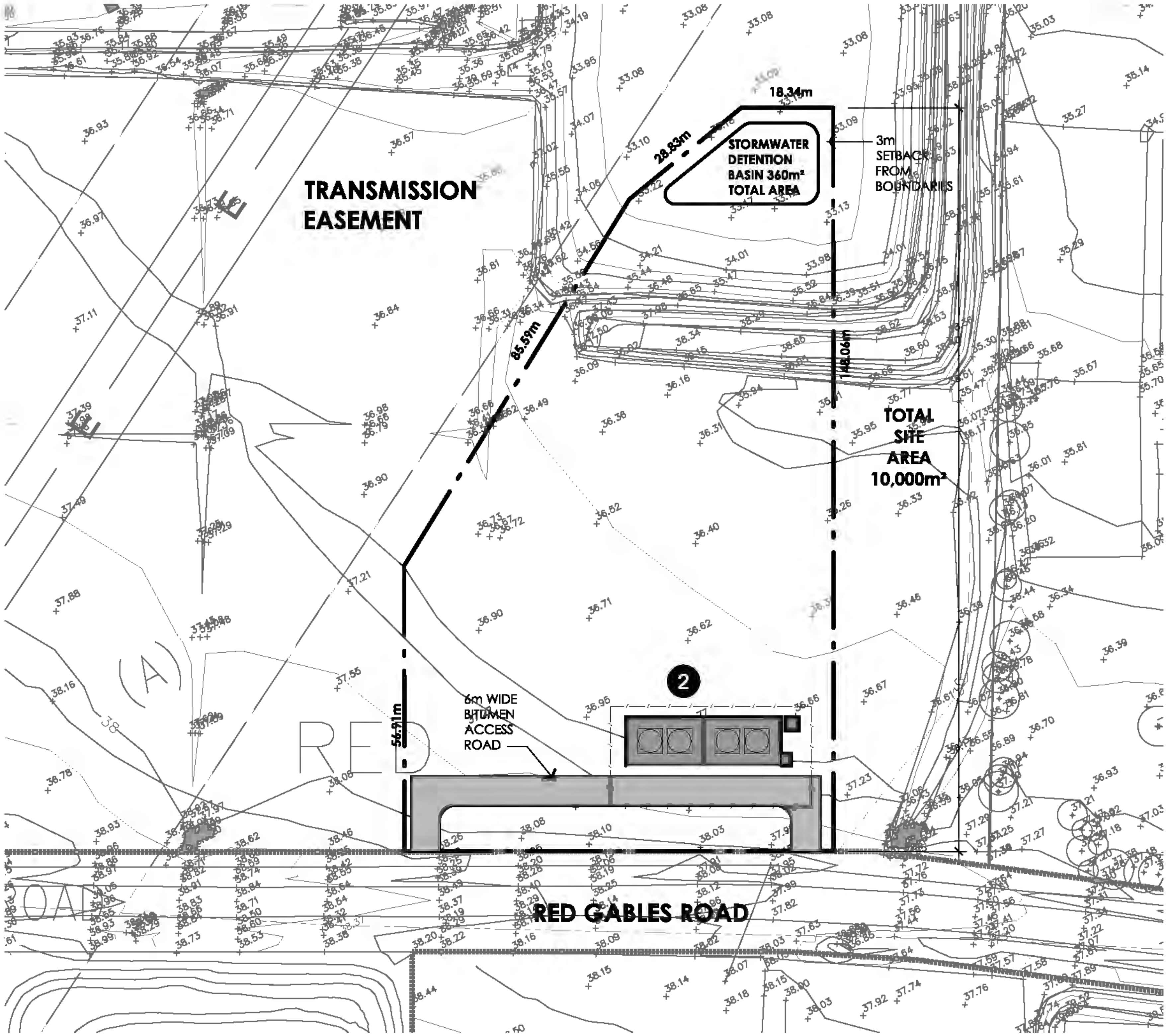
STAGE 1 WORKS

2 INTERIM STORAGE TANKS

STORMWATER DETENTION BASIN



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1	23.12.14	GO	AC	**	ISSUED FOR REVIEW

CLIENT

flow systems

NAME:	BOX HILL NORTH		
PROJECT:	LOCAL WATER CENTRE		
Design	Date	Drafting	Date
AJC	18-Mar-15	MDP	18-Mar-15

TITLE: STAGE 1 PLAN

SCALE	PERMEATE PROJECT # C14121	PERMEATE DRAWING # C14121-111
SHEET A3	CLIENT PROJECT # TBA	CLIENT DRAWING # TBA

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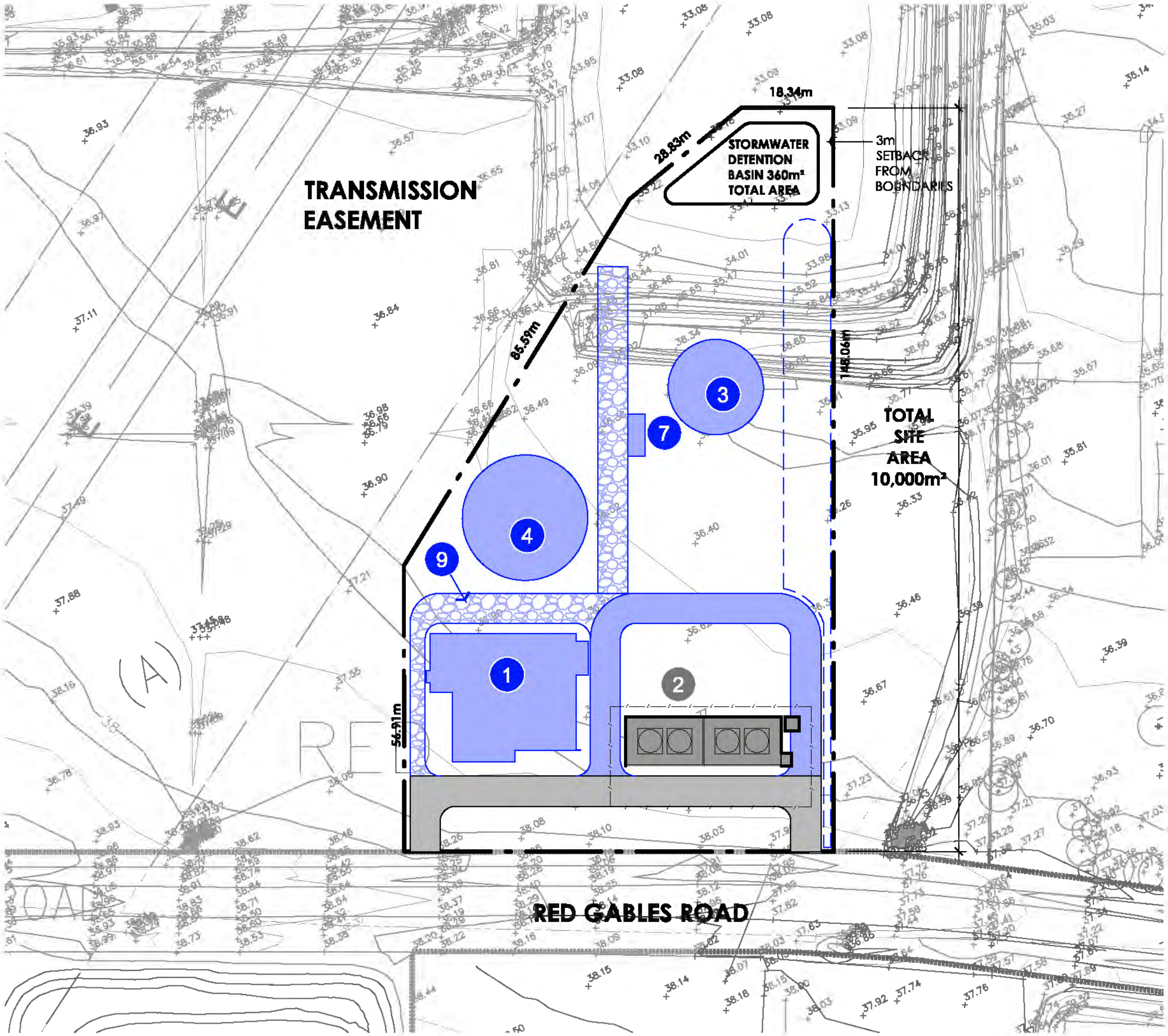

STAGE 1 WORKS

- 2 INTERIM STORAGE TANKS
- STORMWATER DETENTION BASIN

STAGE 2 WORKS

- 1 LOCAL WATER CENTRE 1
- 3 RECYCLE WATER STORAGE TANK 19mØ, 3.6m HIGH
- 4 RECYCLE WATER STORAGE TANK 25mØ, 5m HIGH
- 9 COMPACTED GROUND FOR MAINTENANCE ACCESS ONLY
- 7 RECYCLE WATER PUMP SHED

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1	23.12.14	GO	AC	**	ISSUED FOR REVIEW

CLIENT: flow systems

NAME:	BOX HILL NORTH		
PROJECT:	LOCAL WATER CENTRE		
Design	Date	Drafting	Date
AJC	18-Mar-15	MDP	18-Mar-15

TITLE: **STAGE 2 PLAN**

SCALE	PERMEATE PROJECT # C14121	PERMEATE DRAWING # C14121-112
SHEET A3	CLIENT PROJECT # TBA	CLIENT DRAWING # TBA

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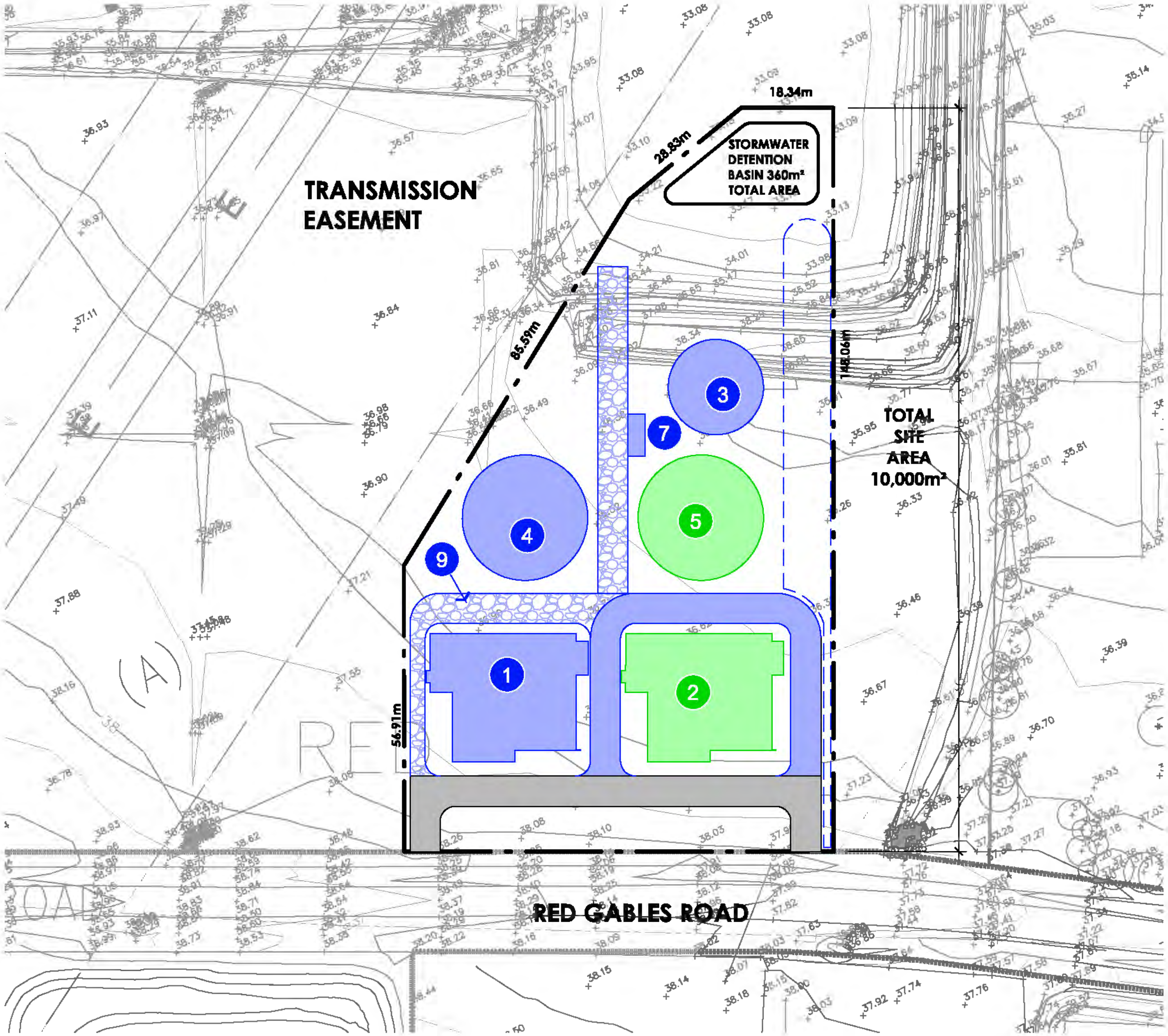

STAGE 1 WORKS

- 2 INTERIM STORAGE TANKS
- STORMWATER DETENTION BASIN

STAGE 2 WORKS

- 1 LOCAL WATER CENTRE 1
- 3 RECYCLE WATER STORAGE TANK 19mØ, 3.6m HIGH
- 4 RECYCLE WATER STORAGE TANK 25mØ, 5m HIGH
- 9 COMPACTED GROUND FOR MAINTENANCE ACCESS ONLY
- 7 RECYCLE WATER PUMP SHED

STAGE 3 WORKS

- 2 LOCAL WATER CENTRE 2 & REMOVAL OF INTERIM STORAGE TANKS
- 5 RECYCLE WATER STORAGE TANK 25mØ, 5m HIGH

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2	17.03.15	VC	AC	**	ISSUED FOR REVIEW
1	23.12.14	GO	AC	**	ISSUED FOR REVIEW

CLIENT: flow systems

NAME:	BOX HILL NORTH
PROJECT:	LOCAL WATER CENTRE
TITLE:	STAGE 3 PLAN
SCALE	
SHEET	A3
PERMEATE PROJECT #	C14121
PERMEATE DRAWING #	C14121-113
CLIENT PROJECT #	TBA
CLIENT DRAWING #	TBA

Design	Date	Drafting	Date
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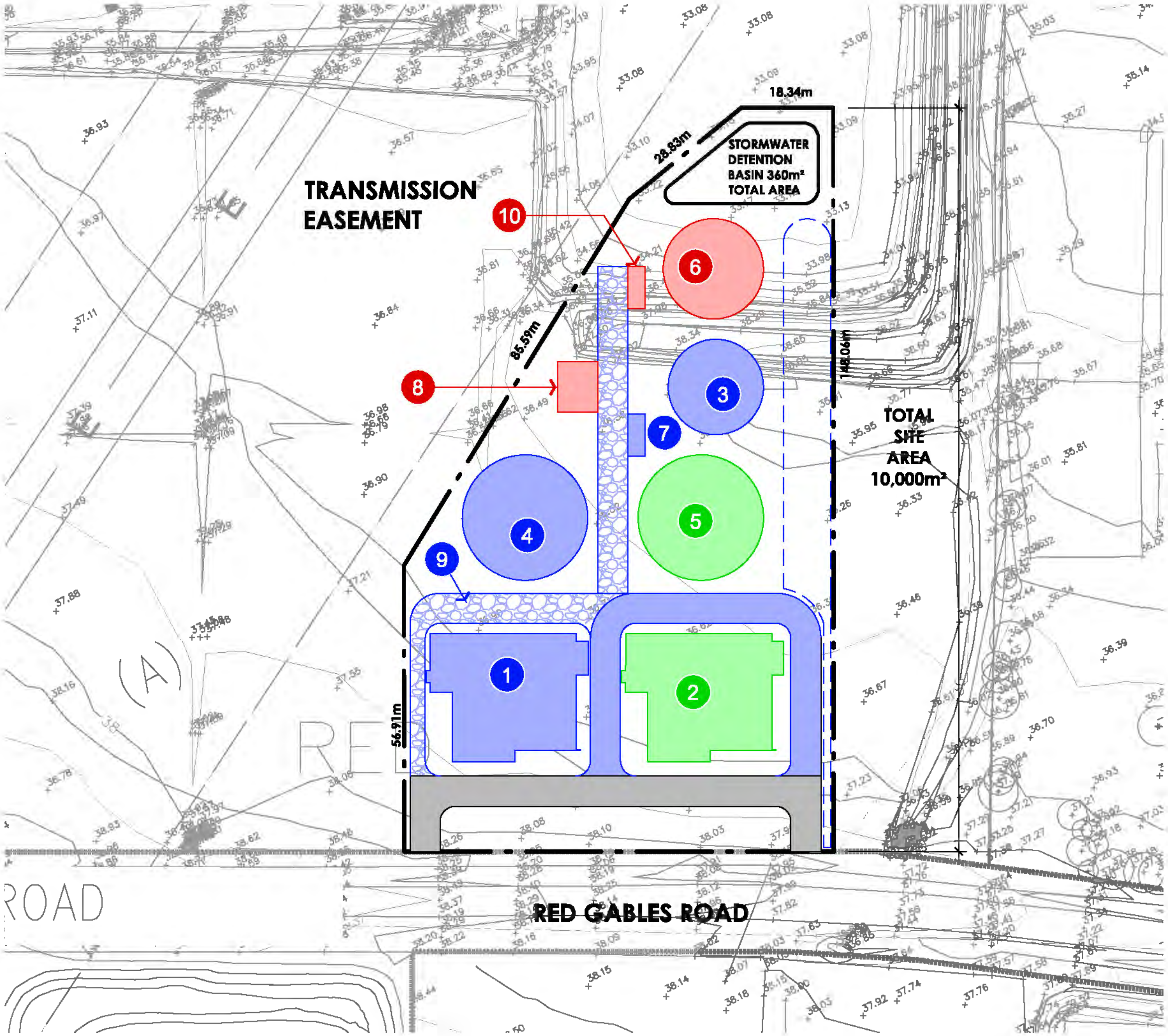

STAGE 1 WORKS

- 2 INTERIM STORAGE TANKS
- STORMWATER DETENTION BASIN

STAGE 2 WORKS

- 1 LOCAL WATER CENTRE 1
- 3 RECYCLE WATER STORAGE TANK 19mØ, 3.6m HIGH
- 4 RECYCLE WATER STORAGE TANK 25mØ, 5m HIGH
- 9 COMPACTED GROUND FOR MAINTENANCE ACCESS ONLY
- 7 RECYCLE WATER PUMP SHED

STAGE 3 WORKS

- 2 LOCAL WATER CENTRE 2 & REMOVAL OF INTERIM STORAGE TANKS
- 5 RECYCLE WATER STORAGE TANK 25mØ, 5m HIGH

STAGE 4 WORKS

- 6 ADDITIONAL STORAGE TANK 20mØ, 3.6m HIGH
- 8 RO UNIT
- 10 ADDITIONAL PUMP SHED

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1	23.12.14	GO	AC	**	ISSUED FOR REVIEW

CLIENT: flow systems

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PROJECT:	LOCAL WATER CENTRE	SCALE	PERMEATE PROJECT # C14121 / PERMEATE DRAWING # C14121-114
Design: AJC, Date: 18-Mar-15	Drafting: MDP, Date: 18-Mar-15	SHEET A3	CLIENT PROJECT # TBA / CLIENT DRAWING # TBA

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PERSPECTIVE 1 - PROPOSED

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1	18.12.14	VC	AC	**	ISSUED FOR COMMENT

CLIENT
flow systems

NAME:	BOX HILL NORTH
PROJECT:	LOCAL WATER CENTRE
TITLE:	PERSPECTIVE 1
SCALE	
SHEET	A3
PERMEATE PROJECT #	C14121
PERMEATE DRAWING #	C14121-501
CLIENT PROJECT #	TBA
CLIENT DRAWING #	TBA

Design	Date	Drafting	Date
AJC	24-Mar-15	MDP	24-Mar-15

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PERSPECTIVE 2 - PROPOSED

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1	18.12.14	VC	AC	**	ISSUED FOR COMMENT

CLIENT

flow systems

NAME:	BOX HILL NORTH		
PROJECT:	LOCAL WATER CENTRE		
Design	Date	Drafting	Date
AJC	24-Mar-15	MDP	24-Mar-15

TITLE:	PERSPECTIVE 2	
SCALE	PERMEATE PROJECT # C14121	PERMEATE DRAWING # C14121-502
SHEET A3	CLIENT PROJECT # TBA	CLIENT DRAWING # TBA

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PERSPECTIVE 3 - PROPOSED

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2	19.12.14	VC	AC	**	ISSUED FOR COMMENT
1	18.12.14	VC	AC	**	ISSUED FOR COMMENT

CLIENT

flow systems

NAME:	BOX HILL NORTH		
PROJECT:	LOCAL WATER CENTRE		
Design	Date	Drafting	Date
AJC	24-Mar-15	MDP	24-Mar-15

TITLE:	PERSPECTIVE 3	
SCALE	PERMEATE PROJECT # C14121	PERMEATE DRAWING # C14121-503
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PERSPECTIVE 4 - PROPOSED

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CLIENT: flow systems

NAME:	BOX HILL NORTH		
PROJECT:	LOCAL WATER CENTRE		
Design	Date	Drafting	Date
AJC	24-Mar-15	MDP	24-Mar-15

TITLE:	PERSPECTIVE 4	
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Appendix 3

Statement of Environmental Effects and notice of determination for DA 1634/2015/ZB

Ref: 68448_Projct_8_ FINALSEE

mckenzie group

Statement of Environmental Effects

Box Hill North Precinct

Proposed Two (2) Lot Torrens Title Subdivision, Earthworks and Dam Relocation

153 Boundary Road, Box Hill

Lots 10 DP 593517

Prepared by McKenzie Group Consulting Planning for E.J. Cooper & Son Pty Ltd

June 2015

Document Control Table

Document Reference:	68448_Project_8_FINALSEE		
Date	**Version**	**Author**	**Checked By**
21 May 2015	Draft	T. Cook	C. Wilson
12 June 2015	Draft	T. Cook	C. Wilson
17 June 2015	Draft	T. Cook	C. Wilson

Executive Summary

This Statement of Environmental Effects (SEE) has been prepared to support a Development Application on behalf of E.J. Cooper & Son Pty Ltd and relates to the proposed subdivision, earthworks and dam relocation for the future construction of a water recycling facility known as a Local Water Centre to service Box Hill North. The proposed works are to be carried out at the property identified as 153 Boundary Road, Box Hill.

The proposed works are to provide an appropriate pad site to accommodate the future development of the Local Water Centre to service the Box Hill North Precinct.

The proposal is an essential step in achieving the required water servicing for future development in accordance with the Box Hill North Masterplan.

The proposal is considered appropriate for the site for the following reasons:

- The proposed subdivision and works have been designed to allow for future development of a Local Water Centre to service future development within the Box Hill North Precinct and in accordance with Council's relevant development controls and the Box Hill North Masterplan.

- The Box Hill North Precinct and associated Masterplan responds to residential housing demands and targets identified within the strategic policy within The Hills Shire LGA, providing a range of housing choice for existing and future residents.

- The development of the Box Hill North Precinct is considered to make a considerable contribution to the region with significant net community benefit as it will improve the provision and range of residential housing within the locality and will respond to a demonstrated market driven need identified in the Metropolitan Strategy for Sydney 2031 and the Draft West Central Sub-Regional Strategy through the provision of additional housing within the locality.

- The proposal will not result in any adverse impact to surrounding properties or the wider community.

This SEE provides an assessment of the proposed development and addresses the relevant matters for consideration under Section 79C of the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulations 2000* (as amended).

An assessment has been carried out against the following Environmental Planning Instruments and Local Council development policies and plans:

- State Environmental Planning Policy No. 55 – Remediation of Land;
- State Environmental Planning Policy (Infrastructure) 2007;
- Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River
- The Hills Local Environmental Plan 2012;
- The Hills Development Control Plan (Box Hill North) 2012;
- A Plan for Growing Sydney; and
- Draft West Central Subregional Strategy.

Based on the assessment undertaken, it is recommended that favorable consideration to the approval of the Development Application be given.

CONTENTS

1.	Introduction	4
2.	Site Analysis	7
2.1	Property Description and Existing Development	7
2.2	Site Context	7
2.3	Box Hill North Masterplan	9
3.	Proposed Development	10
3.1	Overview of Proposal	10
3.2	Details of Proposal	10
4.	Planning Framework	14
4.1	Environmental Planning Instruments	14
4.2	Development Control Plans	21
4.3	Voluntary Planning Agreement Commitments	22
4.4	Contributions Plan No. 16 – Box Hill North Precinct	22
4.5	Plans, Policies and Strategies	23
4.5.1	A Plan for Growing Sydney	23
4.5.2	Draft West Central Subregional Strategy	23
5.	Likely Impacts of the Development	25
5.1	Context and Setting	25
5.2	Access, Transport and Traffic Impact	25
5.3	Social-Economic Impact	25
5.4	Heritage	25
5.5	Flora and Fauna	25
5.6	Geotechnical Impacts	26
5.7	Contamination	26
5.8	Aboriginal / Cultural Heritage	26
5.9	Cumulative Impacts	27
5.10	The Suitability of the Site for the Development	27
5.11	Any submissions made in accordance with the Act	27
5.12	The Public Interest	27
6.	Conclusion	28

APPENDICES

Appendix 1	Council Pre-Lodgment Notes
Appendix 2	Survey Plan
Appendix 3	Box Hill North Masterplan
Appendix 4	Engineering Plans
Appendix 5	Orderly Development Layout Plan
Appendix 6	Development Control Plan Compliance Table
Appendix 7	Geotechnical Assessment
Appendix 8	Remediation Action Plan
Appendix 9	Aboriginal Heritage Assessment
Appendix 10	Cultural Heritage Assessment
Appendix 11	Species Impact Statement
Appendix 12	Vegetation Management Plan
Appendix 13	Flood Modeling
Appendix 14	Waste Management Plan

FIGURES

Figure 1	Site Location Map
Figure 2	Aerial Map
Figure 3	Site Context Map
Figure 4	Box Hill North Masterplan
Figure 5	Plan of Subdivision
Figure 6	Cut & Fill Plan
Figure 7	The Hills Local Environmental Plan 2012 Zoning Map
Figure 8	The Hills Local Environmental Plan 2012 Minimum Lot Size Map
Figure 9	The Hills Bushfire Prone Map
Figure 10	West Central Subregion Map

TABLES

Table 1	Pre-Lodgement Meeting Notes
Table 2	Development Plan Register

1. INTRODUCTION

This Statement of Environmental Effects (SEE) has been prepared to support a Development Application on behalf of E.J. Cooper & Son Pty Ltd and relates to the proposed subdivision, earthworks and dam relocation at the property identified as 153 Boundary Road, Box Hill.

This SEE provides an assessment of the proposal against the relevant matters for consideration under Section 79C of the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulations 2000 (as amended). The document is arranged as follows:

- Section 1 outlines this application and its structure.
- Section 2 describes the site and its context.
- Section 3 outlines the details of the proposed development.
- Section 4 provides an assessment against the relevant policies within the planning framework.
- Section 5 provides a background to the proposed development.
- Section 6 provides the conclusions and recommendations.

Specialist reports are also provided in support of the application in Appendices 1 – 14.

1.1 Purpose of this report

The report provides the following:

- A description of the site context, including identification of the site, existing development on the site, and surrounding development;
- Detailed description of the proposed development;
- Assessment of the proposed development with the relevant planning controls;
- Identification and assessment of the issues relevant to the proposed development; and
- Assessment of relevant matters under Section 79C of the *Environmental Planning and Assessment Act 1979*.

1.2 History

On 27 July 2013 a Planning Proposal (1/2014/PLP) was lodged by E.J. Cooper & Son Pty Ltd to amend The Hills Local Environmental Plan 2012 (THLEP 2012). The Planning Proposal was lodged with Council seeking to rezone land within the Box Hill North Precinct from Transition (RU6) zone to a combination of General Residential (R1), Medium Density Residential (R3), Environmental Conservation (E2), Environmental Management (E3), Environmental Living (E4), Local Centre (B2) and Public Recreation (RE1) zones, as well as amendments to Schedule 1 of the THLEP 2012 to allow additional uses within zones R3 and RE1.

On 26 November 2013 Gateway Determination for the Planning Proposal was provided by the NSW Department of Planning & Infrastructure (now Department of Planning & Environment).

Planning Proposal 1/2014/PLP was favorably determined by The Hills Shire Council and the Department of Planning & Environment on 20 February 2015 and commences on the day on which it is published on the NSW legislation website. The Planning Proposal as approved facilitates the development of approximately 4,100 dwellings, a retail centre, a primary school, community and sporting facilities for the Box Hill North Precinct. To facilitate the Planning Proposal, establish the controls for future development and provide the framework for delivery of infrastructure, the following were created:

- Development Control Plan (Box Hill North);
- Voluntary Planning Agreement; and
- Section 94 Contributions Plan.

1.3 Masterplan Development Application

On 12 May 2015 the Box Hill North Masterplan development application was lodged with Council. This staged application was lodged pursuant to section 83B of the *Environmental Planning & Assessment Act 1979* (EP&A Act) which seeks consent for:

- the layout of development into nine (9) precincts;
- location of a new town centre and central parkland;
- vehicular access from Boundary, Old Pitt Town, Cataract, Red Gables, Maguires and Janpieter Roads and street layout and hierarchy;
- land uses across the site including future primary school site;
- housing types and development controls; and
- landscape concept including location of sporting fields and parks, integrated passive recreation area within a riparian corridor network and street tree strategy

The staged development comprises the following components:

- 4,100 residential dwellings; and
- maximum of 10,000 m2 GFA of retail / commercial space.

The Masterplan application does not seek consent for any physical works.

The subject development application seeks consent for subdivision and works within Precinct D of Box Hill North to create a site suitable for future development in accordance with the Masterplan objectives.

1.4 Voluntary Planning Agreement

The approval of the Planning Proposal includes the establishment of a Voluntary Planning Agreement (VPA) for the delivery of the local infrastructure (and dedication of associated land) needed to facilitate the release of the Box Hill North Precinct for urban development. It will deliver the following infrastructure and facilities to meet the needs of an expected 13,500 persons to Councils standards:

- Open space facilities including local active and passive open space (playing fields, playgrounds and pedestrian cycle paths);
- Community facilities (a multi-purpose facility);
- Transport and traffic facilities (new roads, intersection upgrades and public transport facilities); and
- Water cycle management facilities as a result of the extra stormwater runoff generated by impervious surfaces associated with urban development.

The VPA supports The Hills Future Community Strategic Plan by providing for future facilities which will enhance and maintain an attractive and safe environment and ensure that future development is consistent with the Shire’s urban character.

The applicable commitments under the VPA are addressed in section 4.3 of this report.

1.5 Contributions Plan No. 16

Contributions Plan No. 16 has been created for the Box Hill North Precinct and the contributions received from this Plan will provide for the active and passive open space (pedestrian/cycle links, parks, playgrounds etc), road works, drainage, and administration costs.

The Plan does not identify the proposed subdivision or works as being subject to developer contributions.

1.6 Pre-Lodgement Advice

A Pre-Lodgement meeting was held with Council on dated 6 May 2015 and notes from this meeting have been provided by Council **(Appendix 1)**. These notes outline the following key issues:

Table 1. Pre-Lodgement Meeting Notes

Key Issue/Requirement	Section of SEE	Appendix
Referral required to NSW Office of Water	Section 4.1.1	N/A
Concurrence from Transgrid	Section 3.2	N/A
Matters of ecology, tree removal and flooding must be addressed and related back to the Masterplan and eventual development of site.	Section 3.2, 4.1.1 and 5.5	Appendix 9, 10 and 11
Flood behaviour along watercourse within the site needs to be considered in the context of the flood impact assessment report and associated modeling.	Section 3.2 and 4.1.1	Appendix 11
Demonstrate how the pad level proposed for Lot 1 is linked to the eventual development of this lot.	Section 3.2	Appendix 4
Engineering plans must include flood levels taken from the flood impact assessment report and associated modeling. Needs to be demonstrated that the filling proposed relates to the same, and that the works detailed are consistent with the modelled landform.	Section 3.2	Appendix 4
Demonstrate on a separate plan where the lot boundary sits with respect to the RE1 and R3 zone boundary. Also provide an indicative road/subdivision block layout showing how the local water centre lot can be accommodated within the wider development footprint.	N/A	Appendix 4
With respect to the dam dewatering, details must be submitted with the development application.	Section 3.2	Appendix 4
To satisfy NOW, must clearly show the extent of works and their proximity to the natural watercourse.	Section 3.2 and 4.1.1	Appendix 4
Need to provide comment on the proposed/possible use of Lot 1 and why it is needed and what processes will follow for it to be eventually developed as a local water centre.	Section 3.1	N/A

2. SITE ANALYSIS

2.1 Property Description and Existing Development

This application relates to 153 Boundary Road, Box Hill as shown in **Figure 1 & 2** below. The site is legally defined as Lot 10 in DP 593517. The Survey Plan of the subject site is provided in **Appendix 2**.

The subject site has an area of 10.13ha with a frontage to Boundary Road of 289.87m and a secondary frontage to Red Gables Road of 331.96m. The subject site currently contains a dwelling house with an ancillary farm building.

The site contains an electrical easement through the middle of the site approximately 85m wide and drainage easement along the eastern boundary approximately 5m wide.

The site is currently used primarily for low intensity farming and agricultural purposes. It also contains a farm dams located towards the eastern boundary.

2.2 Site Context

The subject site is located within the suburb of Box Hill, approximately 48 kilometres north-west from the Sydney Central Business District and lies within an area characterised predominantly by large lot rural-residential development and low intensity agricultural land uses.

The Box Hill North Precinct is located on the urban fringe of the Shire, with an area of approximately 380ha. The precinct is located directly north of the Box Hill Growth Centres Precinct and is bounded by Old Pitt Town Road, Boundary Road, Maguires Road and Janpieter Road.

Windsor Road (approximately 2.6km south) serves as the main classified road of the locality and connects to Terry Road providing connectivity to the Box Hill North Precinct.

The Site Context Map in **Figure 3** below illustrates the site's location and surrounding areas.

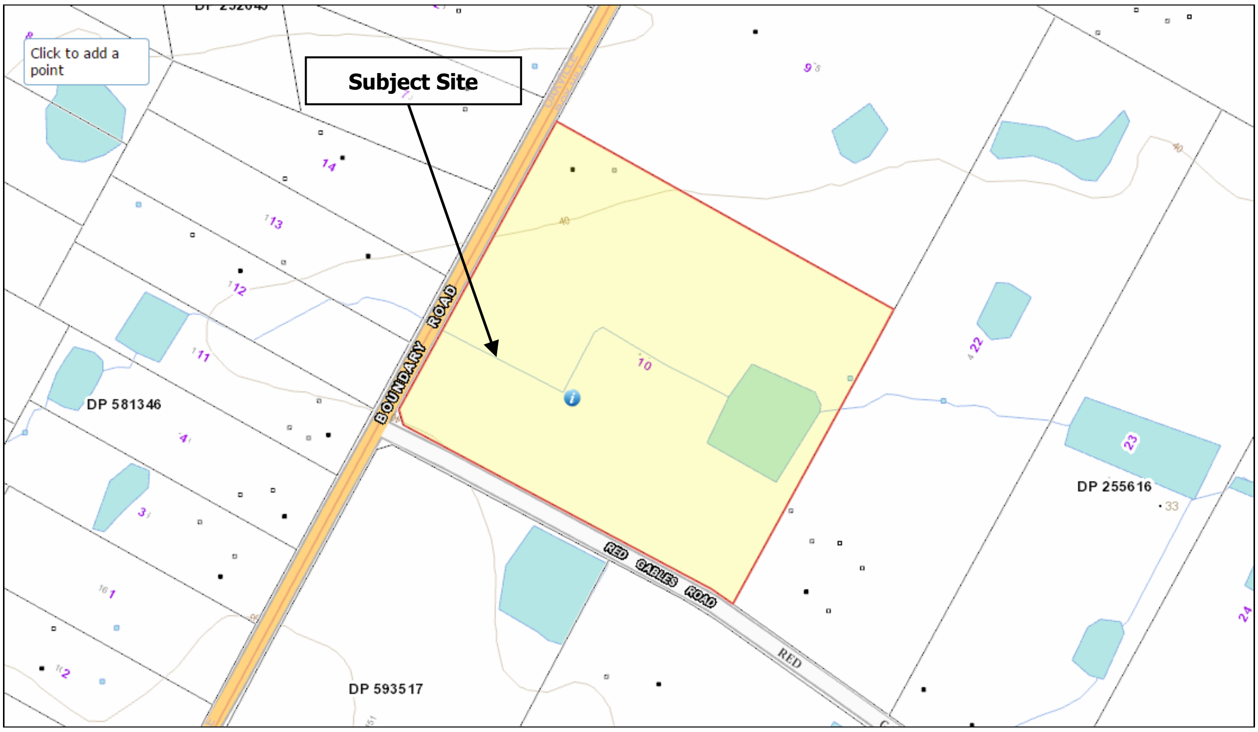

Figure 1: Site Location Map (Land and Property Information, 2015)

Figure 2: Aerial Map (Land & Property Information, 2015)

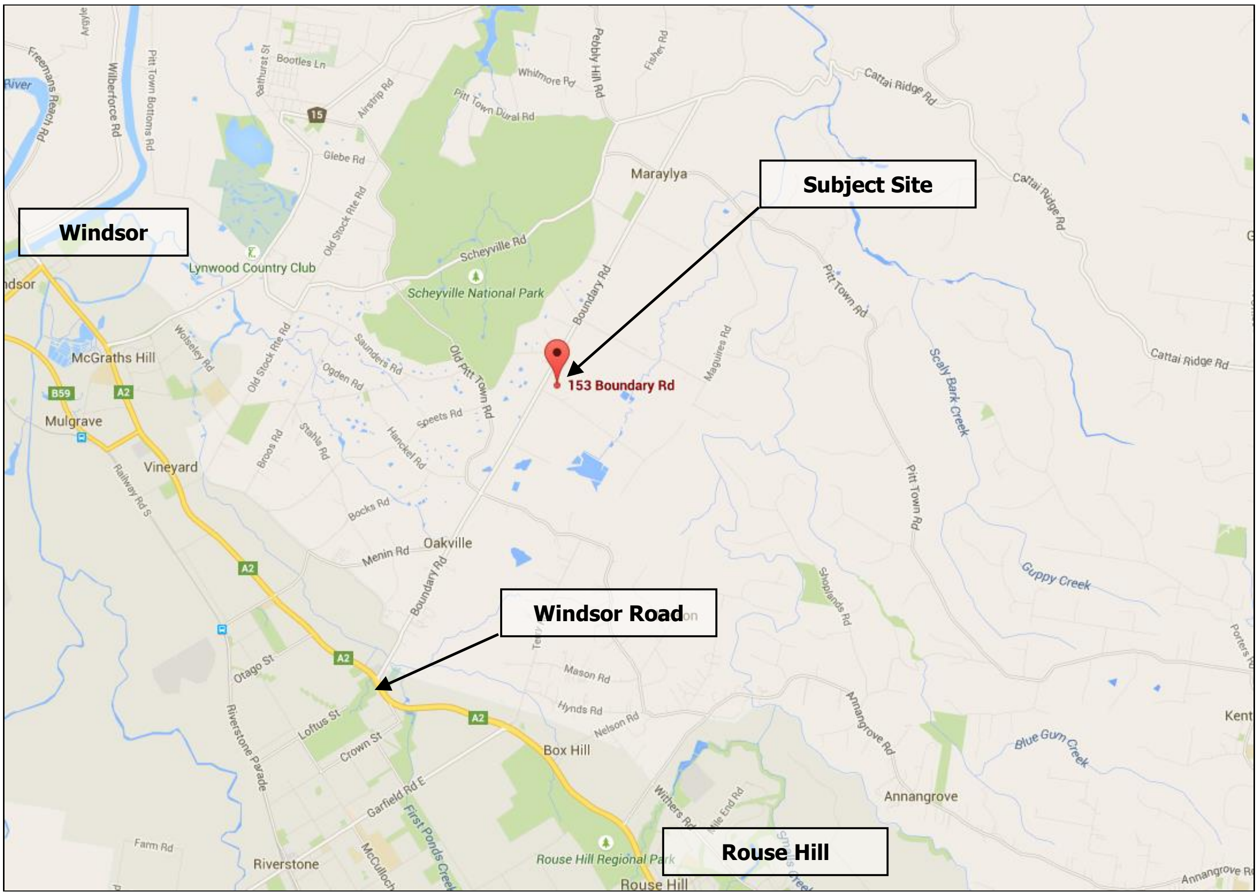

Figure 3: Site Context Map (Google Maps, 2015)

2.3 Box Hill North Masterplan

As previously discussed the subject site is located within the Box Hill North Precinct. The Box Hill North Precinct and Masterplan are illustrated in **Figure 4** below and provided in **Appendix 3**.

Figure 4: Box Hill North Masterplan (Box Hill North DCP, 2012)

3. PROPOSED DEVELOPMENT

3.1 Overview of Proposal

This application seeks approval for subdivision, earthworks and dam relocation within the subject site.

The aim of the proposal is to create a suitable site for the future development of a water recycling facility, known as a Local Water Centre (within proposed Lot 1) to service the Box Hill North Precinct. The subject site has been selected as it is positioned appropriately to provide water services across the development.

The development of Box Hill North will be serviced by a pressure sewer network linked to a water recycling facility known as a local water centre. The water recycling facility will treat sewage and generate recycled water for the use throughout the Box Hill North. In order to develop the local water centre on site the site (proposed Lot 1) is to be rezoned to SP2 Infrastructure via a Planning Proposal which is currently being prepared. Once the proposed Lot 1 is rezoned SP2 Infrastructure the local water centre may be developed under *State Environmental Planning Policy (Infrastructure) 2007*.

3.2 Details of Proposal

The subject development application seeks approval for the following:

Two (2) Lot Torrens Title Subdivision, Earthworks and Dam Relocation

Subdivision Layout

The site is proposed to be subdivided into two (2) lots as demonstrated in drawing no. 997604/DA71 in **Appendix 4** and **Figure 5**. The existing and proposed lots are outlined in the table below.

Existing Lot 10	Proposed Lot 1	Proposed Lot 2
10.13ha	1ha	9.13ha

Bulk Earthworks

As demonstrated in the Cut & Fill Plan (997604/DA73) in **Appendix 4**. The majority of the fill proposed has been positioned within proposed Lot 1 to create a suitable pad site for the future Local Water Centre as well as within part of the existing dam. Cut has been proposed directly to the north of the existing dam where the dam is to be relocated to.

The following quantities have been applied for the proposed cut and fill within the site:

- Cut: 11,410m^3
- Fill: 26,360m^3
- Balance: 14,950m^3

The proposed bulk earthworks have been designed in accordance with The Hills Shire Council's Engineering Specifications. An emphasis has been placed on the impact of the development on the adjacent creek corridor. The proposed development includes the relocation of the existing farm dam further north to maintain the detention requirements for the watercourse as outlined in the Flood Impact assessment report.

The design of the fill levels for the bulk earthworks has been based on the existing levels in Red Gables Road with a shallow grade towards the corridor for future drainage of the site. The filling works do not affect the adjoining future development of the masterplan estate and follow proposed overall catchment boundaries.

The engineering plans **(Appendix 4)** include flood levels taken from the flood impact assessment report to relate to levels within the proposed dam and corridor. Included in the engineering set accompanying the development application are the following plans:

- Overlay of the subdivision plan with the zoning plans to show the proposed site in relation to the RE1 and R3 zone boundaries.
- Indicative road and lot layout of the adjacent masterplan with the future Local Water Centre site integrated to show orderly development.

The existing site and all the existing service connections are located within the proposed Lot 2 of the subdivision including wastewater and will be retained as part of this development application.

Finally this development application is only the initial step for the Local Water Centre site with the proposed infrastructure requiring a Planning Proposal to rezone the site to allow the development of the Local Water Centre under the Infrastructure SEPP. The purpose of the site will be to provide future sewer and recycled water infrastructure for the entire Box Hill North precinct.

Dam Relocation

The proposal includes the relocation of the existing farm dam further north to maintain the detention requirements for the watercourse as outlined in the Flood Impact Assessment. The existing dam is proposed to be relocated approximately 65m towards the northern boundary of the site so it is not impacted upon by the future Local Water Centre.

Soil & Water Management

The Soil & Water Management Plan (Plan No. 997604/DA75 in **Appendix 4**) demonstrates the array to mitigation measures being applied to manage the resultant ground levels and water diversions. The earthworks propose to incorporate the following:

- Straw bales within the riparian corridor to provide rapid control of runoff and suspended sediment.
- Surface inlet sediment traps to prevent contaminated water leaving the site.
- Sediment fencing to prevent the concentration of stormwater run-off. This is to be provided within the subject site as well as around the topsoil stockpiles within the north east corner of the proposed Lot 2.
- Stabilised site access has been provided at the southern boundary of proposed Lot 1 off Red Gables Road to reduce the tracking of sediment off the site and onto Council's roads and stormwater system.
- Diversion drains to transport stormwater runoff to the disposal area.

Easements

The site contains two existing easements including a drainage easement along the eastern boundary of the site and an electrical easement which runs through the middle of the site. Proposed Lot 1 does not encroach on either easement and the future development of the Local Water Centre is unlikely to impact on these.

Preliminary discussions have been held with Transgrid and a meeting arranged to discuss the proposal and future development of the site.

Orderly Development of Proposed Lot 2

The Orderly Development Layout Plan provided in **Appendix 5** demonstrates how proposed Lot 2 is likely to be subdivided and development within Precinct D of Box Hill North following subdivision and establishment of the Local Water Centre.

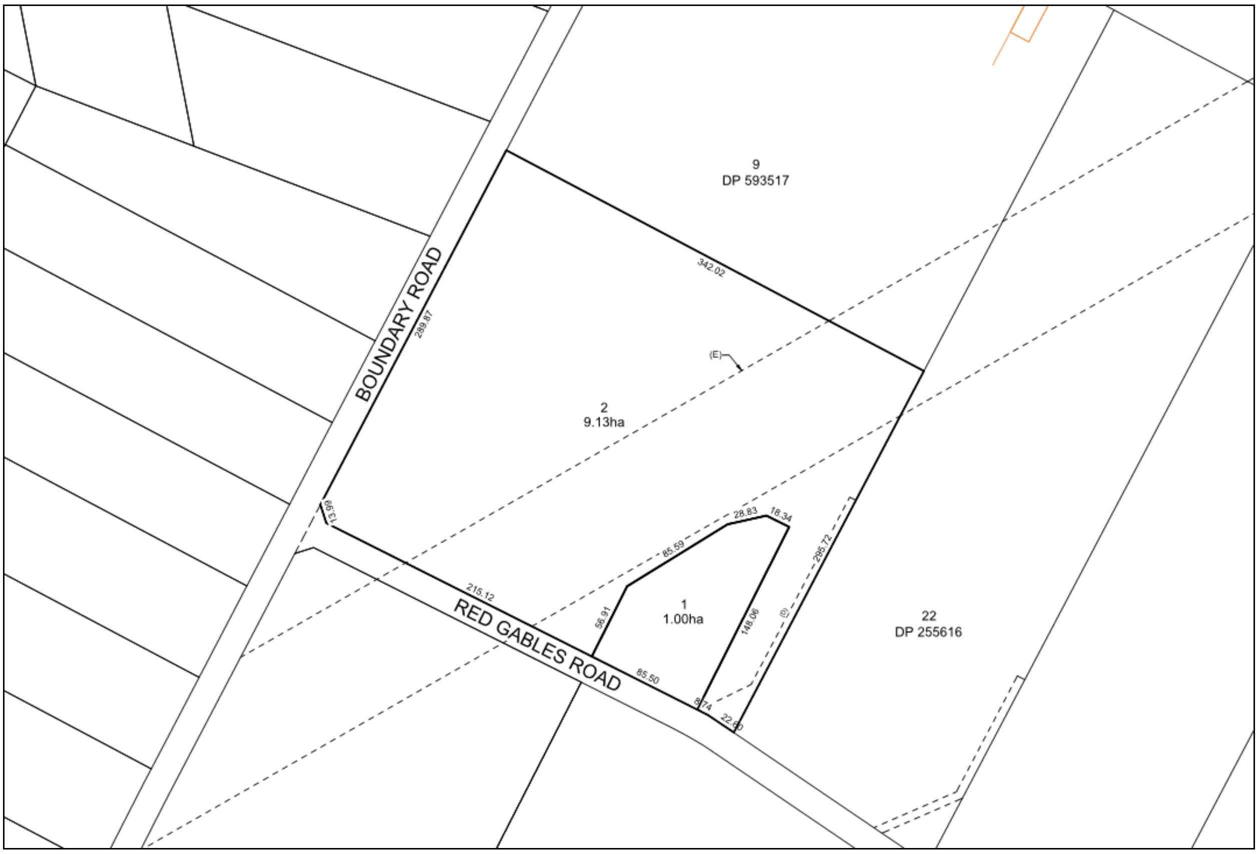

Figure 5. Plan of Subdivision (extract) (Source: J. Wyndham Prince, 2015)

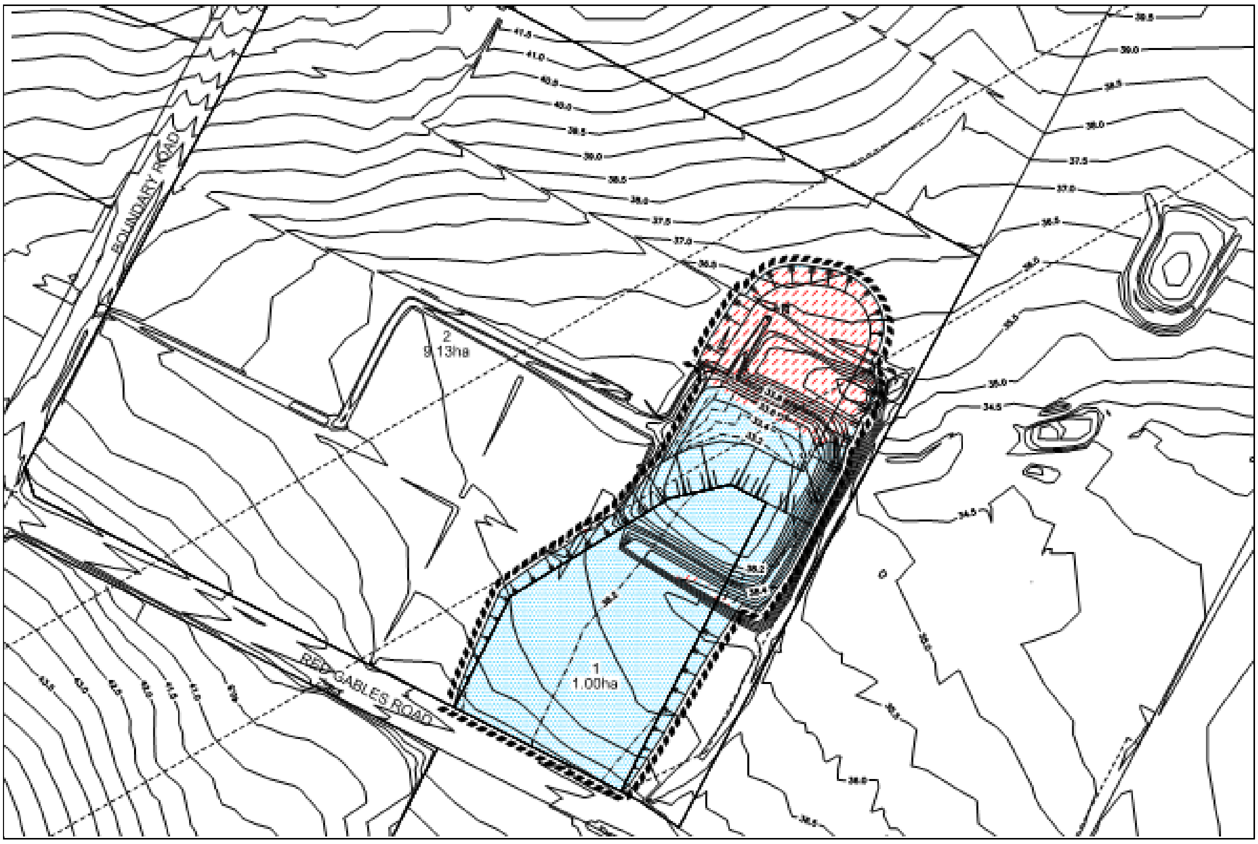

Figure 6. Cut & Fill Plan (extract) (Source: J. Wyndham Prince, 2015)

3.3 Development Plans

The following plans in **Table 2** have been prepared by J. Wyndham Prince for the purpose of the proposal and are provided in **Appendix 4.**

Table 2. Development Plan Register

Plan No.	Plan Name	Revision No.
997604/DA70	COVER SHEET & INDEX	C
997604/DA71	SUBDIVISION PLAN LOT 10 , DP 593517	C
997604/DA72	ENGINEERING PLAN LOT 10, DP 593517	B
997604/DA73	CUT/FILL PLAN LOT 10, DP 593517	B
997604/DA74	SITE SELECTIONS LOT 10, DP 593517	B
997604/DA75	SOIL & WATER MANAGEMENT PLAN LOT 10, DP 593517	B
997604/DA76	ZONING LAYOUT LOT 10, DP 593517	A

4. PLANNING FRAMEWORK

Section 79C of the *Environmental Planning and Assessment Act 1979*, requires that in determining a development application, a consent authority is to take into consideration the following matters as are of relevance to the development:

(a) the provisions of:
- *(i) any environmental planning instrument, and*
- *(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and*
- *(iii) any development control plan, and*
- *(iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and*
- *(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and*
- *(v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979),*

that apply to the land to which the development application relates,

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,
(c) the suitability of the site for the development,
(d) any submissions made in accordance with this Act or the regulations,
(e) the public interest.

These matters are discussed in the following sections.

4.1 Environmental Planning Instruments

4.1.1 Water Management Act 2000

The object of the *Water Management Act 2000* is the sustainable and integrated management of the state's water for the benefit of both present and future generations.

The subject site is located within 40m of a natural watercourse being Cataract Creek which runs through Precinct H feeds into the existing farm dam. The proposal seeks approval pursuant to Clause 91(2) of the *Water Management Act 2000* for a controlled activity:

> *91(2) A controlled activity approval confers a right on its holder to carry out a specified controlled activity at a specified location in, on or under waterfront land.*

The existing farm dam within the subject site is to be relocated for the construction of the future Local Water Centre. The relocation of the dam is not considered to impact upon the existing watercourse and the process will be carried out in accordance with the NSW Office of Water guidelines.

In 2012 the New South Wales Office of Water released guidelines for riparian corridors on waterfront land. New rules regarding controlled activities within riparian corridors have been established which provide more flexibility in how riparian corridors can be used. These guidelines have been adopted in developing the riparian corridor strategy for the Box Hill North Precinct. The riparian corridor widths have been determined in accordance with the NSW Office of Water guidelines.

An emphasis has been placed on the impact of the development on the adjacent creek corridor. The proposed development includes the relocation of the existing farm dam further north to maintain the detention requirements for the watercourse as outlined in the Flood Impact Assessment Report in **Appendix 13.**

The design of the fill levels for the bulk earthworks has been based on the existing levels in Red Gables Road with a shallow grade towards the creek corridor for future drainage of the site. The filling works do not affect the adjoining future development of the masterplan estate and follow proposed overall catchment boundaries.

The engineering plans include flood levels taken from the flood impact assessment report to relate levels within the proposed dam and corridor. Included in the engineering set accompanying the development application are the following plans:

- Overlay of the subdivision plan with the zoning plans to show the proposed site in relation to the RE1 and R3 zone boundaries.
- Indicative road and lot layout of the adjacent masterplan with the proposed Local Water Centre site integrated to show orderly development.

The existing site and all the existing service connections are located within the proposed Lot 2 of the subdivision including wastewater and will be retained as part of this development application.

Flood Modelling

The Flood Impact Assessment **(Appendix 13)** for the proposed Local Water Centre within the Box Hill North Precinct has been prepared to support development applications for bulk earthworks, subdivision and development of the site.

The investigation demonstrates that impacts of the Local Water Centre development on the flooding regime can be managed to acceptable levels. The relocation/retention of the existing farm dam within the northern extents of the site will offset the impacts of filling in the floodplain to create a development platform.

There are increases in 1% AEP flood levels within the site and immediately downstream. However, these increases are localised to the riparian corridor. There are also significant decreases to the 1% AEP flood extents and levels in the vicinity of the existing dwelling to the east of the Local Water Centre site.

There are some increases in flood velocities in the more frequent 0.5 EY and 20% AEP events within and immediately downstream of the site. Where flood velocities increase, they are generally still less than 1.5 m/s. Where velocities exceed 1.5 m/s, appropriate erosion control measures will be incorporated into the detailed design to ensure there is no degradation to the creeks.

Therefore, the Flow Systems development will result in some minor redistribution of flows as a result of the development platform and dam relocation, however these impacts are manageable.

Species Impact Statement

Review of the Figures 4.4 & 4.6 in the Species Impact Statement **(Appendix 11)** prepared by Cumberland Ecology has shown that within Lot 10 DP 593517 there is no surveyed native vegetation communities of threatened species or threatened recorded fauna.

Vegetation Management Plan

Section 5.2 and Figure 5.1 of the Vegetation Management Plan **(Appendix 12)** prepared by Cumberland Ecology for Box Hill North outlines the proposed Management zones relating to the proposed site or adjacent sites.

The proposal is considered to result in minimal impact on the natural watercourse and achieves the provisions for controlled activities under Clause 32:

32 Core provisions

The controlled activity and aquifer interference activity planning provisions of a management plan for a water management area must deal with the following matters:

(a) identification of the nature of any controlled activities or aquifer interference causing impacts, including cumulative impacts, on water sources or their dependent ecosystems, and the extent of those impacts,

(b) specification of controlled activities or aquifer interferences which are to require controlled activity approvals or aquifer interference approvals in the area.

The subject site has previously been identified for future residential development and public open space. The proposed subdivision and works acknowledge the surrounding future development and aims to create a site suitable to service these uses within impacting upon the existing watercourse.

As a result of the above the proposal is considered to be consistent with the objectives of the *Water Management Act 2000* as it ensures the sustainable management of water surrounding the site.

It is acknowledged that the proposal requires referral to the NSW Office of Water.

4.1.2 State Environmental Planning Policy No 55—Remediation of Land

Clause 7(1) of *State Environmental Planning Policy No.55 – Remediation of Land* (SEPP 55) requires that a consent authority must not grant development consent on land unless:

a) it has considered whether the land is contaminated, and
b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose

Geotechnique Pty Ltd have carried out geotechnical investigations **(Appendix 7)** for the subject site. Geotechnique's report includes the assessment of soil erodibilty, soil salinity, soil aggressivity, site and road subgrade preparation, batter slopes and saline soil management.

In terms of slope stability Geotechnique describe the topography of the site as being *generally undulating and gently slopes towards the creeks. Inspection did not indicate any signs of slope failure.*

Geotechnique's assessment does not identify the site as being unsuitable for the proposal and provides a number of recommendations and mitigation measures to ensure no adverse impacts result from any proposed earthworks.

As recommended in their Detail Site Investigation (DSI) in 2014 JBS&G Australia Pty Ltd (JBS&G) have prepared a Remediation Action Plan (RAP) **(Appendix 8)**. Following the outcomes of the DSI identifying the state of the site and potential contamination, the RAP has provided Possible Remedial Options (section 5.3) as well as Preferred Remediation Options (section 5.5). JBS&G confirm that as the masterplan for the site has been divided into nine Precincts, the remedial strategies can be applied across the site as a whole, or on a staged basis.

JBS&G conclude that *subject to the successful implementation of the measures detailed in this RAP and subject to the limitations in Section 15, it is considered that the identified impacted soils can be remediated and validated without the need for further management.*

Given the findings and recommendations of the DSI and RAP, the proposed earthworks are considered acceptable subject to the application of the suggested remedial actions. Furthermore the current site conditions and recommended remedial actions the proposal is considered to adequately achieve the objectives and requirements of SEPP No. 55.

4.1.3 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (SEPP Infrastructure) aims to facilitate the effective delivery of infrastructure across the State. A number of mechanisms are provided under the instrument to achieve this outcome, including providing greater flexibility in the location of infrastructure and service facilities.

Schedule 3 lists the types of development that are defined as Traffic Generating Development. Schedule 3 does not identify any of the proposed works or subdivision as requiring referral to the Roads and Maritime Services (RMS) under the provisions of *SEPP Infrastructure.*

4.1.4 Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River

As of 1 July 2009, Regional Environmental Plans (REPs) no longer form part of the environmental planning instrument hierarchy. All existing REPs are now deemed State Environmental Planning Policies (deemed SEPPs). *Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River* (SREP 20) applies to the site as a deemed SEPP.

SREP 20 covers water quality and quantity, environmentally sensitive areas, riverine scenic quality, agriculture, and urban and rural residential development. It controls development that has the potential to impact on the river environment. The plan applies to all parts of the catchment in the Sydney Region including The Hills Local Government Area.

The Hawkesbury-Nepean River SREP aims *to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context.*

The subject site is not identified as being located in an environmentally sensitive area; containing cultural heritage or archaeologically significant items; being within an area of scenic quality; or containing potential contamination for remediation.

Furthermore the proposed works and intended future use of the land are not considered to result in any detrimental impacts within the catchment.

Therefore the proposal requires no further assessment and commentary.

4.1.5 The Hills Local Environmental Plan 2012

The relevant provisions of *The Hills Local Environmental Plan 2012* (THLEP2012) are considered below:

Zoning and Permissibility

The subject site is located within the R3 Medium Density Residential and RE1 Public Recreation zone under the THLEP2012 **(Figure 7)**.

The objectives of these zones are as follows:

R3 Medium Density Residential

- *To provide for the housing needs of the community within a medium density residential environment.*
- *To provide a variety of housing types within a medium density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*
- *To encourage medium density residential development in locations that are close to population centres and public transport routes.*

RE1 Public Recreation

- *To enable land to be used for public open space or recreational purposes.*
- *To provide a range of recreational settings and activities and compatible land uses.*
- *To protect and enhance the natural environment for recreational purposes.*

The proposal is considered to achieve the objectives of the R3 zone as it will create site levels and a topography suitable for a Local Water Centre which will service residential development in the future.

The proposed earthworks have considered the RE1 Public Recreation zoned land in that these areas have been identified as future public open space and will not be encroached as part of this application and future Local Water Centre.

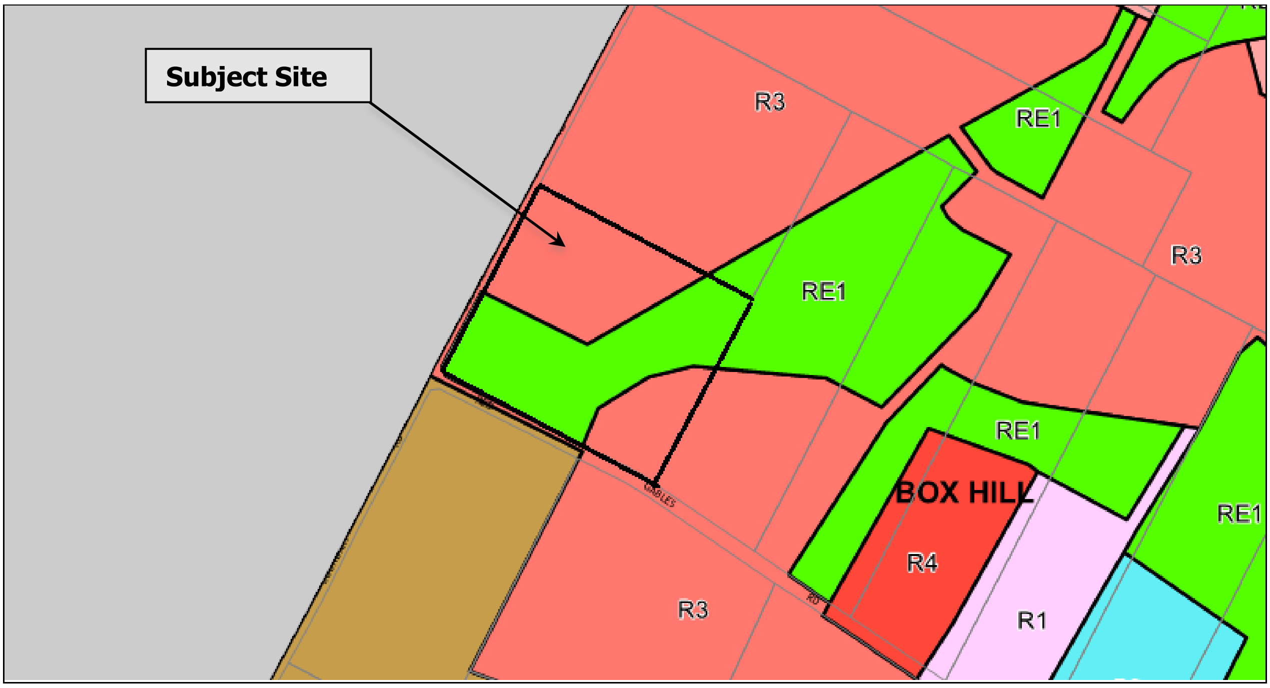

Figure 7. The Hills Local Environmental Plan 2012 Zoning Map (Source: THLEP 2012)

Principle Development Standards

Clause 4.1 Minimum subdivision lot size

The site is subject to minimum lot size of 450m^2.

The proposed subdivision result in two (2) lots being 9.13ha and 1ha. The proposal therefore achieves the minimum lot size requirements of Clause 4.1.

Figure 8. The Hills Local Environmental Plan 2012 Lot Size Map (Source: THLEP 2012)

Clause 4.3 Height of Buildings

The Height of Buildings Map identifies the site as having a maximum building height limit of 10m. The proposal is however not subject to the standards within Clause 4.3 as no buildings are proposed as part of this development application.

Clause 4.4 Floor Space Ratio

The Floor Space Ratio (FSR) Maps do not identify the site as being subject to an FSR standard. Furthermore as the proposal does not seek approval for the construction of any buildings Clause 4.4 does not apply to this development application.

Clause 4.6 Exception to development standards

The proposal does not seek consent for a variation to any development standard within THLEP2012.

Miscellaneous provisions

Clause 5.9 Preservation of trees or vegetation

The proposed works do not include the removal of any trees within the subject site.

Clause 5.10 Heritage Conservation

The site is not identified as an item of environmental heritage, nor is it located within close proximity of an item of environmental heritage. The proposal will not result in any impact on the heritage significance of the Hills Local Government Area.

Clause 5.11 Bush fire hazard reduction

The Hill Bushfire Prone Land Map **(Figure 9)** identifies the site being within bushfire prone as Vegetation Buffer – 100m and 30m along the western boundary. The proposed works however are not located within the bushfire prone land.

Figure 9. The Hills Bushfire Prone Map (Source: The Hills Bushfire Prone Maps, 2015)

Urban Release Areas

The subject site is identified as being within an 'Urban Release Area' under THLEP2012.

Clause 6.2 Public utility infrastructure

The proposal does not include development of any land use which requires public utility infrastructure. The proposal is for the creation of an additional lot and pad site for the purpose of a Local Water Centre which will service future development within the Box Hill North Precinct. The establishment of the Local Water Centre on site is subject to a Planning Proposal and environmental assessment.

Additional local provisions

Clause 7.1 Acid Sulfate Soils

The Acid Sulfate Soils Maps do not identify the subject site as containing Acid Sulfate Soils.

Clause 7.6 Landslide Risk

The Landslide Risk Map does not identify the subject site as being subject to potential land movement or slip.

4.2 Development Control Plans

4.2.1 The Hills Development Control Plan 2012

The Hills Development Control Plan 2012 (THDCP2012) provides a comprehensive framework for development in the Hills. The relevant sections of the THDCP2012 as they apply to the proposal are addressed in the Development Control Plan Compliance Table **(Appendix 6)**.

Box Hill North Development Control Plan (Part D Section 17)

The Box Hill North DCP was created through approval of Planning Proposal 1/2014/PLP to communicate the planning, design and environmental objectives and controls applicable for the precinct. Although the subject site is located outside of the Box Hill North Precinct, consideration has been given to this part of the DCP as the works proposed include the provision of a collector road to the south of the precinct.

The objectives of the Box Hill North DCP are as follows:

(i) To focus business and community activities in and around the Town Centre with a mix of retail, commercial and community uses.

(ii) To create a mixed use Town Centre which has main street characters, is pedestrian friendly and offers high levels of amenity for residents, workers and visitors.

(iii) To accommodate up to 10,000m^2 of non-residential floor space principally within the Town Centre.

(iv) Accommodate approximately 4,000 dwellings within a range of housing products and densities.

(v) Promote innovative housing types/design.

(vi) Encourage walking and cycling and use of public transport.

(vii) Provide a hierarchy of roads and paths with links to the surrounding area.

(viii) Create safe and walkable neighbourhoods.

(ix) Provide community and social infrastructure including schools, local parks, district sporting fields that provide for a range of facilities and opportunities.

(x) Accommodate water sensitive urban design measures, including the use of recycled water and integrated options for water supply, wastewater and stormwater servicing.

(xi) Protect and rehabilitate waterways and riparian corridors as natural systems.

The proposal is considered to be consistent with the objectives of the Box Hill North DCP as it establishes ground levels and a topography suitable for future development of the Box Hill North Precinct.

4.3 Voluntary Planning Agreement Commitments

The Voluntary Planning Agreement (VPA) for Box Hill North does not contain any items under the 'Items of Work', under Schedule 3, which are to be considered for this development application. As such the proposed works are not subject to the requirements of the VPA.

4.4 Contributions Plan No. 16 – Box Hill North Precinct

Contributions Plan No. 16 identifies the need for transport facilities, water cycle management facilities, open space facilities, and land acquisition. The proposal does not include the provision of any of these items and the proposed works are not subject to developer contributions under Contributions Plan No. 16.

4.5 Plans, Policies and Strategies

4.5.1 A Plan for Growing Sydney

On 14 December 2014, the NSW Minister for Planning released *A Plan for Growing Sydney* (the Plan). The Plan is intended to guide land use planning decisions for the next 20 years and presents a strategy for accommodating Sydney's predicted population growth over this time. Whilst the Plan supersedes the *Metropolitan Plan for Sydney to 2036* (former Plan), it generally maintains and builds on the former Plan's policies and objectives, including the:

a. expansion and enhancement of Western Sydney;
b. provision of increased housing numbers and densities near transport and employment areas; and
c. provision of greater connectivity throughout Sydney and with other Australian centres.

The new Plan is, however, more specific in its objectives and in setting targeted locations for implementation of those objectives, compared to previous metropolitan strategies.

To achieve the Government's vision for Sydney as *a strong global City, a great place to live*, the Plan sets out four main goals, for Sydney to be:

- a competitive economy with world-class services and transport;
- a City of housing choice with homes that meet our needs and lifestyles;
- a great place to live with strong, healthy and well connected communities; and
- a sustainable and resilient City that protects the natural environment and has a balanced approach to the use of land and resources.

Although the proposal is not directly influenced or impacted by the Plan, the intent of the proposal is to service and assist in the orderly delivery of the Box Hill North Precinct. The precinct supports the Plan through the provision and opportunity for additional housing choice that meets the needs and lifestyles within the region. Furthermore the precinct Masterplan has been designed to connect efficiently with existing communities while also protecting the surrounding natural environment.

The Box Hill North Precinct is located within the West Central Subregion which encompasses the entire The Hills LGA. The West Central Subregion is discussed below.

4.5.2 Draft West Central Subregional Strategy

The West Central Subregion has been identified as an area with significant focus on infrastructure investment and intensive growth over the next 20 years. The strategy focuses on the provision of a network of centres to support the Greater Parramatta region.

The priorities for the West Central Subregion are as follows:

- A competitive economy;
- Accelerate housing supply, choice and affordability and build great placed to live; and
- Protect the natural environment and promote its sustainability and resilience.

The Box Hill North Precinct is consistent with the West Central Subregion Strategy in that it will:

- contribute to the increased housing opportunities of The Hills LGA with the provision of over 4,000 new residential lots/dwelling;
- contribute to achieving housing targets within the West Central Subregion; and
- protect the existing natural environment within the precinct and its surrounds.

Given the nature of the proposal and its role in supporting and servicing the Box Hill North Precinct for the future provision of additional housing, the proposal is considered to achieve the objectives of *A Plan for Growing Sydney*.

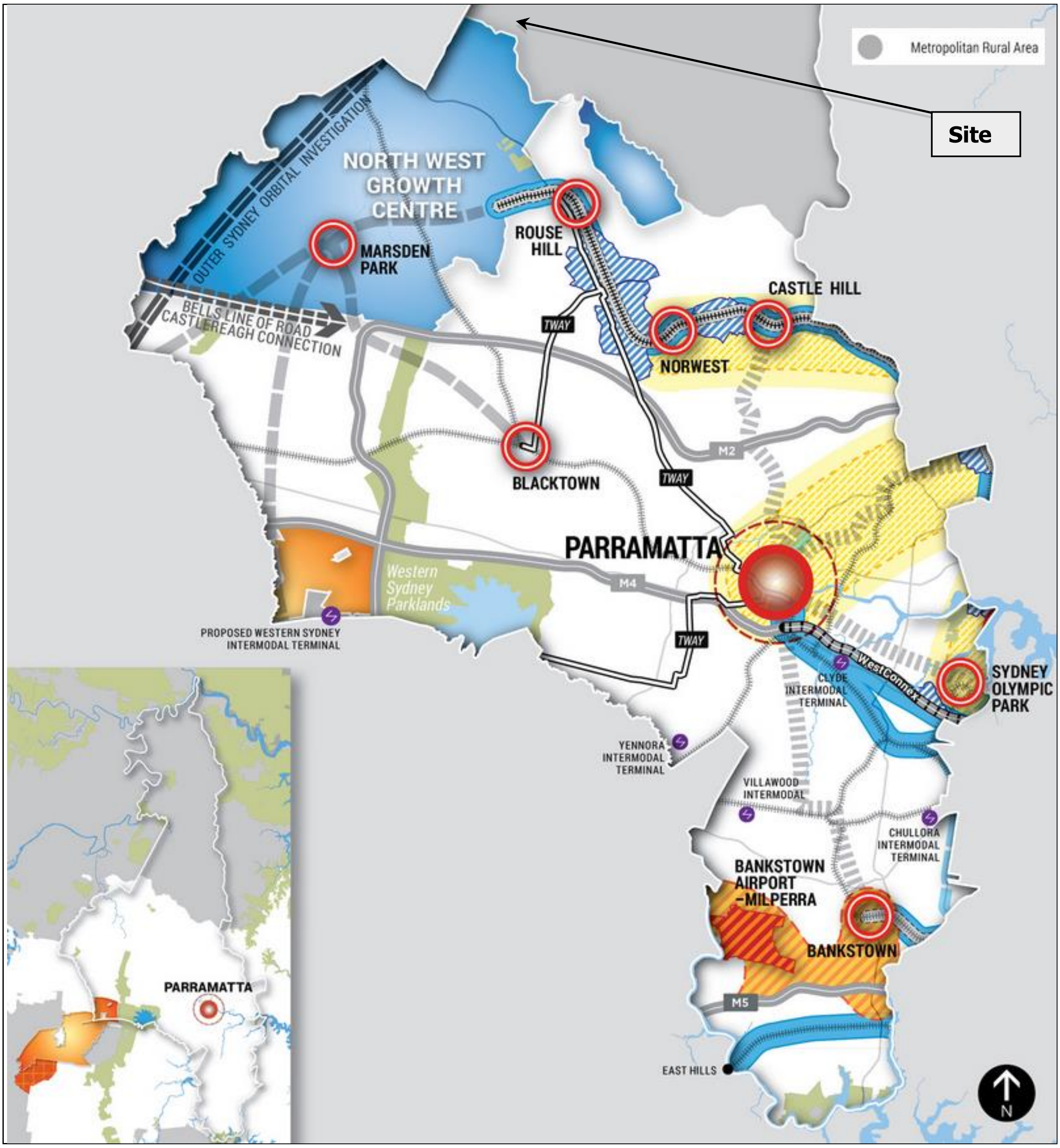

Figure 10. West Central Subregion Map (Source: A Plan For Growing Sydney, 2015)

5. LIKELY IMPACTS OF THE DEVELOPMENT

Pursuant to Section 79C(1)(b), the Likely Impacts of the proposed development are assessed below:

5.1 Context and Setting

The subject site is located within the R3 Medium Density Residential and RE1 Public Recreation zones and the character of this site can be is defined as large lot rural/residential. This character is consistent throughout the immediate vicinity within Box Hill.

The site and its surrounds are located on the urban fringe of The Hills Shire and is generally cleared and consisting mainly of grassed land.

The land use pattern of the precinct consists mainly of low density rural housing with a significant portion of development being detached dwelling houses and ancillary outbuilding.

The proposed earthworks have considered the RE1 Public Recreation zoned land in that this land has been identified for future public open space and will be not be impacted upon as part of the proposed works.

The creation of the proposed pad site is considered favourable in terms of location and setting as this is a suitable position for the future Local Water Centre to adequately service the precinct.

5.2 Access, Transport and Traffic Impact

The proposal does not include the creation of any new roads or works to any existing roads. The carrying out of the proposed earthworks will have no immediate impact on the surrounding sites and land uses in terms of vehicular movements and accessibility.

5.3 Social-Economic Impact

The Box Hill North precinct will result in an increased population density and commercial activity within precinct resulting in greater economic benefits to the area.

The proposal will also offer increased provision of pedestrian activity and interaction within the locality. The provision of urban renewal will improve visual and environmental amenity of the area, creating spaces which complement adjacent land uses.

Furthermore, the Box Hill North Precinct will result in the creation of a retail centre, school, community facilities and sports fields within the town centre, creating a sense of community within the precinct and providing significant social-economic benefit to the area.

5.4 Heritage

The site is not identified as an item of environmental heritage, nor is it located within close proximity of an item of environmental heritage. The proposal will have no impact on the heritage significant of The Hills Local Government Area.

5.5 Flora and Fauna

The proposal does not seek the removal of any trees from the subject as a result of the proposed works.

The overall Box Hill North Precinct contains critical endangered ecological communities including Cumberland Plain Woodland and Shale Sandstone Transition Forest. The subject site or those adjoining however does not contain any of these communities which are subject adverse impacts.

Species Impact Statement

Review of the Figures 4.4 & 4.6 in the Species Impact Statement **(Appendix 11)** prepared by Cumberland Ecology has shown that within lot 10 DP 593517 there is no surveyed native vegetation communities of threatening species or threatened recorded fauna.

Vegetation Management Plan

Section 5.2 and Figure 5.1 of the Vegetation Management Plan **(Appendix 12)** prepared by Cumberland Ecology for Box Hill North outlines the proposed Management zones relating to the proposed site or adjacent.

5.6 Geotechnical Impacts

Geotechnique Pty Ltd have carried out geotechnical investigations **(Appendix 7)** for the subject site. Geotechnique's report includes the assessment of soil erodibilty, soil salinity, soil aggressivity, site and road subgrade preparation, batter slopes and saline soil management.

In terms of slope stability Geotechnique describe the topography of the site as being *generally undulating and gently slopes towards the creeks. Inspection did not indicate any signs of slope failure.*

Geotechnique's assessment does not identify the site as being unsuitable for the proposal and provides a number of recommendations and mitigation measures to ensure no adverse impacts result from any proposed earthworks.

As a result of these finding, further investigations for the proposed works are not considered necessary to support the proposal. All future earthworks to be carried out on site are to be managed and monitored by the Geotechnical Engineer.

5.7 Contamination

As recommended in their Detail Site Investigation (DSI) in 2014 JBS&G Australia Pty Ltd (JBS&G) have prepared a Remediation Action Plan (RAP) **(Appendix 8)**. Following the outcomes of the DSI identifying the state of the site and potential contamination, the RAP has provided Possible Remedial Options (section 5.3) as well as Preferred Remediation Options (section 5.5). JBS&G confirm that as the masterplan for the site has been divided into nine Precincts, the remedial strategies can be applied across the site as a whole, or on a staged basis.

JBS&G conclude that *subject to the successful implementation of the measures detailed in this RAP and subject to the limitations in Section 15, it is considered that the identified impacted soils can be remediated and validated without the need for further management.*

Given the findings and recommendations of the DSI and RAP, the proposed subdivision and works are considered acceptable subject to the application of the suggested remedial actions.

5.8 Aboriginal / Cultural Heritage

An Aboriginal Archeological Assessment **(Appendix 9)** and Cultural Heritage Assessment **(Appendix 10)** has been carried out by Kelleher Nightingale Consulting Pty Ltd (KNC) for the subject site. The assessment identifies the subject site is identified as containing "Low Level" Archaeological Potential and is void of any artefact scatter.

Given the findings and assessment carried out by KNC, it is considered reasonable to conclude that the proposed subdivision and earthworks will not result in significance harm to the overall archaeological significance of the Box Hill North Precinct.

5.9 Cumulative Impacts

The proposal will result in the creation of a pad site suitable for the future development of a Local Water Centre which will subsequently service residential and commercial development throughout Box Hill North.

Given the nature and intent of the proposal no foreseeable adverse cumulative impacts are envisaged to result from the proposed works.

The Local Water Centre is subject to a separate Planning Proposal and environment assessment.

5.10 The Suitability of the Site for the Development

The site is suitable for the proposed works and subdivision as well as the future intent of the land for the Local Water Centre. Apart from the appropriate relocation of the existing dam the site does not contain any hazards or sensitive features which would otherwise preclude the development.

5.11 Any submissions made in accordance with the Act

No submissions have been received in relation to the proposed development.

5.12 The Public Interest

The proposed subdivision and earthworks will not result in any adverse impacts on the surrounding properties and general public.

The proposal is considered to be in the interest of the public as it will create a site suitable to cater for the future Local Water Centre to service Box Hill North which will ultimately provide for additional housing and employment opportunities and promote a more vibrant urban form and character within the locality. Furthermore the future Local Water Centre to be established in proposed Lot 1 is a highly sustainable feature and approach to a recycled water network.

The provision of urban renewal will improve visual and environmental amenity of the area, creating spaces which complement adjacent land uses.

Additionally, no adverse environmental impact is to result from the proposal.

6. CONCLUSION

The proposal has been assessed against Council's existing and draft planning policies. It is the opinion of McKenzie Group Planning that the proposal should warrant a positive assessment for the following compelling reasons:

- The proposal is consistent with State and local strategic planning policies. The proposal positively contributes to state strategic planning requirements to facilitate new dwelling approvals in targeted urban areas.
- The proposal has been determined to comply with Council's current provisions. Where the proposal does not fully comply with a numeric provision, the report has demonstrated the objectives and intent of the numeric provision has been met and therefore achieving compliance.
- The proposal positively responds to the site's immediate location and surrounding locality. The proposed subdivision, dam relocation and earthworks have been designed having close consideration of Council's requirements.
- The proposal is an essential step in delivering future commercial and community development within Box Hill North including a retail centre, school, community facilities and sports fields within the town centre which will result in significant community benefits
- The proposal is consistent with the Box Hill North Masterplan and will contribute to the effective delivery of the future water services throughout the precinct.

Having considered all the relevant matters, we conclude that the proposal represents sound and orderly development of the land that upholds Council's vision to transform the existing site for additional housing opportunities.

THE
HILLS
Sydney's Garden Shire

THE HILLS SHIRE COUNCIL
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ABN No. 25 034 494 656

20 November, 2015

Mr B Stokes
Level 1, 580 High St
PENRITH NSW 2750

Our Ref: 1634/2015/ZB

Dear Sir/ Madam

NOTICE OF DETERMINATION OF A DEVELOPMENT APPLICATION

In accordance with Section 81 of the Environmental Planning and Assessment Act 1979

Notice is given of determination by the consent authority of the development application described below.

Development:	Subdivision creating two residue lots
Development Application No.:	1634/2015/ZB
Property Description:	Lot 10 DP 593517 153 Boundary Road, BOX HILL NSW 2765
Applicant:	Mr B Stokes
Owner:	Mr J Sant
Decision:	Approved
Determination Date:	18 November 2015

The development application has been determined by granting consent subject to conditions. The conditions of consent are attached to this notice and are deemed necessary by The Hills Shire Council in accordance with Part 4 Division 2 of the Environmental Planning and Assessment Act 1979.

Lapsing of Consent

This consent will lapse unless development is physically commenced within five years from the determination date, or as otherwise provided under Section 95 of the Environmental Planning and Assessment Act 1979 which may vary the date the consent lapses.

Right of Review
Section 82A of the Environmental Planning and Assessment Act 1979 confers on the applicant the right of review of determination subject to such a request being made within six months of the determination date and accompanied by a fee as prescribed in Clause 257 of the Environmental Planning and Assessment Regulation 2000. For development applications lodged before 28 February 2011, the statutory timeframe for review is twelve months from the determination date. Section 82(A)(1) of the Environmental Planning and Assessment Act 1979 does not permit a review of determination in respect of:

a) Designated development, or
b) Integrated development, or
c) An application by the Crown under Division 4.

Right of Appeal
Section 97 of the Environmental Planning and Assessment Act 1979 confers on the applicant who is dissatisfied with the determination of a consent authority, a right of appeal to the NSW Land and Environment Court exercisable within six months after receipt of this determination. For development applications lodged before 28 February 2011, the statutory timeframe for appeal is twelve months from the determination date.

CONDITIONS OF CONSENT

GENERAL MATTERS

1. Approved Plan
The subdivision must be carried out in accordance with the approved plan of subdivision prepared by J. Wyndham Prince, Plan No. 997603/DA71, Revision E, dated 28/10/2015 and other supporting documentation except where amended by other conditions of consent.

2. Compliance with NSW Department of Primary Industries - Office of Water Requirements
Compliance with the requirements of the NSW Department of Primary Industries - Office of Water throughout all stages of the subdivision as outlined in their letter dated 4 August 2015 Ref 10 ERM2015/0581 attached to this consent as Appendix A.

3. Compliance with Transgrid Requirements
Compliance with the requirements of Transgrid throughout all stages of the subdivision as outlined in their letter dated 15 October 2015 attached to this consent as Appendix B.

4. Subdivision Certificate Pre-Lodgement Meeting / Check
Prior to the submission of a Subdivision Certificate application a draft copy of the final plan, administration sheet and Section 88B instrument (where included) must be submitted in order to establish that all conditions have been complied with.

Street addresses for the lots within this subdivision will be allocated as part of this preliminary check process, for inclusion on the administration sheet.

5. Planning Agreement
The obligations in the Planning Agreement between The Hills Shire Council and E.J. Cooper and Son Pty Ltd, dated 12 March 2015 (Planning Agreement) must be performed in accordance with the terms of the Planning Agreement including, but not limited to, the completion of Capital Works identified in Schedule 3 of the Planning Agreement and the Dedication of Land identified in Schedule 1.

6. Imported 'Waste Derived' Fill Material
The only waste derived fill material that may be received at the development site is:

- excavated natural material (within the meaning of the Protection of the Environment Operations Act 1997); or

- any other waste-derived material the subject of a resource recovery exemption under clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005 that is permitted to be used as fill material.

Any waste-derived material the subject of a resource recovery exemption received at the development site must be accompanied by documentation as to the material's compliance with the exemption conditions and must be provided to the Principal Certifying Authority on request.

7. Contamination Assessment & Site Remediation
The recommendations of the Geotechnical & Salinity Assessment prepared by Geotechnique Pty Ltd, referenced as 13174/1-AA, dated 26 August 2014 and submitted as part of the Development Application are to be implemented as part of this approval. In particular; *Section 7.4 Site Preparation* of the assessment.

8. Dam Dewatering Requirements
The recommendations of the Dam Dewatering Report prepared by J. Wyndham Prince Pty Ltd, referenced as 109976_FS_DD_Rpt1B.doxc, dated 22 October and submitted as part of the Development Application are to be implemented as part of this approval. In particular:

- The dam water discharge rate of 75m^3/ day via surface irrigation over a 3.2 hectare area on the site is to be complied with. All practical measures to ensure water pollution does not occur are to be implemented.
- Testing of the sediment is to occur prior to removal. If the testing indicates elevated levels of any chemical tested, an assessment is to be provided to Council's Environmental Health Section advising on whether the material is suitable for reuse or is to be disposed off-site to an approved facility. If material is removed off site, receipts are to be retained and provided to Council's Environmental Health Section upon request.

9. Retention of Trees
All trees not specifically identified on the approved plans for removal are to be retained and protected during the proposal.

10. Construction Certificate
Before any works are carried out a Construction Certificate must be obtained. The plans and accompanying information submitted with the Construction Certificate must comply with the conditions included with this consent.

11. Protection of Public Infrastructure
Council must be notified of any damage to public infrastructure caused by the development. Adequate protection must be provided prior to work commencing and maintained during building operations. Any damage caused must be made good, to the satisfaction of Council, before an Occupation Certificate can be issued. Public infrastructure includes the road pavement, kerb and gutter, concrete footpaths, drainage structures, utilities and landscaping fronting the site.

12. Requirements for Council Drainage Easements
No works are permitted within existing or proposed public drainage easements unless approved by Council. Where works are permitted, the following requirements must be adhered to:

a) Provision for overland flow and access for earthmoving equipment must be maintained.

b) The existing ground levels must not be altered. No overland flow is to be diverted out of the easement.

c) No fill, stockpiles, building materials or sheds can be placed within the easement.

d) Open style fencing must be used. New or replacement fencing must be approved by Council.

PRIOR TO THE ISSUE OF A CONSTRUCTION CERTIFICATE

13. Security Bond Requirements

A security bond may be submitted in lieu of a cash bond. The security bond must:

a) Be in favour of The Hills Shire Council;

b) Be issued by a financial institution or other accredited underwriter approved by, and in a format acceptable to, Council (for example, a bank guarantee or unconditional insurance undertaking);

c) Have no expiry date;

d) Reference the development application, condition and matter to which it relates;

e) Be equal to the amount required to be paid in accordance with the relevant condition;

f) Be itemised, if a single security bond is used for multiple items.

Should Council need to uplift the security bond, notice in writing will be forwarded to the applicant 14 days prior.

14. Controlled Activity Authority – NSW Office of Water

A copy of the Controlled Activity Authority required to be obtained from the NSW Office of Water must be submitted to Council before a Construction Certificate is issued.

15. Sediment and Erosion Control Plan

A sediment and erosion control plan prepared in accordance with Council's Works Specification Subdivision/ Developments must be submitted. The plan must include:

a) Allotment boundaries;

b) Adjoining roads;

c) Contours;

d) Existing vegetation;

e) Existing site drainage;

f) Critical natural areas;

g) Location of stockpiles;

h) Erosion control practices;

i) Sediment control practices; and

j) A maintenance program for the erosion and sediment controls.

16. Security Bond – Road Pavement and Public Asset Protection

In accordance with Section 80A(6)(a) of the Environmental Planning and Assessment Act 1979, a security bond of $30,000.00 is required to be submitted to Council to guarantee the protection of the road pavement and other public assets in the vicinity of the site during construction works.

The bond must be lodged with Council before a Construction Certificate is issued.

The bond is refundable upon written application to Council and is subject to all work being restored to Council's satisfaction. Should the cost of restoring any damage exceed the value of the bond, Council will undertake the works and issue an invoice for the recovery of these costs.

17. Engineering Works and Design

The design and construction of the engineering works listed below must be provided for in accordance with the following documents and requirements:

a) Council's Design Guidelines Subdivisions/ Developments

b) Council's Works Specifications Subdivisions/ Developments

Variation from these documents can only be approved by Council's Manager – Subdivision and Development Certification.

Engineering works can be classified as either “subdivision works” or “building works” as categorised below:

1. Works within an existing or proposed public road, or works within an existing or proposed public reserve. These works can only be approved, inspected and certified by Council in accordance with the Roads Act 1993 and the Local Government Act 1993 respectively. For Council to issue this approval the following must be provided:

   a) A completed application form.

   b) An electronic copy of the design plans and accompanying documentation.

   c) Payment of the applicable application and inspection fees.

   d) Payment of any required security bonds.

2. Works within the development site, or an adjoining private property, that relates to existing or proposed Council infrastructure assets, such as the laying of a stormwater pipeline or the formation of an overland flow path within a public drainage easement. These works can only be approved, inspected and certified by Council because Council will have an ongoing risk exposure and management/ maintenance liability with respect to these assets once completed.

   A “compliance certificate” as per Section 109(1)(a)(ii) of the Environmental Planning and Assessment Act 1979 can be issued certifying that the detailed design for these works complies with the requirements listed and the above documents. This “compliance certificate” can be issued by Council’s Manager – Subdivision and Development Certification and not a private certifier, as discussed. Once approved, the works must be carried out under the supervision of Council’s Construction Engineer in accordance with the terms attached to the issued “compliance certificate”. Post construction, a further “compliance certificate” as per Section 109(1)(a)(i) of the Environmental Planning and Assessment Act 1979 can be issued certifying that the as-built infrastructure and associated works have been carried out to the satisfaction of Council’s Construction Engineer. Alternatively, these works can be incorporated into any construction approval granted under category (1) above.

3. Works within the development site, or adjoining private properties, that do not relate to existing or proposed Council infrastructure assets, such as water sensitive urban design elements or inter-allotment drainage pipelines. Such works can be approved, inspected and certified by either Council or a private certifier, so long as the private certifier is accredited to do so.

   This certification must be included with the documentation approved as part of any Construction Certificate. The designer of the engineering works must be qualified, experienced and have speciality knowledge in the relevant field of work.

The following engineering works are required:

i. Earthworks/ Site Regrading

Earthworks are limited to those shown on the concept engineering design prepared by JWP Revision D submitted with the development application. Where earthworks are not shown on the approved plan the topsoil within lots must not be disturbed. Geotechnical certification is required for the design and as-built dam wall/ embankment.

ii. Stormwater Drainage – Temporary Works

Tail out drains over adjoining properties are required to be provided, where necessary, of sufficient length and width to dissipate stormwater flows to an acceptable level from the end of all stormwater outlets.

Grassed swale drains or temporary piped drainage must be installed to intercept, control and redirect surface stormwater runoff from upstream undeveloped properties.

iii. Stormwater Drainage – Creek Outlets

Piped stormwater outlets/ connections to a natural watercourse must comply with the requirements of Council and the NSW Office of Water (as well as Sydney Water, in the case of stormwater management land).

PRIOR TO WORK COMMENCING ON THE SITE

18. Protection of Existing Trees

The trees that are to be retained are to be protected during all works strictly in accordance with AS4970- 2009 Protection of Trees on Development Sites.

At a minimum a 1.8m high chain-wire fence is to be erected at least three (3) metres from the base of each tree and is to be in place prior to works commencing to restrict the following occurring:

- Stockpiling of materials within the root protection zone,
- Placement of fill within the root protection zone,
- Parking of vehicles within the root protection zone,
- Compaction of soil within the root protection zone.

All areas within the root protection zone are to be mulched with composted leaf mulch to a depth of not less than 100mm.

A sign is to be erected indicating the trees are protected.

The installation of services within the root protection zone is not to be undertaken without prior consent from Council.

19. Public Infrastructure Inventory Report

A public infrastructure inventory report must be prepared and submitted to Council recording the condition of all public assets in the direct vicinity of the development site. This includes, but is not limited to, the road fronting the site along with any access route used by heavy vehicles. If uncertainty exists with respect to the necessary scope of this report, it must be clarified with Council before works commence. The report must include:

a) Planned construction access and delivery routes; and

b) Dated photographic evidence of the condition of all public assets.

20. Erosion and Sedimentation Controls

Erosion and sedimentation controls shall be in place prior to the commencement of site works and maintained throughout construction activities, until the site is landscaped and/or suitably revegetated. These requirements shall be in accordance with *Managing Urban Stormwater – Soils and Construction (Blue Book)* produced by the NSW Department of Housing.

This will include, but not be limited to a stabilised access point and appropriately locating stockpiles of topsoil, sand, aggregate or other material capable of being moved by water being stored clear of any drainage line, easement, natural watercourse, footpath, kerb or roadside.

DURING CONSTRUCTION

21. Standard of Works

All work must be carried out in accordance with Council's Works Specification Subdivisions/ Developments and must include any necessary works required to make the construction effective. All works, including public utility relocation, must incur no cost to Council.

22. Critical Stage Inspections – Subdivision Works

The subdivision works must be inspected by Council in accordance with the schedule included in Council's Works Specification Subdivisions/ Developments. A minimum of 24 hours' notice is required for inspections. No works are to commence until the first inspection has been carried out.

23. Subdivision Earthworks – Lot Topsoil

Where earthworks are not shown on the engineering drawings, the topsoil within lots must not be disturbed. Where earthworks are shown, a 150mm deep layer of topsoil must be provided, suitably compacted and stabilised in accordance with Council's Works Specification Subdivisions/ Developments.

24. European Sites or Relics

If, during the earthworks, any evidence of a European archaeological site or relic is found, all works on the site are to cease and the NSW Office of Environment and Heritage must be contacted immediately. All relics are to be retained in situ unless otherwise directed by the NSW Office of Environment and Heritage.

25. Aboriginal Archaeological Sites or Relics

If, during activities involving earthworks and soil disturbance, any evidence of an Aboriginal archaeological site or relic is found, all works on the site are to cease and the NSW Office of Environment and Heritage must be notified immediately.

26. National Parks and Wildlife Act 1974

Should any artefacts be uncovered in the course of any works, all works should cease and comply with Part 6 of the National Parks and Wildlife Act 1974, in particular Section 90 regarding permits to destroy.

27. Working Hours

All work must be restricted to between the hours of 7.00am and 5.00pm, Monday to Saturday. No work can occur outside the hours specified above on Sundays or public holidays. The contractor must instruct sub-contractors regarding the hours of work.

28. Dust Control

The emission of dust must be controlled to minimise nuisance to the occupants of the surrounding premises. In the absence of any alternative measures, the following measures must be taken to control the emission of dust:

- Dust screens must be erected around the perimeter of the site and be kept in good repair for the duration of the construction work;
- All dusty surfaces must be wet down and suppressed by means of a fine water spray. Water used for dust suppression must not cause water pollution; and
- All stockpiles of materials that are likely to generate dust must be kept damp or covered.

29. Contamination

Ground conditions are to be monitored and should evidence such as, but not limited to, imported fill and/or inappropriate waste disposal indicate the likely presence of contamination on site, works are to cease, Council's Manager- Environment and health is to be notified and a site contamination investigation is to be carried out in accordance with State Environmental Planning Policy 55 – Remediation of Land.

The report is to be submitted to Council's Manager – Environment and Health for review prior to works recommencing on site.

PRIOR TO ISSUE OF A SUBDIVISION CERTIFICATE

30. Planning Agreement

Written evidence is to be submitted to Council prior to the issue of a Subdivision Certificate, demonstrating that the relevant obligations of the Planning Agreement have been satisfied including, but not limited to, the completion of Capital Works identified in Schedule 3 of the Planning Agreement and the Dedication of Land identified in Schedule 1 of the Planning Agreement.

31. Completion of Subdivision Works

A Subdivision Certificate cannot be issued prior to the completion of all subdivision works covered by this consent.

32. Compliance with NSW Office of Water Requirements

A letter from the NSW Office of Water must be submitted confirming that all works associated with the Controlled Activity Authority have been completed to their satisfaction.

33. Western Sydney Growth Areas – Payment of Special Infrastructure Contribution

A special infrastructure contribution is to be made in accordance with the Environmental Planning and Assessment (Special Infrastructure Contribution – Western Sydney Growth Areas) Determination 2011, as in force when this consent becomes operative.

Information about the special infrastructure contribution can be found on the Department of Planning website:

http://www.gcc.nsw.gov.au/sic-69.html

Please contact the NSW Department of Planning and Infrastructure regarding arrangements for the making of a payment.

34. Works as Executed Plans

Works as executed (WAE) plans prepared by a suitably qualified engineer or registered surveyor must be submitted to Council when the subdivision works are completed. The WAE plans must be prepared in accordance with Council's Design Guidelines Subdivisions/ Developments.

The plans must be accompanied by pavement density results, pavement certification, concrete core test results, site fill results, structural certification, CCTV recording, signage details and a public asset creation summary, where relevant.

35. Section 73 Compliance Certificate

A Section 73 Compliance Certificate issued under the Sydney Water Act 1994 must be obtained from Sydney Water confirming satisfactory arrangements have been made for the provision of water and sewer services. Application must be made through an authorised Water Servicing Coordinator. The certificate must refer to this development consent and all of the lots created.

Sydney Water's guidelines provide for assumed concurrence for the strata subdivision of a development approved by an earlier consent covered by a compliance certificate.

36. Provision of Electrical Services

Submission of a notification of arrangement certificate confirming satisfactory arrangements have been made for the provision of electrical services. This must include the under-grounding of the existing electrical services fronting the site and removal of all redundant poles and cables, unless otherwise approved by Council in writing. The certificate must refer to this development consent and all of the lots created.

37. Provision of Telecommunication Services

Submission of a telecommunications infrastructure provisioning confirmation certificate issued by the relevant telecommunications provider authorised under the Telecommunications Act, or a design compliance certificate and an as-built compliance certificate from the company engaged to design and construct the pit and pipe infrastructure, confirming satisfactory arrangements have been made for the provision, or relocation, of telecommunication services including telecommunications cables and associated infrastructure. This must include the under-grounding of the existing telecommunication services fronting the site and removal of all redundant poles and cables, unless otherwise approved by Council in writing. The certificate must refer to this development consent and all of the lots created.

38. Public Infrastructure Inventory Report - Post Construction

Before an Occupation Certificate is issued, an updated public infrastructure inventory report must be prepared and submitted to Council. The updated report must identify any damage to public assets and the means of rectification for the approval of Council.

The reasons for the conditions imposed on this consent are:

1. To facilitate the orderly implementation of the objectives of the Environmental Planning and Assessment Act 1979 and the aims and objectives of any other applicable environmental planning instruments.

2. To ensure local amenity is maintained and is not adversely affected and that adequate safeguards are incorporated into the development.

3. To ensure the development does not hinder the proper and orderly development of the subject land and its surrounds.

4. To ensure the relevant matters for consideration under Section 79C of the Environmental Planning and Assessment Act 1979 are maintained.

A copy of the relevant approved plans and documents is enclosed.

Please contact Joshua Owen on (02) 9843 0264 if you require further information.

Yours faithfully

A. M. Brooks.

Andrew Brooks
MANAGER - SUBDIVISION & DEVELOPMENT CERTIFICATION

APPENDIX A

Department of
Primary Industries
Water

NSW GOVERNMENT

Contact: Gina Potter
Phone: 02 8838 7566
Fax: 02 8838 7554
Email: Gina.Potter@dpi.nsw.gov.au
Our ref: 10 ERM2015/0581
Our file:
Your ref: DA2015/1634

The General Manager
The Hills Shire Council
PO Box 75
Castle Hill NSW 1765

BATCH NO:
TIME:

10 AUG 2015

THE HILLS SHIRE COUNCIL

Attention: Joshua Owen

4 August 2015

Dear Sir/Madam

Re: Integrated Development Referral – General Terms of Approval
Dev Ref: DA2015/1634
Description of proposed activity: Subdivision creating two residue lots
Site location: Precinct D 153 Boundary Road Box Hill

I refer to your recent letter regarding an integrated Development Application (DA) proposed for the subject property. Attached, please find DPI Water's (formerly the NSW Office of Water) General Terms of Approval (GTA) for works requiring a controlled activity approval under the *Water Management Act 2000* (WM Act), as detailed in the subject DA.

Please note Council's statutory obligations under section 91A (3) of the *Environmental Planning and Assessment Act 1979* (EPA Act) which requires a consent, granted by a consent authority, to be consistent with the general terms of any approval proposed to be granted by the approval body.

If the proposed development is approved by Council, DPI Water requests that these GTA be included (in their entirety) in Council's development consent. Please also note the following:

- DPI Water should be notified if any plans or documents are amended and these amendments significantly change the proposed development or result in additional works on waterfront land (which includes (i) the bed of any river together with any land within 40 metres inland of the highest bank of the river, or (ii) the bed of any lake, together with any land within 40 metres of the shore of the lake, or (iii) the bed of any estuary, together with any land within 40 metres inland of the mean high water mark of the estuary).

- Once notified, DPI Water will ascertain if the amended plans require review or variation/s to the GTA. This requirement applies even if the proposed works are part of Council's proposed consent conditions and do not appear in the original documentation.

- DPI Water should be notified if Council receives an application to modify the development consent and the modifications change any activities on waterfront land.
- DPI Water requests notification of any legal challenge to the consent.

As the controlled activity to be carried out on waterfront land cannot commence before the applicant applies for and obtains a controlled activity approval, DPI Water recommends the following condition be included in the development consent:

"The Construction Certificate will not be issued over any part of the site requiring a controlled activity approval until a copy of the approval has been provided to Council".

The attached GTA are not the controlled activity approval. The applicant must apply (to DPI Water) for a controlled activity approval **after consent** has been issued by Council **and before** the commencement of any work or activity on waterfront land.

Finalisation of a controlled activity approval can take up to eight (8) weeks from the date DPI Water receives all documentation (to its satisfaction). Applicants must complete and submit (to the undersigned) an application form for a controlled activity approval together with any required plans, documents, the appropriate fee and security deposit or bank guarantee (if required by the Office or Water) and proof of Council's development consent.

Application forms for the controlled activity approval are available from the undersigned or from DPI Water's website:
www.water.nsw.gov.au Water licensing > Approvals > Controlled activities

DPI Water requests that Council provide a copy of this letter to the applicant.

DPI Water also requests that Council provides DPI Water with a copy of the determination for this development application as required under section 91A (6) of the EPA Act.

Yours Sincerely

Gina Potter
Water Regulation Officer
Water Regulatory Operations, WR Operations - Hunter, Sydney & South Coast
NSW Department of Primary Industries – DPI Water

General Terms of Approval

for work requiring a controlled activity approval under s91 of the *Water Management Act 2000*

Number	Condition		File No:
Site Address:		Precinct D 153 Boundary Road Box Hill	
DA Number:		DA2015/1634	
LGA:		The Hills Shire Council	
Plans, standards and guidelines			
1	These General Terms of Approval (GTA) only apply to the controlled activities described in the plans and associated documentation relating to DA2015/1634 and provided by Council: (i) Site plan, map and/or surveys Any amendments or modifications to the proposed controlled activities may render these GTA invalid. If the proposed controlled activities are amended or modified DPI Water (formerly the NSW Office of Water) must be notified to determine if any variations to these GTA will be required.		
2	Prior to the commencement of any controlled activity (works) on waterfront land, the consent holder must obtain a Controlled Activity Approval (CAA) under the Water Management Act from DPI Water. Waterfront land for the purposes of this DA is land and material in or within 40 metres of the top of the bank or shore of the river identified.		
3	The consent holder must prepare or commission the preparation of: (i) Vegetation Management Plan (ii) Erosion and Sediment Control Plan (iii) Soil and Water Management Plan		
4	All plans must be prepared by a suitably qualified person and submitted to the NSW Office of Water for approval prior to any controlled activity commencing. The following plans must be prepared in accordance with DPI Water's guidelines located at www.water.nsw.gov.au/ Water-Licensing/Approvals. (i) Vegetation Management Plans (ii) Riparian Corridors (iii) In-stream works (iv) Outlet structures		
5	The consent holder must (i) carry out any controlled activity in accordance with approved plans and (ii) construct and/or implement any controlled activity by or under the direct supervision of a suitably qualified professional and (iii) when required, provide a certificate of completion to DPI Water.		
Rehabilitation and maintenance			
6	The consent holder must carry out a maintenance period of two (2) years after practical completion of all controlled activities, rehabilitation and vegetation management in accordance with a plan approved by the DPI Water.		
7	The consent holder must reinstate waterfront land affected by the carrying out of any controlled activity in accordance with a plan or design approved by the DPI Water.		
Reporting requirements			

Number	Condition	File No:
8	The consent holder must use a suitably qualified person to monitor the progress, completion, performance of works, rehabilitation and maintenance and report to DPI Water as required.	
Security deposits		
9	The consent holder must provide a security deposit (bank guarantee or cash bond) - equal to the sum of the cost of complying with the obligations under any approval - to DPI Water as and when required.	
Access-ways		
10	N/A	
11	The consent holder must not locate ramps, stairs, access ways, cycle paths, pedestrian paths or any other non-vehicular form of access way in a riparian corridor other than in accordance with a plan approved by DPI Water.	
Bridge, causeway, culverts, and crossing		
12-13	N/A	
Disposal		
14	The consent holder must ensure that no materials or cleared vegetation that may (i) obstruct flow, (ii) wash into the water body, or (iii) cause damage to river banks; are left on waterfront land other than in accordance with a plan approved by DPI Water.	
Drainage and Stormwater		
15	The consent holder is to ensure that all drainage works (i) capture and convey runoffs, discharges and flood flows to low flow water level in accordance with a plan approved by DPI Water; and (ii) do not obstruct the flow of water other than in accordance with a plan approved by DPI Water.	
16	The consent holder must stabilise drain discharge points to prevent erosion in accordance with a plan approved by DPI Water.	
Erosion control		
17	The consent holder must establish all erosion and sediment control works and water diversion structures in accordance with a plan approved by DPI Water. These works and structures must be inspected and maintained throughout the working period and must not be removed until the site has been fully stabilised.	
Excavation		
18	The consent holder must ensure that no excavation is undertaken on waterfront land other than in accordance with a plan approved by DPI Water.	
19-21	N/A	
River bed and bank protection		
22	N/A	
23	The consent holder must establish a riparian corridor along the first order watercourse in accordance with a plan approved by DPI Water.	
END OF CONDITIONS		

APPENDIX B

TransGrid

Training, Logistics and Property
Telephone: (02) 9620 0104
Your Reference: DA 1634/2015/ZB

ABN 19 622 755 774

WALLGROVE
200 Old Wallgrove Road
Eastern Creek
NSW 2766 Australia

PO Box 87
Horsley Park
NSW 2175 Australia

T (02) 9620 0777

www.transgrid.com.au

15 October, 2015

The Hills Shire Council
PO Box 7064
BAULKHAM HILLS BC, NSW 2153

Attn: Joshua Owen

Dear Mr Owen

Re: Development Application DA 1634/2015/ZB – 153 Boundary Road, Box Hill – Lot 22 in DP 255616 and Lot 10 in DP 593517 (Subdivision to create two lots, battering, earthworks and dam relocation to be positioned outside of TransGrid's easement)

We refer to The Hills Shire Council's notification pursuant to regulation 45 of SEPP (Infrastructure) 2007 in respect of the abovementioned Development Application (**DA**). TransGrid notes that the DA proposes a subdivision to create two lots, battering, earthworks and dam relocation to facilitate a clear platform at the above-mentioned address.

TransGrid owns and operates the high voltage transmission line network, being of State significant infrastructure. *TransGrid's Vales Point – Sydney West 330KV Transmission line (Feeder 25/26, Structure span 240 - 244)* traverses the subject land within an 85.35-metre wide easement. (Please refer to the attached TAMIS plan).

TransGrid has reviewed this development application and determined the proposed subdivision to create two lots, battering, earthworks and dam relocation to be positioned outside of TransGrid's easement acceptable subject to the following conditions:

1) TransGrid requests to be notified before the construction work commences. This is to ensure a TransGrid Easement Officer attends the site induction and can assess the construction site mindful of key safety issues pertaining to TransGrid's infrastructure.

2) All works will need to be carried out in accordance with the *NSW WorkCover 'Work Near Overhead Power Lines' Code of Practice 2006*. Please also refer to the accompanying *TransGrid Easement Guidelines for Third Party Development* and contact TransGrid in the event of any uncertainty.

3) During construction, traffic control measures need to be implemented to prevent vehicles colliding with TransGrid's transmission towers. Any temporary fencing will need to be earthed and every second panel isolated. No works is permitted within the 30-metre exclusion zones around TransGrid's towers.

4) Height restrictions must be applied to cranes, elevated work platforms and any other plant and equipment proposed to operate on the easement that is capable of exceeding the 4.2m height restriction.

5) No mounds of earth or other materials may be left on the easement, even on a temporary basis, as doing so effectively creates a hazard by reducing the vertical clearances to the transmission lines.

6) TransGrid requests formal notification for the future proposed development on the land. Any further development on the subject land (including fencing) must be assessed by TransGrid to determine whether it complies within our easement restrictions and TransGrid's prior written consent is required.

To this end, please accept this letter as TransGrid's formal approval for this Development Application (DA 1634/2015/ZB) only.

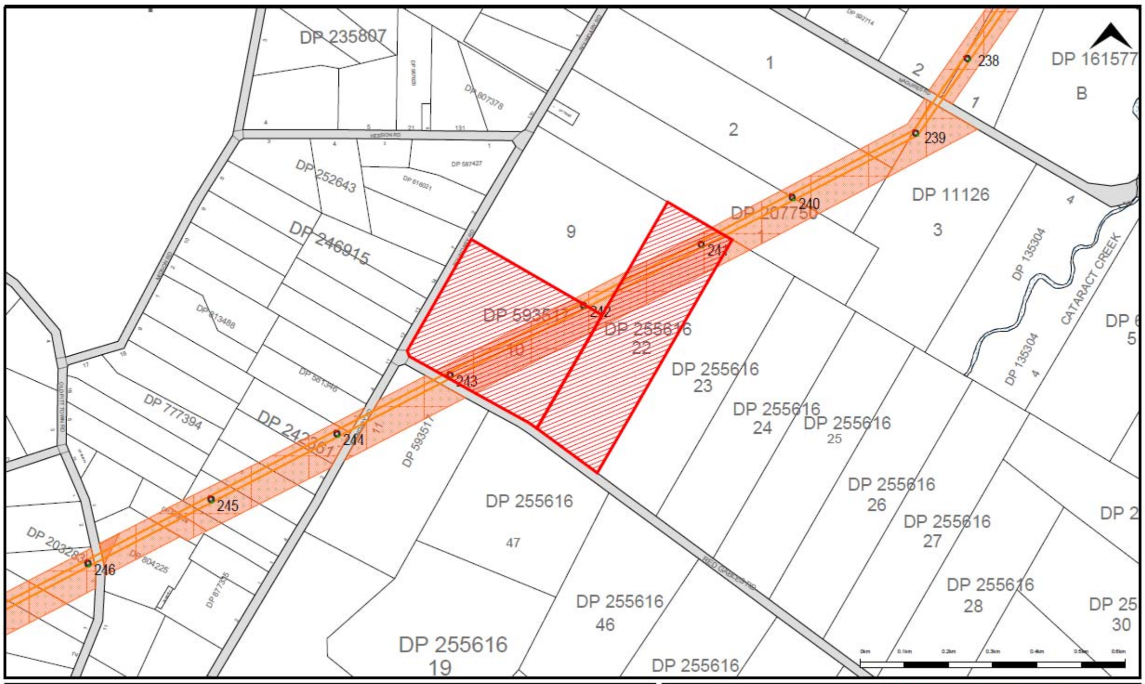
Thank you for consulting with TransGrid in respect of this matter and should you have any queries, please feel free to contact me on (02) 9620 0104.

Yours sincerely

Skye Shanahan
Property Enquiries Coordinator | Training, Logistics and Property

Encl.

Environment ISO 14001 Quality ISO 9001 Health & Safety AS 4801



Legend

Structure — TransGrid Easement

TransGrid

Vales Point – Sydney West 330KV T/L

Feeder 25 & 26, Structure span 240 – 244

Property of Transgrid. No warranty is given that information shown is complete or accurate.

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Appendix 4

Planning Proposal

Planning Proposal

Box Hill North

July 2013

APP

Program & Project Delivery | Design & Technical Services | Real Estate | Independent Assurance Services | Consulting & Advisory

APP
Level 7 | 116 Miller Street | North Sydney | NSW 2060 | Phone | 61 2 9957 6211 Fax | 61 2 9954 1951 | www.app.com.au

This report has been prepared and reviewed in accordance with our quality control system. The report is preliminary draft unless it is signed below.

This report has been prepared by : Elise Crameri

Signature

Date : 26/07/2013

This report has been reviewed by: Allison Smith

Signature

Date : 26/07/2013

Table of Contents

Volume 1

1. Introduction 17
   1.1. Purpose of the Planning Proposal ... 19
   1.2. Structure of this Report 20
   1.3. Background 21
2. Site Analysis 23
   2.1. Site Location ... 25
   2.2. Land Ownership and Legal Description 27
   2.3. Existing Zoning and Development Standards 28
   2.4. Existing Land Uses and Development ... 28
   2.5. Topography.. ... 28
   2.6. Hydrology 32
   2.7. Geology 35
   2.8. Acid sulphate soil 35
   2.9. Contamination. ... 35
   2.10. Aboriginal Cultural Heritage 39
   2.11. European Heritage ... 42
   2.12. Ecological Characteristics and Values ... 42
   2.13. Bushfire Assessment ... 46
   2.14. Access and Transport 49
   2.15. Community and Social Infrastructure... 51
3. Planning Proposal 55
   3.1. Introduction.. ... 57
   3.2. Part 1 - Objectives and Intended Outcomes ... 57
   3.3. Part 2 - Explanation of Provisions. ... 57
   3.4. Part 3 - Justification 58
4. Indicative Layout Plan 63
   4.1. Creating a Living and Happy Community.. ... 65
   4.2. Establishing a Vibrant Town Centre 71
   4.3. Connecting the community 71
   4.4. Growing a Sustainable Living Environment ... 78
   4.5. Bushfire Management 83
   4.6. Indicative Staging.. ... 84

5. Proposed LEP Amendment 85

5.1. Land to which LEP amendment will apply 87
5.2. Proposed Land Use zone.. 87
5.3. Explanation of land use zone selection 97
5.4. Principal Development Standards. 100
5.5. Minimum subdivision lot sizes 100
5.6. Land Reservation and Acquisition 105
5.7. Development Control 105

6. Development Contributions 107

6.1. State Development Contributions. 109
6.2. Local Development Contributions. 109

7. Strategic Justification 111

7.1. Metropolitan Plan for Sydney 2036.. 113
7.2. Metropolitan Strategy - City of Cities: A Plan for Sydney's Future (2005) 113
7.3. Metropolitan Transport Plan – Connecting the City of Cities (2010) 114
7.4. Draft North West Subregional Strategy 114
7.5. North West Sector Bus Servicing Plan 115
7.6. Draft Local Strategy – New Strategic Direction for Baulkham Hills Shire 115
7.7. State Environmental Planning Policies 116
7.8. Section 117 Direction 117

8. Environmental, Social and Economic Impact 121

8.1. Flora and Fauna 123
8.2. Transport and Access assessment 127
8.3. Water Cycle and Flood Management 139
8.4. Services and Utilities 143
8.5. Contamination 144
8.6. Aboriginal Heritage 144
8.7. Social Planning 145
8.8. Retail Analysis 150

9. Conclusion 153

10. Appendices 157

Appendices

A. Summary of Consultation

Volume 2

B. Preliminary Site Investigation
C. Aboriginal Heritage Archaeological Assessment Report
D. Flora and Fauna Assessment

Volume 3

E. Bushfire Constraints Assessment
F. Transport and Access Impact Statement
G. Social Infrastructure Assessment
H. Retail Analysis

Volume 4

I. Infrastructure Services Assessment
J. Water Cycle and Flood Management Strategy
K. Draft Development Control Plan

Figures

Figure 1. Indicative Layout Plan 15
Figure 2. Potential Homes Sites Program – Evaluation Report 21
Figure 3. North West Growth Centre Structure Plan.. 25
Figure 4. Location Plan. 26
Figure 5. Aerial Photograph 29
Figure 6. View of the site from Cataract Road, looking north-east. 30
Figure 7. View of the site from Red Gables Road, looking north.. 30
Figure 8. View of the site and transmission line and towers from the corner of Red Gables Road and Boundary Road. 30
Figure 9. View of the site along Cataract Road, looking south-east 30
Figure 10. View of the site along Maguires Road, looking south. 30
Figure 11. View from the north-east corner of the site (Maguires Road), looking south-west.. .30
Figure 12. Topography 31
Figure 13. Riparian Corridor Matrix (NSW Office of Water) 32
Figure 14. Existing drainage configuration. 33
Figure 15. Indicative Riparian Corridor. 34
Figure 16. Regional 100 Year ARI and PMF Flood Extents 36
Figure 17. Areas of environmental concern 37
Figure 18. Aboriginal sites within the site 40
Figure 19. Assessment of archaeological potential in the study area 41
Figure 20. Location of CPW and SSTF 43
Figure 21. Condition of CPW and SSTF 44
Figure 22. Extract from The Hlls Bushfire Prone Land Map 47

Figure 23.Extract from The Hills Bushfire Prone Land Map showing the modification to the extent of the mapped Category 1 Bushfire Vegetation (outside of the site) 48
Figure 24.Regional Transport Context. 50
Figure 25.Proposed North West Sector Bus Network 50
Figure 26.Proposed social infrastructure within Box Hill 53
Figure 27.Indicative Layout Plan 66
Figure 28.Location of Open Spaces 70
Figure 29.Indicative layout options for Town Centre 72
Figure 30.Proposed Road Hierarchy 73
Figure 31.Typical Collector Road 75
Figure 32.Typical Local Street. 75
Figure 33.Typical Rear Lane. 75
Figure 34.Public Transport 76
Figure 35.Pedestrian and Cycle Ways. 77
Figure 36.Indicative location of water quality treatment devices 81
Figure 37.Indicative location of detention basins..82
Figure 38.Indicative Asset Protection Zones 83
Figure 39.Indicative Staging. 84
Figure 40.Draft Land Application Map. 88
Figure 41.Draft Land Use Zoning Map 89
Figure 42.Draft Minimum Lot Size Map...102
Figure 43.Draft Building Heights Map 103
Figure 44.Summary of recommended ecological options. 125
Figure 45.Anticipated roadway service - AM peak hour 129
Figure 46.Anticipated roadway service - PM peak hour 130
Figure 47.Intersection Performance - AM Peak Hour. 132
Figure 48.Intersection Performance - PM Peak Hour. 133
Figure 49.Proposed Infrastructure Works. 136
Figure 50.Intersection performance after improvements - AM peak hour 137
Figure 51.Intersection performance after improvements - PM peak hour 138
Figure 52.Flood Difference Mapping 141

Tables

Table 1. Land ownership and legal description (land subject to agreement with EJC) 25
Table 2. Land ownership and legal description (land not subject to agreement with EJC) 26
Table 3. Strahler System of Stream Classification 30
Table 4. Potential areas of environmental concern 36
Table 5. Threatened Fauna with Potential to Occur on the Subject Site 43
Table 6. Proposed Dwelling Mix and Dwelling Yield 64
Table 7. Proposed Street Types.. 70
Table 8. Draft Land Zoning Table 86
Table 9. Minimum lot sizes 96
Table 10. Proposed maximum building heights 100
Table 11. Proposed contribution rate per hectare 105
Table 12. Peak Hour Traffic Generation...123
Table 13. Proposed Intersection Improvement Works to accommodate Box Hill North 129
Table 14. Summary of detention basin volumes 134
Table 15. Box Hill North activity centre, supportable floorspace 146

Executive Summary

Executive Summary

This Planning Proposal is submitted to The Hills Shire Council in support of an amendment to The Hills Local Environmental Plan 2012. The proposal is to rezone a 380 hectare parcel of land at Box Hill North to accommodate a new sustainable and high quality residential community comprising 4,100 dwellings, a 5.5 hectare town centre, active and passive open space, a school site, new roads and infrastructure.

The planning proposal includes a servicing and water strategy which demonstrates how this infrastructure is to be delivered to Box Hill North in a timely and efficient manner at no additional cost to government. It is accompanied by an offer to enter into a Voluntary Planning Agreement with State Government and Council for the delivery of infrastructure, services and utilities that are required to meet the future demands of Box Hill North. This includes road network improvements, 2.2 hectares of land for a primary school, 77 hectares of active and passive open space and a multi-purpose community centre.

The strategic justification for the rezoning of Box Hill North has been demonstrated by the identification of Box Hill North as a 'strategic investigation site' as part of the Department of Planning and Infrastructure's Potential Home Sites Program in March 2013, being seen as a 'strategic fit' in terms of planned growth and urban policy. Whilst the site was seen as a 'strategic fit', lack of enabling services and long lead in times and fragmented ownership posed a challenge for delivery. This has now been remedied with E.J. Cooper and Son Pty Ltd having secured agreements to purchase 86% of the site and 'in principal' support with Sydney Water in relation to forward funding enabling services.

There are sound planning reasons to support the rezoning of Box Hill North at this time when investment certainty, housing affordability and land supply are key issues of concern at the national, state and regional level. The successful development of Box Hill North will assist in meeting State government policy to release as much land to the market as quickly as possible. The project is consistent with and will assist in the delivery of key outcomes of the NSW State Plan and the North West Sub-Regional Strategy by contributing to the supply to market of appropriately located land to sustainably accommodate the projected housing and employment needs of the region's population and The Hills Shire which is required to provide 21,500 dwellings by 2031. As demonstrated throughout this planning proposal, the Box Hill North site is capable of speedy and well planned development with the first lots ready to be taken up in 2016.

The development will deliver a range of densities, lot sizes and dwelling types and create a diverse community that is demographically balanced. The variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, enabling people to age in place.

The Vision

The Vision for Box Hill North is to create a new well-connected, living and diverse community that supports a vibrant town centre in the heart of the neighbourhood. Nestled within the undulating landform to the north of the recently release Box Hill and Box Hill Industrial Precincts, Box Hill North will establish the following key principles:

- creating a living and happy community;
- establishing a vibrant Town Centre;
- connecting the community; and
- growing a sustainable living environment.

Indicative Layout Plan

The Planning Proposal is supported by an Indicative Layout Plan (ILP), which represents the overall planning framework and preferred outcome for Box Hill North (refer to Figure 1). The ILP includes:

- approximately 290 hectares of residential land;
- a 5.5 hectare town centre incorporating a mix of retail, commercial and business uses capable of accommodating up to 10,000m2 of floor space;
- a 2.2 hectare new school site;
- new roads and infrastructure;
- sporting fields and parks;
- an integrated passive recreation area within a riparian corridor network; and
- land for environmental conservation.

Box Hill North will have its own identity primarily due to the ridgeline along Old Pitt Town Road that separates it from the Box Hill precinct. Being on the northern side of this ridgeline presents the site with an aspect that focuses on distant views of the Blue Mountains, bushland and a rural environment to the north, east and west. The urban structure has been designed to celebrate these features by incorporating them into a central parkland spine for the development, which converges in the centre of the site with a gathering place for the community. This gathering place being the active and passive parklands, wetland features, school and town centre which will incorporate retail and restaurants. The movement network is deliberate with the open space corridors being used as a means to travel to this precinct centre by walking or cycling. The open space linkages will be framed by higher density housing forms, which will focus around the town centre to increase people activity and make the most of the parkland setting for future residents to enjoy.

LEP Amendment and Development Control

It is proposed to rezone the site from RU6 Transition to R1 General Residential, R3 Medium Density, E2 Environmental Conservation, E3 Environmental Management, E4 Environmental Living, B2 Local Centre and RE1 Public Recreation under The Hills LEP 2012. As far as practical, the planning proposal incorporates the range of presently permissible land uses within the proposed land use zones together with a limited number of additional residential and other uses. This is to facilitate the delivery of 4,100 dwellings on the site contributing to the housing targets identified in strategic policies for the Sydney metropolitan area and the North West subregion. The Planning Proposal seeks to deliver the highest and best use of the land in the context with its environmental attributes through a “roll over” of existing controls where possible. The introduction of new site specific development standards and controls for Box Hill North has been limited to where an existing standard and control is an impediment to achieving the desired outcomes for Box Hill North.

A site specific Development Control Plan for Box Hill North has been prepared and is included as part of the Planning Proposal. The new Development Control Plan will guide the assessment of future detailed subdivision and built form proposals.

Strategic and Statutory Planning Considerations

Figure 1. Indicative Layout Plan

The Planning Proposal is generally consistent with the provisions of all relevant local and State government strategic plans and strategies, including:

- Metropolitan Plan for Sydney 2036;
- Metropolitan Strategy - City of Cities: A Plan for Sydney's Future (2005);
- Metropolitan Transport Plan – Connecting the City of Cities (2010);
- Draft North West Subregional Strategy;
- North West Sector Bus Servicing Plan;
- State Environmental Planning Policies;
- Section 117 Directions; and
- Draft Local Strategy – New Strategic Direction for Baulkham Hills Shire.

Environmental Impact

Detailed investigations of site constraints demonstrate that the land is relatively free of major physical constraints. The Planning Proposal presents a holistic and integrated outcome for Box Hill North having regard to biodiversity, water, Aboriginal archaeology and other environmental features. The planning proposal demonstrates that the proposed development is satisfactory with respect to:

- transport and traffic;
- biodiversity values;
- servicing of water, waste water and power;
- flood impact, stormwater management and water quality;
- indigenous heritage;
- bushfire risk; and
- social infrastructure.

The suitability and capacity of the site for the proposed range and intensity of uses taking into account the site's regional context and environmental, economic and social opportunities and constraints has been addressed and the redevelopment of Box Hill North will result in significant benefits for North-West Sydney and its future residents.

SECTION 1.

Introduction

1. Introduction

1.1. Purpose of the Planning Proposal

This Planning Proposal is submitted to The Hills Shire Council (Council) in support of an amendment to The Hills Local Environmental Plan (LEP) 2012. The proposal is to rezone a 380 hectare parcel of land at Box Hill North to accommodate a new residential community comprising 4,100 dwellings, a 5.5 hectare town centre, active and passive open space, a school site, new roads and infrastructure. The proposal is a logical extension of the recently rezoned Box Hill and Box Hill Industrial Precincts to the immediate south of the site.

The proponent of this proposal is E.J. Cooper and Son Pty Ltd (EJC) who are wholly owned by the Baiada family group of companies. EJC represent thirty one (31) land holdings subject to the proposal, representing 86% of the site. EJC have entered into agreements with landowners to purchase their land.

The Planning Proposal is supported by an Indicative Layout Plan (ILP), which represents the overall planning framework and preferred outcome for Box Hill North. The ILP includes:

- approximately 290 hectares of residential land;
- a 5.5 hectare town centre incorporating a mix of retail, commercial and business uses capable of accommodating up to 10,000m2 of floor space;
- a 2.2 hectare new school site;
- new roads and infrastructure;
- sporting fields and parks;
- an integrated passive recreation area within a riparian corridor network; and
- land for environmental conservation.

The planning proposal includes a servicing and water management and remediation strategy for the site. It is also accompanied by an offer to enter into a Voluntary Planning Agreement with State Government and Council for the delivery of infrastructure, services and utilities that are required to meet the future demands of Box Hill North. This includes road network improvements, land for a primary school, district and local open space and a multi-purpose community centre.

The strategic justification for the rezoning of Box Hill North has been demonstrated by the identification of Box Hill North as a ‘strategic investigation site’ as part of the Department of Planning and Infrastructure’s Potential Home Sites Program in March 2013, being seen as a ‘strategic fit’ in terms of planned growth and urban policy. Whilst the site was seen as a ‘strategic fit’, lack of enabling services and long lead in times and fragmented ownership posed a challenge for delivery. This has now been remedied with agreements to purchase 86% of the site and ‘in principal’ support with Sydney Water in relation to forward funding enabling services.

There are sound planning reasons to support the rezoning of Box Hill North at this time when investment certainty, housing affordability and land supply are key issues of concern at the national, state and regional level. Australia faces a national housing affordability and supply crisis. As at the end of 2010, the National Supply Council’s estimated there to be a short fall of approximately 200,000 homes in NSW. This number was expected to grow in the short to medium term. Recent pronouncements by all levels of Government agree that the contributing causes of the housing affordability crisis are inadequate housing supply in the market, complex planning systems and high infrastructure levies. Housing affordability is a key issue for North West Sydney and The Hills Shire. Whilst Council acknowledges that local government options are limited, it does recognise that adequate housing supply, diversity of choice, a mix of dwelling sizes including smaller lot housing and a sufficient supply of adaptable and accessible housing can partly address this issue at the local level. The successful development of Box Hill North will assist in meeting State government policy to release as much land to the market as quickly as possible. The project is consistent with and will assist in the delivery of key outcomes of the NSW State Plan and the North West Sub-Regional Strategy by contributing to the supply to market of appropriately located land to sustainably accommodate the projected housing and employment needs of the region's population and The Hills Shire which is required to provide 21,500 dwellings by 2031.

The Planning Proposal will deliver a range of densities, lot sizes and dwelling types and create a diverse community that is demographically balanced. The variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, enabling people to age in place.

This report has been prepared by APP Corporation Pty Ltd on behalf of EJC and is based on plans and information provided by Design IQ and other supporting technical documents (refer to Table of Contents). It has been prepared in accordance with the Department of Planning and Infrastructure's '*A guide to preparing planning proposals*' (October 2012) and includes the following:

- a statement of the objectives;
- an explanation of the provisions proposed;
- the justification for those objectives, outcomes and provisions and the process for their implementation;
- a zoning map which reflects the proposed land use zones; and
- acknowledges the community consultation that will be undertaken.

This section of the planning proposal addresses the matters that must be addressed as set out in section 55(2) of the *Environmental Planning and Assessment Act 1979* and the Department of Planning and Infrastructure's '*A guide to preparing planning proposals*' (October 2012).

1.2. Structure of this Report

The Planning Proposal is structured as follows:

Section 2	Site Analysis;
Section 3	Planning Proposal;
Section 4	Indicative Layout Plan;
Section 5	Proposed LEP Amendments;
Section 6	Development Contributions;
Section 7	Strategic Justification;
Section 8	Environmental, Social and Economic Impact
Section 9	Conclusion

1.3. Background

1.3.1. Potential Home Sites Program (Department of Planning and Infrastructure)

In August 2011, the Minster for Planning and Infrastructure called for expressions of interest from large landholders to develop their land for housing where it is close to infrastructure. By the end of November 2011 forty three (43) sites were nominated of different sizes and in a variety of locations for government consideration. On 27 January 2012, the CEO's Review Committee decided that twenty nine (29) sites located in the Sydney Region and over 100 hectares in size would be evaluated, including Box Hill North.

In March 2013, the NSW Government announced the outcomes of a review into potential housing opportunities. The evaluation assessed whether housing was appropriate on the land and could be delivered quickly by focussing on the broad questions of: the suitability of the site for urban development; infrastructure planning and cost (i.e. at no additional cost to government); the ability of nominees to deliver housing; and the appropriateness of the location.

Box Hill North was identified as a 'strategic investigation site', being seen as a 'strategic fit' in terms of planned growth and urban policy and potentially suitable for urban development (refer to Figure 2). The lack of enabling services and long lead in time and fragmented ownership posed a challenge for delivery of Box Hill North at the time of the review. These matters have now been remedied with EJC having entered into agreements to purchase 86% of the site and 'in principal' support with Sydney Water in relation to forward funding enabling services. As demonstrated throughout this planning proposal, the Box Hill North site is capable of speedy and well planned development with the first lots ready to be taken up in 2016.

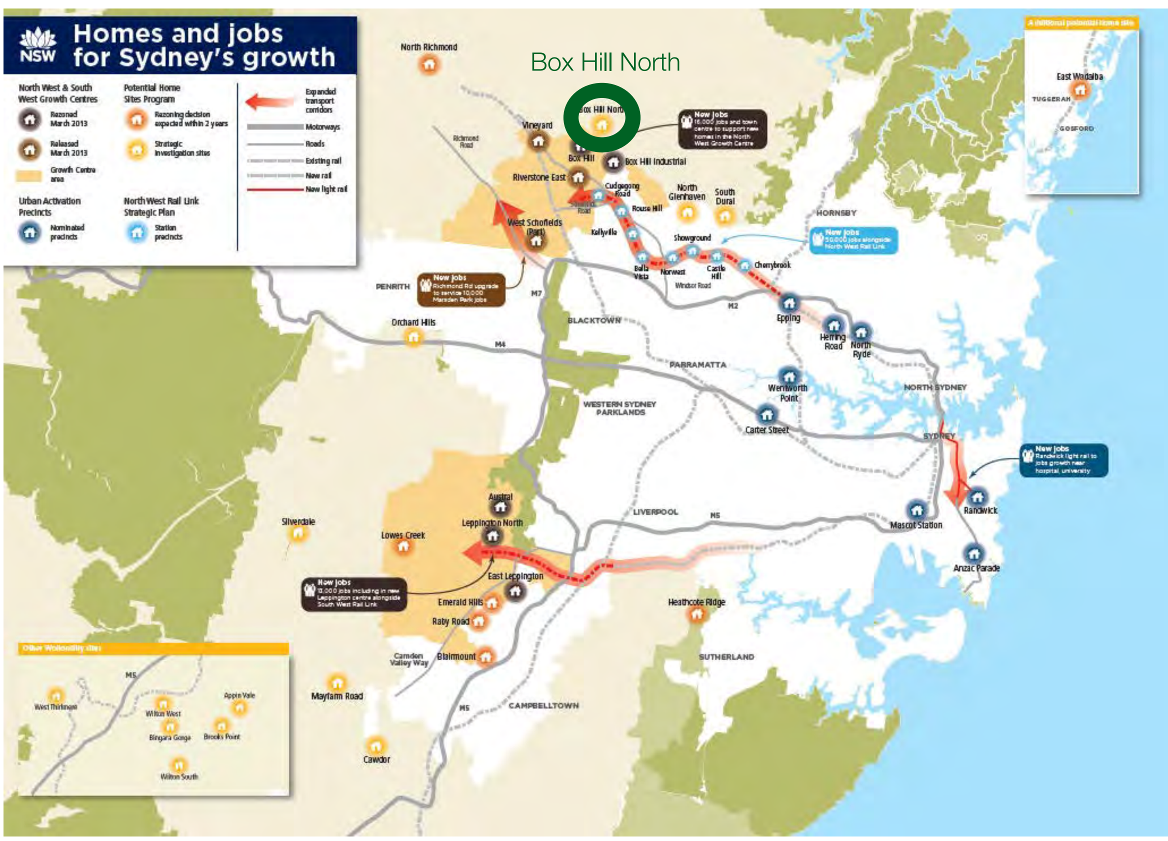


Figure 2. Potential Homes Sites Program – Evaluation Report

1.3.2. Consultation

Consultation has been undertaken with Council and relevant Government agencies during the preparation of supporting technical studies investigations. The following public authorities, including all relevant utility providers, have been consulted:

- Department of Planning and Infrastructure;
- Department of Environment and Heritage;
- Department of Education and Communities;
- Department of Transport;
- The Hills Shire Council
- Transport NSW (Roads and Maritime Services);
- NSW Rural Fire Service;
- Sydney Water;
- NSW Police; and
- NSW Fire.

A summary of consultation undertaken with public agencies has been prepared by APP and is included at **Appendix A**.

SECTION 2.

Site Analysis

2. Site Analysis

2.1. Site Location

Box Hill North comprises an area of approximately 380 hectares. It is located to the north of the recently rezoned Box Hill and Box Hill Industrial Precinct and lies approximately 48 km to the north west of Sydney CBD. The site is generally bound by Maguires Road to the north, Old Pitt Town Road to the south, Janpieter Road to the east and Boundary Road to the west. The metropolitan and regional context of the site is illustrated in Figure 3. A site plan is provided at Figure 4.

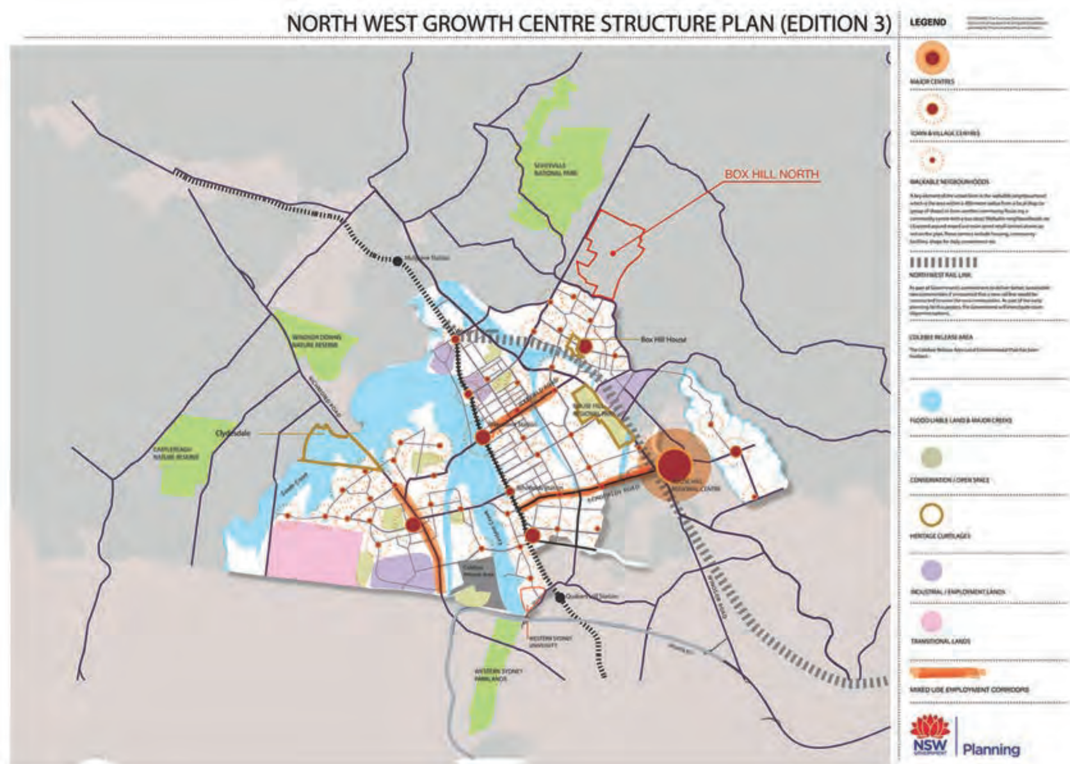


Figure 3. North West Growth Centre Structure Plan

Figure 4. Location Plan

2.2. Land Ownership and Legal Description

The legal description, area and current ownership of land to which the Planning Proposal applies is detailed in Table 1 below.

Table 1. Land ownership and legal description (land subject to agreement with EJC)

Lot	Lot and DP	Owner	Area (Ha)
9	593517	Brian & Susan Eveston	10.01
17	255616	John & Lorraine Earl	12.03
1	207750	Anthony & Angela Brisindi	11.09
2	11126	Mario Rechichi & Mary Lawler	12.07
10	593517	Joe & Stella Sant	10.01
4	253552	Eugene Kavanagh	10.02
27	255616	Michael & Jane Mathers	10.02
30	255616	Fred & Elaine Dominello	10.01
18	255616	Charlie & Mary Portelli	10.06
23	255616	Garry & Mary Galea	10.01
44	255616	Joseph & Steven Bugeja	10.01
43	255616	Zaren & Rose Bugeja	10.01
2	253552	D & A Kavanagh, T Akuila, R & R Edwards	10.35
4	135304 A & B	Paul & Margaret Gaudry	12.68
41	255616	Paul & Diane Sammut	10.01
1	11126	John & Daphne Cox	12.07
45	255616	E, M E G & A Miscallef	10.02
46	255616	E, M E G & A Miscallef	10.03
26	255616	Charlie & Pauline D'Anastasi	10.01
21	255616	Verna Joy Howes	11.02
5	658286	Twihaven Pty Limited	12.65
16	255616	John Martin Camilleri	10.56
31	255616	Diverse Construction Group Pty Limited	10.34
3	11126	Maguires Road Pty Limited	12.68
40	255616	Mahmoud & Jamila Hussein	10.01
29	255616	Norma Jean Pike	10.08
25	255616	Sam D'Anastasi	10.01
1	564211	John & Josephine Saliba	12.00
15	255616	I & M Zalac & G & C Galdes	10.03
22	255616	E.J. Cooper & Son PL	10.13
47	255616	E.J. Cooper & Son PL	10.15
			330.18

The legal description, area and current ownership of land also included in proposal which EJC do not have legal agreements to purchase are detailed in Table 2 below.

Table 2. Land ownership and legal description (land not subject to agreement with EJC)

Lot	Lot and DP	Owner	Area (Ha)
24	255616	Michael & John D'Anastasi	10.01
28	255616	Blazenka, Stephen & Christine Grgic	10.01
42	255616	John and Peta Cappello	10.01
1	253552	George & Vicki Attard	10.04
3	253552	MCA Medical Supplies Pty Limited	10.03
1	782360	Kevin James Wiley & Debra Ann Wiley	0.20
			50.3

The planning proposal and draft LEP maps show suggested land use zones and development standards for land that is identified in Table 2.

2.3. Existing Zoning and Development Standards

The site is currently zoned RU6 Transition under The Hills Local Environmental Plan 2012 (The Hills LEP 2012). There are a range of existing development standards that apply to the land under the existing LEP, including provisions relating to minimum subdivision lot size (i.e. 2 hectares) and building height (i.e. maximum 10 m).

2.4. Existing Land Uses and Development

An aerial photograph of the site is included at Figure 5. General views of the site are illustrated in Figures 6 to 11.

The site is used for low intensity farming, primarily grazing land for cattle, horse stables and a small number of market gardens. It also contains a number of rural residences, numerous farm dams and outbuildings. An 85 m wide electricity transmission corridor transects the north-west portion of the site.

2.5. Topography

The site consists of undulating land with slopes generally within a range of 1 to 3%. The land has generally been cleared and consists mainly of grassed land. The regional topographic data map (NATMAP, 1975) shows the site at approximately 40 metres Australian Height Datum (AHD). The southern portion of the site along Old Pitt Town Road forms a ridge with a gentle fall to the north. There are a number of small drainage lines that cross the site, connecting farm dams, with a main creek Cataract Creek orientated north south in the northern portion of the site. The site topography is illustrated at Figure 12.

Figure 5. Aerial Photograph


Figure 6. View of the site from Cataract Road, looking north-east


Figure 7. View of the site from Red Gables Road, looking north


Figure 8. View of the site and transmission line and towers from the corner of Red Gables Road and Boundary Road


Figure 9. View of the site along Cataract Road, looking south-east


Figure 10. View of the site along Maguires Road, looking south


Figure 11. View from the north-east corner of the site (Maguires Road), looking south-west

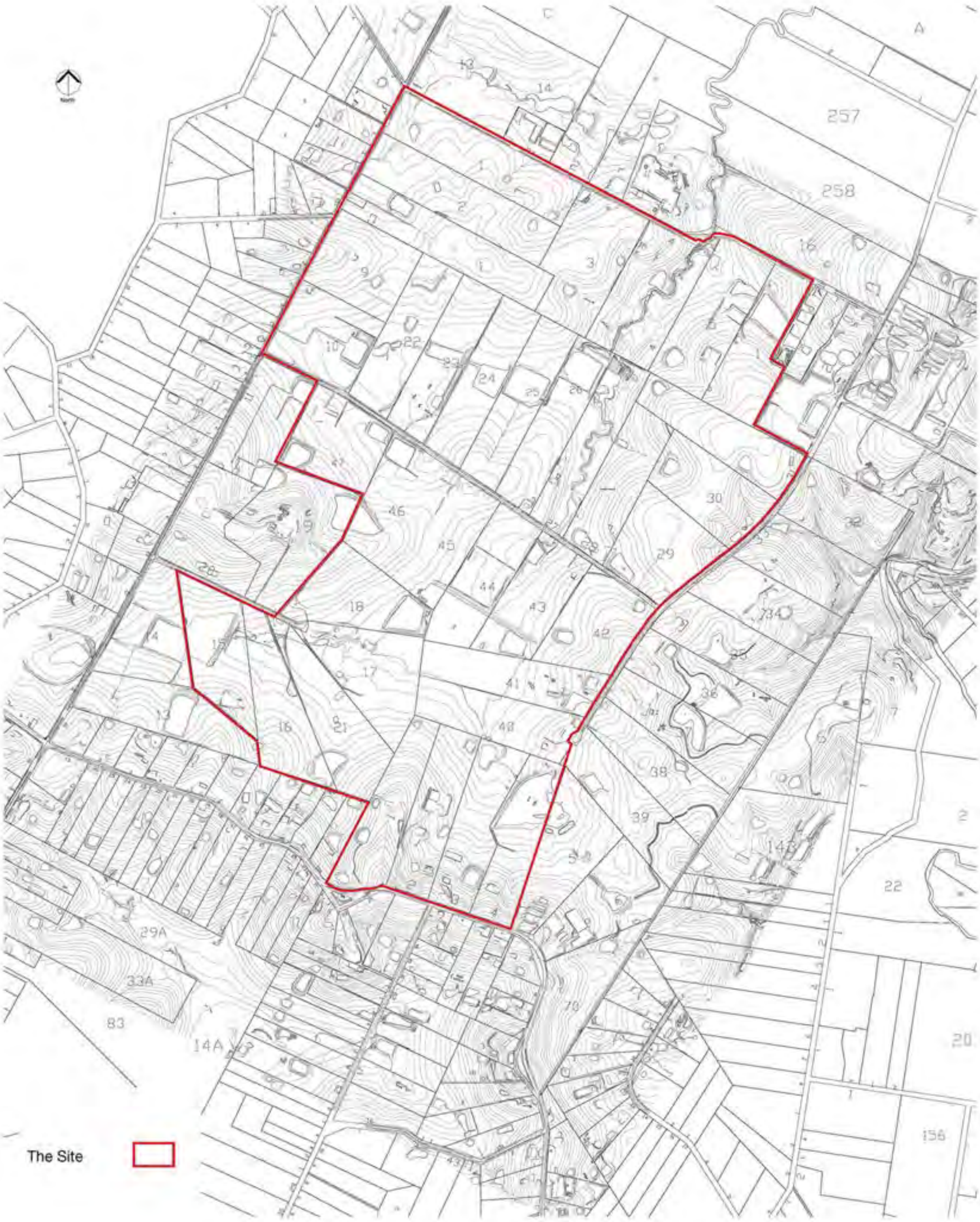


Figure 12. Topography

2.6. Hydrology

Three water courses enter the site along the western boundary. Two of these water courses merge within the site with the third draining through the north-west corner of the site. The combined water course flows in a northerly direction and forms a tributary to Cataract Creek. Another water course enters the site at the eastern boundary, toward the northern extents. This water course joins the main water course at the site's northern boundary. A small portion of the site drains to the eastern boundary and forms a tributary to Cattai Creek.

The site includes a number of farm dams, associated diversion embankments and channels, both online and offline to the main water courses (refer to Figure 14). Several of these online dams are significant in area (up to approximately 15 hectares), resulting in a significant change to the hydrology and flooding that would have occurred prior to any development of the catchment.

2.6.1. Riparian Corridors

As part of the NSW Office of Water guidelines, water courses orders have been classified under the Strahler System using current 1:25,000 topographic maps. Water courses within the site have been classified as either 1st or 2nd order water courses (refer to Figure 15) and are subject to the riparian corridor widths and riparian corridor matrix set out in Table 3 and Figure 13.

Table 3. Strahler System of Stream Classification

Watercourse type	VRZ width (each side of watercourse)	Total RC width
1st order	10 m	20 m + channel width
2nd order	20 m	40 m + channel width
3rd order	30 m	60 m + channel width
4th order and greater (includes estuaries, wetlands and any parts of rivers influenced by tidal waters)	40 m	80 m + channel width

Stream order	Vegetated Riparian Zone (VRZ)	RC off-setting for non RC uses	Cycleways and paths	Detention basins		Stormwater outlet structures and essential services	Stream realignment	Road crossings		
				Only within 50% outer VRZ	Online			Any	Culvert	Bridge
1st	10m	•	•	•	•	•	•	•		
2nd	20m	•	•	•	•	•		•		
3rd	30m	•	•	•		•			•	•
4th +	40m	•	•	•		•			•	•

Figure 13. Riparian Corridor Matrix (NSW Office of Water)

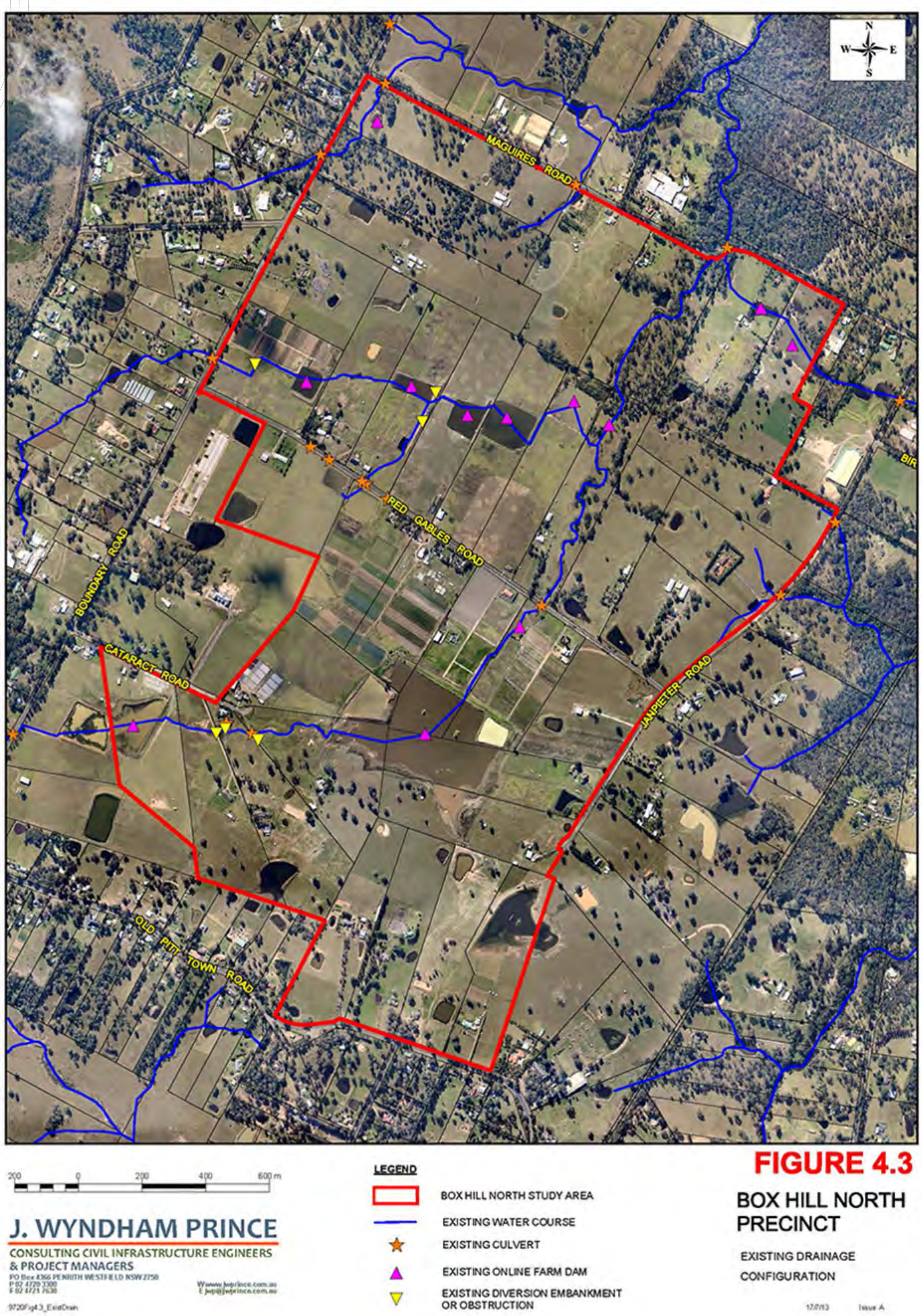


Figure 14. Existing drainage configuration

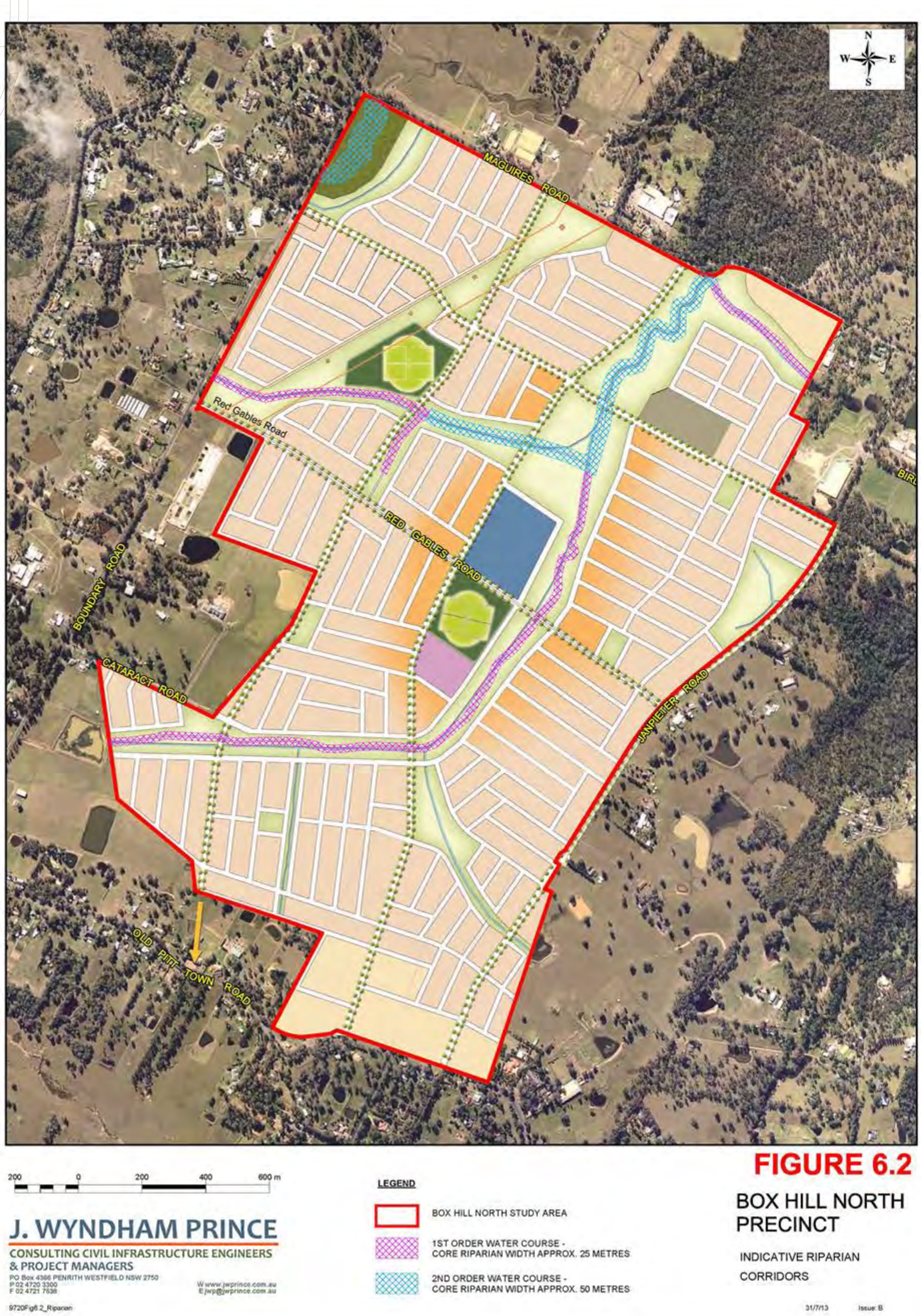


Figure 15. Indicative Riparian Corridor

2.6.2. Flooding

The Floodplain within the Box Hill North site is located above RL 17.3 and is therefore not affected by regional Hawkesbury/Nepean flooding for the 100 year ARI event. The regional PMF extends slightly into the northern extents of the Box Hill North Precinct, but is limited to the area designated as riparian corridor. As the chances of a regional and local PMF storm event occurring simultaneously are extremely remote, regional tailwater conditions are therefore not considered for the site. The extent of the 100 year ARI and PMF regional flood events is illustrated on Figure 16.

2.7. Geology

The regional geological map (DMR, 1991) shows the site is underlain by Middle Triassic Bringelly Shale, Mittagong Formation and Ashfield Shale, all part of the Wianamatta Group. The Bringelly Shale consists of shale, carbonaceous claystone, claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff. The Mittagong Formation consists of fine to medium-grained quartz-lithic sandstone. The Ashfield Shale consists of dark-grey to black claystone-siltstone and fine sandstone-siltstone laminate.

The regional soil map (SCS, 1989) shows the site located within two soil landscape groups, the residual Lucas Heights and Blacktown Soil Landscapes. The Lucas Heights Landscape soils are typically found on gently undulating crests and ridged on plateau surfaces of the Mittagong Formation, with local reliefs of up to 30 m and shallow slopes. The soils generally consist of moderately deep hard setting yellow podzolic and yellow soloth soils. The profile is characterised by stony soil, low soil fertility and low available water capacity. The Blacktown Soil Landscape soils are typically found on gently undulating rises overlying shales of the Wianamatta Group, with local reliefs of up to 30 m and shallow slopes. The soils generally consist of shallow to moderately deep hard setting podzolic soils, typically mottled red and brown on crests and grading to yellow on lower slopes and within drainage lines. The profile is characterised by moderately reactive highly plastic subsoils, low soil fertility and poor soil drainage. The original vegetation of eucalypt woodland and tall open forest is expected to have been cleared.

Groundwater bore data indicates relatively shallow surface soils comprising sandy clay and sand to depths between 0.5 m and 13 m below ground surface overlying sandstone and shale bedrock.

2.8. Acid sulphate soil

Acid Sulphate Soil mapping under The Hills LEP 2012 does not indicate the presence of acid sulphate soils.

2.9. Contamination

A Preliminary Site Investigation of the site was undertaken by JBS Environmental Pty Ltd (refer to report included at Appendix B). The preliminary site investigation has concluded that the potential for widespread contamination across the site is low and the potential areas of ‘environmental concern’ as identified below will not prevent planning and development of the land for the proposed uses.

2.9.1. Potential areas of environmental concern

Potential areas of environmental concern are identified in Figure 17 and Table 4.

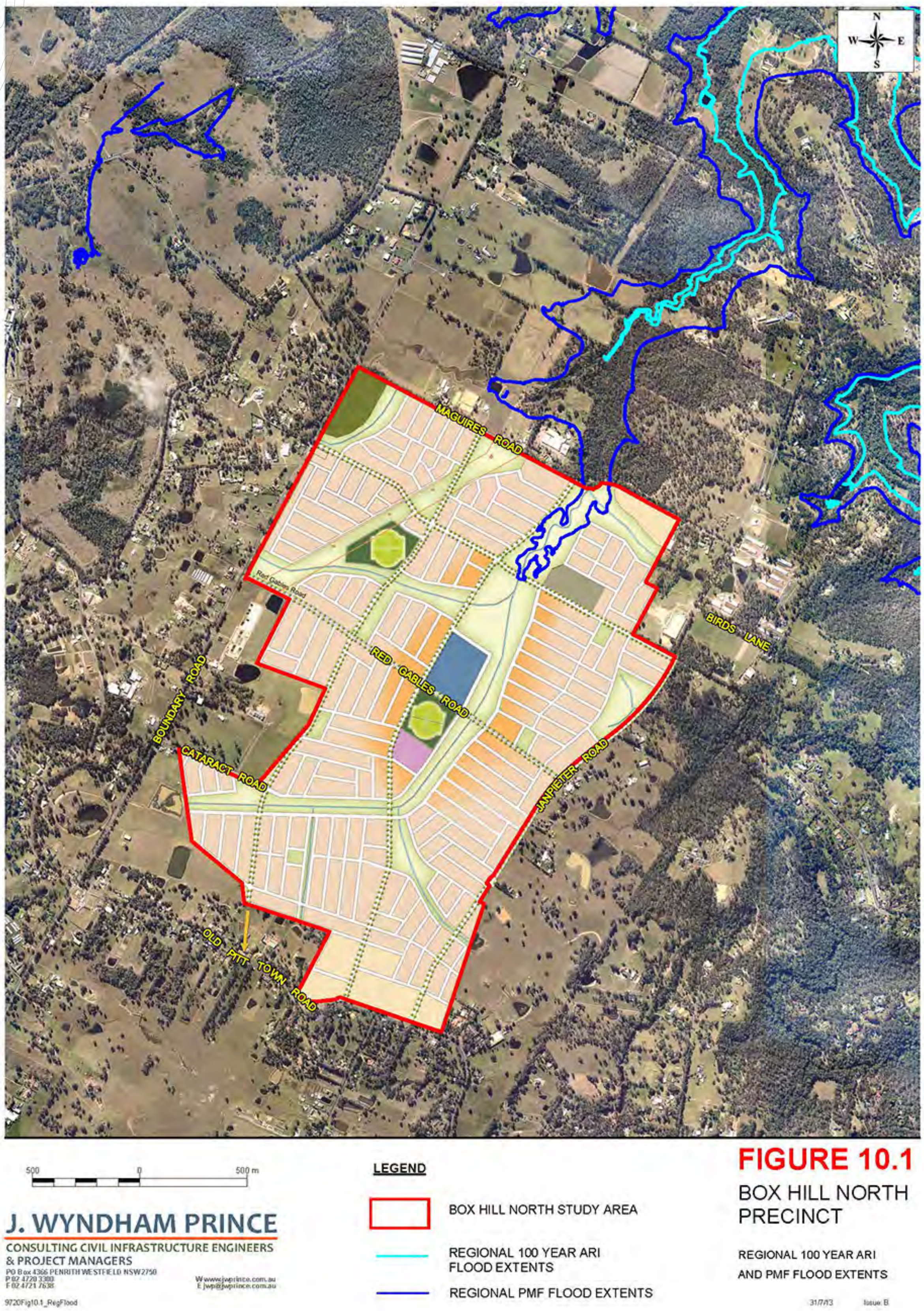


Figure 16. Regional 100 Year ARI and PMF Flood Extents

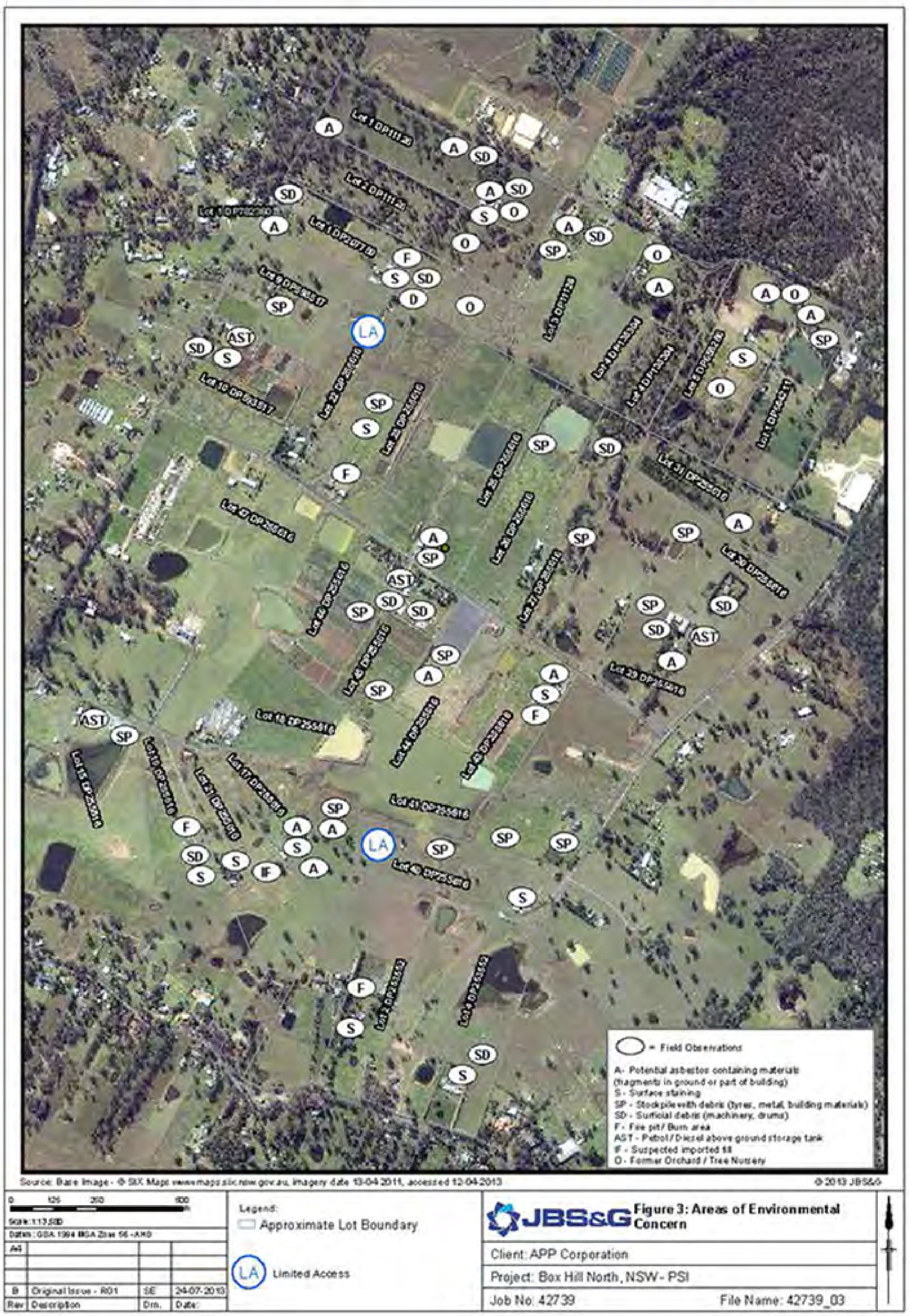


Figure 17. Areas of environmental concern

Table 4. Potential areas of environmental concern

Area of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
Fill material used to alter the sites topography	Heavy metals, TPH/BTEX, PAHs, OCPs, PCBs, volatile organic compounds (VOCs), asbestos, acid sulphate soils (ASS)
Former site structures	Lead paint, asbestos
Contamination associated with agricultural landuse, including former orchards and/or tree nurseries	Heavy metals, OCPs and OPPs
Potential underground and/or above ground storage tanks at the site (in particular at farm workshops)	Heavy metals, TPH/BTEX, PAHs and VOCs
Hazardous materials storage (pesticides), maintenance areas/workshops with associated oil storage/staining, surface debris/ debris stockpiles and burn pits.	Heavy metals, TPH/BTEX, PAHs, OCPs, PCBs, VOCs, asbestos
Regional groundwater (regional use predominantly agricultural)	OCPs, OPPs, metals, TPH/BTEX, VOCs, nutrients.

2.9.2. Potentially Contaminated Media

Potentially contaminated media present at the site include:

- Fill material;
- Natural soils and/or bedrock; and
- Groundwater.

The historical review identified that previous site activities has included agricultural activities which may have impacted the historical soils. In addition, the reclamation and filling of around farm dams has the potential for impacted material to have been imported to the site for use as fill. Based on the potential mobility of contaminants and their associated potential leachability through the soil/fill profile, vertical migration of contaminants from the surface soils and fill material into the underlying natural soils/sandstone bedrock may have occurred. As a result, the natural soils and underlying sandstone bedrock are also considered to be potentially contaminated media. Given the occurrence of alluvial soil conditions at the site, there is a possibility of shallow perched groundwater occurring within either alluvial deposits or occurring across the bedrock interface in near surface soils, particularly following sustained rainfall events. The anticipated shallow depth to underlying sandstone bedrock of low permeability may result in the potential for lateral migration of contaminants within subsoil water across the bedrock interface in surface and near-surface fill material and/or natural soil especially following rainfall events Taking into account the likely depth of groundwater and the potential leachability of the identified contaminants of concern, it is considered that groundwater is a potentially contaminated medium. As with the natural soils, the potential for contamination of groundwater will depend upon the actual nature, occurrence and characteristics of contamination within the overlying fill material and potentially natural soils.

2.9.3. Potential for Migration

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential contaminants identified as part of the site history review and site inspection are generally in either a solid form (e.g. heavy metals, PAHs, asbestos, OCPs) or liquid form (e.g. fuel, oils, pesticides). As the ground surface across the site comprises predominantly unsealed areas, the potential for windblown dust from the site and potential for contamination migration via surface water movement and infiltration of water and subsequent migration through the soil profile is considered to be moderate.

Based on the results of the PSI investigation as outlined in section 8.5, there is potential for subsurface contamination to be present on the site as a result of current and previous site usage (i.e. agriculture). Based on the site observations and agriculturally related site activities, it is considered that the potential for widespread contamination across the site is low, with the possible exception of asbestos.

The impact of contamination on the planning proposal is addressed in section 3.4.

2.10. Aboriginal Cultural Heritage

An Aboriginal Heritage Archaeological Assessment Report, prepared by Kelleher Nightingale Consulting Pty Ltd is included at **Appendix C**. The assessment included background research and an archaeological field survey conducted in accordance with the Office of Environment and Heritage (OEH) requirements including:

- Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales; and
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales.

Four Aboriginal archaeological sites were identified in the study area:

- Box Hill North 1 (BHN 1) – grinding groove site;
- Box Hill North 2 (BHN 2) – open artefact scatter ;
- Box Hill North 3 (BHN 3) - open artefact scatter; and
- Box Hill North 4 (BHN 4) – isolated find.

These sites are identified on Figure 18. Three of the identified sites (i.e. BHN 1, BHN 2 and BHN 3) were defined by an association with the flat terraces and gentle lower slopes bordering waterways, characteristic of the topography of the study area. The presence of a grinding groove site on the Hawkesbury sandstone outcropping in the north of the study area is characteristic of the underlying geology of this part of the study area.

Areas of high potential for intact subsurface archaeology exist in association with the particular landforms known to be archaeologically sensitive in the local and regional area – gentle lower slopes, terraces and flats bordering waterways (refer to Figure 19). These areas, where the deposit is stable and relatively unmodified by disturbance, retain high archaeological potential. Moderate potential exists on less archaeologically sensitive landforms, or where the ground surface has been subject to low-moderate disturbance. Low archaeological potential is contained in areas that have been subject to significant disturbance and the creation of highly modified landscapes due to intensive farming and dam construction.

Low visibility of the ground surface hampered the identification of archaeological sites and it is possible that the area contains more than were identified during the field survey.

In accordance with the significance assessment criteria established in the Australia ICOMOS Burra Charter, 1999 (Australia ICOMOS 1999), BHN 1 (the grinding groove site) is considered to be of high significance. The remaining Aboriginal archaeological sites, BHN 2 and BHN 3 (open artefact scatter) and BHN 4 (isolated find) have moderate significance.

Figure 18. Aboriginal sites within the site

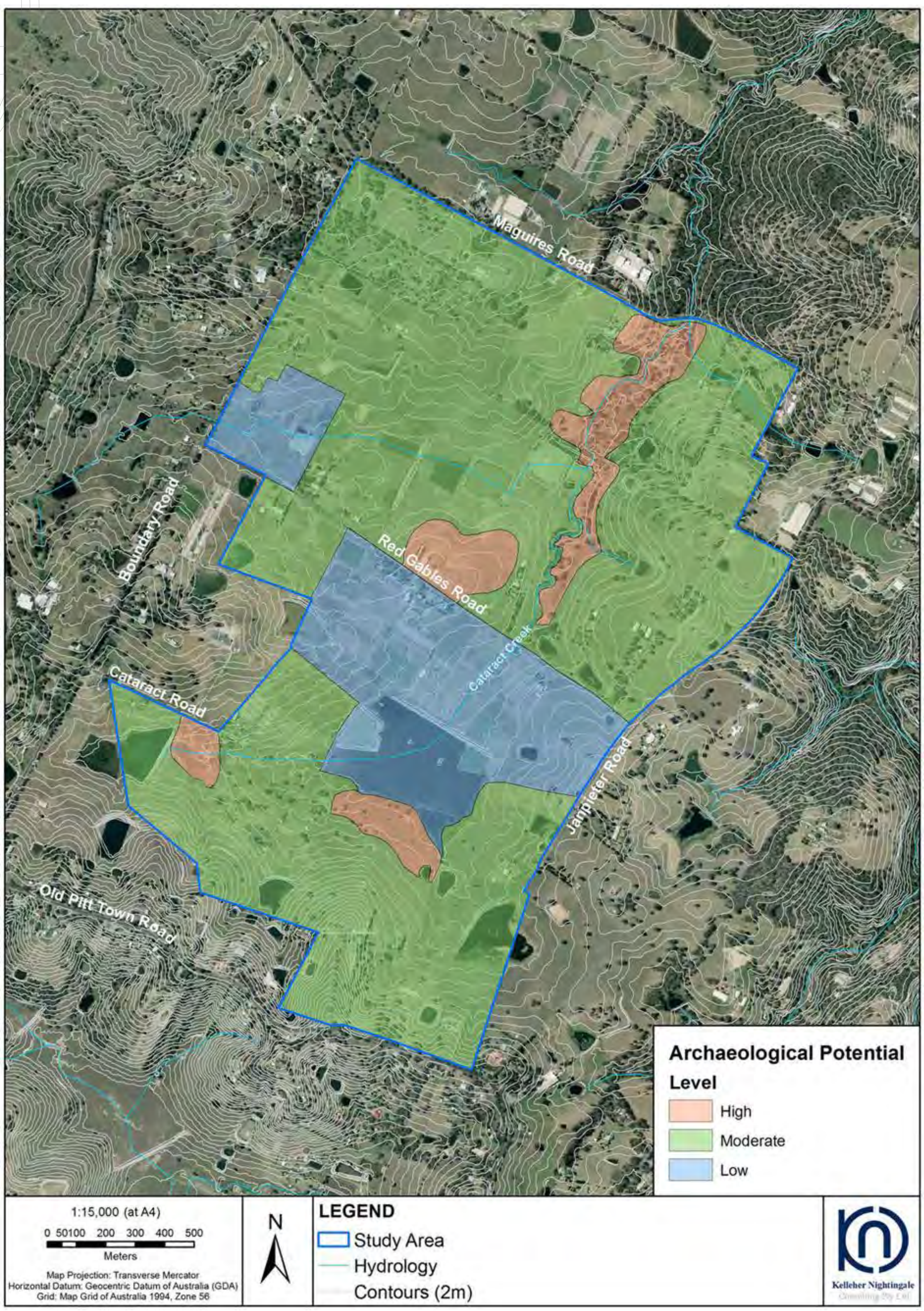


Figure 19. Assessment of archaeological potential in the study area

2.11. European Heritage

The site does not contain any items of local or State heritage significance.

2.12. Ecological Characteristics and Values

A Flora and Fauna Assessment prepared by NGH Environmental and Cumberland Ecology is included at **Appendix F**. The key ecological characteristics and values of the site are identified below.

2.12.1. Vegetation communities

The subject site has a history of agricultural land use and has been largely cleared as a result. The site consists of farmland with exotic vegetation (pasture, crops and shelter belts of trees) and farm dams.

The original vegetation across most of the subject site was likely to have comprised open forest and woodland. In cleared areas, the presence of scattered paddock trees species such as Grey Box (*Eucalyptus moluccana*), Forest Red Gum (*Eucalyptus tereticornis*) and Narrow-leaved Ironbark (*Eucalyptus crebra*) indicate that the original vegetation across much of the subject site would have been dominated by Cumberland Plain Woodland (CPW). In the north east of the subject site, open forest dominated by Forest Red Gum (*Eucalyptus tereticornis*), Rough Barked Apple (*Angophora floribunda*) and Grey Gum (*Eucalyptus punctata*) together with a shrubbier understorey indicates that Shale Sandstone Transition Forest (SSTF) originally occurred along Cataract Creek, particularly in areas where Hawkesbury Sandstone is exposed at the creek banks.

Only a few patches of native woodland and forest vegetation remain in the current landscape (refer to Figure 20). These patches of woodland represent young, woodland and forest that have been allowed to regenerate after clearing. Notwithstanding, these vegetation patches conform to CPW and SSTF (Patches 1-3). The largest patches of CPW (Patches 4 and 5) and SSTF (Patch 6) are located within the northern portion of the site.

The size and shape of the remaining woodland areas, and the fact that they are surrounded by heavily cleared and modified farmland presents a challenge for long term conservation. This is because with increased intensity of land usage, there is potential for the remaining patches to become increasingly isolated and for edge effects (e.g. encroachment of weeds, disturbance by humans) to become more significant.

Cumberland Plain Woodland (Patches 1-5)

All of the mapped patches of CPW within the subject site support young canopy trees that are sufficiently mature to be reproductive. These trees are likely to produce blossom resources for fauna; however, they are too young to have hollows. All patches largely lack a shrubby understorey but have a moderate diversity of grasses and other native herbaceous plants in the understorey. Patch 1 is dominated largely by Forest Red Gum (*Eucalyptus tereticornis*). The understorey is semi-natural with a mixture of native grasses and shrubs such as Blackthorn (*Bursaria spinosa*).

Patches 2 and 3 are similar to Patch 1 in composition and diversity of understorey but are largely dominated by Grey Box (*Eucalyptus moluccana*) and Narrow-leaved Ironbark (*Eucalyptus crebra*). The grassy understorey within these patches is of variable quality but largely native in composition. Patches 4 and 5 were originally shown in the NGH assessment as one patch of CPW. However, due to the variable condition of the understorey, the original patch was refined to exclude exotic grassland areas from the patch. The better areas of CPW within Patch 4 are generally located within the western half of the patch (see Figure 21).

Figure 20. Location of CPW and SSTF

Figure 21. Condition of CPW and SSTF

Shale Sandstone Transition Forest (Patch 6)

SSTF occurs in the north east around the tributary of Cataract Creek. The patch is in an "L" shape, where the longest part of the patch is along the creek, with a bulge to the east. The trees along the creek appear to be the oldest and largest and the highest concentration of hollows is along the creek. Conversely, where the patch bulges away from the creek, the forest appears to be much younger re-growth and lacks tree hollows. Therefore the more significant portions of the SSTF patch on the subject site appear to be centred around the creek line. The trees within this patch are dominated largely by Forest Red Gum (*Eucalyptus tereticornis*) and Rough-barked Apple (*Angophora floribunda*). Other tree species include Grey Gum (*Eucalyptus punctata*) and Narrow-leaved Ironbark (*Eucalyptus crebra*).

Grassland

Native grasses are relatively abundant in the grassy openings amid Patch 4 and around Patch 1. Such native grasses and a suite of native herbs also occur amid the ground stratum of the six woodland patches on the subject site. Most grassland surrounding the patches of forest and woodland have been significantly altered and are now dominated by exotic grasses such as Carpet Grass (*Axonopus affinis*), Paspalum (*Paspalum dilatatum*) and Couch (*Cynodon dactylon*). Exotic grasslands comprise more than 90% of the grasslands within the site. Very little grassland on site appears to be of high enough condition to be considered as part of the state listing of the CPW TEC.

2.12.2. Fauna Habitats and Threatened Species

Threatened fauna with the potential to occur on the site is identified in Table 5 below.

Table 5. Threatened Fauna with Potential to Occur on the Subject Site

Threatened and Migratory Vertebrate Taxa	Latin Names	Status^ TSC Act	EPBC Act	*types of habitat resources	Vegetation Type
Birds					
Swift Parrot	*Lathamus discolor*	E	E	f	CPW, SSTF
Spotted Harrier	*Circus assimilis*	V	not listed	f	CPW, SSTF, dams
White-bellied Sea-eagle	*Haliaeetus leucogaster*	not listed	Mar; Mi	f	CPW, SSTF, dams, grassland
Cattle Egret	*Ardea ibis*	not listed	Mar; Mi	f	CPW, SSTF, dams, grassland
Tree-dwelling Marsupials					
Koala	*Phascolarctos cinereus*	V	V	f	CPW, SSTF
Microchiropteran Bats and Flying Foxes					
Grey-headed Flying Fox	*Pteropus poliocephalus*	V	V	f	CPW, SSTF
Eastern Bentwing-bat	*Miniopterus schreibersii oceanensis*	V	not listed	f	CPW, SSTF
Eastern Freetail-bat	*Mormopterus norfolkensis*	V	not listed	f, r	CPW, SSTF
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*	V	not listed	f, r	CPW, SSTF

Threatened and Migratory Vertebrate Taxa	Latin Names	Status^ TSC Act	EPBC Act	*types of habitat resources	Vegetation Type
Frogs					
Green and Golden Bell Frog	*Litoria aurea*	E	V	f,b	dams
Invertebrates					
Cumberland Land Snail	*Meridolum corneovirens*	E	not listed	f,b	CPW, SSTF

^E = Endangered; V = Vulnerable; Mar = Marine; Mi = Migratory *f = foraging; r = roosting; b = breeding

The following threatened and migratory species were recorded during surveys in May 2013 by NGH Environmental:

- Spotted Harrier (*Circus assimilis*) – Vulnerable, TSC Act;
- Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) - Vulnerable, TSC Act;
- Eastern Freetail-bat (*Mormopterus norfolkensis*) - Vulnerable, TSC Act;
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*) - Vulnerable, TSC Act;
- White-bellied Sea-eagle (*Haliaeetus leucogaster*) – Migratory, EPBC Act; and
- Cattle Egret (*Ardea ibis*) – Migratory, EPBC Act.

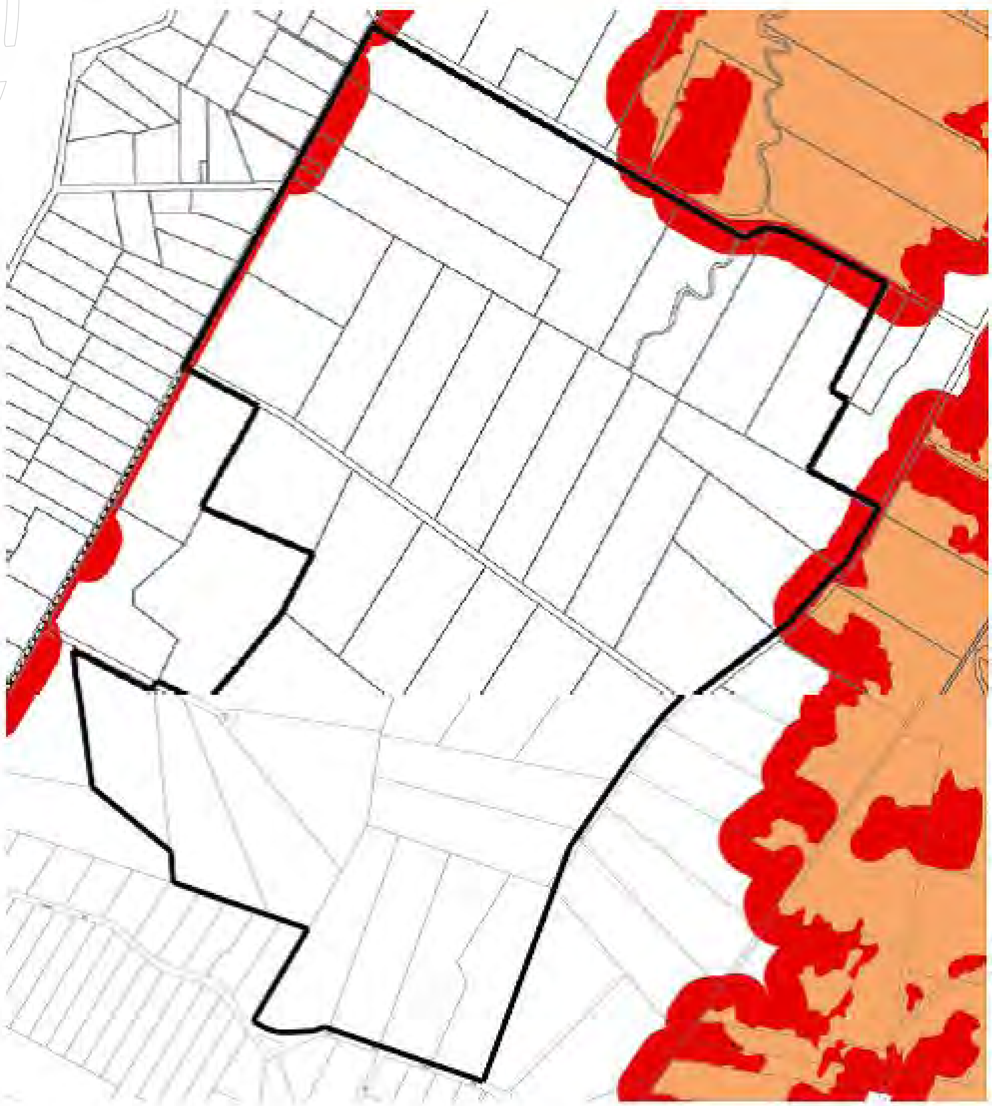
Forest and woodland habitats on the site are highly modified and generally, there is a lack of fallen timber on the ground to provide habitat that supports ground dwelling fauna. Patches of CPW (1-5) generally lack tree hollows as the dominant trees are relatively young mature specimens too young to produce hollows. All CPW woodland patches have semi-natural grassy understorey which, at the time of this investigation were cattle-grazed. Like the lack of fallen timber, this reduces the values of the CPW patches for fauna. Of the fauna species considered most likely to occur on the subject site, relatively few of these are likely to forage in or find significant habitat within the CPW patches. The SSTF on the site comprises the most intact and continuous wooded habitats for native fauna and, as it occurs along Cataract Creek, the larger trees occur in places amid sandstone outcrops. The SSTF on the subject site also retains the highest number of hollow-bearing trees and so have important habitat values for threatened fauna.

2.13. Bushfire Assessment

A bushfire constraints assessment, prepared by Australian Bushfire Protection Planners Pty Ltd is included at **Appendix E**. Parts of the site are identified as being within a 100 m buffer zone to Category 1 Bushfire Prone Vegetation on Council's Bushfire Prone Land Maps. These areas are shown on Figures 22 and 23 and comprise linear strips of land within the sites:

- western boundary, adjacent to Boundary Road;
- northern boundary, adjacent to Maguires Road; and
- eastern boundary, adjacent to Janpieter Road

A site inspection undertaken by Australian Bushfire Protection Planners Pty Ltd has identified that Council's Bushfire Prone Land Map inaccurately records the extent of bushfire prone vegetation to the north and north-east of the site. This land is under-scrubbed, managed and not deemed to be Category 1 Bushfire Vegetation. As a result, a reduced area of the northern and eastern boundaries of the site should be identified as being located within the 'buffer' zone.



Legend: Orange – Category 1 Bushfire Prone Vegetation; Red – 100m wide buffer zone to Category 1 Bushfire Prone Vegetation.

Figure 22. Extract from The Hlls Bushfire Prone Land Map

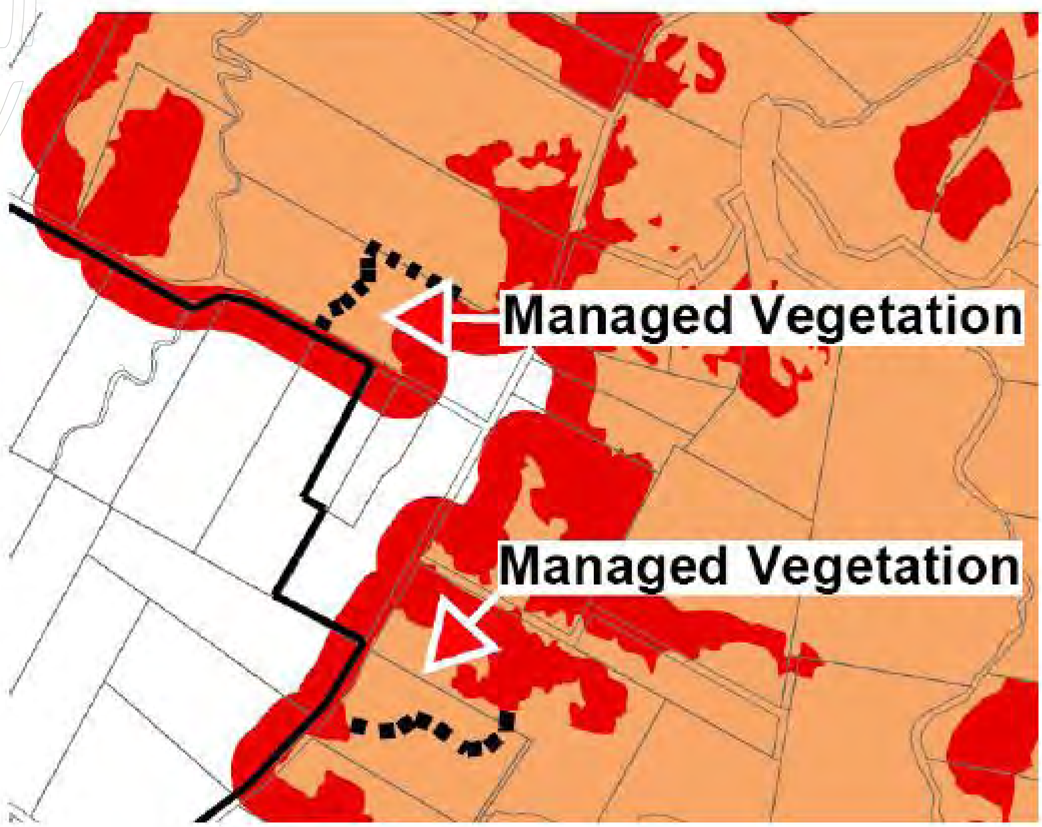


Figure 23. Extract from The Hills Bushfire Prone Land Map showing the modification to the extent of the mapped Category 1 Bushfire Vegetation (outside of the site)

2.14. Access and Transport

A Transport and Access Impact Assessment, prepared by GTA Consultants is included at **Appendix F.** The key transport network and future infrastructure and upgrades in the Greater Western Sydney region are identified in Figure 24.

2.14.1. North West Rail Link

The North West Rail Link will provide passenger rail services every 5 minutes during peak periods and every 10 minutes across the day and on weekends. The North West Rail Link will feature eight new stations between the Cudgegong Road Station in Schofields to Epping Station and extend the existing Epping to Chatswood line to Chatswood. Future plans for the line include extension to the Sydney CBD via a second Harbour Crossing and further extension to Hurstville and Bankstown.

2.14.2. Local Road Network

Key elements of the existing road network are:

- Windsor Road - state road, two-way road configured with a 4-lane, 26 metre wide carriageway, including a 8 metre wide median, set within an approximately 40 metre wide road reserve.
- Boundary Road - regional road, two-way road configured with a 2-lane, 8 metre wide carriageway, set within an approximately 20 metre wide road reserve.
- Old Pitt Town Road - local road, two-way road configured with a 2-lane, 8 metre wide carriageway, set within an approximately 20 metre wide road reserve.
- Terry Road - local road, two-way road configured with a 2-lane, 8 metre wide carriageway, set within an approximately 20 metre wide road reserve.

2.14.3. Road Network Improvements

As outlined in the North West Growth Centres Structure Plan - Explanatory Notes (Department of Planning and Infrastructure, March 2010), the *"structure Plan makes use of, and improves, the existing network of rural roads. The network will be extended and enhanced to accommodate the increase in travel demand. Existing arterials will be upgraded. These improved roads will also accommodate either bus priority measures, transit lanes or a centre median transitway".* Among the existing roads that have been identified for future upgrades over the next 25 to 30 years, and crucial for the connection of Box Hill North to the existing and proposed railway networks are Garfield Road corridor and Terry Road.

Intersection improvements planned as part of Box Hill and Box Hill Industrial Precincts include the following:

- Windsor Road/ Nelson Road – conversion to three-way intersection;
- Windsor Road/ Terry Road/ Garfield Road – additional right-turn lane along Windsor Road East, two lanes (one through, one right turn) along Terry Road and Garfield Road;
- Windsor Road/ Mount Carmel Road – new signalised; and
- Windsor Road/ Boundary Road – conversion to four-way with re-alignment of Loftus Street.

2.14.4. Bus Network

Busways operate Bus Route 746 along Terry Road and Old Pitt Town Road, with five trips daily between Riverstone and Box Hill. Hawkesbury Valley Buses operate Bus Route 662 along Boundary Road, with one service to Riverstone in the morning and one service from Riverstone in the afternoon on weekdays. In relation to future bus services, the North West Sector Bus Servicing Plan (NSW Transport and Infrastructure, 2009) provides for a future bus network that would service growing public transport demand in the North West Growth Centre arising from increased population and employment. The plan proposes an all-day bus network as shown in Figure 25.

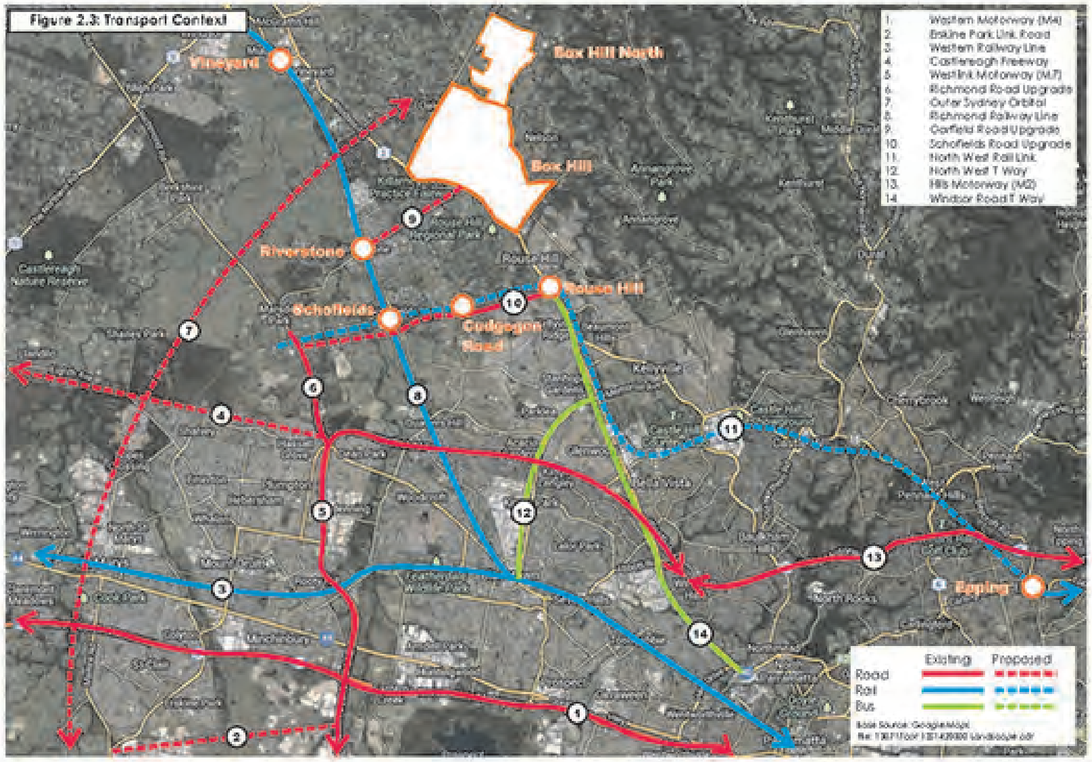


Figure 24. Regional Transport Context

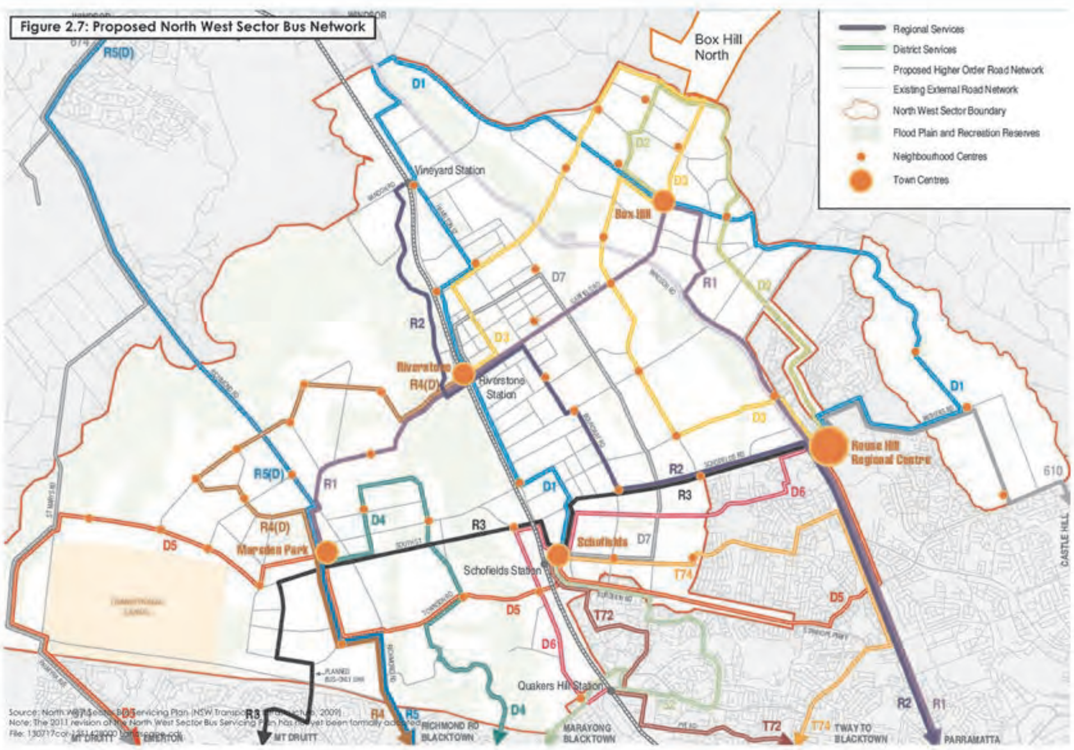


Figure 25. Proposed North West Sector Bus Network

The proposed bus network indicates two proposed new routes in the vicinity of Box Hill North:

- Route D2: Rouse Hill – Withers Road – Box Hill; and
- Route D3: Rouse Hill – Box Hill – Riverstone.

It is anticipated that the routes outlined in the 2009 North West Sector Bus Servicing Plan would be revised with the introduction of passenger rail services at Cudgegong Road station as part of the North West Rail Link.

2.15. Community and Social Infrastructure

Consistent with its current rural residential uses, there is no existing social infrastructure within Box Hill North. There is also little in the way of existing social infrastructure in the surrounding areas at present, although this will change shortly as development of the Box Hill and Box Hill Industrial Area Precincts gets underway.

Shopping centres

Rouse Hill Town Centre provides the major shopping centre for the district and also includes restaurants, cafes and a cinema. Local village shops are available in Maraylya and Oakville.

Schools

The closest government primary schools to the site are Maraylya Public School, Rouse Hill Public School, Oakville Public School and Vineyard Public School. All are located within 5km of the Box Hill North site. The closest government high school is Windsor High School, located approximately 6km west of the site. The closest Catholic schools are Marian College (Years 7-12), approximately 12km south east of the site and Our Lady of the Angels Catholic Primary school (k-6), approximately 6km to the south east. Rouse Hill Anglican College (k-12) is located approximately 7km south east of the site. In the wider Hills district there are a number of other private high schools within reach of the site including The Hills Grammar School (Kenthurst), Northolm Grammar (Arcadia) and William Clark College (Kellyville).

The majority of the primary schools identified above have increased enrolments between 2008 and 2012, reflecting recent population growth across the area. Of particular note is Oakville Public School, the closest school to Box Hill North. This school is already over its capacity with one demountable classroom and will have no capacity to absorb demand from Box Hill North.

The Box Hill North area falls within the catchment zone for Windsor High School, which has experienced fluctuating enrolments over recent years. With a capacity for 1100 students, and a current enrolment of only 520 students, it has significant spare capacity. The closest TAFE colleges are in Blacktown and Baulkham Hills.

Community Facilities

The Hills Shire Council provides two community halls within proximity to the site, the Box Hill Nelson Community Hall and the Maraylya Hall. Rouse Hill town centre contains the Vinegar Hill Memorial Library and Vinegar Hill Community Centre, which has a variety of learning spaces which include North West Community College and Learn2. The Vinegar Hill Community Centre has not been planned nor sized to accommodate demand from future Box Hill North residents.

Childcare facilities

There are a variety of child care facilities in proximity to Box Hill North including long day care, occasional day care, before and after school care, vacation care and pre-school care.

Welfare and support services

The area close to the development site contains two facilities offering services to residents with disabilities and their carers:

- McCall Gardens Disability provides accommodation and residential service to people with intellectual disabilities, offering a range of personal support options and lifestyle choices to meet the individual and diverse needs of clients; and

- Care and Support Services Box Hill provides assistance to people who have a disability or people who are older and require additional support. For most other types of support services, residents rely on facilities and services based in Blacktown, Mount Druitt, Castle Hill and Windsor.

Medical services

The closest medical centres are located in the Rouse Hill town centre, and in Riverstone. The nearest hospital to the site is the Hawkesbury Hospital, approximately 8kmto the west. This is a private hospital, however is contracted to provide public patient services also. The area is also served by Blacktown and Westmead Hospitals as the major hospitals for the region, and by The Hills Private Hospital in Baulkham Hills and NorWest Private Hospital in Bella Vista.

Emergency Services

The closest ambulance station to the site is located within Riverstone. The nearest police stations are Riverstone Police Station and Hawkesbury Police Station. Annangrove Fire Station is located approximately 4km from the site, while the closest Rural Fire Service is the Box Hill - Nelson branch, located approximately 1km from the development site.

Open space and recreation facilities

There are currently no areas of public open space within Box Hill North or immediately adjacent areas that can meet the needs of the future Box Hill North residents. Within a 5km radius of the site there are a number of private and public sporting and recreation facilities that could be utilised by the future population. These include:

- Annangrove Aquatic and Leisure Centre, which provides a mix of pools, classes and water based activities;
- Maraylya Park, which contains a tennis court and a large playing oval;
- Killarney Practice Fairway Golf, which provides golf course facilities;
- Kingston Park Equestrian Centre; and
- Rouse Hill Regional Park, which is a large area of public open space with bike and walking trails, an adventure playground, barbecue facilities and extensive undercover seating facilities.

The Draft Contributions Plan No 15 for Box Hill Precinct notes that while “there is reasonable supply of open space in adjacent areas, overall there is a shortage of sports fields across the Shire and the Box Hill Precinct will not be able to rely on open space in the surrounding area” (p. 28).

New social infrastructure proposed for the area

New social infrastructure proposed for inclusion within the Box Hill and Box Hill Industrial Area Precincts is illustrated in Figure 26 below and includes new schools, child care facilities, open space, sport and recreation facilities, emergency services and cultural and community facilities.

While the needs of Box Hill North have not been factored into their planning, some of the proposed facilities may nevertheless help to meet needs generated from Box Hill North. This applies especially those provided on a commercial basis, where the additional population from Box Hill North will help to make viable a variety of shops, services and entertainment facilities.

Figure 26. Proposed social infrastructure within Box Hill

SECTION 3.

Planning Proposal

3. Planning Proposal

3.1. Introduction

The Hills LEP 2012 is the principal environmental planning instrument applying to the site. Under The Hills LEP 2012, the site is zoned RU6 Transition. The key objectives of the RU6 Transition zone, as set out in The Hills LEP 2012, is to protect and maintain land that provides a transition between rural and other land uses of varying intensities or environmental sensitivities and to minimise conflict between land uses within this zone and land uses within adjoining zones. The existing LEP includes a range of development standards relating to minimum subdivision lot sizes, maximum building heights, as well as special provisions relating to a range of environmental management issues including flooding and vegetation protection.

It is proposed to rezone the site from RU6 Transition to R1 General Residential, R3 Medium Density, E2 Environmental Conservation, E3 Environmental Management, E4 Environmental Living, B2 Local Centre and RE1 Public Recreation generally in accordance with The Hills LEP 2012. The Planning Proposal also seeks to establish a number of development controls to guide future development on the site including minimum lot sizes for residential development in the R1 General Residential, R3 Medium Density, E3 Environmental Management and E4 Environmental Living land use zones and maximum height of buildings development standards.

3.2. Part 1 - Objectives and Intended Outcomes

The objectives of the Planning Proposal are:

- to facilitate redevelopment of Box Hill North in a coordinated fashion and in doing so achieve the site's highest and best use;
- to accommodate 4,100 dwellings and a 5.5 hectare town centre comprising up to 10,000m2 of retail / commercial floor space;
- to deliver a design that integrates community, transport, environmental and economic outcomes;
- to create a diverse community that is demographically balanced, responds to changing life cycle, lifestyle and work requirements over time;
- to reserve land for environmental conservation;
- to develop an open space network including active playing fields, and a connecting trail network of passive recreational spaces that capture riparian and amenity qualities; and
- to identify 2.2 hectares of land for a new primary school site.

3.3. Part 2 - Explanation of Provisions

A detailed explanation of provisions is provided in section 5. The Planning Proposal will, as far as practical, incorporate the range of presently permissible land uses within the proposed land use zones together with the introduction of additional permitted residential land uses. This is to facilitate the delivery of 4,100 dwellings on the site contributing to the housing targets identified in strategic policies for the Sydney metropolitan area and the North West subregion. The Planning Proposal seeks to deliver the highest and best use of the land in the context with its environmental attributes through a "rollover" of existing controls where possible. The introduction of new site specific development standards and controls for Box Hill North has been limited to where an existing standard and control is an impediment to achieving the desired outcomes for Box Hill North.

3.4. Part 3 - Justification

The justification of the Planning Proposal is set out under the following probe questions asked in the Department of Planning and Infrastructure's *Guide on Preparing Planning Proposals*.

3.4.1. Need for the Planning Proposal

Is the Planning Proposal the result of any strategic study or report?

Box Hill North has been identified as a 'strategic investigation site' as part of the Department of Planning and Infrastructure's Potential Home Sites Program in March 2013, being seen as a 'strategic fit' in terms of planned growth and urban policy. Whilst the site was seen as a 'strategic fit', lack of enabling services and long lead in times and fragmented ownership posed a challenge for delivery. This has now been remedied with agreements to purchase 86% of the site and 'in principal' support with Sydney Water in relation to forward funding enabling services. The proposal is a logical extension of the recently rezoned Box Hill and Box Hill Industrial Precincts located to the immediate south of the site. As part of the Potential Home Sites Program and detailed in the Evaluation Report dated March 2013 (page 69), Council recommended that Box Hill North should be considered for future housing subject to detailed assessment.

Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The Hills LEP 2012 is the principal environmental planning instrument applying to the site. The Hills LEP 2012 was prepared in accordance with the (Standard Instrument) and was gazetted on 5 October 2012. It is considered that a stand-alone Planning Proposal is the best means of achieving the objective and intended outcome for the site.

Is the Planning Proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?

The Planning Proposal is consistent with the objectives and actions of applicable regional or sub-regional strategies including the Sydney Metropolitan Strategy. A detailed discussion of the Planning Proposal's relationship to the relevant strategies is included at section 7.

Is the Planning Proposal consistent with a Council's local strategy or other strategic plan?

The Planning Proposal is consistent with Council's Adopted Draft Local Strategy: New Strategic Direction for Baulkham Hills Shire (June 2008). A detailed discussion of the Planning Proposal in relation to Council's strategy is in Section 7.

Is the Planning Proposal consistent with applicable State Environmental Planning Policies?

State Environmental Planning Policies (SEPP) relevant to the planning proposal are:

- SEPP No.55 – Remediation of Land; and
- SEPP No.65 – Design Quality of Residential Flat Development.

A detailed discussion of the planning proposal in relation to its consistency with SEPP 55 and SEPP 65 is provided in section 7. Given the site's current and previous usage (i.e. agriculture), the potential for widespread contamination across the site is considered low, with the possible exception of asbestos. JBS Environmental has concluded that contamination on the site would not prevent the planning and development of Box Hill North for the proposed uses, consistent with the objectives of State Environmental Planning Policy No. 55 – Remediation of Land (refer to section 8 and Preliminary Site Investigation, prepared by JBS Environmental included at

Appendix B).

Is the Planning Proposal consistent with applicable Ministerial Directions (s.117 directions)?

A detailed discussion of the planning proposal's consistency with the relevant s.117 directions is included at section 7. In summary, the planning proposal is not inconsistent with any relevant s.117 direction.

Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The site contains Cumberland Plain Woodland and Shale Sandstone Transition Forest which will be affected by the planning proposal. The proposal is supported by a biodiversity strategy that will not adversely affect the site's biodiversity.

The majority of the site has been cleared due to a long history of agricultural land use and consists mainly of exotic pastures, farm dams, farm housing and infrastructure. There are six (6) patches of modified Cumberland Plain Woodland and Shale Sandstone Transition Forest within the northern portion of the site which are examples of threatened ecological communities (TECs) that are listed under both the *NSW Threatened Species Conservation Act 1995 (TSC Act)* and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).* These patches have a total area of approximately 26 hectares or 7% of the site. Cumberland Ecology have classified the condition of vegetation on the site as 'low' and moderate'.

This vegetation, together with small creeks and dams were found to provide actual and potential habitat for threatened species including the Spotted Harrier (*Circus assimilis*), Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*), Eastern Freetail-bat (*Mormopterus norfolkensis*), Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*), White-bellied Sea-eagle (*Haliaeetus leucogaster*) and Cattle Egret (*Ardea ibis*). The site may also provide potential habitat for a number of additional threatened species, including habitat for the Koala (*Phascolarctos cinereus*), Green and Golden Bell Frog (*Litoria aurea*) and Cumberland Land Snail (*Meridolum corneovirens*).

The size and shape of existing woodland areas, and the fact that they are surrounded by heavily cleared and modified farmland presents a challenge for long term conservation. This is because with increased intensity of land usage, there is potential for the remaining patches to become increasingly isolated and for edge effects (e.g. encroachment of weeds, disturbance by humans) to become more significant. The Planning Proposal is supported by a strategy that will maintain or improve biodiversity values on the site. This includes a combination of 'in situ' conservation of identified woodland areas along creeks within the subject site and off-site offsetting via the purchase of Biodiversity Credits where clearing is considered unavoidable.

It is proposed to retain approximately 5.8 hectares of area of higher quality Cumberland Plain Woodland within the north-western corner of the site and approximately 12 hectares of Shale Sandstone Transition Forest within the north-eastern portion of the site, of which 3 hectares of Shale Sandstone Transition Forest is proposed to be zoned E3 Environmental Management. These areas, particularly the patch of Shale Sandstone Transition Forest are fundamental elements of the project, forming part of the proposed conservation land, riparian corridor network and open space areas for the development. These areas will be protected by an RE1 Public Open Space, E2 Environmental Conservation and E3 Environmental Management zoning under the LEP amendment.

In relation to fauna, the Shale Sandstone Transition Forest within the north-eastern portion of the site comprises the most intact and continuous wooded habitats for native fauna. This area is proposed to be zoned part RE1 Public Open Space and part E3 Environmental Management.

Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

An environmental assessment of the Planning Proposal in relation to the following factors has been considered:

- Transport and Access assessment;
- Flora and fauna;
- Water cycle management including flooding, surface water, groundwater quality and riparian corridors;
- Services and Utilities;
- Geotechnical, soils and contamination assessment;
- Aboriginal heritage assessment;
- Social planning assessment;
- Bushfire risk assessment;
- Retail analysis; and
- European heritage.

In summary, the Planning Proposal does not result in any significant adverse environmental impact.

Has the Planning Proposal adequately addressed any social and economic effects?

A discussion of the planning proposal's social and economic effects is provided in sections 8 and 9 and the Retail Analysis, prepared by Location IQ included at **Appendix H**. In summary, the proposal has a number of positive social and economic impacts, namely:

Social Impacts

- delivery of additional residential (approximately 380 hectares) and employment land in North-West Sydney;
- provision of housing diversity for a full range of household types and lifestyle preferences;
- creation of an environment that provides access to public and private spaces and promotes healthy lifestyles, facilitating a vibrant, robust, sustainable community;
- public benefits including additional public open space, sporting grounds, community centre;
- provision of physical and social infrastructure to the site.

Economic Impacts

- a large portion of main trade area residents will be serviced by the existing and future centres including Rouse Hill and Box Hill town centre;
- provision of retail floor space including supermarket and retail specialty;
- provision of non-retail specialty, commercial/office, medical centre, childcare, tavern, petrol station and gym;
- retail activity centre will be positioned in close proximity to higher density residential;
- based on population projections and take-up rate, a supermarket based centre would be supportable at Box Hill North by 2021;
- there is potential for a centre of up to 10,000 m2 to be supportable at Box Hill North; and
- existing larger facilities in the region would continue to provide the major retail destination for the future Box Hill North residential population.

Furthermore, the proposal will:

- provide employment opportunities on the site by providing up to 10,000m2 of non-residential floor space;
- increase employment opportunities during the roll out and construction phase;
- increase the demand for local employment opportunities from the 4,100 households located

Box Hill North; and

- during construction and once completed generate additional economic activity both locally and outside of the area.

Is there adequate public infrastructure for the Planning Proposal?

The Planning Proposal is supported by a clear and viable infrastructure servicing strategy that leverages readily accessible existing infrastructure and demonstrates that the project can be implemented as a standalone proposal.

The Project presents an opportunity to provide infrastructure and high quality new facilities in a timely manner based on leading practice sustainability principles and sustainable funding, management and maintenance arrangements. A detailed discussion in relation to public infrastructure is included at section 8 and the Infrastructure Services Assessment, prepared by J Wyndham Prince and included at **Appendix I**.

In summary, Box Hill North will require the construction of a Sewerage Pumping Station (SPS). The location of this SPS is likely to be adjacent to Maguires Road at the northern end of the site. Sydney Water are currently undertaking extensions to the trunk sewerage infrastructure within the Chain-of-Ponds Creek system that includes a large diameter sewer carrier from near Boundary Road to Vineyard and thence via a new SPS to Riverstone West Wastewater Treatment Plant (WWTP). Sydney Water has confirmed that this system can accommodate the proposed development of the Box Hill North Precinct (via the new SPS at Maguires Road).

The existing potable water service within the site is appropriately sized for the rural residential development. A significant amplification of this system will need to occur with the development of the site. Sydney Water has confirmed that the bulk supply to the site can occur from the Rouse Hill Elevated Reservoir; however the local supply may require a new reservoir close to the site. It is proposed that a new surface reservoir be installed at the Oakville Reservoir site with a new supply line from Rouse Hill. Construction and planning of the new Surface Reservoir and Supply Main will be undertaken directly with Sydney Water and the developer of the site.

Utility providers Endeavour Energy, Jemena and NBN Co have confirmed that the site can be serviced with regard to electricity, gas and telecommunications, respectively.

What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

As discussed in section 1, consultation has been undertaken with Council and relevant government agencies during the preparation of the Planning Proposal and supporting technical studies investigations, including:

- Department of Planning and Infrastructure;
- Office of Environment and Heritage;
- Department of Education and Communities (in relation to the proposed school site);
- Department of Transport;
- The Hills Shire Council
- Transport NSW (Roads and Maritime Services);
- NSW Rural Fire Service;
- Sydney Water;
- NSW Police; and
- NSW Fire.

A copy of relevant correspondence is included at **Appendix I**.

SECTION 4. Indicative Layout Plan

4. Indicative Layout Plan

The Vision for Box Hill North is to create a new well-connected, living and diverse community that supports a vibrant town centre in the heart of the neighbourhood. Nestled within the undulating landform to the north of the recently release Box Hill and Box Hill Industrial Precincts, Box Hill North will establish the following key principles:

- creating a living and happy community;
- establishing a vibrant Town Centre;
- connecting the community; and
- growing a sustainable living environment.

An Indicative Layout Plan (ILP) for Box Hill North has been prepared by Design IQ to demonstrate the capability of the site to accommodate the vision and to guide future planning (refer to Figure 27). The main features of the ILP that relate directly to the key principles are:

- Creating a living and happy community:
  - Urban Structure
  - Residential
  - Open Space
- Establishing a vibrant town centre:
  - Employment
  - Town Centre and Entertainment
- Connecting the community:
  - Road Network
  - Public Transport
  - Pedestrian / Cycleway Network
- Growing a sustainable living environment:
  - Environment
  - Water Cycle and Flood Management
  - Bushfire Management

4.1. Creating a Living and Happy Community

The ILP for Box Hill North will provide for an accessible town centre, a connected open space and pedestrian network, and a mix of housing types to meet the needs of the new community. However, the ultimate success of any residential development is based on the community's acceptance and enjoyment of the neighbourhood. The key components of a living and happy community is the fundamental structure of the neighbourhood, the size and type of housing and access to open space.

4.1.1. Urban Structure

Box Hill North will have its own identity primarily due to the ridgeline along Old Pitt Town Road that separates it from the Box Hill precinct. Being on the northern side of this ridgeline presents the site with an aspect that focuses on distant views of the Blue Mountains, bushland and a rural

Figure 27. Indicative Layout Plan

environment to the north, east and west. The urban structure has been designed to celebrate these features by incorporating them into a central parkland spine for the development, which converges in the centre of the site with a gathering place for the community. This gathering place being the active and passive parklands, wetland features, school and town centre which will incorporate retail and restaurants. The movement network is deliberate with the open space corridors being used as a means to travel to this precinct centre by walking or cycling. This open space linkages will be framed by higher density housing forms, which will focus around the town centre to increase people activity and make the most of the parkland setting for future residents to enjoy.

The Indicative Layout Plan as shown in Figure 27 below, illustrates the urban structure. The key features of the urban structure are:

- Utilisation of all existing roads (i.e. Boundary Road to the west, Old Pitt Town Road to the south, Cataract Road, Red Gables Road, Maquires Road and Janpieter Road to the east) and the envisaged extension of others (i.e. Terry Road and Mount Carmel to the south) to create an interconnected grid network.
- A centrally located town centre with capacity for up to 10,000m2 of retail, office and business floor space and surrounded by sporting fields to the south, pond and open space to the north and east. The town centre is likely to include supermarket, retail, office, hotel, petrol station, medical centre and child care centre.
- A primary school site that is also centrally located and is immediate south of sporting fields and town centre.
- Retention of approximately 5.8 hectares of area of higher quality Cumberland Plain Woodland within the north-western corner of the site and approximately 12 hectares of Shale Sandstone Transition Forest within the north-eastern portion of the site.
- Distribution of residential densities types across the precinct to match site opportunities.
- A passive recreation network that extends from the site's south-west to north-west corner and provision of open space along the existing transmission line easement within the site's north-west corner.

4.1.2. Residential

Box Hill North will provide a mix of housing types ranging from residential flat buildings, through traditional single lot residential dwellings to large lot residential dwellings, to provide housing diversity and choice to meet the needs of the community. These housing types may change over time as market interest and demand changes to match new architectural designs and functional layout as developed to adapt to energy efficiency and passive solar awareness. The residential housing density for Box Hill North is approximately 20 dwellings per net developable area (hectare).

The higher density housing types will be concentrated closer to the Town Centre and adjoining open space areas and will have a maximum building height of 18 metres (5 storeys). While the medium and lower density housing types will be located on the fringes, and topographical sensitive areas, and will have a maximum building height of 12 and 10 metres respectively (2 – 3 storeys). Although it is not anticipated to development to the maximum height for the entire residential area, it does allow for architecture design elements within the dwelling treatments to add interest to the overall streetscape.

Distribution of residential areas are proposed as follows:

- higher residential densities located within and adjacent to the town centre to maximise access to services and public transport and in areas with high visual or landscape amenity;
- pockets of large lot residential development (environmental living) along ridges and steeper slopes to maximise scenic outlook, better conserve existing landform and patches of vegetation and provide a transition from existing and planned large lot residential development to the south;
- a pocket of environmental management land is proposed to the east of the main north-

south riparian corridor; and
- provision of medium density residential development throughout the remainder of the site.

Table 6 outlines the net residential areas (excluding roads) in the ILP and the estimated housing yield.

Table 6. Proposed Dwelling Mix and Dwelling Yield

Product Type	Target	No of Dwellings
Traditional Lot 18 x 30m – 540m2	28%	1148
Courtyard Lot 15 x 30m – 450m2	37%	1517
Villa Lot 10 x 30m – 300m2	23.25%	953
Rear Loaded 6m x 30m -180m2 (50%) 7.5m x 30m – 225m2 (50%)	4.75%	195
Environmental Zone (2000m2)	0.25%	15
Low Density Residential (2000m2)	2%	84
Residential flat buildings	4.75%	200

Product Type	Target	No of Dwellings
Total	**100**	**4,112**

4.1.3. Open Space

Open space provides an important role in the health and well-being of the community. The open space network is structured along a central spine that connects all key features to the community. The ILP provides for active open space / sports fields, local parks and a passive recreational trail network (refer to Figure 28).

Active Parks

The ILP identifies two (2) active parks that incorporate sporting fields, one being in the north-western corner of the site, near the existing transmission line easement and the second being to the immediate south of the proposed town centre. These spaces are likely to comprise multi-purpose sports uses, playgrounds, parking facilities and amenities.

Local Parks

The ILP identifies four (4) local parks evenly distributed throughout the site and within a 5 minute walking distance to all residential areas. The local parks are likely to accommodate children playgrounds, passive areas, picnic and BBQ areas, densely vegetated areas and / or small kicking grounds. The central park, to the north of the town centre, will be an important place for the local community and offers high levels of amenity being situated around a proposed lake north of the town centre.

Passive Recreation

Passive recreation is provided through integrating water management facilities with the riparian function of streams and passive recreation areas. Riparian parks will be appropriately vegetated to create the amenity of a natural bushland setting. Where appropriate, these parks will include shared pathways, seating, small playgrounds, fitness pods and BBQs. These spaces will be an integral feature of the urban design, connecting the community to the town centre and playing fields, encouraging walking and cycling. These areas will also provide high levels of amenity for surrounding planned residential areas.

Figure 28. Location of Open Spaces

4.2. Establishing a Vibrant Town Centre

The ILP proposes a centrally located Town Centre to maximise its accessibility to the surrounding community. The aim is to create a compact, vibrant, safe and prosperous town centre to supply the retails needs of the community and provide the civic focus. The town centre will be supported by an integrated access network, higher density residential housing in close proximity and an appropriate mix of land uses.

4.2.1. Employment

The Town Centre has the potential to employment a significant number of jobs through the various retail and commercial activities. The ultimate number will be subject to future consideration during development assessment process.

4.2.2. Town Centre and Entertainment

The Town Centre will form the heart of the precinct, and the community. It will be a modern centre providing a functional and easily accessible town centre shopping experience. It will consist of retail and commercial activities supported by an entertainment precinct with restaurants and cafes, overlooking an open space network and urban park. There will also be an active sporting field and primary school in close proximity to the town centre to add to the centre's vitality and energy.

Based on the future population growth within the region, it is considered that a centre of around 7,750 square metres would be supportable up to 2026 to an ultimate capacity reaching beyond 10,000 square metres. The retail component would be anchored by a full-line supermarket of 4,000 square metres, and supported by speciality retail and other non-retail and commercial floor space.

Although the ultimate functional layout and design of the town centre will be subject to a future development application process, two functional concepts have been prepared to illustrate the principles of good town centre planning (refer to Figure 29).

4.3. Connecting the community

4.3.1. Road Network

The ILP is characterised by a permeable street network, which incorporates existing roads. New streets are located to respond to the topography and gradients (refer to Figure 30). Streets are located along parks and riparian corridors to ensure passive surveillance and pedestrian/cycle connectivity through the site. The proposed street network and road hierarchy is described in Table 7.

The ILP illustrates that vehicular access to Box Hill North will be provided from Boundary Road to the west and Old Pitt Town Road to the south with the following intersections:

- Boundary Road/ Maguires Road/ Cusack Road (Existing);
- Boundary Road/ BHN Access Road (Proposed);
- Boundary Road/ Red Gables Road (Existing);
- Boundary Road/ Cataract Road (Existing);

Indicative Layout Plan - Box Hill North Town Centre Example A - At Grade Parking

Indicative Layout Plan - Box Hill North Town Centre Example B - Basement Parking

Figure 29. Indicative layout options for Town Centre

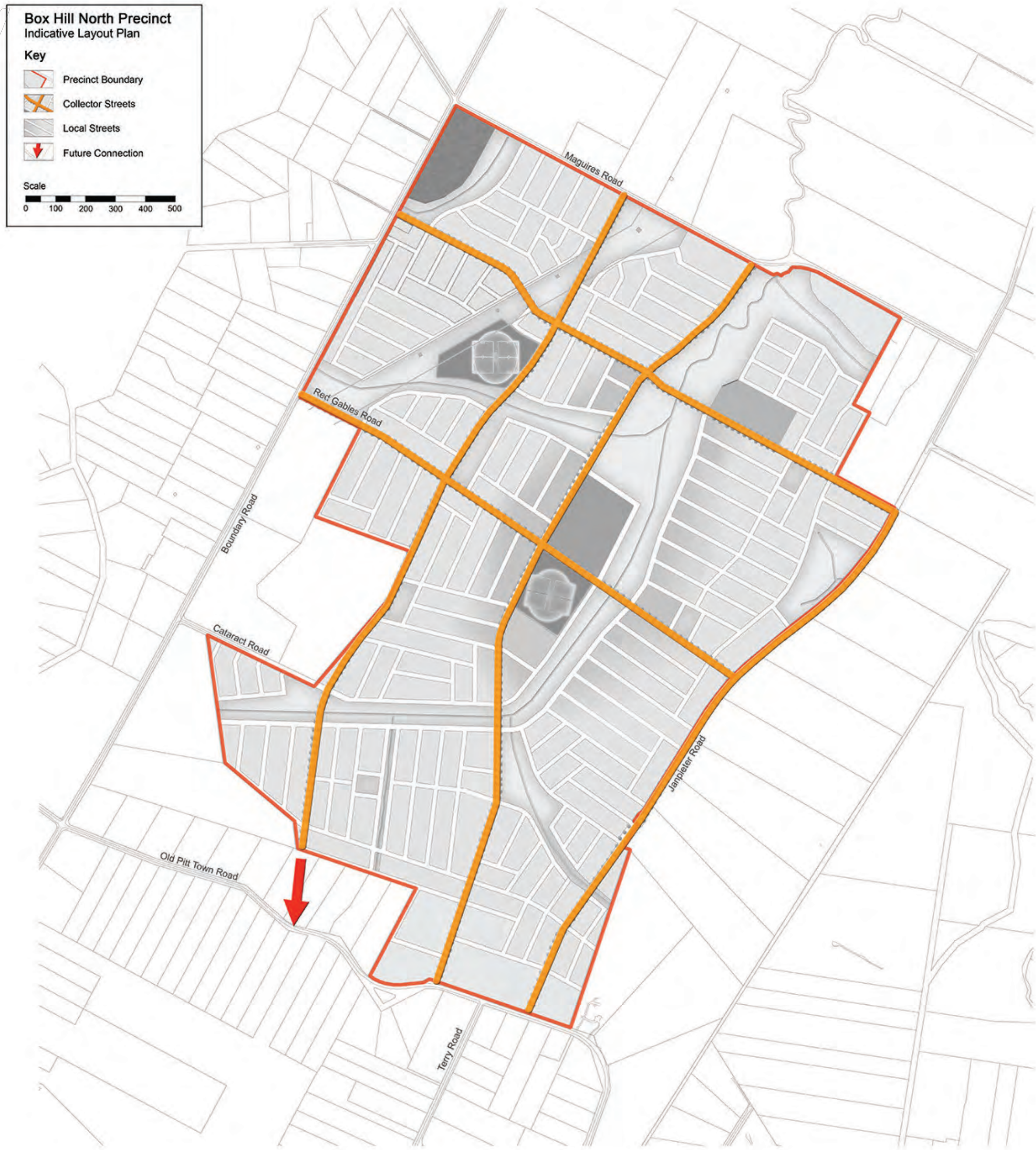


Figure 30. Proposed Road Hierarchy

- Old Pitt Town Road/ BHN Access Road West (Proposed); and
- Old Pitt Town Road/ BHN Access Road East (Proposed).

Table 7. Proposed Street Types

Street Type	Description
Collector Road	Collects traffic from local streets and carries a higher volume of traffic, linking neighbourhoods and centres and accommodating public transport routes. Amenity and safety is to be maintained by restricting vehicle speeds through traffic-calming measures and intersection design. Intermittent parking with landscaping is provided on both sides of the street. Refer to Figure 31.
Local Street	Provide local residential access. These streets are designed to slow residential traffic in order to give priority to pedestrians. Amenity and safety is to be maintained by introducing various traffic calming measures. On-street parking is provided on both sides of the street. Refer Figure 32.
Rear Lane	Provide access to developments fronting sub-arterial and collector roads and also to medium density developments. Rear lanes will provide access for servicing. Refer to Figure 33.

4.3.2. Public Transport

The ILP road network allows for the provision of bus services through the neigbourhood. The 2009 North West Sector Bus Servicing Plan, propose two new district bus routes in the vicinity of Box Hill North:

- Route D2: Rouse Hill – Withers Road – Box Hill; and
- Route D3: Rouse Hill – Box Hill – Riverstone.

District bus routes provide services every 30 minutes during weekday peaks and 60 minutes off-peak, however they do not run into the evening. These routes ensure 90 per cent of residents are within 400 metres of a service. The routes are anticipated to be revised with the introduction of passenger rail services at Cudgegong Road station as part of the North West Rail Link. Figure 34 illustrates the indicative extensions to bus routes D2 and D3 to serve Box Hill North and ensure that more than 90 per cent of residents are within the service catchment.

The extension of Bus Route D2 to Box Hill North passes through a future connection of the Mount Carmel Road link into Box Hill North. Bus routes are proposed within 400 metres of all areas and at key intersections. A regional bus route will link Box Hill North to the Box Hill Town Centre to the south of the site, Rouse Hill and Riverstone through the sub-arterial roads.

4.3.3. Pedestrian / Cycleway Network

Connectivity to the Town Centre and the open space network is one of the key principles that underpin the urban structure of the precinct. The open space and road networks provide the fundamental linkages for pedestrian and cyclists. An interconnected off-road shared pathway system for pedestrians and cyclists are proposed along sub-arterial roads, collector roads and streets fronting open spaces. The proposed cycle and pedestrian network is shown in Figure 35.

Figure 31. Typical Collector Road

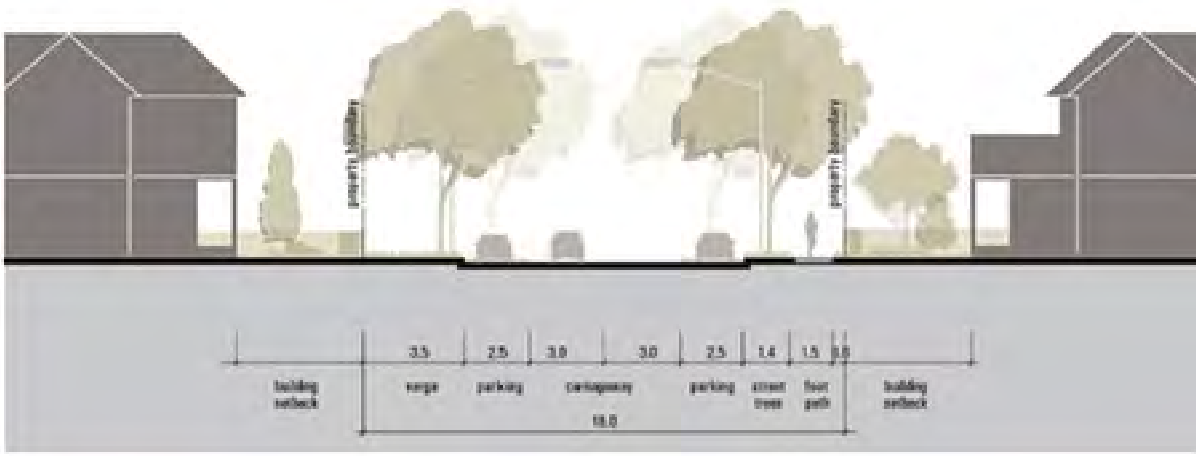


Figure 32. Typical Local Street

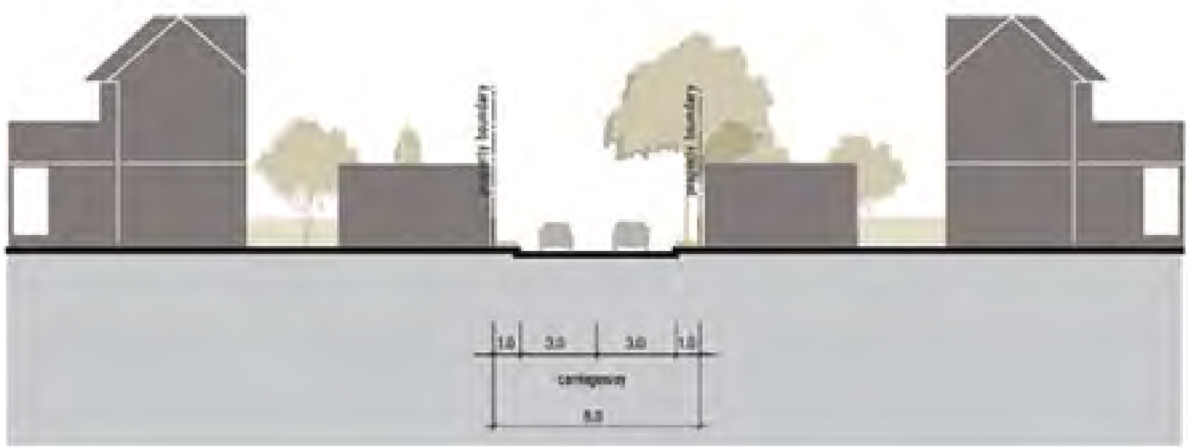


Figure 33. Typical Rear Lane

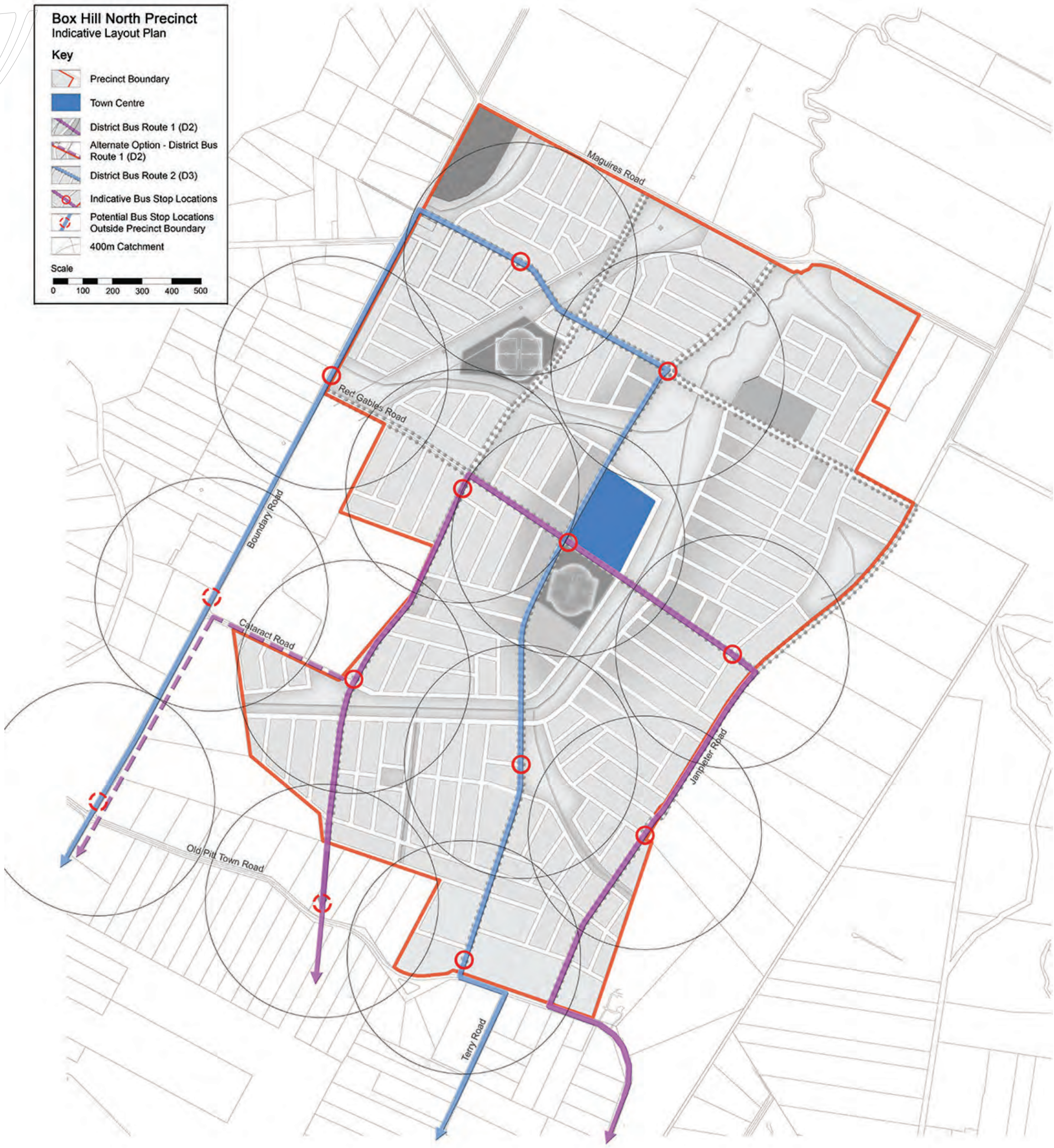


Figure 34. Public Transport

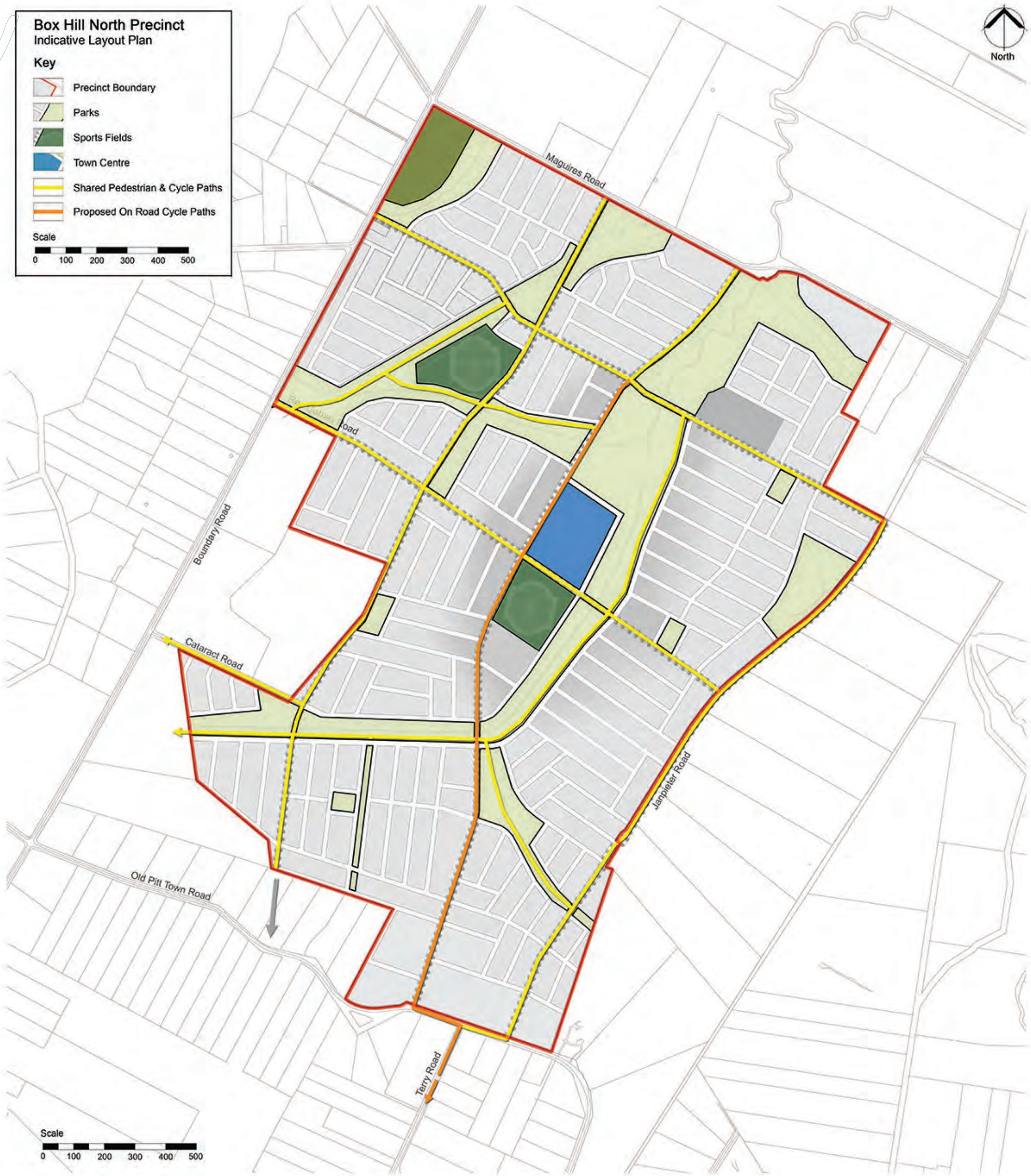


Figure 35. Pedestrian and Cycle Ways

4.4. Growing a Sustainable Living Environment

4.4.1. Environment

An options assessment has been undertaken in considering the conservation strategy for the Cumberland Plain Woodland and Shale Sandstone Transition Forest on the site. The analysis has involved balancing good urban design outcomes for a sustainable and cohesive community and adopting a 'maintain or improve' approach for these ecological communities. The proposal has sought options for rezoning that aim in the first instance to maximise the in-situ retention of biodiversity values as far as practicable, particularly the CPW and SSTF patches identified in the NGH assessment.

4.4.2. Water Cycle and Flood Management

The water cycle and flood management strategy proposed for the Box Hill North is functional, delivers the required technical performance, lessens environmental degradation and pressure on downstream ecosystems and infrastructure, and provides for a 'soft' sustainable solution for stormwater management within the release area. The water cycle and flood management strategy for the site has been prepared by J. Wyndham Prince and is included at **Appendix J**.

The strategy focuses on mitigating the impacts of the development on the total water cycle and maximising the environmental, social and economic benefits achievable by utilising responsible and sustainable stormwater management practices. A range of stormwater management techniques and options considered for the management of nutrients and suspended solids discharging from the site are summarised below.

Management Technique	Relevance for Box Hill North
Vegetated Swales and Buffers	The grade of the land within certain portions of the Box Hill North is suitable for swales and buffers less than (< 3%), in particular on the fringes of the riparian corridors. However, swales and buffers within urban residential streets are not recommended due to the large number of culvert crossings required for driveways, safety concerns, increased number of GPT's required and significant maintenance requirements. Swales within central road medians, if provided within the development, may be appropriate.
Sand filters	Sand filters are generally suited to smaller catchments. They are inefficient when compared to bio-retention systems and require frequent maintenance
Permeable pavement	Permeable pavements are generally a more 'at source' solution and best suited as an 'on lot' approach or for small roadway catchments. Permeable pavers may possibly be considered at the development application stage for on lot treatment or for areas draining small catchment areas with low sediment loads and low vehicle weights. These systems are also prone to clogging and are not suitable in saline soils that may be encountered at Box Hill North and are therefore unlikely to be recommended for the site.
Infiltration trenches and basins	Infiltration trenches and basins are not appropriate for clay soils or where there is potential for salinity issues. Infiltration trenches and basins are therefore unlikely to be suitable for Box Hill North.

Management Technique	Relevance for Box Hill North
Constructed wetlands and ponds	Wetlands and ponds are effective in removing sediment and nutrient loads typically generated from urban development. They do however require a large footprint area in relation to the catchment size. Wetlands and ponds generally also require a significant amount of maintenance. They are susceptible to algal blooms and require recirculation systems. Consideration of public safety measures is also required due to permanent deep water areas.
Base flow management basins	Base Flow Management Basins are effective in removing sediments and nutrient loads typically generated from urban development. These devices are effective at ensuring that increase stream forming flows from urban development are reduced.
Bio-retention systems	Bio-retention systems are an effective and efficient means of treating pollutants from urban development when part of an overall treatment train. Bio-retention systems require a reasonable amount of maintenance during the vegetation establishment phase.
Cartridge Filtration Systems	Cartridge filtration systems are an efficient means of treating pollutants from urban development as they are typically located underground and therefore do not require additional land take. As cartridge systems have a low treatable flow rate, additional 'buffer' storage is usually provided to keep the capital costs down. Cartridge filtration systems also need to be supplemented with additional treatment devices to achieve pollutant reduction targets. This requires significant height differences between the inlet to the filtration system and the discharge point from the supplementary system. It also generally results in expensive capital and ongoing maintenance costs.
Rainwater tanks	Rainwater tanks are effective in removing suspended solids and a small amount of nutrient pollutants. They are also effective in reducing overall runoff volumes. The effectiveness of rainwater tanks is also increased when plumbed in for internal use.

To maintain stormwater quality at the required levels, a 'treatment train' approach is proposed where various types of pollutants are removed and flow volumes and discharge rates are managed by a number of devices acting in series. The stormwater management treatment train will consist of the following elements:

Water Efficiency	Proposed for Box Hill North
On lot Treatment	Elements proposed include: • Implementation of water efficient fittings and appliances • Minimisation of impervious areas. • provision of rainwater tanks
Water Quality Measures	
Street level treatments	
Inlet Pit Filter Inserts and Gross Pollutant Traps (GPTs)	GPT devices are to be typically provided at the outlet to stormwater pipes. These systems operate as a primary treatment to remove litter, vegetative matter, free oils and grease and coarse sediments prior to discharge to downstream (Secondary and Tertiary) treatment devices. They can take the form of trash screens or litter control pits, pit filter inserts and wet sump gross pollutant traps

Water Efficiency	Proposed for Box Hill North
Subdivision / Development Treatment	
Swales	Four (4) swales are proposed on the fringes of the riparian corridors. The swales will collect and convey base flows from selected catchments and discharge them to the bioretention systems and raingardens for further treatment. Swales would typically be 0.3m – 0.5m deep (0.3m depth conservatively adopted in the MUSIC modelling). It is assumed that the swales would be sized to convey the 3 month ARI flow as a minimum. It is also assumed that trash and gross sediments will be effectively removed prior to entering the swales by the proposed GPT units.
Bio-retention Systems and Raingardens	Twenty (20) regional scale bio-retention systems and 'rain gardens' are proposed within the development (refer to Figure 36). Rain gardens are large scale, non-linear bioretention systems. The systems will be appropriately sized to achieve the nutrient reduction targets outlined in the Office of Environment and Heritage draft guidelines (2006). The bio-retention systems and rain gardens will also attenuate first flush flows to reduce the risk of stream erosion within the water courses. The media beds of the bio-retention systems are typically 500 - 600mm deep with an average particle size of 0.5 mm, a minimum hydraulic conductivity of 100 mm/hr and minimum depth of storage above the media of 300 mm.
Pond	One (1) pond is proposed for Box Hill North, located at the confluence of the two main water courses within the central portion of the site. The pond will provide multiple benefits to the site including, aesthetics, water quality, potential stormwater harvesting and reuse opportunities and minor volume management. The final configuration of the pond may also include wetland planting appropriate locations, however has been conservatively considered as a pond only for the purpose of the current assessments. Stormwater flows up to at least the 3 month ARI will be treated by a combination of other water quality devices prior to entering the lake. It is assumed that the lake is approximately 4 hectares in area, will have an extended detention depth of at least 300mm and a hydraulic retention time of 8 hours. A discharge control structure can be configured (during the Development Application process) to promote extended detention times if required.
Water Quantity (Flood Control) Measures	
Subdivision / Development Treatment	
Detention Basins	Peak storm flow attenuation up to the 100 year ARI event is addressed through the provision of six (6) online and offline detention storages located within the site. Two (2) of these basins are designed to manage 2 year ARI peak flows, with excess flows overtopping into an adjacent basin for attenuation up to the 100 year ARI event.
Stormwater Erosion Index	Limiting the post development stream forming flow duration so that it is no more than 3.5 – 5 times that of the pre-development stream forming flow duration.

Detailed concept designs were prepared for each of the proposed combined detention / water quality basins. The detailed concept designs for the combined detention / water quality basins and estimate of costs for the basins and water quality devices are included in **Appendix J**.

Figures 36 and 37 illustrate the general location of water quality and water quantity treatments.

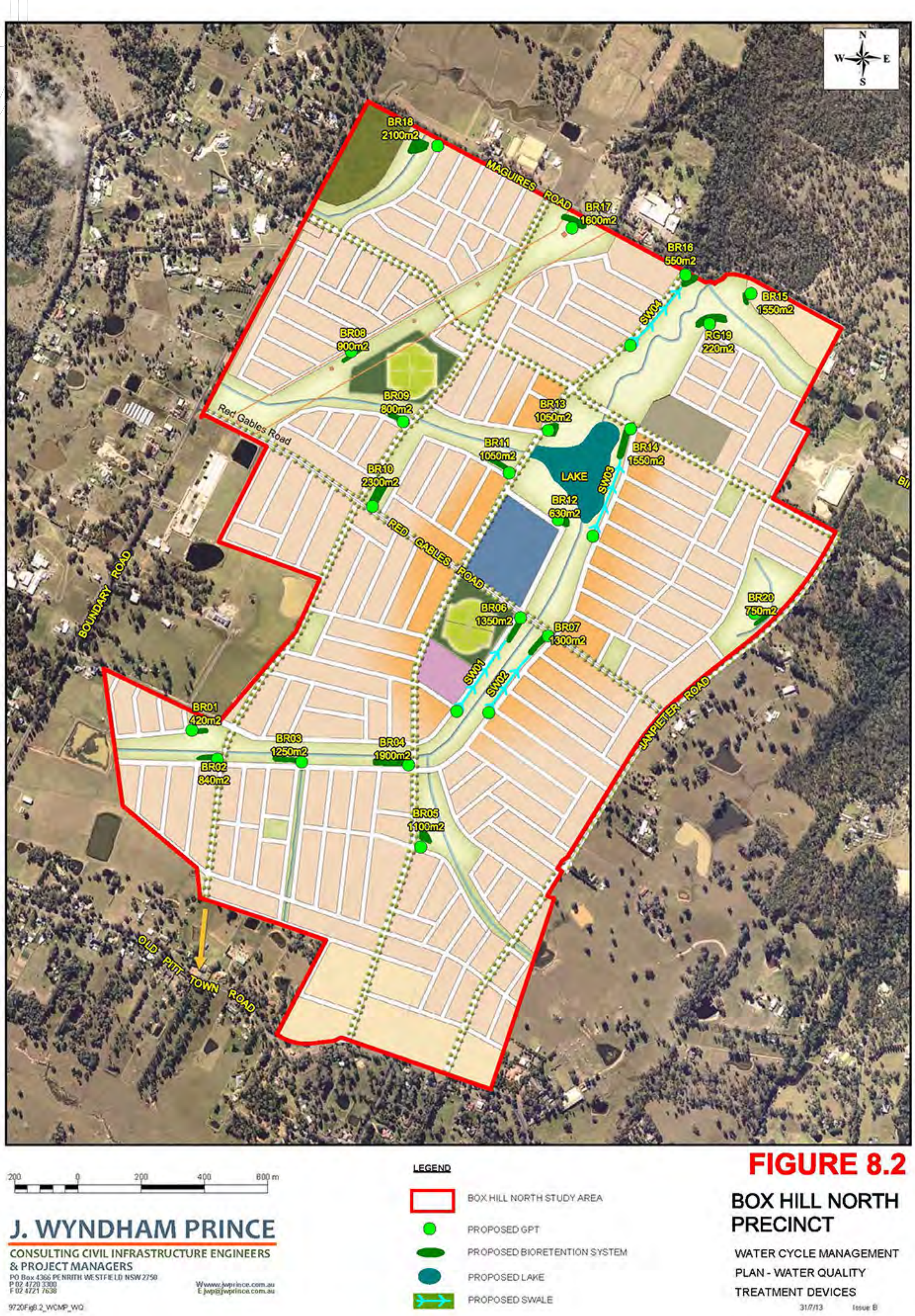


Figure 36. Indicative location of water quality treatment devices

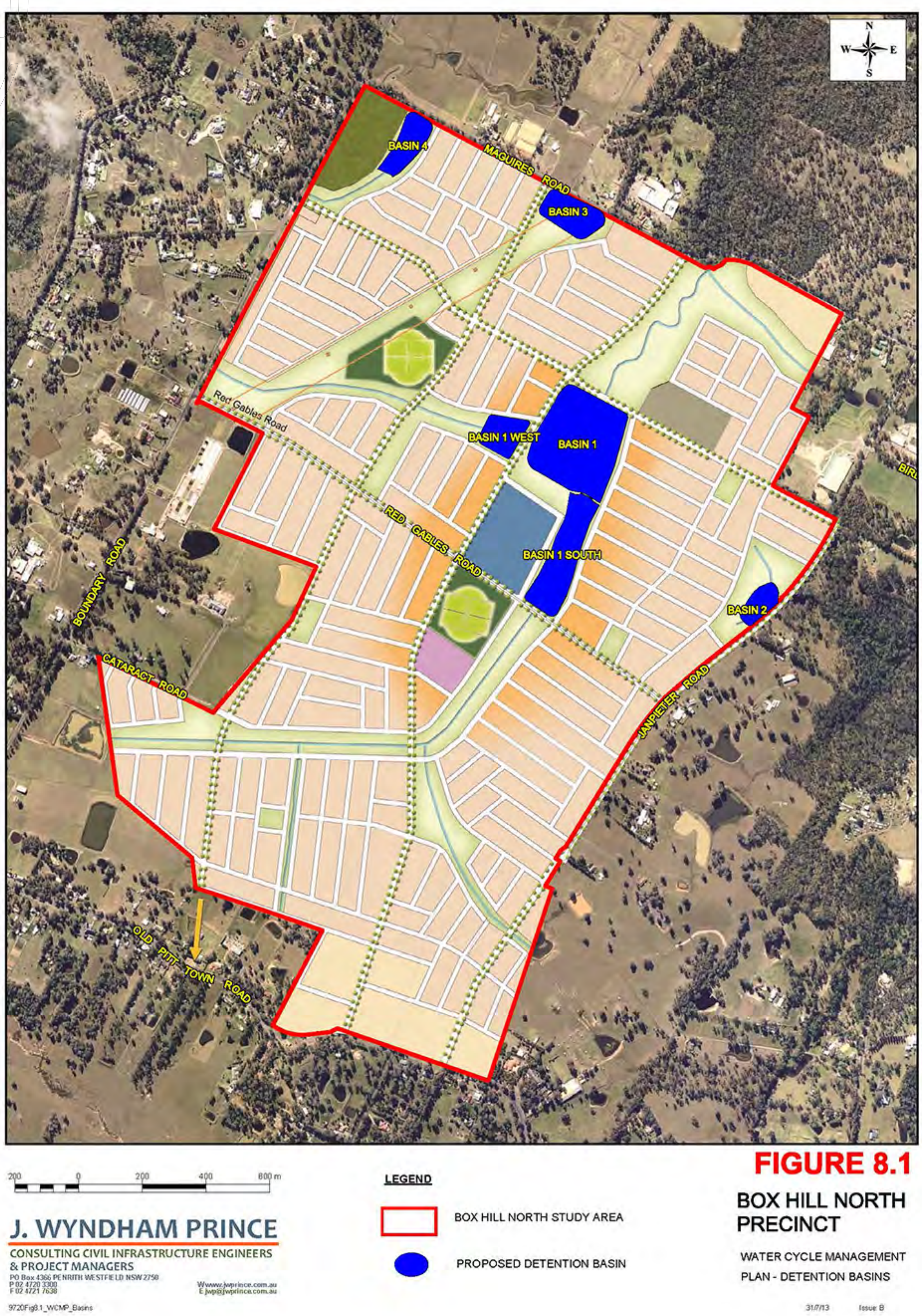


Figure 37. Indicative location of detention basins

4.5. Bushfire Management

Residential and Special Fire Protection Purposes (SFPP) APZs for the site identify the main areas of risk and have been recommended according to the specifications contained within the Planning for Bushfire Protection (NSW Rural Fire Service 2006). They are located along riparian corridors and open spaces with retained native vegetation (refer Figure 38). The size of each zoning parcel is large enough to accommodate the required APZs and an adequate perimeter road system can meet setback, access and egress requirements. APZs will be wholly contained within the perimeter road easement and standard residential setbacks. The APZ for areas that have roads fronting the riparian corridors will comprise the vegetated buffer in the proposed riparian zone and the street fronting the riparian corridor.

Figure 38. Indicative Asset Protection Zones

4.6. Indicative Staging

Figure 39 identifies the manner in which the 4,100 dwellings are intended to be delivered within the site. For each stage, there will be a series of sub-stages (i.e. 1A, 1B). The development of Box Hill North will commence in the north. On average each sub-stage is expected to comprise approximately 250 lots. Each future residential neighbourhood within the overall development will contain a range of lot sizes and a variety of housing types. Physical infrastructure including roads, parks, drainage and community infrastructure will also be delivered on a stage by stage basis.

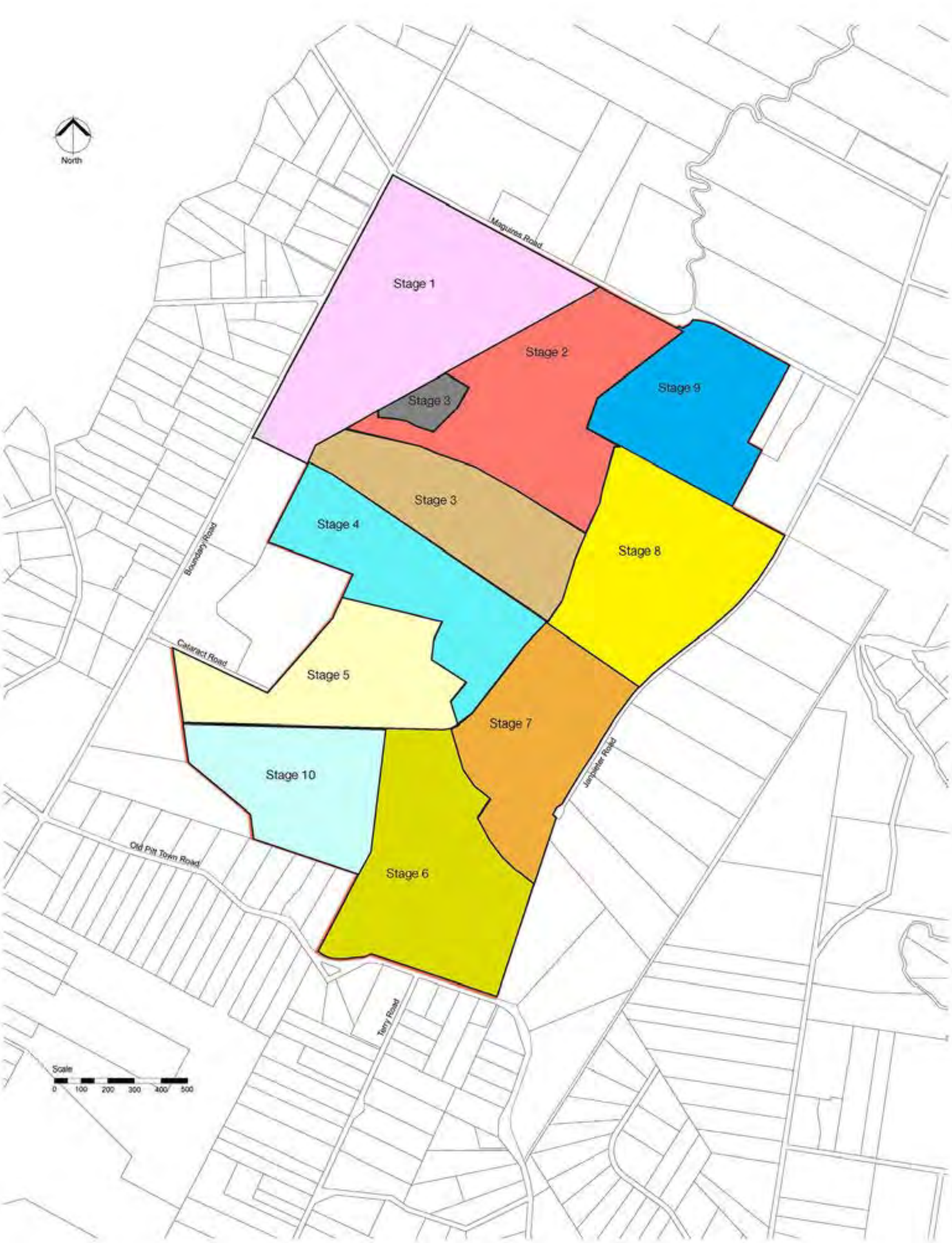


Figure 39. Indicative Staging

SECTION 5.

Proposed LEP Amendment

5. Proposed LEP Amendment

5.1. Land to which LEP amendment will apply

A draft Land Application Map is provided at Figure 40. The draft Land Application Map illustrates the land that is to be included in the LEP Amendment.

5.2. Proposed Land Use zone

It is proposed that the following land use zones be applied to the land:

- R1 General Residential;
- R3 Medium Density;
- B2 Local Centre;
- RE1 Public Recreation;
- E3 Environmental Management; and
- E4 Environmental Living.

A Draft Land Zoning Map illustrating the intended location of each proposed land use zone is provided at Figure 41.

The proposed development that is intended to be permissible without consent, with consent or prohibited in each zone is shown in Table 8. The relevant zone objectives are also shown. The provisions of Table 8 are consistent with The Hills LEP 2012.

It is noted that the existing The Hills LEP 2012 land use table adopts the approach for the residential and centres zones of identifying development that is permissible with or without consent, and then prohibiting all development otherwise not specified. Consistent with the DoPI's LEP Practice Note PN 06-002, the proposed land use tables for the R1, R3 and B2 zones have been drafted to maximise the range of appropriate uses that are permissible with or without consent in the residential, business and special purposes zones by listing the Standard Template mandated uses, and then:

- Specifically listing any uses that may be undertaken without consent under Item 2 as 'Permitted without consent',
- Specifically listing any land uses that are prohibited under Item 4, and
- Allowing all other unnamed (i.e. inominant) uses under Item 3 as 'Permitted with consent'.

Also in accordance with LEP Practice Note PN 06-002 the land use tables for the E3, E4 and RE1 zones specify permitted uses and prohibits other development, thereby minimising the need to undertake 'spot rezonings' or other ad hoc LEP amendments over time to permit additional acceptable uses that were not anticipated during the initial LEP preparation.

Figure 40. Draft Land Application Map

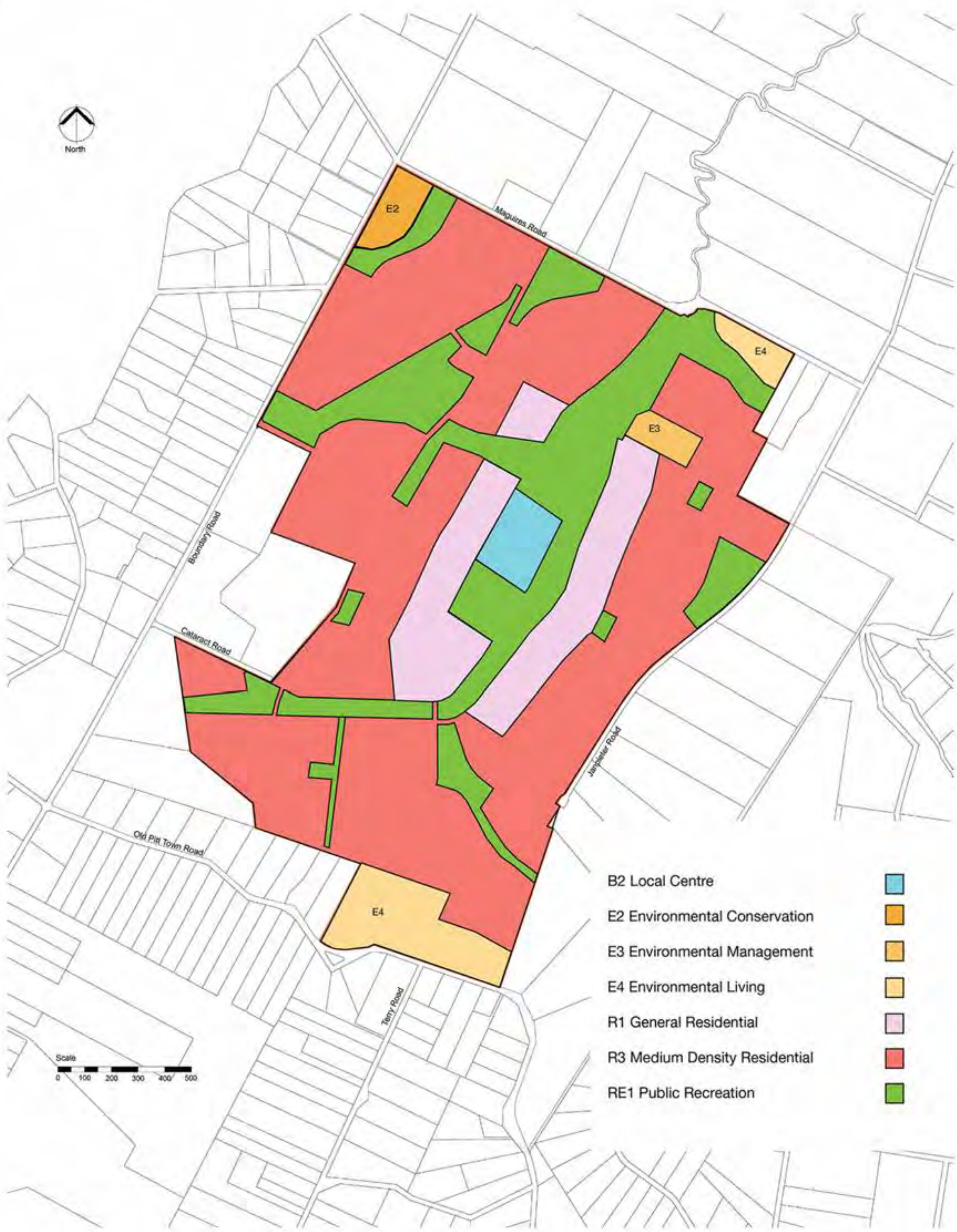


Figure 41. Draft Land Use Zoning Map

Table 8. Draft Land Zoning Table

Zone	Purpose (as per DoPI guidelines)	Proposed Land Uses
R1 General Residential	This zone is generally intended to provide for a variety of residential housing types and densities, including dwelling houses, multi-dwelling housing, residential flat buildings, boarding houses and seniors housing. The zone also provides for additional uses that provide facilities or services to residents, including neighbourhood shops and child care centres.	**1 Objectives of zone** • To provide for the housing needs of the community. • To provide for a variety of housing types and densities. • To enable other land uses that provide facilities or services to meet the day to day needs of residents. • To enable other land uses that support the adjoining or nearby commercial centres and protect the amenity of the adjoining or nearby residential areas. **2 Permitted without consent** Home businesses; Home occupations **3 Permitted with consent** Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Business premises; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Home-based child care; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Office premises; Places of public worship; Residential flat buildings; Respite day care centres; Restaurants or cafes; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Any other development not specified in item 2 or 4 **4 Prohibited** Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Environmental facilities; Exhibition villages; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential accommodation; Resource recovery facilities; Restricted premises; Rural industries; Service stations; Sewerage systems; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Waste disposal facilities; Water recreation structures; Water supply systems; Wharf or boating facilities; Wholesale supplies

Zone	Purpose (as per DoPI guidelines)	Proposed Land Uses
R3 Medium Density Residential	This zone is for land where a variety of medium density accommodation is to be established or maintained. Other residential uses (including typically higher or lower density uses) can also be permitted in the zone where appropriate. A variety of residential uses have been mandated to encourage housing choice and diversity in this zone	**1 Objectives of zone** • To provide for the housing needs of the community within a medium density residential environment. • To provide a variety of housing types within a medium density residential environment. • To enable other land uses that provide facilities or services to meet the day to day needs of residents. • To encourage medium density residential development in locations that are close to population centres and public transport routes. **2 Permitted without consent** Home businesses; Home occupations **3 Permitted with consent** Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Home-based child care; Multi dwelling housing; Neighbourhood shops; Places of public worship; Respite day care centres; Roads; Seniors housing; Any other development not specified in item 2 or 4 **4 Prohibited** Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Environmental facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential accommodation; Restricted premises; Rural industries; Service stations; Sewerage systems; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water supply systems; Wharf or boating facilities; Wholesale supplies

Zone	Purpose (as per DoPI guidelines)	Proposed Land Uses
B2 Local Centre	This zone is generally intended for centres that provide a range of commercial, civic, cultural and residential uses that typically service a wider catchment than a neighbourhood centre. This zone provides for residential accommodation in the form of 'shop top housing,' and other uses such as 'educational establishments,' 'entertainment facilities,' 'function centres,' 'information and education facilities,' 'office premises,' and 'tourist and visitor accommodation.' Such a mix of uses will increase walking, cycling and public transport options for more people by making more activities available in one location. It is expected that this will be the most appropriate zone for most local and town centres across NSW.	**1 Objectives of zone** • To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area. • To encourage employment opportunities in accessible locations. • To maximise public transport patronage and encourage walking and cycling. **2 Permitted without consent** Home businesses; Home occupations **3 Permitted with consent** Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Child care centres; Commercial premises; Community facilities; Educational establishments; Entertainment facilities; Function centres; Home-based child care; Information and education facilities; Medical centres; Multi dwelling housing; Passenger transport facilities; Recreation facilities (indoor); Registered clubs; Residential flat buildings; Respite day care centres; Restricted premises; Roads; Service stations; Shop top housing; Tourist and visitor accommodation; Any other development not specified in item 2 or 4 **4 Prohibited** Agriculture; Air transport facilities; Animal boarding or training establishments; Boat building and repair facilities; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Environmental facilities; Exhibition homes; Exhibition villages; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Heavy industrial storage establishments; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Recreation facilities (major); Research stations; Residential accommodation; Resource recovery facilities; Rural industries; Sewerage systems; Sex services premises; Signage; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Warehouse or distribution centres; Waste disposal facilities; Water recreation structures; Water supply systems; Wharf or boating facilities; Wholesale supplies

Zone	Purpose (as per DoPI guidelines)	Proposed Land Uses
RE1 Public recreation (local open space / regional open space etc)	This zone is generally intended for a wide range of public recreation areas and activities, including local and regional open space. Councils may generally permit typical public recreation uses in this zone. A range of land uses compatible with the recreation use of the land should be permitted. Land zoned RE1 Public Recreation must be included on the Land Reservation Acquisition Map.	**1 Objectives of zone** • To enable land to be used for public open space or recreational purposes. • To provide a range of recreational settings and activities and compatible land uses. • To protect and enhance the natural environment for recreational purposes. **2 Permitted without consent** Environmental protection works **3 Permitted with consent** Building identification signs; Business identification signs; Car parks; Child care centres; Community facilities; Emergency service facilities; Environmental facilities; Information and education facilities; Kiosks; Markets; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafes; Roads; Take away food and drink premises; Water recreation structures **4 Prohibited** Any development not specified in item 2 or 3

Zone	Purpose (as per DoPI guidelines)	Proposed Land Uses
E2 Environmental Conservation	This zone is generally intended to protect land that has high conservation values outside the national parks and nature reserve system. The use of this zone needs to be justified by appropriate evaluation of the area in terms of meeting the core zone objectives of having high ecological, scientific, cultural or aesthetic values.	**1 Objectives of zone** • To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values. • To prevent development that could destroy, damage or otherwise have an adverse effect on those values. **2 Permitted without consent** Nil **3 Permitted with consent** Environmental facilities; Environmental protection works; Research stations; Roads **4 Prohibited** Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Zone	Purpose (as per DoPI guidelines)	Proposed Land Uses
E3 Environmental Management	This zone is generally intended to be applied to land that has special ecological, scientific, cultural or aesthetic attributes, or land highly constrained by geotechnical or other hazards.	**1 Objectives of zone** • To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values. • To provide for a limited range of development that does not have an adverse effect on those values. • To provide for residential development on the land having regard to the geotechnical constraints of the land. **2 Permitted without consent** Home occupations **3 Permitted with consent** Dwelling houses; Environmental protection works; Roads **4 Prohibited** Industries; Multi dwelling housing; Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Zone	Purpose (as per DoPI guidelines)	Proposed Land Uses
E4 Environmental Living	This zone is for land with special environmental or scenic values, and accommodates low impact residential development.	**1 Objectives of zone** To provide for low-impact residential development in areas with special ecological, scientific or aesthetic values. To ensure that residential development does not have an adverse effect on those values. **2 Permitted without consent** Home occupations **3 Permitted with consent** Bed and breakfast accommodation; Building identification signs; Business identification signs; Community facilities; Dual occupancies (attached); Dwelling houses; Emergency services facilities; Environmental protection works; Home-based child care; Home businesses; Roads; Secondary dwellings **4 Prohibited** Industries; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

5.3. Explanation of land use zone selection

A fundamental objective for development within Box Hill North is to ensure that 4,100 dwellings are delivered upon. This will require the provision of a full range of housing types, including medium density dwellings and residential flat development. Delivery of higher density housing in conjunction with new local centres and transport networks and green space is a further fundamental objective for the development.

5.3.1. R1 General Residential Zone

It is proposed to apply the R1 General Residential Zone to land adjacent to the proposed town centre and central area of open space (i.e. generally within 200 m of the town centre) on the basis that this zone is broad based, allows for and encourages the provision of the most diverse range of housing, and allows for maximum flexibility for subdivision and development over time. Whilst the R1 General Residential zone also permits a range of non-residential uses, it is expected that the majority of non-residential uses will be accommodated within the proposed Town Centre (proposed to be zoned B2 Local Centre) in the central portion of the site. The zoning objectives for the R1 General Residential, in particular, relate to limiting other non-residential uses to facilities and services that meet the day to day needs of residents and other uses that 'support' the adjoining centre as opposed to 'compete' with the Town Centre.

5.3.2. R3 Medium Density Zone

It is proposed to apply the R3 Medium Density Zone to the majority of the remaining residential areas of the site, consistent with the application of the R3 Medium Density Zone within other parts of The Hills Local Government Area (LGA) (i.e. Rouse Hill, Beaumont Hills, Kellyville and Norwest) where a variety of medium density accommodation is proposed to be established and where other residential uses (including typically higher or lower density uses) and other land uses that provide facilities or services to meet the day to day needs of residents could also be permitted. As part of the LEP amendment, it is proposed to amend Schedule 1 - Development for Certain Additional Purposes of The Hills LEP 2012 –to enable the use of land proposed to be zoned R3 Medium Density within Box Hill North for 'residential flat buildings', 'secondary dwellings', 'semi-detached dwellings', 'shop top housing' and 'sewerage systems'. The proposed R3 Medium Density zone also allows for a limited amount of non-residential uses, to meet the day to day needs of residents. This is considered appropriate in that non-residential uses outside of a local centre can make improvements to the liveability of a neighbourhood (i.e. a local neighbourhood shop or café, or child care centre can become important meeting places for the local community).

Application of a R1 General Residential Zone and R3 Medium Density Zone with additional Schedule 1 permitted uses across the majority of the site with the accompanying development controls, is considered to be an appropriate outcome for the site and the project as a whole given that it is a major urban development project with an implementation time frame of 15+ years. The land use zone applied needs to be flexible and responsive to circumstances that may arise over time, and should be established in a manner that is permissive and facilitative without undue restriction and control. Alternatively, the application of an R1 General Residential zone across the majority of the site, as a single zone, would also reflect the intended outcome of the planning proposal and the site.

It is considered that the application of an R2 Low Density Zone or a mix of R2 Low Density, R3 Medium Density and R4 High Density is difficult at the planning proposal stage, is unnecessarily restrictive, does not provide sufficient flexibility to respond to changes in the market and housing needs over a 15+ year period and may not address design issues as they arise during the detailed design phase or provide sufficient market flexibility to encourage higher density housing more broadly throughout the site. The approach taken (i.e. application of an R1 General Residential zone and R3 Medium Density Zone with additional Schedule 1 permitted land uses) or single R1 General Residential zone, will minimise the need to undertake 'spot rezonings' or other ad hoc LEP amendments that were not anticipated during the initial ILP / LEP preparation.

5.3.3. B2 Local Centre Zone

It is proposed to apply the B2 Local Centre Zone to the Box Hill North Town Centre rather than the B1 Neighbourhood Centre or B4 Mixed use Zone on the basis that the B2 Local Centre Zone is considered to better reflect the intention of the Box Hill North Town Centre to provide a range of non-residential development as well as residential development. The ILP provides a local centre with capacity for up to 10,000m2 of non-residential floor space for retail, office and business uses. The intention to accommodate non-residential uses primarily in the Town Centre is proposed to be reinforced / strengthened through the site specific DCP prepared for Box Hill North.

As described in the DoPI's LEP Practice Note PN 06-002 the B2 Local Centre Zone is intended for centres that provide a range of retail, business, entertainment and community functions that typically service a wider catchment than a neighbourhood centre. The proposed local centre will primarily support the 4,100 dwellings to be accommodated within Box Hill North and expected residential population of 12,860 persons.

It is also considered that application of the B2 Local Centre Zone is consistent with DoPI's Promoting Economic Growth and Competition Through the Planning System Review Report (April 2010). The Review Report identifies that land use planning systems should be flexible and should ensure that land use planning policies provide for the growth of centres to be responsive as the population density in the area changes and consumer needs shift over time with changes in demographics. To have the best economic and innovative outcomes, the DoPI Review Report concludes that strategic planning documents need to reflect the dynamic nature of land use and in particular, that it is important that centres can accommodate a range of mixed uses.

Mixed use land included within the ILP within the future Town Centre is to be used for a wide range of retail, commercial, business, entertainment, civic, community, recreation, residential, tourist and visitor accommodation and mixed use employment. It is considered that the B2 Local Centre zone appropriately reflects this outcome.

5.3.4. RE1 Public Recreation

It is proposed to apply the RE1 Public Recreation zone to all riparian corridors (existing and proposed), parks and sporting fields within the site. This land is to be dedicated to Council.

It is also proposed to zone the existing patch of Shale Sandstone Transition Forest within the site's north-east corner to RE1 Public Recreation as opposed to an E2 Environmental Conservation zone or E3 Environmental Management zone. In terms of protecting this vegetation, under the Local Government Act 1993 Council must prepare and implement a Plan of Management for this land (i.e. land zoned RE1 Public Recreation). Chapter 6, Part 2, Division 2 of the LGA Act sets out a number of elements that must be addressed in a plan of management including requirements for land that includes endangered species and ecological communities. It is considered that applying an E2 Environmental Conservation Zone to this land would significantly limit opportunities for Council to enable the land to be used for public open space or recreational purposes. The uses that are permitted within an E2 Environmental Conservation zone are limited to environmental facilities and environmental protection works.

As part of the LEP amendment, it is proposed to amend Schedule 1 - Development for Certain Additional Purposes of The Hills LEP 2012 –to enable the use of land proposed to be zoned RE1 Public Recreation within Box Hill North for 'drainage'.

5.3.5. E2 Environmental Conservation

This zone is generally intended to protect land that has high conservation values outside the national parks and nature reserve system. It is proposed to apply the E2 Environmental

Conservation zone to the 4.8 hectare parcel of land within the north-west corner of the site which contains Cumberland Plain Woodland that is proposed to be retained and revegetated. The use of this zone has been justified by appropriate evaluation of this part of the site as having high ecological and aesthetic value. This is explained in detail and justified in section 8.1 of this Planning Proposal and in the Flora and Fauna Assessment prepared by Cumberland Ecology and included at **Appendix D**.

The conservation management measures proposed for the Cumberland Plain Woodland include managing the vegetation through a native regeneration program. This management program would continue through the life of the development, ensuring its long term and self sustaining conservation. For the benefit of the broader community and the protection of the bushland it is proposed to dedicate this land to Council at development completion.

5.3.6. E3 Environmental Management

It is proposed to apply the E3 Environmental Management Zone to a 3.2 hectare area of land within the north-east corner of the site. The proposed alignment of this parcel of E3 zoned land generally corresponds to Shale Sandstone Transition Forest that has been identified in the flora and fauna assessment as being in poor condition. This is explained in detail and justified in section 8 of this planning proposal and in the Flora and Fauna Assessment prepared by Cumberland Ecology and included at **Appendix D**. The E3 Environmental Management is proposed on the basis that it will act as a transition between areas of Shale Sandstone Transition Forest that are in better condition and proposed to be retained in an RE1 Public Recreation zone and the more intensive R3 Medium Density zoned land. Within the E3 Environmental Management zone under The Hills LEP 2012, 'dwelling houses' are permissible with development consent.

5.3.7. E4 Environmental Living

It is proposed to apply the E4 Environmental Living Zone to the areas of lower density residential development within the north-east and south-east portions of the site in lieu of a R5 Large Lot Residential Zone under The Hills LEP 2012.

As described in the DoPI's LEP Practice Note PN 06-002 the E4 Environmental Living Zone is intended for land with special environmental or scenic values where residential development could be accommodated. The DoPI's LEP Practice Note PN 09-002 further identifies that the E4 Environmental Living Zone:

"is for land with special environmental or scenic values, and accommodates low impact residential development..... This zone will be typically applied to existing low impact residential development. This may include areas already zoned for rural residential that have special conservation values.....where environmental capabilities are the primary concern on land that may be zoned R5 Large Lot Residential, RU4 Rural Small Holdings or E4 Environmental Living, preference should be given to the E4 zone."

By contrast, the R5 Large Lot Residential Zone is intended to:

"cater for development that provides for residential housing in a rural setting. The allocation of large lot 'rural' residential land must be justified by a strategy prepared in accordance with guidelines issued by the Department. This zone was formerly known as a Rural Residential zone."

The areas of land proposed to be zoned E4 Environmental Living will support larger lot, low density residential development. It is considered that the E4 Environmental Living zone better reflects the nature of development proposed in these zones than does the R5 Large Lot Residential Zone, particularly given the context within the wider Box Hill and Box Hill North urban development precinct. Furthermore, the provision of R5 Large Lot Residential is not justified by a land use strategy.

5.3.8. SP2 Infrastructure Zone

It is not proposed to apply the SP2 Infrastructure land use zone to any land that may be required for public infrastructure. This approach is consistent with the DoPI's LEP Practice Note PN 08-002 which advocates a zoning approach that provides greater flexibility and adaptive management of government land. The approach moves away from zoning public infrastructure land as 'special use' or 'special purpose' zones, which limits the ability of infrastructure providers to respond to changing demographic trends and provide the public with infrastructure and services outside of nominated locations.

5.4. Principal Development Standards

It is intended that the LEP Amendment will contain principal development standards for:

- minimum lot sizes for residential development in the R1 General Residential, R3 Medium Density, E3 Environmental Management and E4 Environmental Living land use zones; and
- maximum height of buildings in the R1 General Residential, R3 Medium Density, E3 Environmental Management, E4 Environmental Living and B2 Local Centre land zones.

A draft Minimum Lot Size Map and draft Height of Buildings Map are included at Figures 42 and 43.

5.5. Minimum subdivision lot sizes

It is not proposed to adopt the minimum lot sizes for dual occupancy, multi dwelling housing and residential flat buildings or the exceptions to minimum lot sizes for certain residential development as set out in clauses 4.1A and 4.1B of The Hills LEP 2012, respectively.

For the purposes of subdivision in Box Hill North, the draft Minimum Lot Size Map establishes minimum lot sizes of:

- 125 m2 in the R1 General Residential Zone and R3 Medium Density Zone; and
- 2,000m2 on land within the E3 Environmental Management and E4 Environmental Living Zone.

To facilitate and encourage the provision of a range of dwelling types within the R1 General Residential and R3 Medium Density zone, it is proposed to establish minimum lot sizes for certain types of residential development in accordance with Table 9:

Table 9. Minimum lot sizes

Dwelling Type	Minimum allotment size
Dwelling houses	200m2
Semi-detached dwellings	200m2
Dual occupancy	500m2
Secondary dwellings	250m2
Attached dwellings	125m2
Multi-dwelling housing	1,500m2
Residential Flat Buildings	1,500m2

It is proposed that the LEP Amendment include a special provision to this effect as follows:

4.1D Minimum allotment sizes for residential development in Box Hill North

(1) The objectives of this clause are as follows:

(a) to establish minimum allotment sizes for residential development in Box Hill North,

(b) to ensure that residential development has adequate usable areas for buildings and open space, and

(c) to facilitate and encourage the provision of a range of dwelling types.

(2) The minimum allotment size for certain residential development is set out in the table below.

Dwelling type	*Minimum allotment size*
Dwelling houses	*200m2*
Semi-detached dwellings	*200m2*
Dual occupancy	*500m2*
Secondary dwellings	*250m2*
Attached dwellings	*125m2*
Multi dwelling housing	*1,500m2*
Residential flat buildings	*1,500m2*

The proposal to establish minimum lot sizes for different types of residential dwellings within the broader residential zone is consistent with the minimum lot size controls established for Box Hill and North Kellyville Precinct Plans.

The draft Minimum Lot Size Map has adopted the 125 m2 minimum lot size for attached dwellings, being the smallest Torrens Title lot size proposed within the zone. No minimum lot size is proposed for the B2 Local Centre zone.

5.5.1. Integrated Housing

The objective of clause 4.1B of The Hills LEP 2012 is to ensure that the development of dwellings on small lots is managed in order to achieve reasonable levels of residential amenity and relevantly states

4.1B Exceptions to minimum lot sizes for certain residential development

(1) The objective of this clause is to encourage housing diversity without adversely impacting on residential amenity.

(2) This clause applies to development on land in the following zones:

(a) Zone R3 Medium Density Residential,

(b) Zone R4 High Density Residential.

(3) Development consent may be granted to a single development application for development to which this clause applies that is both of the following:

(a) the subdivision of land into 3 or more lots,

(b) the erection of an attached dwelling or a dwelling house on each lot resulting from the subdivision, if the size of each lot is equal to or greater than:

(i) for the erection of a dwelling house—240 square metres, or

(ii) for the erection of an attached dwelling—240 square metres.

As discussed above, it is not proposed to apply clause 4.1B to development within Box Hill North on the basis that it:

- discourages the development of smaller lot housing by increasing the time and risk in the planning and approval process. It is easier, more time efficient, less risky and more cost effective to simply subdivide all lots to the minimum permissible lot size;

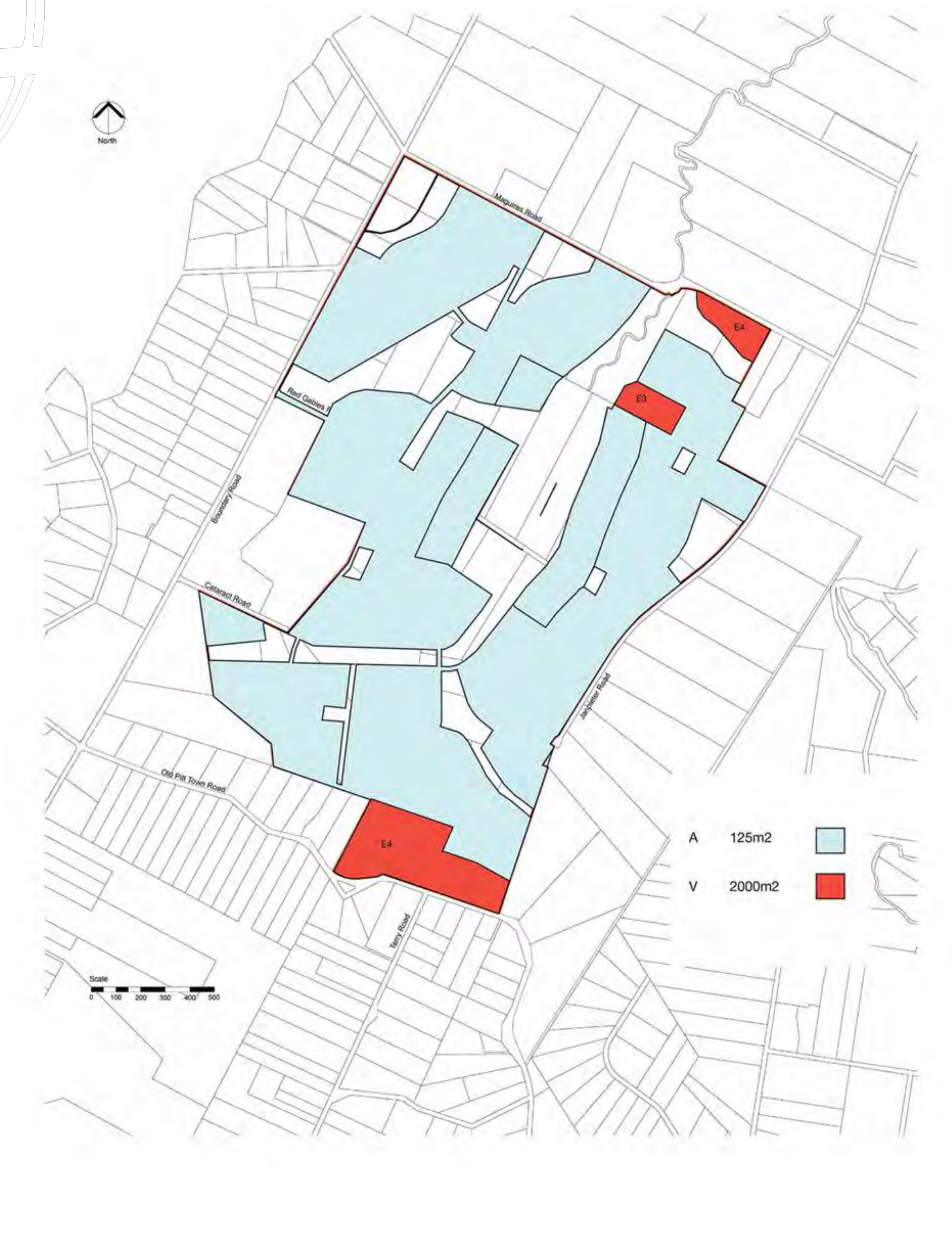


Figure 42. Draft Minimum Lot Size Map

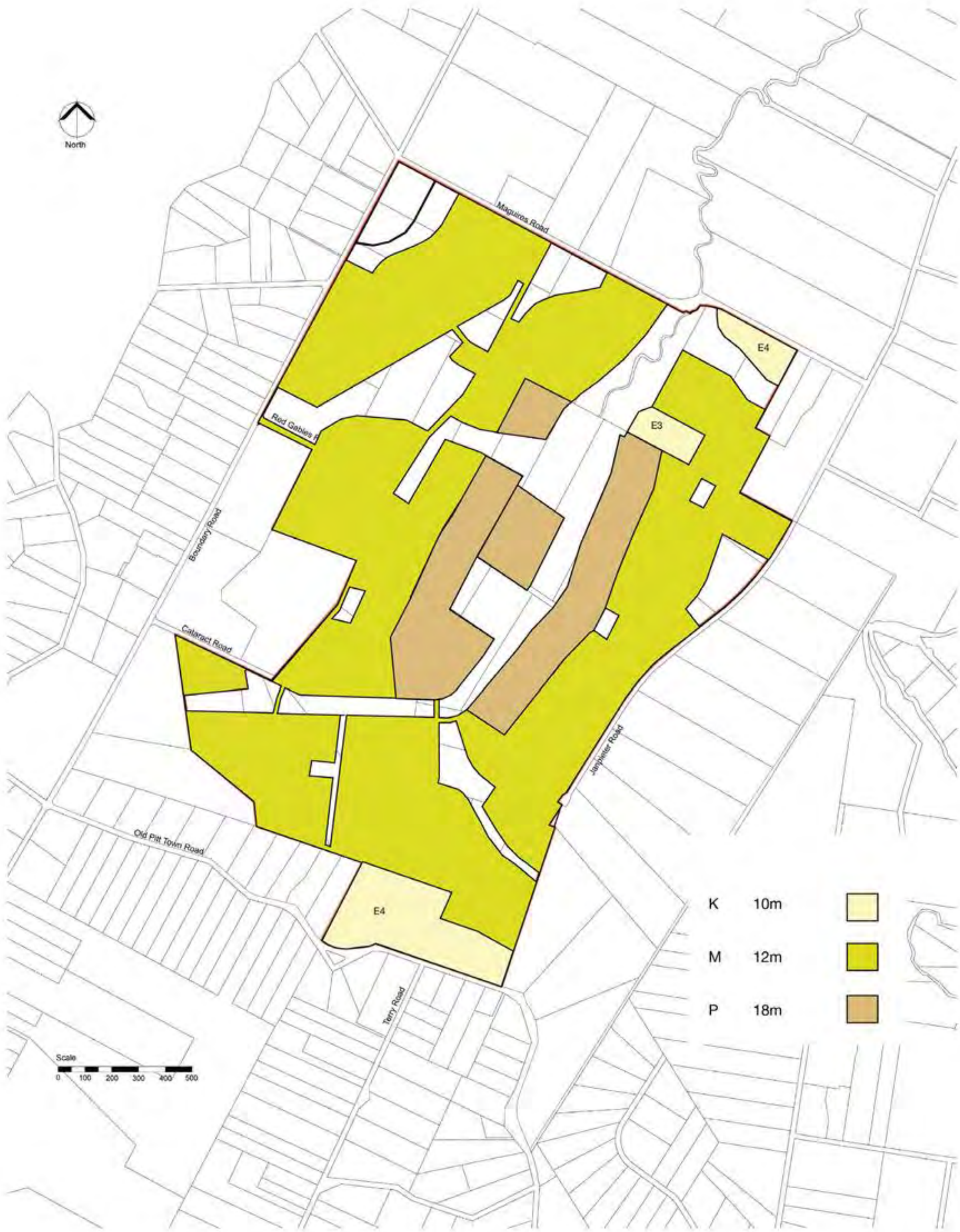


Figure 43. Draft Building Heights Map

- reduces the affordability of small lot housing as the increased holding and development costs are generally passed onto the potential purchaser; and
- can contribute to the dominance of large single detached homes being constructed in accordance with minimum lot sizes rather than promoting a mix of dwelling types that meet the housing needs of a diverse community.

The design of small lot housing is proposed to be controlled through the Draft Development Control Plan for Box Hill North. The Draft Development Control Plan contains specific controls in relation to small lot housing to ensure that reasonable levels of residential amenity and solar access are achieved (refer to **Appendix K**).

5.5.2. Maximum Height of Buildings

Currently, a maximum building height of 10 metres applies across the site. The maximum height proposed for the R1 General Residential, R3 Medium Density, E3 Environmental Management, E4 Environmental Living and B2 Local Centre land use zones is summarised in Table 10.

Table 10. Proposed maximum building heights

Zone	Maximum Height (m)
R1 General Residential	18 m
R3 Medium Density	12 m
E3 Environmental Management	10 m
E4 Environmental Living	10 m
B2 Local Centre	18 m

Within the R1 General Residential and B2 Local Centre Zone, a general maximum building height of 18 m is proposed. It is intended that the town centre will comprise predominantly up to 5 storey buildings in the centre, with lower buildings or set down edges to the street of 3-4 storeys. Within the R3 Medium Density zone, a general maximum height of 12 m is proposed, consistent with the heights prescribed in The Hills LEP 2012 on other land zoned R3 Medium Density (i.e. Rouse Hill, Beaumont Hills, Kellyville and Norwest). This will allow for buildings of 2 - 4 storeys. It is not anticipated to develop to the maximum height for the entire area, it does allow for architectural design elements within the dwelling treatments and taller building forms in areas with high visual or landscape amenity and proximity to facilities.

5.5.3. Minimum Residential Density

It is not proposed to apply a minimum residential density standard to Box Hill North on the basis that the existing The Hills LEP 2012 does not apply a minimum residential density development standard for any land to which the LEP applies. It is also considered that minimum residential density development standard are unnecessarily complicated and restrictive and unlike circumstances in which the development of fragmented land holdings in multiple ownership may make achieving certainty in delivery of minimum density problematic, in this case the majority of the site is in single ownership and / or control.

5.5.4. Floor Space Ratio

It is not proposed to set a maximum FSR for any building on any land within the Box Hill North site. FSR controls are effective development controls for high density development in urban areas. Medium and low rise residential development requires a combination of controls to achieve public and private domain outcomes, and different housing types need quite different FSRs. A better alternative to appropriately deal with a range of dwelling types is use of building footprint limits, minimum landscaped area, solar access controls and minimum rear boundary setbacks. These matters are appropriately dealt with in the Draft Development Control Plan for Box Hill North.

5.6. Land Reservation and Acquisition

The proposed LEP Amendment proposes to reserve land exclusively for a public purpose. Land to be included on the Council's existing Land Reservation Acquisition Map and section 5.1 of the Hills LEP 2012 includes:

- all land zoned RE1 Public Recreation (to be dedicated to Council); and
- 2.2 hectare portion of the site that comprises the school site (to be dedicated to the Department of Education and Communities).

The conservation management measures proposed for the Cumberland Plain Woodland include managing the vegetation through a native regeneration program. This management program would continue through the life of the development, ensuring its long term and self sustaining conservation. For the benefit of the broader community and the protection of the bushland it is proposed to dedicate this land to Council at development completion.

5.7. Development Control

A site specific Development Control Plan for Box Hill North is included as part of the Planning Proposal (refer to **Appendix K**). It is intended that the Development Control Plan for Box Hill North will guide the assessment of future detailed subdivision and built form proposals. In the event of any inconsistency between the site specific section of the DCP that relates to Box Hill North and any other sections of Council's DCP, the provisions of the site specific DCP shall prevail only to the extent of the inconsistency.

SECTION 6.

Development Contributions

6. Development Contributions

6.1. State Development Contributions

The site is not subject to the Special Infrastructure Contribution (SIC) that applies to development in the North West and South West Growth Centres. The Special Infrastructure Contribution (SIC) is a contribution towards the funding of a range of regional infrastructure and services that have been identified as being required as a result of the development within the Growth Centres. The SIC will provide a source of funding towards:

- New and upgraded regional roads;
- New and upgraded heavy rail;
- Bus services;
- Educational services;
- Health services;
- Emergency services;
- Attorney General's services;
- Provision of conservation lands; and
- Precinct planning and delivery.

6.2. Local Development Contributions

6.2.1. Existing local contributions regime

Currently, the site is subject to The Hills Section 94A Contributions Plan (the s.94A Plan). The Hills Section 94A Contributions Plan authorises Council to impose a condition of development consent or a complying development certificate to require the payment of a fixed levy. The quantity of the levy and the types of development application which attract the levy are set out below:

Proposed cost of the development	Maximum percentage of the levy
Up to $100,000	Nil
$100,001 - $200,000	0.5%
More than $200,000	1%

Under the s.94A Plan, Council is levying contributions for the provision of the following types of facilities:

- Open Space (land and works);
- Drainage (works);
- Community facilities (works); and
- Roads and Traffic (works).

The existing s.94A Plan does not contemplate future population growth associated with Box Hill North and cannot reasonably be applied.

6.2.2. Draft Contributions Plan No.15 Box Hill Precinct

As part of the recent Box Hill and Box Hill Industrial Precinct rezoning, Council prepared a draft Section 94 Contributions Plan. Under this plan, Council is levying contributions for the provision of the following types of facilities:

- Open space (land and works);
- Transport (land and works);
- Water Management (land and works); and
- Administration.

Contributions under Draft Contributions Plan No.15 Box Hill Precinct are proposed to be based on a per hectare rate as set out in Table 11 (as at March 2013):

Table 11. Proposed contribution rate per hectare

Facility Type	Unit	$ Rate per Hectare
Open Space Land	Net Developable Area	$210,311.54
Open Space Capital	Net Developable Area	$112,887.59
Transport - Land	Net Developable Area	$21,378.24
Transport Capital	Net Developable Area	$192,237.29
Water Management Land (SPC)*	Net Developable Area	$25,803.37
Water Management Capital (SPC)	Net Developable Area	$30,792.80
Administration	Net Developable Area	$19,498.86
Water Management Land (KCP)**	Net Developable Area	$89,057.09
Water Management Capital (KCP)	Net Developable Area	$207,368.69
Total		**$909,335.49**

* Second Ponds Creek Catchment

** Killarney Chain of Ponds Catchment

6.2.3. Proposed local contributions

EJC intend to meet its obligations with respect to local development contributions via a combination of carrying out of works in kind, dedication of land and provision of material public benefits. This planning proposal is accompanied by an offer to enter into a Voluntary Planning Agreement with Council and State Government for the delivery of infrastructure that are required to meet the future demands of Box Hill North. This includes road network improvements, district and local open space and a community facility.

6.2.4. Section 94 Plan for Box Hill North

As the study area to be rezoned contains 5 properties, approximately 50 hectares, a Section 94 Contributions Plan will be required for Box Hill North. This plan is envisaged to be similar to Box Hill.

SECTION 7.

Strategic Justification

7. Strategic Justification

The relationship of the Planning Proposal to the Metropolitan Strategy and Draft North-West Subregional Strategy has been considered. The following section provides evidence that the Planning Proposal is consistent with housing and employment targets, outcomes and actions set out in both of these strategic planning documents. The Planning Proposal's consistency with State Environmental Planning Policies and Section 117 Directions is also examined.

7.1. Metropolitan Plan for Sydney 2036

The Metropolitan Plan predicts that Sydney will grow to a population of approximately 6 million people by 2036. To accommodate this growth, it is anticipated that there will be a need for an additional 770,000 dwellings, 10 million square metres of commercial floor space and 5 million square metres of additional retail floor space. Approximately 760,000 more jobs are targeted to be created in this period.

The primary objective of the Metropolitan Plan for Sydney is to ensure that there is an adequate supply of land to enable the delivery of residential development to accommodate the forecast population growth. The strategy seeks to encourage the provision of housing near jobs, transport and services, to improve housing affordability, upgrade the quality of new development and encourage urban renewal. The Metropolitan Plan provides updated subregional housing targets and a new timeframe to 2036. For the North-West, the new dwelling target is 169,000 new dwellings. Of the 169,000 new dwellings, 83,000 are anticipated to be accommodated in new release areas (Growth Centres and other Greenfield releases in the subregion). The proposed rezoning of Box Hill North will deliver 4,100 new dwellings within close proximity to a town centre and supporting services and facilities and will go some way in contributing to the balance of dwellings to be accommodated within the subregion. As demonstrated throughout this planning proposal, the Box Hill North site is capable of speedy and well planned development with the first lots ready to be taken up in 2016. A mix of housing types that range from small lot, medium and high density to large lot residential dwellings are to be provided within Box Hill North to facilitate housing diversity and choice and meet the requirements of people with different housing needs, consistent with the Metropolitan Plan which calls for more low rise medium density housing in and around smaller local centres. Generally, higher residential densities (small lot, medium and high density) are to be located in the vicinity of the town centre and in areas with high visual or landscape amenity and proximity to facilities. Approximately 80% of all new dwellings are within walking distance of the proposed town centre and 90% within 400 m of a proposed bus stop. The range of densities proposed will enable a range of dwelling types, allow for social and demographic diversity and provide a proportion of dwellings at affordable price points.

7.2. Metropolitan Strategy - City of Cities: A Plan for Sydney's Future (2005)

The NSW Government's Metropolitan Strategy - City of Cities: A Plan for Sydney's Future (2005) (Metropolitan Strategy) outlined the strategic direction for the Sydney region over the next 25 years and included actions specific to the North West Growth Centre. The Metropolitan Strategy outlined five aims to achieve a more sustainable city which include:

- enhance liveability,
- strengthen economic competitiveness,

- ensure fairness,
- protect the environment, and
- improve governance.

The Metropolitan Strategy anticipated that Sydney's population was to grow by 1.1 million people from a population of 4.2 million to 5.3 million by 2031. This population growth would require the following:

- 640,000 new homes;
- 500,000 more jobs over the next 25 to 30 years;
- 7,500 hectares of extra industrial land if current trends continue;
- 6.8 million square metres of additional commercial floor space; and
- 3.7 million square metres of additional retail space.

As discussed above, the proposed rezoning of Box Hill North will deliver 4,100 new dwellings within close proximity to a 5.5 hectare Town Centre and supporting services and facilities and will go some way in contributing to the balance of dwellings to be accommodated within the subregion.

7.3. Metropolitan Transport Plan – Connecting the City of Cities (2010)

The Metropolitan Transport Plan (2010) outlines a 25 year vision for land use planning in Sydney together with a ten year fully funded package of transport infrastructure to support it. The vision of the Metropolitan Transport Plan is to meet Sydney's expected population and employment growth over the next 10 years. Of particular relevance to the North West Growth Centre and Box Hill North are the North West Rail Link (NWRL) and the improvements to bus corridors including the transit way from Parramatta to Rouse Hill. In addition, the principle of getting Sydney moving through creating an active lifestyle will be supported in the precinct planning process through the provision of walking and cycling infrastructure.

7.4. Draft North West Subregional Strategy

Subregional strategies have been adopted to translate objectives of the Metropolitan Strategy and State Plan to the local level. The draft North West Subregional Strategy prepared in December 2007 is the subregional strategy relevant to precinct planning for the Precincts and aims to guide land use planning until 2031.

The Hills Local Government Area (LGA) has a population of 170,000 people (2011) and covers an area of 400 km^2. Population growth in recent years has been among the highest in the Sydney Region. This has been influenced by major land release focussed around Kellyville and Rouse Hill. Housing in the subregion is mainly low density detached dwellings. Employment within the LGA is focussed at Castle Hill, Annangrove, Dural, North Rocks, Northmead, Rouse Hill, Winston Hills and Kellyville as well as Norwest, Marsden Park and Box Hill.

7.4.1. Housing

The Draft Strategy expects that an additional 140,000 new dwellings will be needed in the North-West Subregion by 2031 to accommodate anticipated population growth. Of these, 21,500 are targeted to be located within The Hills LGA. There are a number of factors that will promote or hinder the achievement of these housing targets, such as the ability to meet infrastructure demands, fragmented land ownership and need for site amalgamation, delivery of a variety of housing types to meet market demands and the availability and suitability of greenfield sites to accommodate urban development. Greenfield sites such as Box Hill North that are not constrained by infrastructure and can be serviced efficiently and in a timely manner, are in single ownership or control, and are able to deliver a diversity of housing will play a key role in achieving the North-West Subregional housing targets.

Providing approximately 4,100 dwellings as part of the development of the site is aligned with State Government objectives of meeting population and housing growth targets in Sydney. The outstanding location and amenity of the site lends itself to residential development.

7.4.2. Employment

The Draft Strategy projects an increase of 367,000 jobs in the North West Subregion by 2031. Of these, it is anticipated that 100,000 jobs will be provided locally in The Hills LGA. Box Hill North provides for a new Town Centre with capacity for up to 10,000 m2 of commercial floor space for retail, office and business uses. This amount of non-residential floor space provides for the retail and business services to meet the needs of future residents in Box Hill North. It also provides the opportunity for employment generation in retail and office uses in the Town Centre. The site is to the immediate north of planned major employment lands within the Box Hill and Box Hill Industrial Precinct (approximately 133 hectares).

7.5. North West Sector Bus Servicing Plan

In October 2009, the North West Sector Bus Servicing Plan was released which defines the future long-term bus service needs for the North West Sector. The North West Sector Bus Servicing Plan includes a combination of:

- Regional bus routes – higher frequency services (every 15 minutes during weekday peaks and every 30 minutes off-peak) that run into the evening (hourly) and ensure 90 per cent of residents are within 800 metres of a service; and
- District bus routes – less frequent services (every 30 minutes during weekday peaks and every 60 minutes off-peak) that do not run into the evening. These routes should ensure that 90 per cent of residents are within 400 metres of a service.

The proposed bus network indicates two proposed new routes in the vicinity of Box Hill North:

- Route D2: Rouse Hill – Withers Road – Box Hill
- Route D3: Rouse Hill – Box Hill – Riverstone.

It is anticipated that the routes outlined in the 2009 North West Sector Bus Servicing Plan would be revised with the introduction of passenger rail services at Cudgegong Road station as part of the North West Rail Link. As discussed in section 4.3.2, the proposed bus networks could easily be extended to serve Box Hill North and ensure that more than 90 per cent of residents are within the service catchment.

7.6. Draft Local Strategy – New Strategic Direction for Baulkham Hills Shire

The Draft Local Strategy was adopted by Council on 10 June 2008. This land use planning document aims to guide planning up to 2031 and reflects the five key themes of the Hills 2026 Community Strategic Direction: Looking Towards the Future:

- resilient local leadership;
- vibrant communities;
- balanced urban growth;
- protected environment; and
- modern local economy.

The proposal is consistent with Draft Local Strategy – New Strategic Direction for Baulkham Hills Shire in that it:

- makes provision for a 5.5 hectare town centre in the central portion of the site that will serve the needs of the future Box Hill North local community. The town centre is generally within 500-600 m walking distance from 85% of residents. The town centre will include up to 10,000m2 of retail, restaurant and commercial uses;
- encourages the use of public transport throughout the site. Proposed bus networks can easily be extended to serve Box Hill North and ensure that more than 90 per cent of residents are within the service catchment. The proposal also provides bus stops at key locations and provision of pedestrian and cycle paths throughout the site;
- provides a network of public open space and a passive recreation includes shared paths, seating, small playgrounds and the like, located in proximity to residential areas. The opportunities exists to provide for a range of recreation from sporting fields, local parks and riparian corridors, connected by cycle and pedestrian pathways;
- creates a series of public spaces for people adjacent to the town centre and throughout the site;
- facilitates sustainable economic development by providing a town centre that accommodates up to 10,000m2 of retail and commercial floor space that is within 500-600 m walking distance of approximately 85% of the site. It is anticipated that the redevelopment of Box Hill North will provide employment opportunities in addition to the number of jobs created throughout its 15 + year roll out. Box Hill North will contribute to the planned employment area in Box Hill Industrial, to the south-east;
- creates a vibrant town centre that will add to the existing centres within the LGA. It is expected that the town centre will be developed as part of the early stages of the project;
- accommodates 4,100 dwellings and will support an expected population of some 12,860 persons. Location of smaller lot housing and residential flat buildings in proximity to town centre and areas of high amenity, responds to a recognised need by Council for a mix of smaller lot housing to respond to decline in household size, increase in aging population and issue of housing affordability within the LGA;
- provides larger lots within the southern and north-east corners of the site, providing an appropriate transition between existing large lot residential development and medium density development on the site, and ensuring there is minimal impact on the scenic landscape of Box Hill North;
- proposes a conservation strategy that will retain approximately 5.8 hectares of Cumberland Plain Woodland within the north-western corner of the site and 12 hectares of Shale Sandstone Transition Forest within the north-eastern portion of the site; and
- proposes an effective stormwater system that will manage and protect natural waterways including Cataract Creek.

7.7. State Environmental Planning Policies

State Environmental Planning Policies (SEPP) relevant to the planning proposal are

- SEPP No.55 – Remediation of Land; and
- SEPP No.65 – Design Quality of Residential Flat Development.

7.7.1. SEPP No. 55 – Remediation of Land

A Preliminary Site Investigation (PSI) has been prepared by JBS Environmental and is included at **Appendix B**. Based on the results of the PSI investigation as outlined in section 8, there is potential for subsurface contamination to be present on the site as a result of current and previous site usage (i.e. agriculture). Based on the site observations and agriculturally related site activities, it is considered that the potential for widespread contamination across the site is low, with the possible exception of asbestos.

Dangerous goods (petrol/diesel and chemical storage) are also likely to be present through-out the site, typical of rural / agricultural uses. It is considered unlikely that the areas of environmental concern identified will have impacted the site to a degree that would prevent planning and development of the land for the intended use(s). The PSI report recommends that a Detailed Site Investigation (DSI) be completed to assess the extent of contamination prior to future detailed development. It is also recommended that, based on the age of the structures identified onsite, and the presence of suspected asbestos containing material, a hazardous materials building inspection be conducted for all structures located on the site to enable appropriate management during future development.

7.7.2. SEPP No.65 – Design Quality of Residential Flat Development

SEPP 65 applies to all new residential flat buildings across the State. The planning proposal envisages the site would accommodate residential flat buildings. The detailed design of future residential flat buildings will be subject to the provisions of SEPP 65 and the Residential Flat Design Code (RFDC) as part of the development application process. The ILP presented in the planning proposal and Draft Development Control Plan included at **Appendix K** has had regard to the rules of thumb set out in the RFDC.

7.8. Section 117 Direction

The following section 117 Directions are relevant to the Planning Proposal:

Direction 1.1: Business and Industrial Zones

The objectives of this direction are to:

a) encourage employment growth in suitable locations,

b) protect employment land in business and industrial zones, and

c) support the viability of identified strategic centres.

The Planning Proposal delivers employment land in both retail and business sectors to the site, thereby encouraging employment growth in Box Hill North and in The Hills Shire as a whole. The Planning Proposal is consistent with employment targets identified under the Draft Strategy and provides a suitable balance of retail and business zoned land within the site.

Direction 2.1: Environment Protection Zones

The objective of this direction is to protect and conserve environmentally sensitive areas.

The Planning Proposal has identified opportunities and constraints to development and identified the environmental assets of the site. The Planning Proposal includes a zoning scheme that responds to these factors.

Direction 3.1: Residential Zones

The objectives of this direction area:

a) to encourage a variety and choice of housing types to provide for existing and future housing needs,

b) to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and

c) to minimise the impact of residential development on the environment and resource lands.

The Planning Proposal will deliver a range of densities, lot sizes and dwelling types and create a diverse community that is demographically balanced. The variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, enabling people to age in place. As demonstrated in section 8, the proposal does not result in any significant adverse environmental impacts.

Direction 3.3: Home Occupations

The objective of this direction is to encourage the carrying out of low-impact small businesses in dwelling houses.

'Home occupations' are permissible without consent in the R1 General, R3 Medium Density, B2 Local Centre, E3 Environmental Management and Environmental Living zones, in accordance with The Hills LEP 2012. The Planning Proposal does not propose to amend the land use tables in respect of 'home occupations'.

Direction 3.4: Integrating Land Use and Transport

The objective of this direction is to ensure that urban structures, building forms, land use locations, development designs, subdivision and street layouts achieve the following planning objectives:

a) improving access to housing, jobs and services by walking, cycling and public transport, and

b) increasing the choice of available transport and reducing dependence on cars, and

c) reducing travel demand including the number of trips generated by development and the distances travelled, especially by car, and

d) supporting the efficient and viable operation of public transport services, and

e) providing for the efficient movement of freight.

The Planning Proposal is consistent with relevant guidance documents in that the site is suitably serviced by existing and planned future road infrastructure and transport services. It is expected that future capital works for road improvements within the vicinity of the site (i.e. new / upgrades to intersections, localised widening and turning bays, extension of right-turn-bays, road upgrades and traffic management) will arise as a result of redevelopment of the site. These costs will be borne by EJC.

Given that the Planning Proposal incorporates a variety of land uses ranging from residential to business, this variety in land use zones is expected to facilitate a self-contained suburb that could lead to residents living alongside to where they work, shop and play. This scenario would potentially reduce trips generated outside the site as residents could work and/or shop locally and therefore not significantly overload existing road infrastructure and public transport services. Further, the site could encourage future residents to utilise walking and cycling modes of transport to access their workplaces and/or community or retail uses from their residences within the site, recreation facilities in the locality or to use public transport links. Design of streets and cycleways will be subject of a future subdivision application which will be prepared in accordance with *Improving Transport Choice – Guidelines for planning and development* (DUAP 2001).

Direction 4.4: Planning for Bushfire Protection

The objectives of this direction are:

a) to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and

b) to encourage sound management of bush fire prone areas.

The site is located in close proximity to areas that are identified as bush fire prone land. As such, future investigation and structure planning of the site will consider these bush fire prone areas and identify measures for development to achieve compliance with the NSW Rural Fire Service guidelines on *Planning for Bushfire Protection 2006* and including the provision of Asset Protection Zones. Future development controls will include appropriate building design specifications and nomination of suitable building materials to address bushfire safety considerations. Site specific investigations will be undertaken as part of the post Gateway investigations.

Direction 6.2: Reserving Land for Public Purposes

The objectives of this direction are:

a) to facilitate the provision of public services and facilities by reserving land for public purposes, and

b) to facilitate the removal of reservations of land for public purposes where the land is no longer required for acquisition.

The proposed LEP Amendment proposes to reserve land exclusively for a public purpose, consistent with this direction (refer to section 5.6).

Direction 6.3: Site Specific Provisions

The objective of this direction is to discourage unnecessarily restrictive site specific planning controls.

The Planning Proposal adopts land use zones and uses drawn from The Hills LEP 2012 and specifies permissible and prohibited uses which represent as far as practical a role over of the current planning controls. It also makes provision to accommodate additional permitted residential uses on the site consistent with this Direction.

Direction 7.1: Implementation of the Metropolitan Plan for Sydney 2036

The objective of this direction is to give legal effect to the vision, transport and land use strategy, policies, outcomes and actions contained in the Metropolitan Plan for Sydney 2036.

As previously demonstrated, the Planning Proposal is consistent with the vision, transport and land use strategy, polices, outcomes and actions contained in the Metropolitan Plan for Sydney 2036.

SECTION 8.

Environmental, Social and Economic Impact

8. Environmental, Social and Economic Impact

This section addresses the environmental assessment of the Planning Proposal in respect to the relevant matters for consideration under Section 55(1) of the EP&A Act. The environmental assessment draws upon the site analysis, which justifies the configuration of the proposed development and the land use zones proposed. The following factors have been considered in this section:

- Flora and fauna;
- Transport and Access assessment;
- Water cycle management including flooding, surface water, groundwater quality and riparian corridors;
- Services and Utilities;
- Geotechnical, soils and contamination assessment;
- Aboriginal heritage assessment;
- Social planning assessment;
- Bushfire risk assessment;
- Retail analysis; and
- European heritage.

8.1. Flora and Fauna

A Flora and Fauna Assessment prepared by Cumberland Ecology is included at **Appendix D**. The flora and fauna assessment provides a strategic biodiversity assessment including:

- an analysis of ecological values and identification and mapping of areas of high, moderate and low ecological value (CPW and SSTF) on the site;
- addresses the impact of the ILP and planning proposal on existing native flora and fauna and their habitats, including identified threatened species and ecological communities; and
- provides an overview of the preferred conservation strategy for the site and how the environmental land offsets scheme will mitigate the impacts of the development.

Existing vegetation communities and their conservation status, threatened species and populations are detailed in the Site Analysis at section 2.

8.1.1. Opportunities

An options assessment has been undertaken in considering the conservation strategy for the Cumberland Plain Woodland and Shale Sandstone Transition Forest on the site. The analysis has involved balancing good urban design outcomes for a sustainable and cohesive community and adopting a 'maintain or improve' approach for these ecological communities. As discussed in section 3.4, the proposal has sought options for rezoning that aim in the first instance to maximise the in-situ retention of biodiversity values as far as practicable, particularly the CPW and SSTF patches identified in the NGH assessment.

Retention of Cumberland Plain Woodland

The CPW on the subject site is young, highly modified and surrounded largely by exotic grassland. The largest patch (i.e. Patch 4) is bisected by an existing house and tennis court. Notwithstanding the above, a small drainage line flows through the western corner of Patch 4 and into Patch 1. Since the more intact vegetation within Patch 4 occurs along this drainage line, there is some opportunity to retain woodland in this western half and connect Patches 1 and 4 along the stream by re-vegetating and enhancing the habitats along the stream.

Retention of Shale Sandstone Transition Forest

The SSTF (Patch 6) includes old trees along the riparian corridor and the patch of trees on site links or goes close to linking with more intact vegetation to the north of the site. This means that there is considerable value in maintaining the riparian portion of this patch intact and building upon its condition and its potential to link to more intact vegetation to the north. It is recognised that there will be a mandatory riparian buffer zone on either side of the tributary from the top of both eastern and western bank of a tributary of Cataract Creek, within which no development will be permitted. Notwithstanding this, there would be a great benefit to retaining the majority of the SSTF flanking the creek as this would allow the majority of large hollow-bearing trees on the subject site to be conserved. Due to the general low density of tree cover and woody understorey within the area of SSTF patch away from the creek, there is potential for larger lots to locate building footprints in suitably cleared areas whilst avoiding clearance of trees, if appropriate mechanisms could be emplaced to encourage tree retention/vegetation protection.

In theory, all of patches of CPW and SSTF vegetation could be conserved on the site. This would require substantial and ongoing management to maintain their condition as the site is developed around them. Some of the patches, particularly the smallest patches and the eastern edges of Patches 4 and 5, are likely to be difficult to conserve as they have a large edge to area ratio and are heavily disturbed. By contrast Patch 6 is largely along a riparian corridor which will need to be conserved and managed in any case according to current guidelines for riparian corridors. It also has high concentrations of older trees, and links to more intact vegetation to the north. It is likely to have better prospects for long term conservation in the future. 100% retention of the TEC's would not be practical, lead to a good urban design or environmental outcome. As such, the mapped patches of CPW and SSTF were re-examined with respect to the possible retention of the better quality areas of woodland and open forest on the subject site.

After consideration of the current condition of TEC vegetation on the subject site, Cumberland Ecology has recommended that the following points are adopted in the rezoning:

- Creeks should be considered as focal points or areas for the future conservation of forest and woodland on the subject site;
- The creek linking Patch 1 and the western portion of Patch 4 are zoned for conservation and actively regenerated to form a north western patch of CPW;
- The riparian area of Patch 6 containing the SSTF with large old trees with hollows is zoned for conservation and actively managed to form a north eastern patch of SSTF;
- The eastern "bulge" of Patch 6, which is younger regrowth, should also be considered for retention but could be amenable to retain within larger lots of land, with appropriate mechanisms in place to encourage tree retention; and
- Remaining smaller patches of CPW be either considered for retention (if this can feasibly be done, considering all other factors during the rezoning), or, if cleared, then a suitable offset be provided off site to compensate for the loss due to clearing.

A schematic summary of these recommendations is provided in Figure 44.

Figure 44. Summary of recommended ecological options

The majority of the site has been cleared due to a long history of agricultural land use and consists of mainly exotic pastures, farm dams, farm housing and infrastructure. None of the native vegetation of the site (CPW and SSTF) has been mapped as having a high ecological value. The vegetation patches, much of which are isolated paddock trees, are not large, are irregular in shape and are surrounded by heavily cleared and modified farmland. This creates both long and short term challenges for conservation. Left 'in situ' these patches are likely to become increasingly isolated and for edge effects including encroachment of weeds and disturbance by humans and animals, to become more significant.

There are also design and planning difficulties in accommodating urban development around, in particular the CPW patches, due to their size and shape, namely:

- isolated and fragmented pockets of developable area that are not visually or physically integrated or connected with other parts of the site;
- increased edge effects – the edge of a larger consolidated area of vegetation can be more effectively treated and controlled than a number of smaller patches and a greater proportion of the 'core' area of vegetation can be protected; and
- reduced efficiencies in terms of road layout, lot configuration and servicing.

8.1.2. Proposed Strategy

The planning proposal presents a biodiversity strategy that:

- secures the conservation of native vegetation on the site that is likely to continue to deteriorate under the existing planning regime for the site (i.e. continued rural / farming use or subdivision of the site into 2 hectare parcels and the construction of up to 200 houses) and potential worsening of edge effects;
- retains the better quality patches of CPW and SSTF on the site (approximately 5.8 hectares of CPW and 12 hectares of SSTF), along existing creeks lines and riparian corridors, and where the prospects for the practical long term conservation of vegetation are increased;
- outlines a commitment to undertake re-vegetation and improvement works of retained areas of native vegetation. This is to be implemented through the preparation and implementation of vegetation management plans and is identified in the voluntary planning agreement; and
- recognises that additional off site offsets are to be purchased to compensate for the loss of remaining vegetation, namely the purchase BioBanking biodiversity credits, the quantum and type to be determined via a BioBanking assessment.

In this context, the loss of a limited amount of poorer quality vegetation is considered acceptable.

The majority of the subject site will be owned by one landholder including the lots on which the TEC vegetation occurs. It will be possible for detailed and consistent consideration to be made about the future conservation or offsetting of vegetation on the subject site that will occur as a result of the rezoning and subsequent land use changes.

8.1.3. Other Considerations

Vegetated Riparian Zones (VRZ)

It is mandatory to retain or create a vegetated riparian zone along either side of the creeks on the subject site. The widths of the riparian zones are dependent upon the stream order with high order stream having wider buffers. This may result in some expansion of riparian treed areas.

Bushfire Asset Protection Zones

The subject site is currently heavily grazed and fuel loads are reduced as a result. If one or more patches are to be conserved on site, and grazing ceases, fuel loads will increase. This will be particularly so for the SSTF along Cataract Creek (Patch 6). Asset Protection Zones (APZs) will need to be created in association with areas of SSTF and CPW that are to be retained on site.

Vegetation Management Plan

All retained areas of native vegetation will need to be very actively managed to maintain and improve their condition as the subject site is developed around them. The management of such native vegetation should be carried out under an approved management plan that coordinates the schedule of management works and which sets out clear outcomes and measurable targets for re-vegetation and improvement works.

Need for Off Site Biodiversity Outcomes

It is likely that even with the partial retention of CPW and SSTF on site, additional off site offsets will be required to compensate for the loss of TECs. Suitable offsets that should be considered include the purchase of BioBanking biodiversity credits, the quantum and type to be determined via a BioBanking assessment of the rezoning proposal during preparation of a detailed flora and fauna assessment report that will be completed at a later stage in the assessment process.

8.2. Transport and Access assessment

A Transport and Access Impact assessment of the planning proposal and ILP has been prepared by GTA Consultants (refer to **Appendix F**). The assessment included the consideration of the following:

- existing and base year (2036) traffic conditions surrounding the site;
- the traffic generating characteristics of the planning proposal; and
- the transport impact of the planning proposal on the surrounding road network.

As demonstrated, with the required infrastructure improvements, the proposed development will have acceptable traffic impacts.

The methodology used to assess transport infrastructure requirements for Box Hill North (including capacities, levels of service, intersection analysis and traffic generations) is consistent with that used by GHD Pty Ltd for Box Hill and Box Hill Industrial.

8.2.1. Methodology

The following scenarios were used to compare the impacts of Box Hill North generated traffic on the local road network:

- Base = Existing + Background Growth (for year 2036) + Full Development of Box Hill and Box Hill Industrial Precincts; and
- Full Development = Base + Full Development of Box Hill North.

The *Austroads Guide to Traffic Management – Part 3: Traffic Studies and Analysis* was used to provide typical mid-block capacities for urban roads. These capacities were then used to determine the traffic capacity values for key roads in the vicinity of Box Hill North (Windsor Road, Old Pitt Town Road, Terry Road and The Water Lane). These values are consistent with the values used in the 2011 Box Hill and Box Hill Industrial – Transport and Access Study. The operation of key intersections has been assessed using SIDRA INTERSECTION.

8.2.2. Planned and committed infrastructures works in Box Hill and Box Hill Industrial Precincts

Intersection improvements planned as part of Box Hill and Box Hill Industrial Precincts include the following:

- Windsor Road/ Nelson Road – conversion to three-way intersection;
- Windsor Road/ Terry Road/ Garfield Road – additional right-turn lane along Windsor Road East, two lanes (one through, one right turn) along Terry Road and Garfield Road;
- Windsor Road/ Mount Carmel Road – new signalised; and

- Windsor Road/ Boundary Road – conversion to four-way with re-alignment of Loftus Street.

8.2.3. Traffic Generation

Traffic generation estimates for Box Hill North are provided in Table 12. As shown, the residential component of Box Hill North is likely to generate 3,145 vehicle movements in a peak hour.

Table 12. Peak Hour Traffic Generation

Land Use	Dwellings	Traffic Generation Rate	Traffic Generation
Low Density Residential	3,280	0.85 trips/ dwelling	2,788
Medium Density Residential	615	0.50 trips/ dwelling	308
High Density Residential	205	0.24 trips/ dwelling	49
Total	**4,100**		**3,145**

Distribution and assignment

For the purposes of estimating vehicle movements, the directional distributions and assignment of traffic generated by Box Hill North is 30-45% via Boundary Road, 25-40% via Terry Road and 5-15% via Old Pitt Town Road. A detailed distribution and assignment is provided in **Appendix F** of the GTA report. In addition, the directional split of traffic (i.e. the ratio between the inbound and outbound traffic movements) of 20% inbound and 80% outbound during the morning peak hour and 80% inbound and 20% outbound during the afternoon peak hour has been adopted for the purposes of the transport and access assessment.

Levels of service

The level of service of roadway sections have been assessed using the typical ranges of volume-capacity ratios. A comparison of the anticipated roadway level of service prior to and following the full development of Box Hill North is provided below in Figure XX and Figure XX for the AM and PM peak hours respectively.

In both the AM and PM Peak:

- Windsor Road westbound and Old Pitt Town Road westbound (between Boundary Road and Terry Road) would operate at a LOS F;
- Old Pitt Town Road eastbound (between Boundary Road and Terry Road) would operate at a LOS E; and
- Terry Road northbound (between Mason Road and George Street) would operate at a LOS F.

Intersection assessment

The operation of key intersections with the anticipated Box Hill North traffic has been assessed using SIDRA INTERSECTION. A comparison of the anticipated future operation of key intersections prior to and following the full development of Box Hill North is provided in Figures 45 and 46.

Figure 45 indicates that with Box Hill North traffic:

- Windsor Road eastbound and Old Pitt Town Road eastbound (between Boundary Road and Terry Road) would operate at a LOS F;
- Windsor Road westbound and Terry Road southbound (between Old Pitt Town Road and Mason Road) would operate at a LOS E;

It is noted that Terry Road southbound (between Mason Road and George Street) would operate at a LOS F.

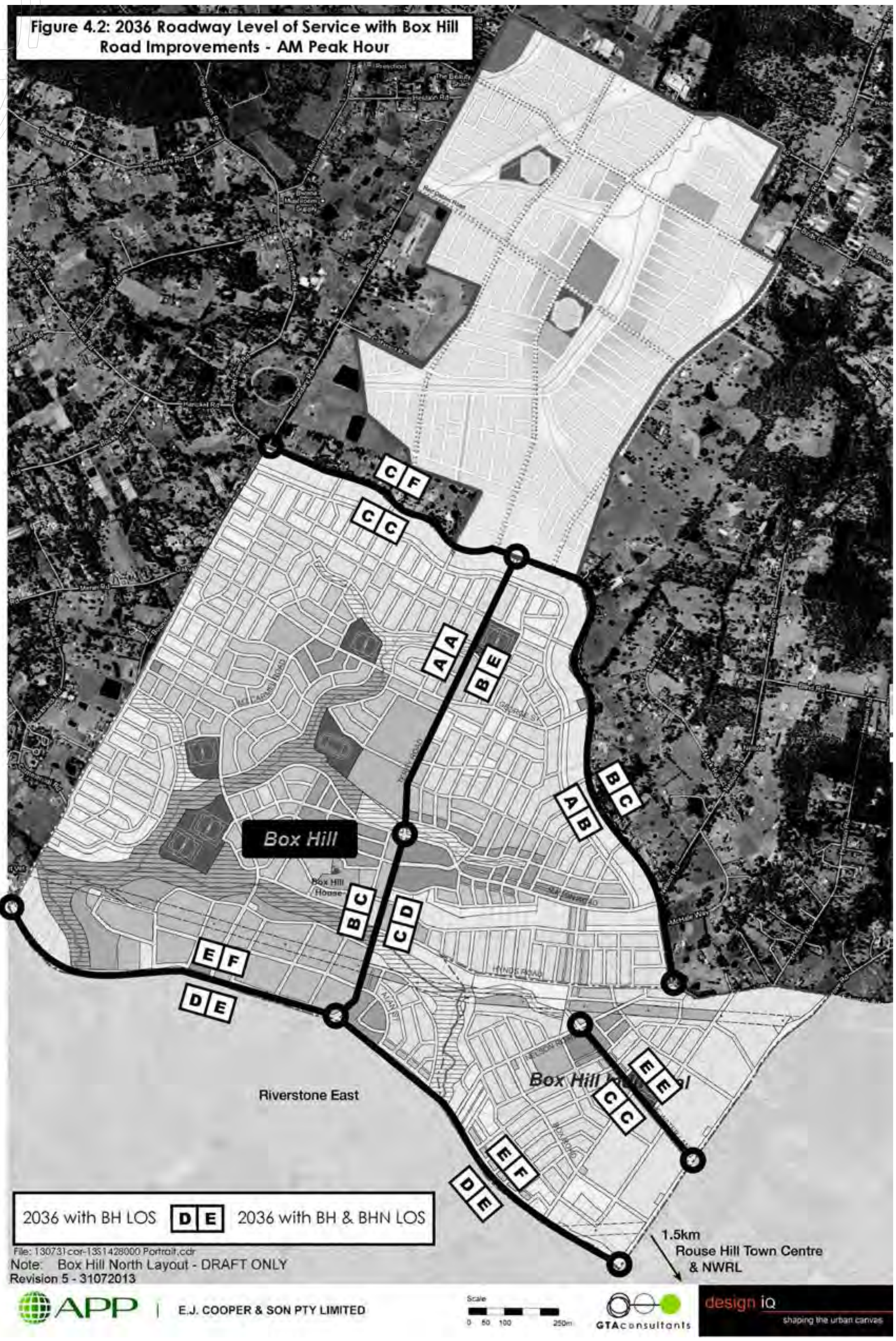


Figure 45. Anticipated roadway service - AM peak hour

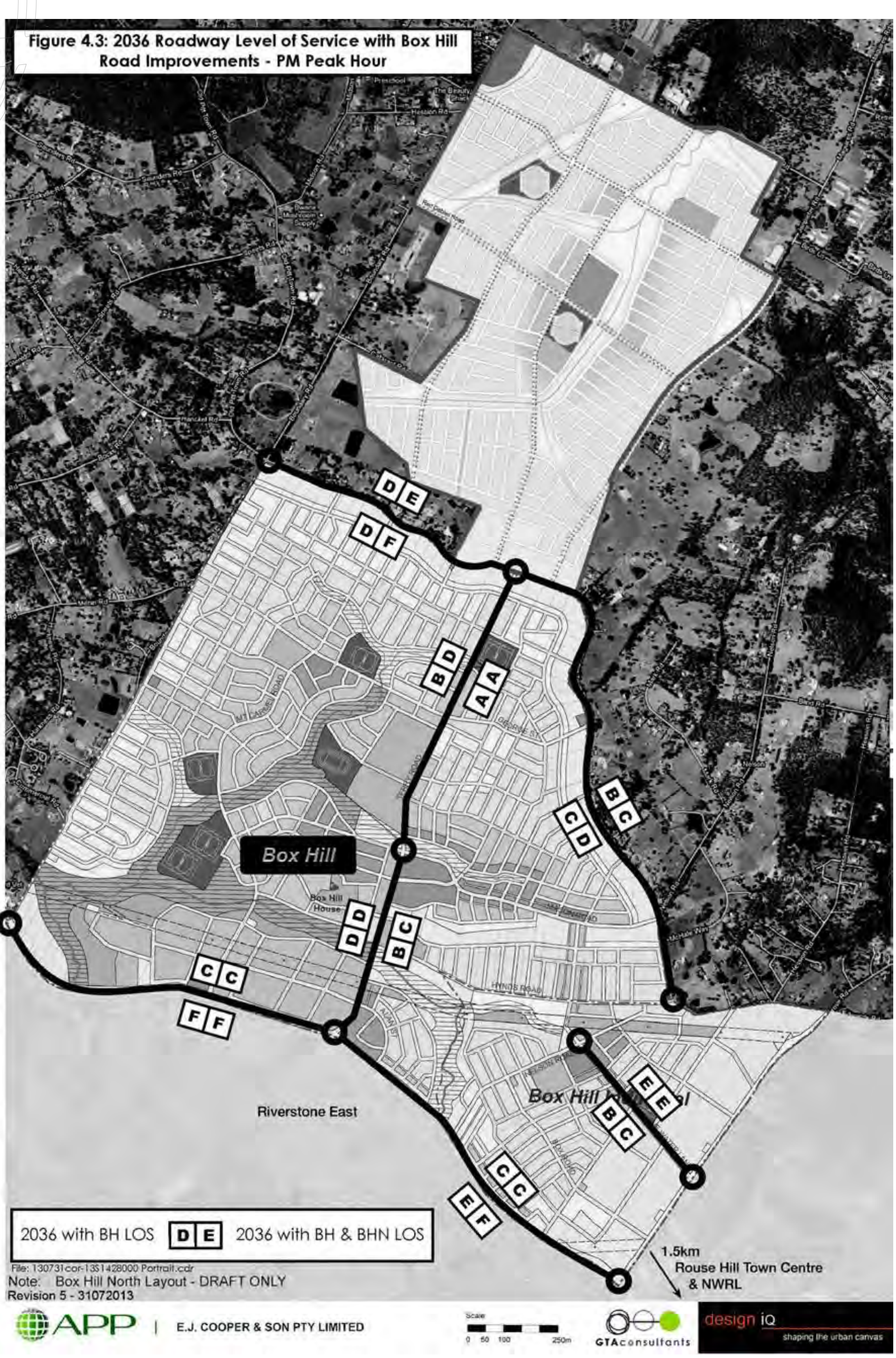


Figure 46. Anticipated roadway service - PM peak hour

Figure 46 indicates that with Box Hill North traffic:

- Windsor Road westbound and Old Pitt Town Road westbound (between Boundary Road and Terry Road) would operate at a LOS F;
- Old Pitt Town Road eastbound (between Boundary Road and Terry Road) would operate at a LOS E;

It is noted that Terry Road northbound (between Mason Road and George Street) would operate at a LOS F.

Intersection assessment

The operation of key intersections with the anticipated Box Hill North traffic has been assessed using SIDRA INTERSECTION. A comparison of the anticipated future operation of key intersections prior to and following the full development of Box Hill North is provided in Figures 47 and 48.

As shown in Figure 47, the following intersections during the AM Peak would operate at LOS F :

- Old Pitt Town Road/ Boundary Road (from LOS C);
- Old Pitt Town Road/ Terry Road (from LOS C);
- Windsor Road/ Nelson Road (from LOS D);
- Windsor Road/ Box Road (from LOS B); and
- Windsor Road/ Annangrove Road (from LOS D).

The following intersections operate at a LOS E:

- Old Pitt Town Road/ Mount Carmel Road (from LOS D);
- Windsor Road/ Boundary Road (from LOS D); and
- Windsor Road/ Terry Road (from LOS D).

The intersection of Windsor Road/ Mount Carmel Road operates at LOS E before the full development of Box Hill North.

The analysis of the addition of Box Hill North generated traffic indicates significant delays (and queuing) at the following approaches:

- south approach of the Windsor Road/ Terry Road/ Garfield Road East intersection;
- north and east approaches of the Old Pitt Town Road/ Boundary Road intersection; and
- south and west approaches of the Old Pitt Town Road/ Terry Road intersection.

Figure 47. Intersection Performance - AM Peak Hour

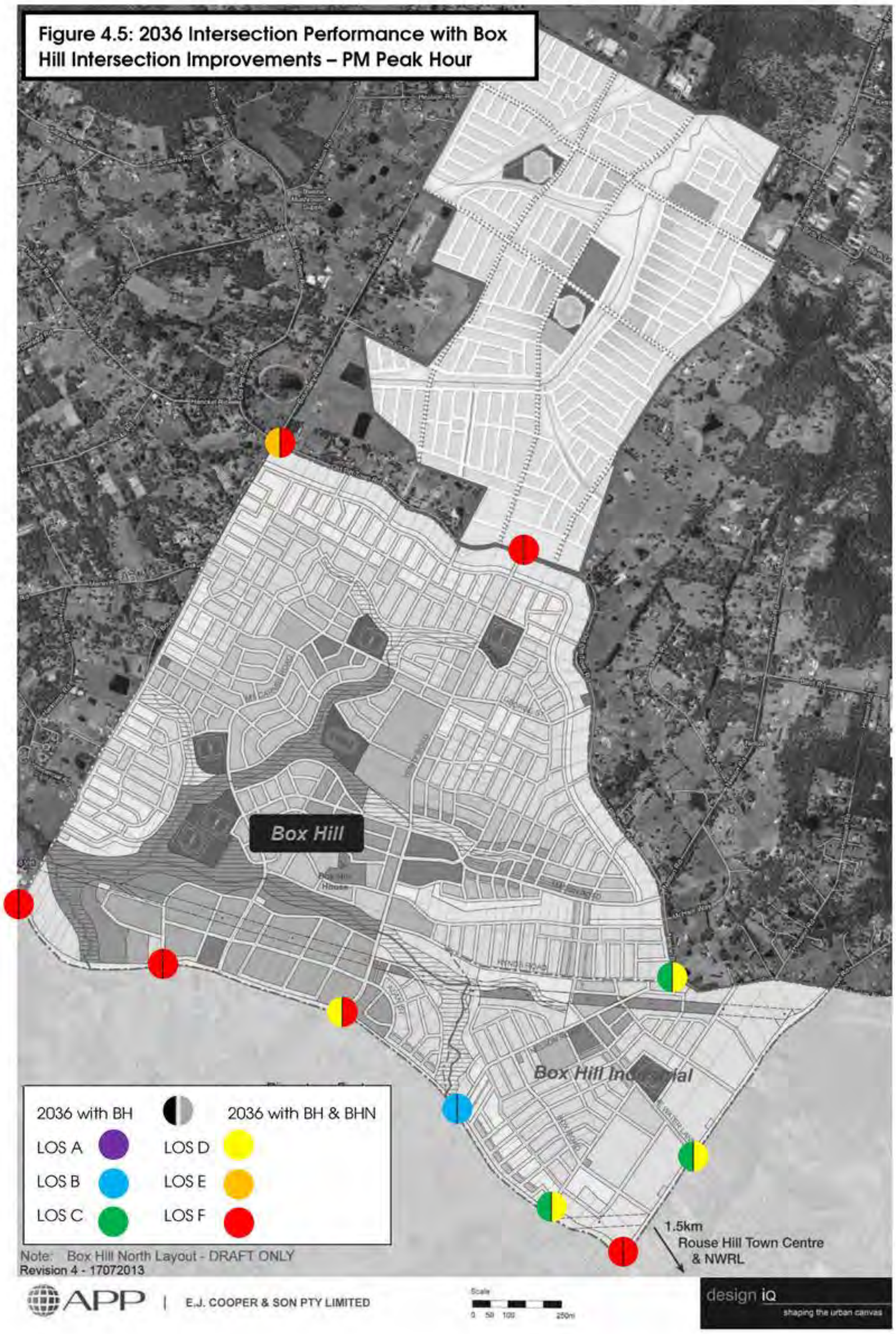


Figure 48. Intersection Performance - PM Peak Hour

As shown in Figure 48, the following intersections during the PM Peak would operate at LOS F:

- Old Pitt Town Road/ Boundary Road (from LOS E); and
- Windsor Road/ Terry Road (from LOS D).

It should be noted that the following intersections operated at LOS F before the full development of Box Hill North:

- Old Pitt Town Road/ Mount Carmel Road;
- Old Pitt Town Road/ Terry Road;
- Windsor Road/ Boundary Road;
- Windsor Road/ Mount Carmel Road; and
- Windsor Road/ Annangrove Road.

With the addition of Box Hill North generated traffic, a detailed analysis of the results indicate significant delays (and queuing) at the following approaches*:

- south and east approach of Windsor Road/ Terry Road/ Garfield Road East intersection;
- east approach of Windsor Road/ Annangrove Road intersection;
- south and east approaches of Old Pitt Town Road/ Boundary Road intersection; and
- south approach of Old Pitt Town Road/ Terry Road intersection.

8.2.4. Proposed Additional Infrastructure Works

Based on the results of the transport assessment and the proposed access locations, infrastructure works will be required as a result of Box Hill North. These are summarised in Table 13 and shown graphically in Figure 49.

Table 13. Proposed Intersection Improvement Works to accommodate Box Hill North

Item No.	Intersection Location	Proposed Improvement	Comments
Windsor Road Intersections			
1	Windsor Rd / Boundary Rd / Loftus Street	Extension of turning lane lengths: • Windsor Rd westbound right turn lane • Boundary Rd southbound left and right turn lanes-	
2	Windsor Rd / Mt Carmel Rd	Extension of turning lane lengths: • Windsor Rd eastbound left turn lane • Mount Carmel Rd southbound right turn lane	This is a new intersection proposed as part of the Box Hill and Box Hill Industrial Precincts.
3	Windsor Rd / Terry Rd / Garfield Rd	Extension of turning lane lengths: • Windsor Rd westbound right turn lane • Terry Rd southbound left turn lane	
4	Windsor Rd / Box Rd/ Guntawong Rd	Extension of turning lane length: • Guntawong Rd northbound left turn lane	Additional storage capacity required on Guntawong Rd to accommodate additional through traffic along Windsor Rd associated with Box Hill North development
5	Windsor Rd / Annangrove Rd	Extension of turning lane length: • Windsor Rd westbound right turn lane	

* Excluding through movements along Windsor Road.

Item No.	Intersection Location	Proposed Improvement	Comments
Boundary Road Intersections			
6	Boundary Rd / Maguires Rd (BHN Access)	Give Way Control – localised pavement widening to accommodate turn lanes	
7	Boundary Rd / BHN Site Access / Hession Rd	Give Way Control – localised pavement widening to accommodate turn lanes	
8	Boundary Rd / Red Gables Rd (BHN Access)	Give Way Control – localised pavement widening to accommodate turn lanes	
9	Boundary Rd / Cataract Rd / BHN Site Access	Give Way Control – localised pavement widening to accommodate turn lanes	
10	Boundary Rd / Old Pitt Town Rd	Upgrade existing 1 lane roundabout to a dual (2) lane roundabout	Subject to further discussions with The Hills Shire Council this intersection could be upgraded with traffic signals. However, roundabout provides better operational performance with Box Hill North traffic distribution. A two lane roundabout also would incur a higher cost than traffic signals and thus the recommendation is considered financially conservative.
Old Pitt Town Road Intersections			
11	Old Pitt Town Rd / BHN Access Rd (west)	Provide a new dual (2) lane roundabout	Consideration was given to the provision of traffic signals at this location. However roundabout was selected due to proximity to Old Pitt Town Rd / Terry Rd intersection (approx. 150m).
12	Old Pitt Town Rd / Terry Rd	Upgrade existing intersection to a dual (2) lane roundabout	Consideration was given to the provision of traffic signals at this location. However roundabout was selected due to proximity to BHN access roads.
13	Old Pitt Town Rd / BHN Access Rd (east)	Provide a new dual (2) lane roundabout	Consideration was given to the provision of traffic signals at this location. However roundabout was selected due to proximity to Old Pitt Town Rd / Terry Rd intersection (approx. 150m).
Other Intersections			
14	Annangrove Rd / The Water Lane / Withers Rd	Provision of left turn slip lane on Annangrove Road northbound	

The intersection performance of the local road intersections with Box Hill North and Box Hill development traffic and network improvements is shown in Table 13. The improvement works to Windsor Road intersections have been proposed to retain the same level of service and operating conditions as with the Box Hill development and associated improvements. The Level of Service intersection operating conditions with the Box Hill North improvements are presented in Figures 50 and 51.

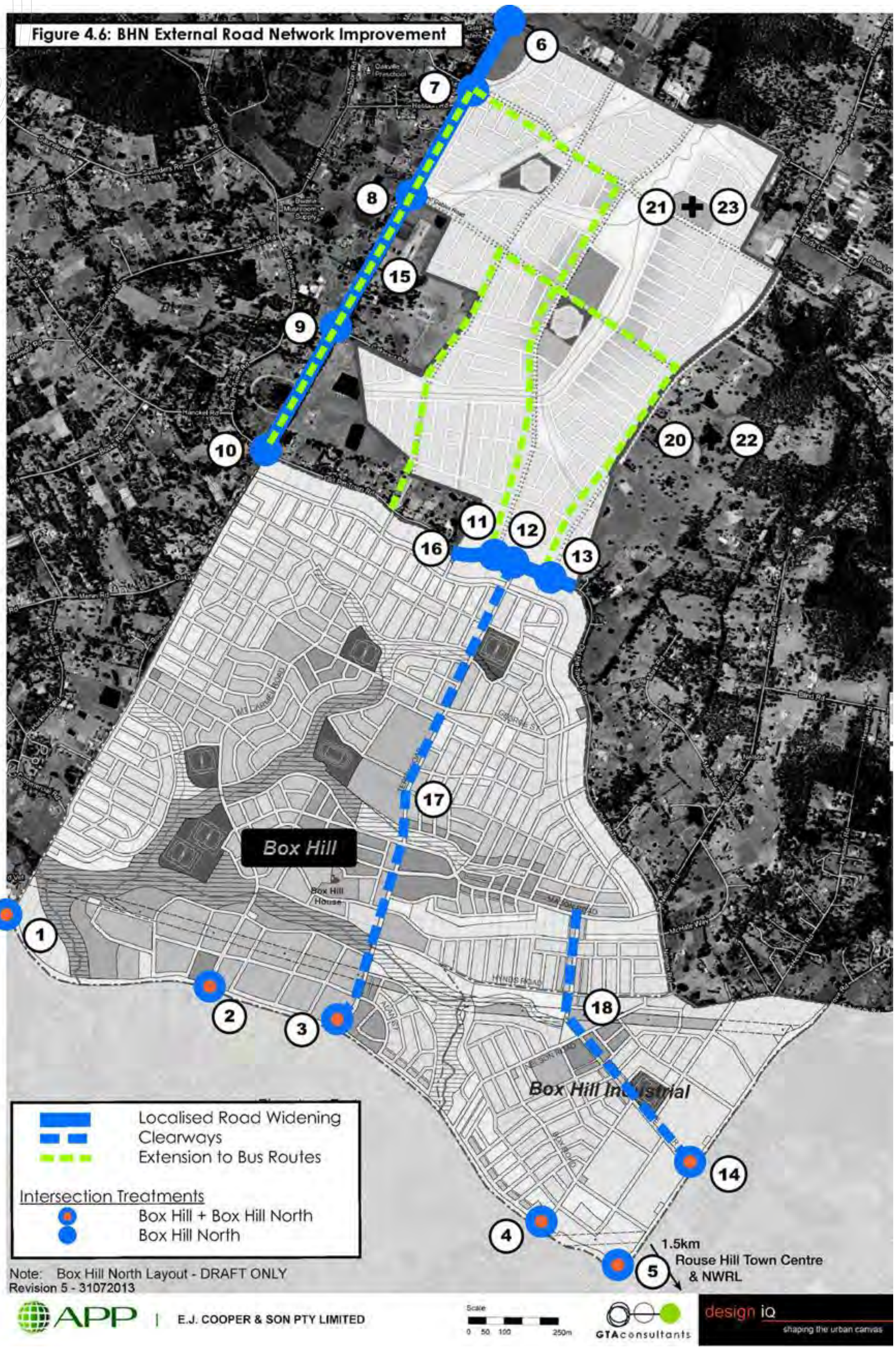


Figure 49. Proposed Infrastructure Works

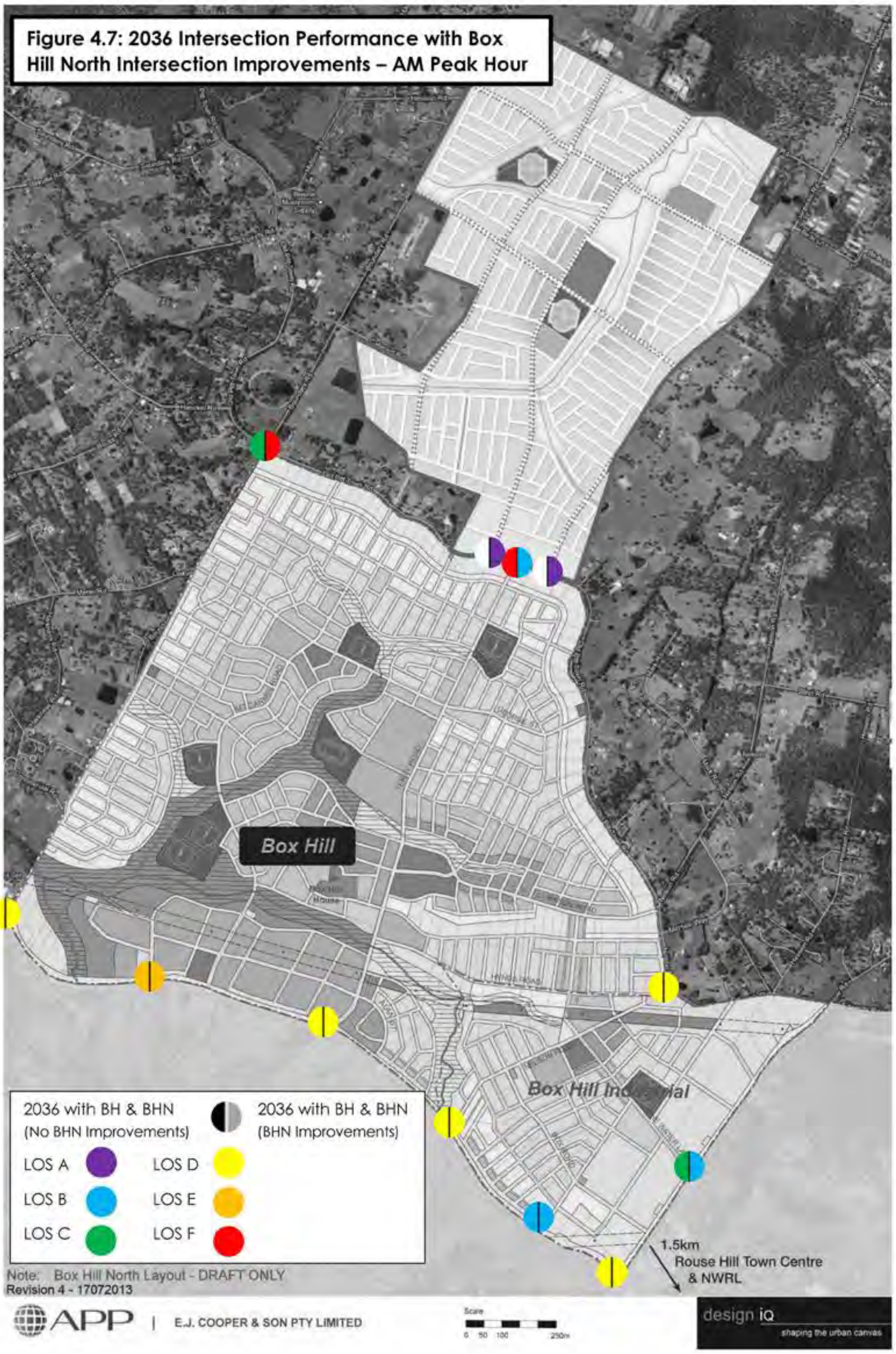


Figure 50. Intersection performance after improvements - AM peak hour

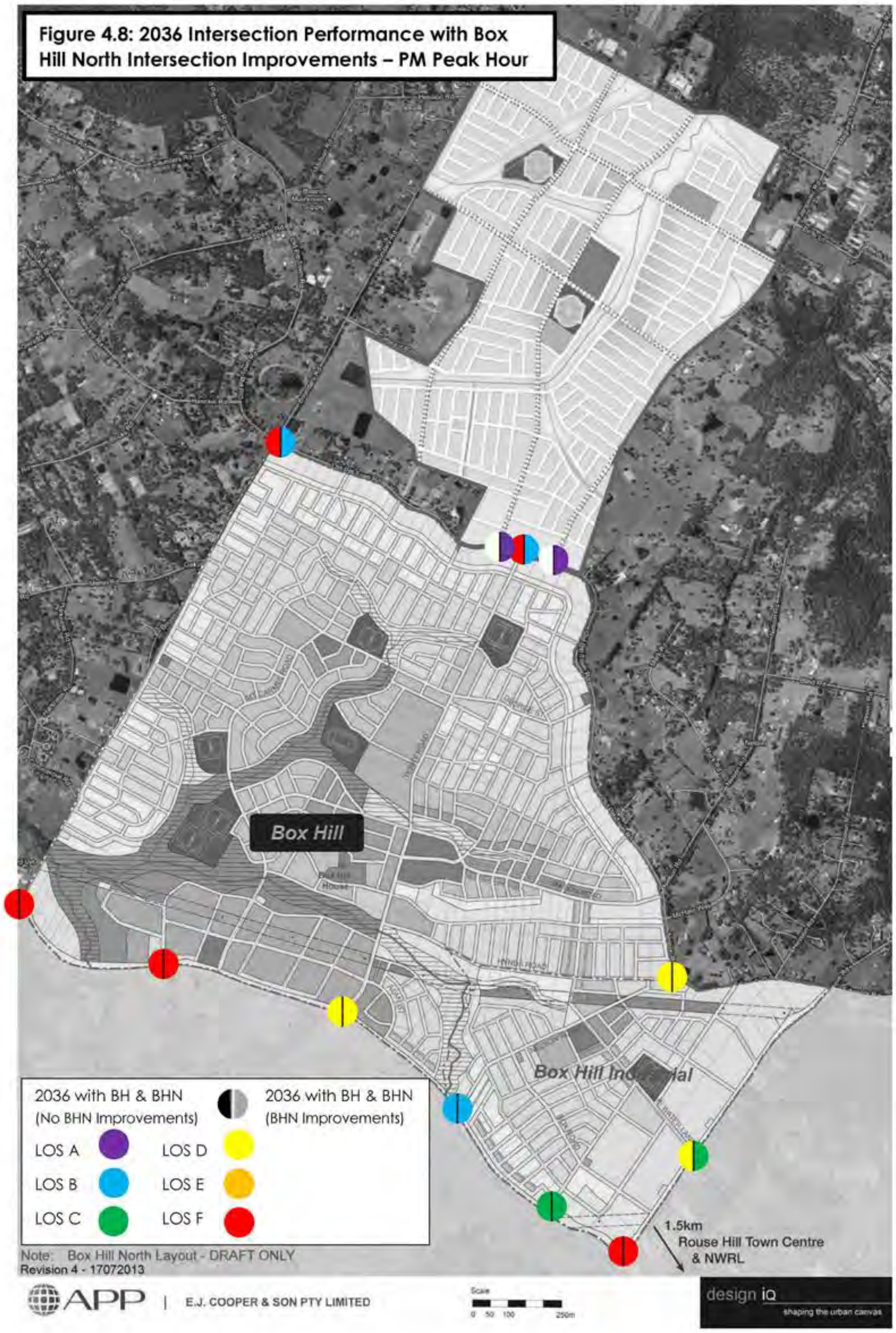


Figure 51. Intersection performance after improvements - PM peak hour

8.3. Water Cycle and Flood Management

A Water Cycle and Flood Management Strategy prepared by J.Wyndham Prince is included at **Appendix J**. The conclusions of this assessment are detailed below.

8.3.1. Hydrologic Analysis

A hydrologic analysis, using the rainfall - runoff flood routing model XP-RAFTS (Runoff and Flow Training Simulation with XP Graphical Interface) (Willing, 1996 & 1994), for the site was undertaken to determine the size of detention basins needed to restrict peak post development flows to pre development levels and also to generate peak flow rate hydrographs for input to the hydraulic model.

A summary of the proposed detention basin volumes for the Box Hill North Precinct are shown in Table 14.

Table 14. Summary of detention basin volumes

Basin	Total Storage Required (m3)
Basin 1	137,200
Basin 1 West	10,700
Basin 1 South	18,000
Basin 2	3,800
Basin 3	6,900
Basin 4	7,100

The detention storages that are located online to the water courses will also capture and attenuate flows from catchments upstream of Box Hill North. The modelling allows for an increase in imperviousness for these upstream catchments. The total catchment area draining to the basins is approximately 640 hectares. The total volume of storage provided therefore represents approximately 287m3/hectare, which is within the range expected for urban development.

The XP-RAFTS modelling undertaken has determined that the proposed detention storages are adequate to restrict post development peak discharges from the site, to pre-development levels for the 2 and 100 year ARI storm events, consistent with the requirements of the The Hills Shire Council Development Control Plan 2012. Whilst the online basins appear to be over attenuating peak post development flows, the higher detention volumes provided reduce peak post development flow rates and assist in minimising the flood impact downstream of the site. Without these volumes, flood levels were found to increase excessively (<100mm) downstream of the site in comparison to existing levels. It is believed that this is a result of the amount of flood storage within the site from the existing dams, even when the water levels are assumed to be close to crest levels during storm events. It is also noted that the average storage volume per hectare is approximately 287m3/ha (including upstream catchments), which is considered to be within the range for urban development. Opportunities to further optimise the detention basins can be considered at the development application and detailed design stages.

8.3.2. Flood Modelling

The 2D flood modelling of the water courses and trunk drainage channels that run through the Box Hill North development was undertaken using TUFLOW (Two-Dimensional Unsteady Flow). Flood modelling for the existing and developed scenarios was undertaken to determine the impact of the Box Hill North development on the flood levels in the creeks.

Existing Farm Dams

There are a number of significant existing farm dams, associated outlet channels and diversion structures located throughout the Box Hill North Precinct. The majority of the dams are located online to the existing water courses assessed in the flood modelling. The farm dams and associated structures significantly alter the existing case flood extent mapping and floodway definition from what would have occurred prior to their construction. This has been taken into consideration and discussed in the following sections. For the purpose of the existing case flood modelling it was assumed that the water level in the dams would generally be at the crest height for the storm durations assessed.

Overland Flow Paths

A broad scale creek and overland flow path assessment has previously been undertaken by Council. In addition to the major water courses running through the site, Council have identified a number of additional tributaries where the catchment is large enough to indicate that a trunk drainage corridor may be required. These catchments have been considered in this current assessment.

Flood Extent Mapping

Flood extent mapping has been completed for the 2 year and 100 year ARI's and PMF events under existing conditions. A series of other maps of specific ARI's have also been developed for this study as follows:

Existing Conditions

- Depth Profile – 2 year, 100 year ARI and PMF;
- Hazard Classification (100 year ARI and PMF only); and
- Provisional Hydraulic Categorisations (100 year ARI only).

Post Development Conditions

- Depth Profile - 2 year, 100 year ARI and PMF; and
- Hazard Classification - 100 year ARI.

The above scenarios were generally mapped for a "No tailwater" scenario.

Flood Difference Mapping

A map has been prepared which indicates the difference in 100 year ARI flood levels arising from the existing case and the proposed development within the site, which is provided as Figure 52. The figure indicates that development of the site, with the recommended controls, will result in some increases in flood levels within the bounds of the site which can be accommodated within the site's riparian corridors and drainage reserves and the filling of the urban areas within the site. The increase in flood levels external to the site are generally less than 100mm and are located within downstream riparian corridors and in locations where no development is located.

Hazard Categories

Hazard mapping was undertaken for 100 year ARI and PMF events from the TUFLOW runs completed as part of this study. Hazard grids are developed directly out of the TUFLOW model and have been used to produce the Hazard plans presented in this report. The floodplain has been divided into three Hazard categories (consistent with the NSW Floodplain Development Manual (FDM, 2005) as follows.

- Low Hazard;
- Transitional Hazard; and
- High Hazard.

Hazards maps are useful to obtain an appreciation of the relative depth and velocity of floodwater

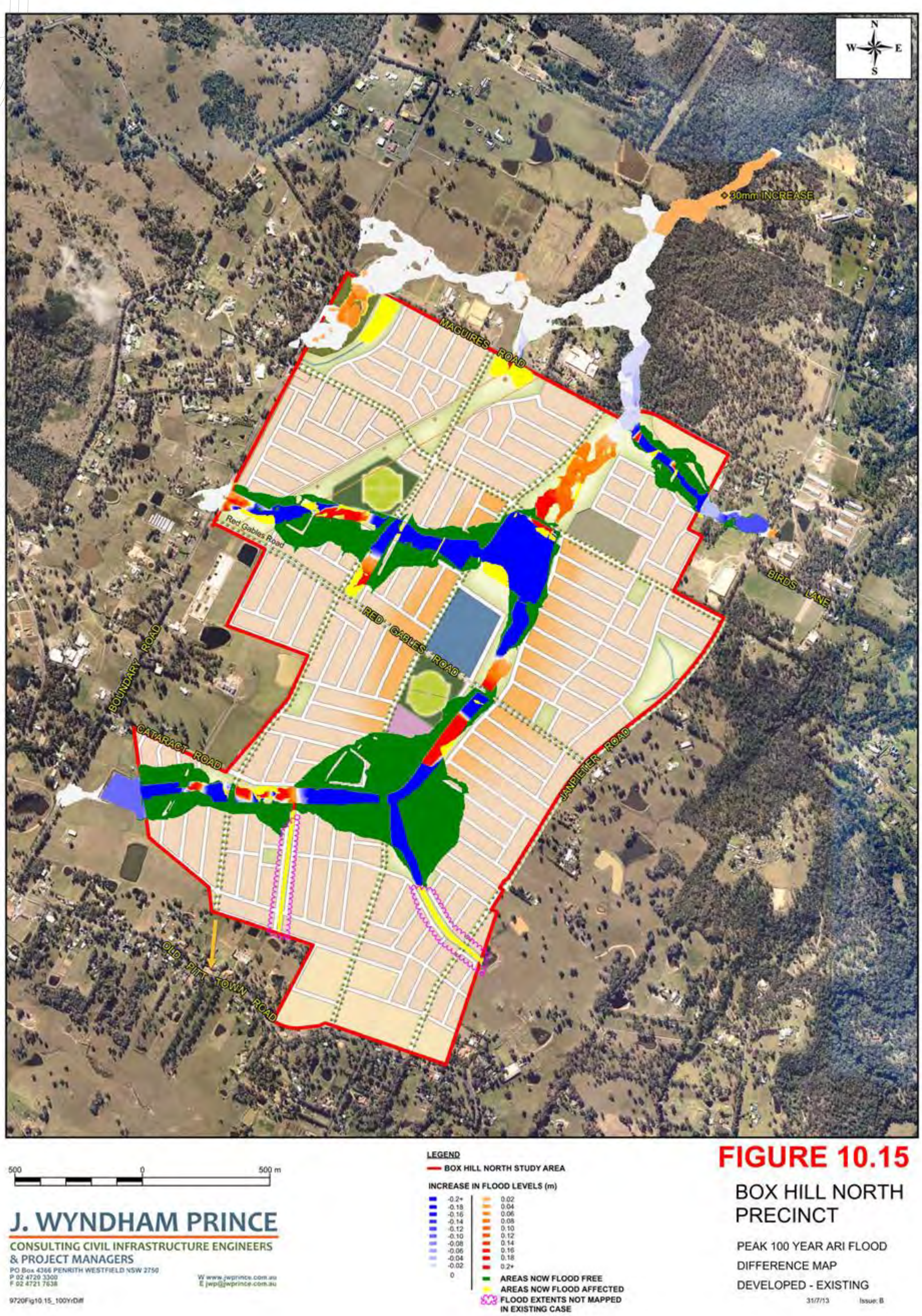


Figure 52. Flood Difference Mapping

within a locality and are a critical element in determining:

- The locations of critical public infrastructure such as hospitals and aged care facilities;
- The areas in the floodplain for which public safety is "at risk"; and
- Assist in the Flood Emergency response and Evacuation Management process.

During the PMF event, significant areas of the floodplain are affected by high hazard flooding and the potential impact on infrastructure within these high hazard areas and will need to be considered as part of the future detailed planning of Box Hill North.

Climate Change Impacts

The Climate Change flows (i.e. 15% increase in Design Rainfall Isopleths) have been used in the development of a post development post Climate Change hydraulic run. Generally the increase in the 100 year ARI flood levels as a result of the impact of climate change are less than 0.2 metres, which is within the component of the standard 0.5m freeboard which relates to climate variability.

Flood evacuation strategy

The proposed Box Hill North residential development areas are not impacted by the regional PMF event (the regional PMF extends only into a small portion of the northern riparian corridor area). Therefore, evacuation from the site to a regional facility is not necessary.

The local PMF event will affect a number of residents adjacent to the riparian corridors and drainage reserves. The local PMF is a short duration event that will occur and recede reasonably quickly (over a number of hours). The ILP and general land formation facilitates evacuation of affected residents through a continually rising grade to flood free land. The flood evacuation strategy will need to be considered and adopted by the State Emergency Services (as applicable) and Council.

8.3.3. Water Quality Analysis

MUSIC modelling was undertaken to demonstrate that the water cycle management system proposed for Box Hill North will result in reductions in overall post-development pollutant loads and that concentrations being discharged from the Precinct comply with the designated target objectives. Total annual pollutant load estimates were derived from the results of a MUSIC model based on a stochastic assessment of the developed site incorporating the proposed water quality treatment system. The proposed water quality management strategy for Box Hill North, as determined through a stochastic MUSIC assessment, achieves the reduction targets specified by the *Office of Environment and Heritage*.

8.3.4. Waterway Stability Management and Stream Erosion Index

The former Department of Environment and Climate Change (now OEH) and the Sydney Metropolitan Catchment Management Authority (SMCMA) have recently released draft guidelines outlining techniques to address the risk of stream erosion from the urbanisation of catchments. The stream erosion index is defined by OEH as the post development duration of flows greater than the 'stream forming flow' divided by natural duration of flows greater than the 'stream forming flow'. The 'stream forming flow' is defined as 50% of the 2 year ARI flow rate estimated for the catchment under natural conditions for cohesive bed and banks, 25% of the 2 year flow rate for moderately cohesive bed and banks and 10% of the 2 year flow rate for cohesion less bed and banks. The OEH guidelines recommend a stream erosion index of no greater than 3.5 – 5.

The MUSIC model developed for Box Hill North was utilised to determine the stream erosion index at each discharge point from the site. The results of the modelling illustrate that the Stream Erosion Index ranges between 2.29 and 4.28 for the developed sub-catchments for the eleven (11) years of rainfall data assessed, which is within the targets outlined by OEH (i.e. 3.5-5.0). The provision of WSUD elements within the Box Hill North Precinct development will assist in minimising the impact of urbanisation on the waterway stability of the creeks within and downstream of the site.

8.4. Services and Utilities

An Infrastructure Services Assessment to support the planning proposal has been prepared by J.Wyndham Prince and is included at **Appendix I.** The purpose of the assessment was to provide an early indication of the constraints and opportunities for the provision of utility service infrastructure to serve Box Hill North and to demonstrate the manner in which it is intended to deliver this infrastructure.

A summary of the investigation's findings and conclusions for the following is provided below:

- electricity services;
- sewer services;
- potable water services;
- gas services; and
- telecommunication.

8.4.1. Electricity Services

The site is currently serviced for the low scale rural residential development that occurs there. The system is not capable of servicing any significant development of the site without substantial upgrade. The development will include normal street lighting (to Council standards), low voltage (LV) network (for house and built development supply), high voltage (HV) distribution network and appropriate transformer (HV/LV) network. The existing electrical reticulation within the Project site will be integrated into the new development street pattern to ensure that supply is continued to the existing dwellings adjacent to the development.

The development can be serviced for the required electrical demands from a proposed zone substation to be provided by Endeavour Energy as part of the Box Hill and Box Hill Industrial Precincts. Endeavour Energy is currently reviewing opportunities and site requirements for the zone substation location. The cost of the HV feeders from the Zone Substation and the cost of the HV/LV and Street lighting reticulation within the site will be borne by the developer of the site.

8.4.2. Sewer Services

The site is currently not serviced by Sydney Water sewerage infrastructure and the site does not drain naturally to any Sydney Water infrastructure. In addition to the normal sewer reticulation network required for a development of this nature, Box Hill North will also require the construction of a Sewerage Pumping Station (SPS). The location of this SPS is likely to be adjacent to Maguires Road at the northern end of the site.

Sydney Water are currently undertaking extensions to the trunk sewerage infrastructure within the Chain-of-Ponds Creek system that includes a large diameter sewer carrier from near Boundary Road to Vineyard and thence via a new SPS to Riverstone West Wastewater Treatment Plant (WWTP). Sydney Water have confirmed that this system can accommodate the proposed development of the Box Hill North Precinct (via the new SPS at Maguires Road).

The transfer of effluent from the Maguires Road SPS to the Chain-of-Ponds Carrier will need to be via an appropriately sized and located rising main. Current planning would suggest that the appropriate location for this is along the road reserve of Boundary Road. Subject to the installation of this SPS, rising main and the reticulation network within the site, the site development can be serviced with an appropriate sewer system. Sydney Water has confirmed that the new SPS and Rising Main would be subject to their procurement policies and reimbursement as development proceeds within the site.

8.4.3. Potable Water Services

The existing potable water service within the site is appropriately sized for the rural residential development. A significant amplification of this system will need to occur with the development of the site. Sydney Water has confirmed that the Bulk Supply to the site can occur from the Rouse Hill Elevated Reservoir; however the local supply may require a new reservoir close to the site.

Sydney Water currently operates the Oakville Elevated Reservoir immediately to the west of the site that is supplied via minor mains from Rouse Hill. It is proposed that a new surface reservoir be installed at the Oakville Reservoir site with a new supply line from Rouse Hill. Construction and planning of the new Surface Reservoir and Supply Main will be undertaken directly with Sydney Water and the developer of the site. Subject to the detail system requirements and design process, this system may also require a Transfer Booster Pump to deliver the potable water to the new reservoir. Sydney Water has confirmed that the new Reservoir and Supply Main would be subject to their procurement policies and reimbursement as development proceeds within the site.

8.4.4. Gas Services

The site is not currently serviced with natural gas reticulation. Jemena has confirmed that subject to appropriate notice and planning that the site can be serviced with natural gas.

8.4.5. Telecommunications Services

The site is currently serviced with telecommunication services consistent with rural residential uses currently operating on it. NBN Co has confirmed that the development can be serviced with appropriate' Fibre To The Premise' infrastructure. This will allow the individual property owner after housing is constructed to make individual arrangements with a telecommunications (broadband) provider.

8.5. Contamination

A Preliminary Site Investigation (PSI) has been prepared by JBS Environmental and is included at **Appendix B**. Based on the results of the PSI investigation as outlined in section 2.9, there is potential for subsurface contamination to be present on the site as a result of current and previous site usage (i.e. agriculture). Based on the site observations and agriculturally related site activities, it is considered that the potential for widespread contamination across the site is low, with the possible exception of asbestos.

Dangerous goods (petrol/diesel and chemical storage) are also likely to be present throughout the site, typical of the site's agricultural use. It is considered unlikely that the areas of environmental concern identified will have impacted the site to a degree that would prevent planning and development of the land for the intended use(s). The PSI report recommends that a Detailed Site Investigation (DSI) be completed to assess the extent of contamination prior to future detailed development. It is also recommended that, based on the age of the structures identified onsite, and the presence of suspected asbestos containing material, a hazardous materials building inspection be conducted for all structures located on the site to enable appropriate management during future development.

8.6. Aboriginal Heritage

An Aboriginal Heritage Assessment Report has been prepared by Kelleher Nightingale Consulting Pty Ltd and is included at **Appendix C**. The report assesses the aboriginal cultural heritage values of the site and the potential impacts of the proposed development on aboriginal cultural heritage. An assessment of the impact of the ILP on existing aboriginal archaeological sites, open artefact scatters and isolated finds on the site (as detailed in section XX) is provided below.

Two identified Aboriginal archaeological sites are contained within the proposed open space corridor bordering Cataract Creek and tributary:

- BHN 1 (grinding grooves); and
- BHN 4 (isolated find).

Two Aboriginal archaeological sites will be partially impacted by proposed development:

- BHN 2 (open artefact scatter); and
- BHN 3 (open artefact scatter).

The aboriginal heritage assessment has concluded that the impact to sites BHN 2 and 3 do not pose a constraint to the development of Box Hill North. The report recommends that the grinding grooves site (BHN 1) be conserved. Post rezoning, a Cultural Heritage Assessment Report (CHAR) and associated Aboriginal stakeholder consultation is be undertaken. This work will inform the preparation of an Aboriginal Heritage Impact Permit (AHIP) that will cover the entire study area to allow impacts to identified and potential archaeological deposits on site.

8.7. Social Planning

An assessment of the social infrastructure for the site has been prepared by Elton Consulting and is included at **Appendix G**. The assessment considered the demand for community facilities and open space likely to be generated by the proposed development and ways that demand will be addressed.

8.7.1. Community facilities and human services

To create a socially sustainable community which supports the health and well-being of the community and which promotes social interaction and the development of community networks, a population of around 13,200 people will generate demand for access to spaces for:

- organised community activities, programs and classes, such as playgroups, fitness groups and after school classes
- meetings of local organisations and community groups
- accommodation for community services and the delivery of sessional and outreach services
- a base for community development activities and community cultural events
- leisure activities for young people and for older people, and
- hire for private functions, such as birthday parties.

These uses are best provided for in a multi-purpose community centre which can incorporate a variety of large and smaller spaces suitable for a range of social, leisure and cultural activities. Based on the level of provision adopted for the North Kellyville Precinct (77 sqm/1000 residents), it is recommended that a community centre of around 1,000 m2 be provided in Box Hill North. This is broadly consistent with the benchmark of 80sqm/1000 people contained within Council's Community Centres Policy and Strategy (December 2006).

Facilities and services for older people

The proportion of older people expected to be attracted to Box Hill North will not be high. However, there will still be a number of older people in the area, and it will be important that their needs are met in order to ensure that they do not become isolated in an otherwise child and family oriented community. The social, leisure and recreational needs of older people may be met through mainstream services and facilities for the whole community, and through programs and activities for older people delivered within the recommended multi-purpose community centre at the local neighbourhood level and existing civic and cultural facilities at the district level.

Facilities for young people

Within Box Hill North, there will be a need for "things for young people to do" at the local level. At the local neighbourhood level, the needs of young people for space for social and leisure activities may be met through the proposed multi-purpose community centre, a well-designed public domain, open space, sporting and recreation facilities. It will be important that the multi-purpose community centre include spaces suitable for activities for young people, with a youth focus on both indoor and outdoor elements.

Libraries

Libraries are another type of community facility which fall within the responsibility of local councils. A district level library is already provided by Council within the Rouse Hill town centre to serve the Shire's growth centre precincts. Council staff have advised that this library will be able to meet the needs of the Box Hill North development and that no additional library facilities will be required.

Schools

The Department of Education and Communities (DEC) Advisory Notes for School Site Selection sets out the following criteria for the provision of schools in areas of new residential development:

- one public primary school per 2,000 to 2,500 new dwellings; and
- one public high school per 6,000 to 7,500 dwellings (i.e. catchment of three primary schools).

Preliminary advice from representatives from DEC indicates that existing primary schools in the surrounding area and those proposed for Box Hill will not have any capacity to meet the needs generated by Box Hill North, and that one new primary school will need to be provided within the development. Although the forecast dwelling yield comes close to the threshold that would trigger requirements for a second primary school, it is felt that at this stage of planning, one primary school is likely to be sufficient for the development. The Department is likely to wait to see how quickly development in Box Hill Precinct, where additional primary schools are proposed, and in the surrounding district occurs before determining need for a second primary school. The ILP includes a 2.2 hectare school site adjacent to open space.

In terms of high schools, as noted in section 2.15, Windsor High School, the school designated to serve the Box Hill North area, has considerable spare capacity (with capacity for 1,100 students and current enrolment of 502 students). It occupies a large site (8 ha) and contains 55 classrooms, of which only 31 are currently in use. It is likely that Windsor High will be able to absorb demand generated by Box Hill North, without the need to provide an additional high school within the precinct. However, this is subject to more detailed planning and demographic modelling within the Department.

The population of Box Hill North will not be large enough to warrant the provision of tertiary or technical and further education facilities, and will instead rely on those in the wider region.

Public health services

The population will not be large enough to justify the provision of any community health or hospital facilities within the precinct, but will instead rely on those in the wider region. Health service planners from the Western Sydney

Local Health District have advised that population growth within the growth areas of The Hills Shire will be accommodated through:

- the current redevelopment of Blacktown and Mount Druitt Hospitals and proposed further development of Westmead Hospital;
- a new integrated health care centre within the Rouse Hill town centre.

Emergency Services

The ways in which emergency services (including police, fire, rural fire, ambulance and SES) plan to service the northern precincts of the North West Growth Centre will determine how the Box Hill North development is serviced. The Precinct Plan for Box Hill and Box Hill Industrial Precincts makes clear that these agencies have not yet developed firm plans for the area and at this stage, no new facilities are proposed within those precincts. However, proposed population growth across the Growth Centre will, over time, necessitate the provision of some new facilities. These are unlikely to be located within Box Hill North, given its location on the periphery of the urban area, but are more likely to be located centrally, close to the proposed Box Hill town centre. In the longer term, these facilities will absorb demand likely to be generated by Box Hill North.

Neighbourhood shopping

Residents of Box Hill North will enjoy easy access to the retail / commercial centre proposed to be located in the central portion of the site. This town centre will make provision for up to 10,000 m2 of retail / commercial floor space including a supermarket and a variety of shops and commercial services and gathering places such as cafes, restaurants and outdoor civic spaces.

Childcare facilities

In common with the provision of childcare in most new developments, childcare in Box Hill North will be provided by private sector providers, as demand develops. The number of childcare centres required will depend upon the size of each centre in terms of number of childcare places. There is no standard size of centre. However, for reasons of cost efficiencies, there is a trend to provide larger centres (80+ places), where local demand justifies this.

It is anticipated that at least one large childcare centre will be provided within or close to the town centre once need can be demonstrated.

Private schools

Providers of independent schools undertake detailed demographic and feasibility assessments before committing to new release areas. They also tend to acquire their sites through market processes, rather than necessarily acquiring sites designated in master plans. At this stage, no other providers of independent schools who may have an interest in Box Hill North have been identified.

Medical services

A population of around 13,200 people will generate a need for about 9 local general practitioners, based on a Western Sydney benchmark of one GP per 1,500 people. The proposed town centre will provide sufficient commercial space for local medical centres. Commercial space within the town centre will also be suitable for local services such as dentists and allied health services.

Welfare and support services

The Box Hill North population is expected to be reasonably affluent and active, and demand for welfare and support services will be modest. However, given the experience of nearby release areas (particularly in relation to stress associated with the high cost of housing, both parents needing to work and long commuting times), there may be some need generated for family support services. Such services are best located in major centres where they are accessible by public transport.

Places of worship

As well as providing places of worship, churches can provide an important base for community development, youth, volunteer and welfare support activities in new communities, and are important in building community spirit and identity. It is important that places of worship can be established within the Box Hill North area. The acquisition of sites for places of worship is generally left to market forces, according to their ability to purchase sites, and it is difficult to specifically identify sites in the rezoning process. Places of public worship are permissible uses within the R1 General Residential and R3 Medium Density zones under The Hills LEP 2012. The planning proposal does not propose to amend the land use tables in respect of 'places of public worship'.

Residential aged care

In the longer term, some provision will also need to be made in the area for residential aged care facilities (hostels and nursing homes). These facilities are funded by the Commonwealth Government according to planning benchmarks based on numbers of people aged 70+. As these numbers cannot be forecast at this early stage of planning, (and as the planning benchmarks are regularly changed in line with policy shifts) it is not possible to predict precise needs now.

Leisure and entertainment

Entertainment and leisure facilities such as restaurants, cinemas, clubs and pubs are provided on a commercial basis according to market demand. It is anticipated that town centre in Box Hill North will provide facilities such as cafes and restaurants, but that residents will rely on the town centres at Rouse Hill and Box Hill for a wider range of leisure and entertainment opportunities, consistent with their status as town centres. The new population of Box Hill North will contribute to demand for these types and facilities and help enhance their viability.

8.7.2. Open space and recreation needs

In terms of open space and recreation, the broad needs of the Box Hill North population will include the following:

- The large proportion of families suggests the need for a variety of parks for informal play and passive recreation that support family and community activities.
- Parks that are locally accessible and which provide high quality and well maintained facilities that support recreation and play will be required. People should have the potential to walk to open space for activities, which will generally require residents to be within 400-500m of usable open space.
- There will be demand for outdoor areas for larger gatherings and cultural events e.g. extended family and group picnics, amphitheatre, markets.
- A relatively large proportion of children is likely and this highlights the need for playgrounds and other outdoor activity opportunities such as bike tracks, BMX and skateboarding.
- The likely large proportion of young people highlights the need for parks and public spaces that are designed to be friendly to young people, providing meeting places that are safe and welcoming and allow for social interaction and informal games.
- The large proportion of adults suggests potential high demand for lower impact and flexible physical activity opportunities such as walking and bike riding. Linear connections and a network of walking and cycling tracks should be provided to support the potential high participation in walking and provide links to key destinations and recreation nodes.
- Opportunities that increase incidental physical activity, through design of footpaths, road networks and accessible, safe and well lit walking and cycling tracks should be provided.
- The open space network should also include areas to walk dogs, and off leash exercise areas for dogs.
- Options to enhance individual fitness in parks and trails will also be important.
- Opportunities to enjoy bushland, water and other natural settings, for picnics, bushwalking and as spaces for reflection, rest and relaxation will be valuable to broaden recreation opportunities.
- To meet the demand for organised sport, multipurpose playing fields that are suitable for a variety of field sports, and able to accommodate both junior and adult sporting activities for males and females will be required.
- There will also be demand for access to both outdoor and indoor courts for court sports, and indoor spaces for activities such as dance, martial arts, yoga, fitness, gym.

8.7.3. Overall quantum of open space

The proposed quantum has considered likely requirements for:

- sporting fields;
- local parks for informal recreation;
- local playgrounds; and
- linear open space and linkages for walking /cycling trails.

The ILP makes provision for 66.76 hectares of open space (sporting fields, local parks and passive recreation) or 5.19 hectares per 1,000 persons.

Sporting fields

The ILP for Box Hill North makes provision for 9.22 hectares of open space for sporting fields. This allows for the creation of two sports grounds, as follows:

- one of 4.368 hectares, located in the centre of the precinct adjoining the neighbourhood retail centre and primary school. It is proposed that this will provide one double playing field and associated setbacks, parking and surrounding passive open space. As identified in the previous chapter, it is also proposed that this sports park will provide shared open space for the co-located primary school.
- one sportsground of 4.851 hectares, located in the northern part of the development area. This sportsground makes use of land affected by electricity transmission lines to create a large area of open space which, subject to detailed design to accommodate the transmission lines, may accommodate two double playing fields or a large oval suitable for senior cricket / AFL together with a smaller field suitable for junior sports.

Outdoor court sports

Council staff have indicated a preference for outdoor courts (tennis, netball, basketball etc) to be clustered together to provide larger complexes suitable for district and regional competitions, rather than providing isolated single courts in each residential area. The Shire already has a large netball court complex in Kellyville and a tennis court complex is proposed for Box Hill Precinct. In line with Council advice, no provision has been made for outdoor sports courts within Box Hill North.

Aquatic and indoor sports

The forecast population will also generate demand for indoor sport, fitness and aquatic facilities. In line with advice provided by Council staff, such facilities (as public, Council-owned facilities) will not be required to be provided within Box Hill North and instead the population will rely on existing facilities in the surrounding area.

In terms of indoor sport, the Box Hill North population will generate demand for only one indoor court, based upon standards contained within the 2007 Recreation Strategy. However, single indoor courts are not viable. Instead it is proposed that the modest demand generated by Box Hill North can be catered for by the Bernie Mullane Indoor Recreation Centre in Kellyville or by proposed new indoor courts within Box Hill Precinct.

In terms of aquatic facilities, Council staff have advised that the area is adequately catered for by existing facilities in the surrounding district and Council has no plans to build any new aquatic facilities in this part of the Shire.

In terms of fitness, aerobic and gym facilities, these are most commonly provided by the private sector, as demand emerges. The proposed multi-purpose community centre for Box Hill North will contain spaces suitable for activities such as yoga, dance and children's martial arts and gymnastics classes.

Open space for informal recreation

Areas of open space for informal recreation (local parks) are shown on the draft ILP and amount to 57.54 hectares. The proposed parks range in size from 0.45 hectares to 0.84 hectares, allowing for a diversity of recreation opportunities in both larger district parks and smaller local parks. The parks have been equitably distributed to ensure that all residents will be within 400-500 m walking distance from an area of open space (including parks, sporting fields or passive recreation areas) to support accessible participation in recreation.

Passive open space

The extensive passive areas of open space throughout the site present opportunities to create a network of linear open space along the main creek line and its tributaries. The amount of open space proposed as linear open space along the creek lines is 59.46 hectares. Although subject to detailed design, these spaces are intended to be a focal point for the development and will provide quality recreation settings and are likely to include barbecue and picnic facilities, seating, playgrounds, pathways.

8.8. Retail Analysis

An independent assessment of the market potential for the demand and scope of retail and commercial floor space within Box Hill North was undertaken by Location IQ (refer to **Appendix H**). The key findings of the assessment are summarised below.

Location and Proposed Development

The Box Hill North Precinct is planned to include up to 13,223 persons across some 4,100 dwellings. Reflecting the size of the development, future retail and community facilities are planned to form part of the release area. The main trade area population has been estimated at 2,940 in 2011 and is projected to increase substantially to 20,950 persons by 2031.

The nearest existing major retail facilities are currently provided at Rouse Hill, approximately 10 km south east of the Box Hill North Precinct. Rouse Hill includes the Rouse Hill Town Centre, the nearest sub-regional shopping centre as well as a range of supermarket facilities. Rouse Hill forms the major non-food shopping destination within the region.

Analysis

In Australia there is typically around 2.2m2 of retail floor space is provided for every person. There is currently no existing retail floor space within the Box Hill North trade area. Around 30 % of retail floor space, or approximately 0.66 m2 per person, is generally allocated to bulky goods/ showroom floorspace. Reflecting the internalised location of Box Hill North, a limited provision is assumed locally, resulting in some 1.6 m2 per person of remaining floorspace.

The 2013 Box Hill North main trade area population of 3,000 people could support 4,800 m2 of retail floorspace at a rate of 1.6 m2 per person. This is projected to increase substantially to around 33,520 m2 by 2031, reflecting the growth within the Box Hill North main trade area. A large proportion of the main trade area residents' retail requirements will be serviced by the existing and future centres including at Rouse Hill as well as the proposed Box Hill Town Centre to the south of the precinct. As such, it is unlikely that all of the demanded retail floorspace would be provided at the proposed Box Hill North activity centre.

It is considered that at least 30%, or approximately 0.49 m2 per person (30% of 1.6 m2 per person), should be provided within the Box Hill North Precinct main trade area. The remaining 70% of retail floorspace would be provided for by larger non-food destinations, including surrounding sub-regional and regional shopping centres.

Given at least 30% of this floorspace should be provided within the Box Hill North Precinct activity centre, this would equate to around 1,440 m2 of supportable retail floorspace currently, with this provision increasing to 10,056m2 by 2031.

In Australia, one major full-line supermarket is typically provided for every 8,000 to 9,000 persons. As a result, with the primary sector population (Box Hill North precinct) projected to increase to

12,410 persons by 2031 and further to 13,233 upon completion, it can be seen that there is potential for a full-line supermarket in the immediate Box Hill North Precinct in the longer term. Indicative plans for the future Box Hill North activity centre indicate that the retail precinct will be located in the central area of the precinct and along a future major road within the locality. The centre will be positioned in close proximity to higher density residential. The site will also be positioned close to the existing Boundary Road.

Retail Analysis Conclusion

Based on the future population growth within the region, it is considered that a centre of up to 10,000 m2 would be supportable at a future activity centre (refer Table 11.2). The retail component should be anchored by a full-line supermarket of 4,000 m2. In addition to the above, a provision of supporting non-retail floorspace is likely to be supportable at the Box Hill North precinct, driven by the substantial future population growth and including key community facilities such as childcare and a medical centre.

Based on the proposed population projections and take-up rate, a supermarket based centre would be supportable at Box Hill North by 2021 at the earliest, with the centre likely to trade at more successful levels once the population is more established by 2026. Ultimately, it is possible that a centre of up to 10,000 m2 could be supportable at Box Hill North. This may include an additional small supermarket such as ALDI and/or further food catering stores to serve the growing population.

It is unlikely that a provision of mini-major or bulky goods/showroom floorspace would be supportable at the site reflecting the internalised location. These types of facilities would prefer to locate at larger regional and sub-regional shopping centres such as the existing Rouse Hill Town Centre or the proposed Box Hill Town Centre. Larger facilities within the region will continue to provide the major retail destinations for the future Box Hill North residential population, however, given the planned size of the precinct, it is important that a small provision of convenience/day-to-day retailing needs are provided locally.

A summary of the supportable floor space for the Box Hill North Town Centre, in the short term, is provided in Table 15.

Table 15. Box Hill North activity centre, supportable floorspace

Tenant / category	GLA (sq.m)	% of Total
Supermarket	4,000	51.6
Retail specialty	1,350	17.4
Total Retail	5,130	69.0
Non Retail Specialty	150	1.9
Commercial/Office	500	6.5
Medical Centre	450	5.8
Childcare	300	3,9
Tavern	400	5.2
Petrol Station	250	3.2
Gym	350	4.5
Total Site	**7,750**	**100.0**

SECTION 9. Conclusion

9. Conclusion

The Planning Proposal presented in this report has been prepared to support an amendment to The Hills LEP 2012 to rezone a 380 hectare parcel of land at Box Hill North to accommodate a new sustainable residential community comprising 4,100 dwellings, a 5.5 hectare town centre, active and passive open space, a school site, new roads and infrastructure.

The strategic justification for the rezoning of Box Hill North has been demonstrated by the identification of Box Hill North as a 'strategic investigation site' as part of the Department of Planning and Infrastructure's Potential Home Sites Program in March 2013, being seen as a 'strategic fit' in terms of planned growth and urban policy. Whilst the site was seen as a 'strategic fit', lack of enabling services and long lead in times and fragmented ownership posed a challenge for delivery. This has now been remedied with agreements to purchase 86% of the site and 'in principal' support with Sydney Water in relation to forward funding enabling services.

There are sound planning reasons to support the rezoning of Box Hill North at this time when investment certainty, housing affordability and land supply are key issues of concern at the national, state and regional level. The successful development of Box Hill North will assist in meeting State government policy to release as much land to the market as quickly as possible. The project is consistent with and will assist in the delivery of key outcomes of the NSW State Plan and the North West Sub-Regional Strategy by contributing to the supply to market of appropriately located land to sustainably accommodate the projected housing and employment needs of the region's population and The Hills Shire which is required to provide 21,500 dwellings by 2031.

The Planning Proposal will deliver a range of densities, lot sizes and dwelling types and create a diverse community that is demographically balanced. The variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, enabling people to age in place.

As demonstrated throughout the planning proposal, the proposed development will not result in any significant adverse environmental, social or economic impact. Environmental impacts with respect to flora and fauna, transport and accessibility, bushfire, contamination, social and community impacts, utility servicing, and Indigenous heritage are demonstrated to be appropriately managed.

The planning proposal presents a biodiversity strategy that will secure the conservation of selected native vegetation on the site and provide a commitment to undertake re-vegetation and improvement works of retained areas of native vegetation though the preparation and implementation of vegetation management plans. The proposal also recognises that additional off site offsets are to be purchased to compensate for the loss of remanent vegetation, namely the purchase BioBanking biodiversity credits, the quantum and type to be determined via a BioBanking assessment.

The background reporting has concluded that there are no contamination issues that would prevent the planning and urban development of the site for the proposed uses, consistent with the objectives of State Environmental Planning Policy No. 55 – Remediation of Land.

Four Aboriginal archaeological sites were identified in the study area, of which one site BHN 1 (the grinding groove site) in accordance with the significance assessment criteria established in the Australia ICOMOS Burra Charter, 1999 (Australia ICOMOS 1999) is considered to be of high significance. The remaining Aboriginal archaeological sites BHN 2 and BHN 3 (open artefact scatter) and BHN 4 (isolated find) have moderate significance. The proposal retains two of the four sites within an open space corridor (BHN1 and BHN 4) and partially impacts on the remaining two sites (BHN 2 and 3), however the aboriginal heritage assessment has concluded that the impact to these site does not pose a constraint to the development of Box Hill North.

The future redevelopment of Box Hill North will not result in any significant adverse traffic or transport impact on the surrounding local and regional road network. This will be achieved through the carrying out of a number of road works including intersection works, road upgrades and traffic management.

The proposed Water Cycle and Flood Management Strategy provides a basis for the detailed design and development of the site to ensure that the environmental, urban amenity, engineering and economic objectives for stormwater management and site discharge are achieved. The water cycle management strategy delivers the required technical performance; lessens environmental degradation and pressure on downstream ecosystems and infrastructure; and provides for a 'soft' sustainable solution for stormwater management within the release area. Provision of the proposed water quality treatment devices within the development will ensure that the post development stormwater discharges will meet the Office of Environment and Heritage's Stream Erosion Index and water quality targets. Hydrologic modelling for the site indicates that inclusion of the proposed detention basins within the site will attenuate peak post development flows to less than existing levels. The detailed flood assessment completed for the strategy has demonstrated that flood levels on the creeks with and without development has shown that urbanisation will result in only minor increases in flood levels outside the site boundary.

The Planning Proposal is supported by viable infrastructure servicing strategy that leverages readily accessible existing infrastructure and demonstrates that the project can be implemented as a standalone proposal. In regard to services, Box Hill North will require the construction of a new Sewage Pumping Station. Sydney Water is currently undertaking extensions to the trunk sewerage infrastructure within the Chain-of-Ponds Creek system that includes a large diameter sewer carrier from near Boundary Road to Vineyard and thence via a new SPS to Riverstone West Wastewater Treatment Plant (WWTP). Sydney Water has confirmed that their current extension works to the trunk sewerage infrastructure within the Chain-of-Ponds Creek system can accommodate the proposed development of the Box Hill North Precinct with the provision of the new sewerage pumping station. Sydney Water has confirmed that the bulk potable water supply to the site can occur from the Rouse Hill Elevated Reservoir, while local supply may require a new reservoir close to the site. Construction and planning of the new Surface Reservoir and Supply Main will be undertaken directly with Sydney Water and the developer of the site. Utility providers Endeavour Energy, Jemena and NBN Co have confirmed that the site can be serviced with regard to electricity, gas and telecommunications, respectively. Therefore, there are currently no infrastructure or servicing hurdles that could preclude the urban development of the Box Hill North precinct, which is capable of delivering the first residential lots in 2016.

The Planning Proposal has a number of positive environmental, social and economic benefits and it is worthy of Council's support. It is recommended that Council forward the Planning Proposal to the DoPI for the Gateway Approval process to amend the provisions of The Hills LEP 2012 under section 54(2) of the *Environmental Planning and Assessment Act, 1979*.

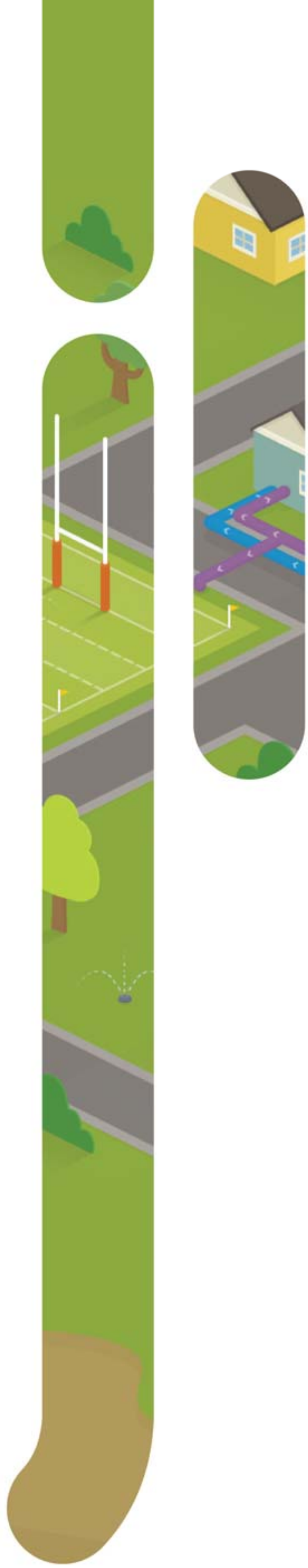
Appendix 5

Questions and Answers Document

flow systems

Box Hill Water

Q&A



5 November 2015

This document responds to questions put by The Hills Shire Council. Further briefing information or a site visit to the Pitt Town Local Water Centre is also available.

What is the context for this application?

This proposal represents an opportunity for The Hills Shire Council to support a globally leading sustainable approach that is smart and delivers community, environmental and affordability outcomes for families, individuals, businesses, schools and the community.

Flow would like to provide Council with a tour of its Pitt Town sustainable water centre and the globally award-winning sustainable Central Park water centre, to enable Councillors to understand the operation and function of these world's-best practice Integrated Water Cycle Management (IWCM) innovations and answer questions.

IWCM is the future. It is helping cities and communities achieve greater amenity and liveability - essential in improving the health and well-being of communities. Enabling greater greening and living architecture, IWCM delivers not just aesthetic outcomes for communities but critical improvements to health and happiness.

There is a sound regulatory and legislative framework underpinning this proposal. The Water Industry Competition Act (WICA) 2006 promotes and enables recycled water schemes and connectivity to homes. This objective is supported in the Metropolitan Plan, by COAG best practice and in national and State sustainability / community targets.

Traditional water and energy utility solutions are clunky, promote capital inefficiency, and hinder optimised sustainable solutions. Why is that we still harvest our wastewater, transport it over tens of kilometres to be pumped out into our pristine oceans, barely treated, next to our high value tourist, community and economic assets - Bondi Beach, Coogee, Manly? World's best innovations and practices allow us to harvest every drop of wastewater - purify it to the highest Australian standards and then reuse it back in the community for up to 70 per cent of daily non-potable needs. These recycled water supplies are essential to our State water balance and are drought resistant.

Flow is at the forefront of driving a step change away from traditional, out dated thinking around water services. New growth areas are critical in enabling leap frogging in technology and outcomes. New developments provide the greatest economic opportunity to make this essential transition to IWCM water management.

Flow would like to work with council to ensure we are able to deliver the highest possible services and outcomes to the community. While appointed by a founding developer, such as Celestino, Flow's local sustainable water utilities provide essential services in perpetuity. We are independent and regulated by IPART and the Minister for Lands and Water. Flow's interests are the long-term benefits of our local communities and we have a proven track record in delivering this aspiration.

Questions about the rezoning application

How does this rezoning support orderly development of the area?

Flow Systems will provide a decentralised wastewater solution with capacity to service 5000 residential dwellings (equivalent treatment -ET) in the nominated Water Industry Competition Act (WICA) 2006-licenced area of operations in accordance with the current land zoning. This is made up of 4,100 residential dwellings (ET) and approximately 100 ET of ancillary facilities such as retail, school and community uses which are initially provided to the Celestino development, with the remaining 800ET thereafter becoming available capacity for the lots within the WICA area of operations not controlled by Celestino.

The solution provided by Flow Systems is provided on a commercial basis to landowners, and uses a pressure sewer reticulation network, and the delivery of recycled water to each dwelling, ensuring BASIX compliance.

The decentralised solution includes a Local Water Centre (LWC) to be constructed on suitable land within the WICA licence area. Celestino, as the foundation landowner who has engaged Flow Systems to deliver the solution, has made available the necessary land. It is this land which is the current subject of the rezoning.

As Celestino does not control all lots within the WICA licence area, and to ensure prudential utility investment, Flow Systems will be delivering the capacity of the LWC in 2 phases:

Phase 1: 2,500 ET
Phase 2: 2,500 ET

to a total of 5,000 ET capacity (if required).

Both Sydney Water and Flow Systems have practical capacity constraints that have to be managed. In the case of the proposed Local Water Centre, Celestino has secured the full capacity of Phase 1 as well as a further 1,700 ET in Phase 2, and will instigate preparations for the development of Phase 2 when capacity above 2,500 ET is required.

As the WICA-licenced area of operations is not a monopoly service, other landowners within the WICA licence area are able to secure wastewater services by:

1. Making application with Sydney Water Corporation (SWC) for services.

   The Box Hill North precinct has Precinct Accelerated Protocol (PAP) status, allowing the landowner to apply to SWC for reimbursement of costs incurred to service the land. Any application will require a servicing strategy acceptable to SWC, and dedication of land and infrastructure assets to SWC. We suggest these landowners make enquiry on timing of regional trunk infrastructure to be provided by SWC, to determine connection arrangements of infrastructure provided by the landowner.

2. Connecting to Flow Systems for services when Phase 2 is provided by Celestino

Current sales projections indicate that the provisions for Phase 2 capacity may need to be instigated by Celestino in 2020 and capacity may be available to the 800 lots by 2024. Surplus capacity will be made available to other landowners to proportion the scheme establishment costs (including initial land dedication for the LWC) on a per lot basis once Celestino's capacity is exhausted. Flow is able to facilitate Developer Services Plan (DSP) charges in some circumstances, including reimbursements schemes for third party connection.

All landowners in the PAP rezone area are obliged to fully fund services to the lot. Often small landowners are reliant on the lead of the majority landholder to forward fund this infrastructure. As Celestino has chosen to appoint Flow Systems for these services for its development, the remaining landowners are subject to timing and internal investment constraints of Celestino and any other developer in a PAP area, subject to the usual land economic principles to bring product to market.

Why is it appropriate to seek rezoning rather than apply as a designated development?

The assessment of environmental impacts of the proposal, which are central to this question, are captured by the licencing approval process, administered by IPART.

Please be assured that we are assessing and responding to the environmental impacts of our proposal.

The rezoning application seeks to zone the land for the end use that is intended - infrastructure. If the land is re-zoned to SP2 Infrastructure, this land will then be defined as a prescribed zone pursuant to s105 of the State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP). Licenced network operators would then develop water recycling facilities without requiring consent under Part 4 of the Environmental Planning and Assessment Act. Our advice on this matter is that the development would only qualify as designated development if we were applying for a development application under Part 4 of the Act. A copy of our legal advice supporting this position has been supplied.

To fulfil our requirements under Part 5 of the Environmental Planning and Assessment Act for environmental assessment of the development we have prepared a review of environmental factors (REF) and submitted this to IPART as part of our licence application. The REF has been prepared to take into account the environmental protection principles of the Water Industry Competition Act and prepared in consideration of section 111 of the Environmental Planning and Assessment Act and section 228 of the Environmental Planning and Assessment Regulation 2000. It has not identified any significant impacts that trigger an EIS under section 112 of the Act. This process is consistent with the environmental assessment and development without consent powers that Sydney Water enjoys.

Have you considered other locations within the Precinct for the facility? What is the rationale for the choice of site?

Yes, Celestino and Flow Systems have worked together to identify the best location for the Local Water Centre. As the Box Hill Local Water Centre will be fed by pressure sewer, the sewage can be pumped to any elevation necessary.

The other locations considered were on Old Pitt Town Road near to the current sales centre and on Old Pitt Town Road near to the proposed zone substation and Mt Carmel Road intersection. The chosen site on Red Gables Road is:

- central to the development area, meaning reticulation pipe sizes are minimised;
- located on relatively low value land being relatively low-lying and next to the Transgrid overhead transmission lines
- located away from the first development precinct, meaning that the LWC will be built and commissioned before houses are built in that location
- in a location where the site is flat. This assists the ability to visually screen and landscape the local water centre site, therefore minimising any visual impact the site may have or be perceived to have.

Traditional sewage treatment plants are usually located at the lowest point of the catchment that it serves as these are usually fed by gravity sewerage systems which must deliver sewer by gravity to those treatment plants. This is not needed for pressure sewer systems.

How does this facility have a lower amenity impact than a traditional STP? Why is it different?

Flow Systems' schemes bring together world's best and proven technologies for each component which results in a much smaller footprint for the same treatment capacity as compared with a "traditional" sewage treatment plant. Traditional gravity sewage reticulation systems and their associated treatment plants are necessarily size for 8-10 times the dry weather flow as they are highly susceptible to wet weather inflow. Pressure sewer systems do not have the same weakness and therefore the associated treatment plant does not need to be over-sized in the same way. In addition, the treatment process used – membrane bioreactor technology – is the most spatially efficient way to treat sewage to a high standard without the need for large, ugly and odorous trickling filter beds and/or sediment ponds used in many traditional sewage treatment plants. Also, to reduce the visual impact of Flow Systems' facilities, they are architecturally designed and landscaped to fit into a residential setting.

Flow Systems operates water recycling facilities with the same treatment technology in other housing supply applications such as at Pitt Town in the Hawkesbury local government area as well as in the basement of high rise residential developments in the inner city. Flow Systems owns and operates the world's largest water recycling facility located in the basement of a residential building at the Central Park development on Broadway in the Sydney CBD.

It is noted that the preliminary lot layout, which has been submitted with Council, identifies lots along the eastern boundary. What measures are in place to ensure that these lots do not have reduced amenity?

Odour and noise modelling, detailed design of the facility and landscaping plans show that the adjacent lots will not have reduced amenity. In order to manage the perception of reduced amenity and to facilitate the efficient movement of traffic around this 1 hectare lot for the local water centre, Celestino has advised the lot layout will incorporate a road that runs along the eastern boundary of the local water centre site, increasing the distance to homes. We have supplied Celestino's current, proposed lot and road layout adjacent to the centre.

The Local Water Centre will be under construction (or built) prior to any homes being marketed for sale in the area. Celestino will provide full disclosure to the future purchasers of lots in this area ensuring that the impacts, if any, are known upfront.

What contingencies would be in place in the event of heavy rain to protect water quality and environs within the creek?

A significant benefit of pressure sewer system is that it does not overflow sewage during heavy rain. This is because it is a closed system. Heavy rain or flooding will not impact the system or site because the:

a. sewer network is under pressure and so it does not allow inflow of stormwater into the network.
b. local water centre will be designed and constructed above the required flood control levels for the development.

Another benefit of a pressurised system is that the volume of water and sewage is significantly reduced and more predictable, resulting in smaller treatment facilities that do not overflow raw sewage to the environment in wet weather.

Does the facility need to be topped up with potable water?

Potentially, yes. We have agreed a potable water supply to the Local Water Centre site with Celestino as part of our commercial agreement. Celestino is facilitating the water supply approvals and construction of new trunk mains to service the development.

Are the tanks within the water centre fully enclosed?

The flow balance tank which buffers the flows of raw sewage entering the local water centre is completely enclosed and vented through a dual stage (biomedia and carbon) odour control unit. This surpasses what is seen in a traditional sewage treatment plant, which has no odour filtering.

The recycled water storage tanks are completely enclosed and so do not experience losses from evaporation nor contamination from the environment.

The bioreactor tanks forming part of the treatment process are open but are not visible beyond the boundaries of the site and the contents are not odorous.

Flow Systems is happy to organise for a visit to the comparable centre at Pitt Town so the lack of odour from this approach can be further verified.

The odour modelling provided indicates that odour emissions from the system would be below the criteria of 2.0 OU. What is the reliability of the filtration units?

Planning guidelines no longer refer to explicit buffer zone requirements for water recycling facilities but instead refer to the required outcome, being that no receiver is subject to odour above 2 odour units. See Table 7.5 of the NSW EPA "Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales" available here: (http://www.epa.nsw.gov.au/resources/air/ammodelling05361.pdf).

All assets (including the odour management infrastructure) are recorded and managed via an online Asset Management System which identifies component replacements and is audited by IPART as part of the regular compliance audits.

The alternative, sewage pumping stations on a gravity sewerage network would not have any odour scrubbing and would rely wholly on ventshafts to vent odour.

What does the acoustic report find?

The report finds all requirements are met apart from an emergency situation where all power to the Local Water Centre drops out and the on-site generator starts up. This would only occur on rare occasions. However, ongoing detailed design and procurement will source low noise-emitting generators and further noise mitigation measures will be implemented such as noise walls built around the generator.

Who will undertake inspections of the facility and connection inspections?

The operation, inspections and maintenance will be in line with industry standards that other water utilities (public and private) would need to carry out for similar infrastructure. Flow Systems' operations personnel and contractors will undertake regular inspections of the facility. The site is also well covered by CCTV cameras for remote inspection of gates and critical equipment.

Additional background information

What are the serviceable width requirements per lot?

There is no requirement for grey water tanks on each property. Recycled water is stored at the local water centre and distributed via a piped reticulation network into each property.

The pressure sewer network requires the installation of a small wastewater collection tank on each property. This tank is only 900mm in diameter and as the discharge pipework is flexible, the locations of the tanks and the associated valve assembly (known as the boundary kit) is flexible.

In any case, Flow Systems has design solutions for the servicing of all properties from 240m^2 blocks to large commercial and retail customers which fits within the available set back areas. It should be noted that the pressure sewer network is connected via small mains laid at minimum depth in the road verge as opposed to gravity sewer mains which are laid at depth through the properties.

How does the infrastructure work within the road reserve (is it different from normal gravity sewer infrastructure)? Will roads need to be wider?

There is no requirement to increase the width of the road reserve.

Gravity sewer mains are usually laid within private properties and can be deep in order to maintain grade which burdens lots.

It is proposed that the Box Hill development be serviced by pressure sewer. Pressure sewer reticulation is smaller, can be laid at minimum depth and is laid along the road verge within an allocation identified through the detailed design. Celestino is currently performing this detailed design.

What are the implications on servicing from Endeavour Energy?

Flow Systems' power requirements for the Local Water Centre have been committed to by Celestino in the commercial agreement between Flow Systems and Celestino. Celestino is arranging the power supply for the site and upgrading the supply for the whole development including facilitating the construction of a new zone substation. These proposed upgrades will have the capacity to service the Local Water Centre. Additionally, the Local Water Centre will have solar panels on the roof to augment the power supply.

The power use of the individual pressure sewer pumps on each property is very low. The pumps are powered by a 1.1kW motor and operate within a 160mm height between cut-in and cut-out levels in the base of the tank (with the remainder of the tank available for up to 48 hours emergency storage). For an average house, the pump will operate about 6 times per day for less than 3 minutes at a time and so they use only about 0.25kWh/day. These will operate in lieu of the network sewage pumping stations that would have been required otherwise by a gravity sewerage system.

The reticulation network is outside the scope of the Planning Proposal to rezone the Local Water Centre site. However, Flow is happy to provide more information if required.

What is the effect of a power outage?

There are several levels of contingency available in the event of electricity outages, which are designed to manage a range of durations. These are provided for at both the Local Water Centre and also in the way that we provide services to homeowners. Flow Systems has taken a conservative approach in this design, which has been assessed as part of the network operator's licence application made to the Independent Regulatory and Pricing Tribunal (IPART).

Back-up generators will be permanently located at the Local Water Centre and water reservoirs, which will be sized to run all the critical equipment at these locations and will start up automatically upon power outage. This enables the Local Water Centre to run normally and continue to treat and distribute recycled water to the homes regardless of the duration of the power outage.

At people's homes, the pressure sewer collection tanks each have 900 litres of storage available, which allows for at least two days of average household sewage production.

The pressure sewer pump control panels are powered from the house electricity distribution board via an external, weatherproof general power outlet. If there is an extended blackout, mobile generators will be used by Flow Systems to temporarily power each control panel in order to pump out the contents of the collection tanks at people's homes. We also have an additional contingency to use wastewater tanker trucks to pump out directly from the collection tanks at people's homes as a last resort.

Regardless of the relevant water authority's sewerage mains design, Australian plumbing regulations provide for outlets from domestic plumbing at a lower level than internal fittings. This means that there is no risk of sewage flowing back up into homes.

Pressure sewer is a widely used and accepted sewerage management technique across Australia and worldwide. It is used by both public and private water utilities, including in other parts of the Hunter. Pressure sewer has been assessed and endorsed for use by the NSW Government regulator (IPART) as part of network operator licences issued for other communities.

Is pressure sewer used elsewhere?

Pressure sewer is a widely used and accepted sewerage management technique across Australia and worldwide. It is used by both public and private water utilities. Pressure sewer has been assessed and endorsed for use by the NSW Government regulator (IPART) as part of network operator licences issued for other communities. Flow Systems operates pressure sewer reticulation at its Pitt Town scheme in the Hawkesbury local government area and Sydney Water operates pressure sewer systems in several of its communities.

The reticulation network is smaller and supported by on-lot infrastructure. What is the reliability of the proposed network?

We operate to the same customer standards expected of Sydney Water. Pressure sewer systems are widely used around the world as modern reticulated sewerage systems. They are not an on-site sewage management system and do not require on-lot effluent disposal areas.

Where maintenance is required on the network, repairs are simple and quick to fix as pumps can be easily removed and replaced and pipes are small and laid at minimum depth and in the public road reserve (rather than potentially at great depth in private property like gravity sewer).

On-lot wastewater collection tanks are proprietary products designed in accordance with the Water Services Association of Australia Pressure Sewer Code (WSA-07) to retain 48 hours' of sewage production from the average home. The small grinder pumps in these tanks automatically switch on and off at pre-specified levels. The pumps will be monitored by remote telemetry so any problems are identified early by Flow Systems' operational personnel. In this way, sewage is not retained in the tanks for long enough to cause odours.

The pumps are highly durable grinder pumps, which macerate the sewage before pumping it through the reticulation network.

The ownership, operation and maintenance of the pumps remains the responsibility of Flow Systems as the licensed network operator.

Are there any implications for the original stormwater strategy?

Flow Systems' recycled water scheme has been recognised by the Department of Planning and Environment as a reticulated alternative water supply for the purposes of BASIX. As a result, homeowners have a secure supply of water other than potable water for up to 70% of their water demand and do not need rainwater tanks.

In 2013, J. Wyndham Prince prepared the original Water Cycle and Flood Management Strategy Report for Box Hill North. This report was prepared to inform the Precinct planning process and to support the rezoning for the site. On 18th September 2015 JWP lodged a revised assessment to Council (Ben Hawkins) which accounts for the removal of rainwater tanks from the overall water cycle and flood management strategy. Exclusion of rainwater tanks has not resulted in any changes to stormwater quantity. In relation to water quality, water quality devices (GPTs, swales, bioretention devices) within the development riparian corridor (no swales are located in road reserve) have been resized where necessary to achieve the water quality targets.

What contingencies are in place in the event that Flow Systems can no longer operate the facility?

There is a very low risk that Flow Systems will be unable to operate the facility for any reason. Flow Systems' majority shareholder is the $200B global infrastructure firm, Brookfield. Flow Systems Operations will be licensed by the NSW Government and subject to regular compliance audits to ensure its technical, financial and organisational capacity to operate the system. Following detailed assessment by the regulator, IPART, Flow Systems and its subsidiaries have been issued with eight network operator's licences under the WIC Act and Flow Systems holds the state-wide retail supplier's licence, the most private water utility licences of any entity.

In the unlikely event that Flow Systems is unable to operate the facility, the WIC Act has provisions for the Minister to appoint an Operator of Last Resort. Flow Systems has strategic agreements with another large treatment plant operator to be the best prepared to step into this role should the Minister so choose.

Who will regulate Flow's activities?

Metropolitan Water Directorate is the office that sets policy for Sydney Water and WICA licensees and drafted the Water Industry Competition Act. We have provided Council with a contact at MWD for any questions that it may have with relation to the operation of the Water Industry Competition Act.

The Independent Pricing and Regulatory Tribunal (IPART) is the regulator for the licensees under the Water Industry Competition Act. IPART and its audit panel conduct audits prior to the commencement of commercial operation and regular compliance audits of licensee infrastructure once operational.

Sewerage systems qualifying as scheduled activities under the Protection of the Environment Operations Act require an environment protection licence (EPL). When this is required, the Environment Protection Agency (EPA) is the appropriate regulatory authority. Whilst our licence application to IPART indicated that we have reasons to believe that an EPL is not required for this system, EPA in its submission to our licence application has deemed that an EPL will be required. In this case the EPA will be the appropriate regulatory authority.

Appendix 6

Land Capability and Staging Assessment

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Land Capability Assessment for Recycled Water Management Scheme at Proposed Box Hill North Master Plan Development, Box Hill, NSW

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Disclaimer

The information contained in this report is based on independent research undertaken by David Wainwright of Whitehead & Associates Environmental Consultants Pty Ltd (W&A). To our knowledge, it does not contain any false, misleading or incomplete information. Recommendations are based on an appraisal of the site conditions subject to the limited scope and resources available for this project, and follow relevant industry standards. The work performed by W&A included a desktop review and limited soil sampling only, and the conclusions made in this report are based on the information gained and the assumptions as outlined. Under no circumstances, can it be considered that these results represent the actual state of the site at all points as subsurface conditions are inherently variable. Concentrations of contaminants may also change with time, and the conclusions in this report have a limited lifespan.

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Table of Contents

1 Introduction 1
2 Overview of Proposed Development 1
3 Site Description 2
4 Site & Soil Assessment 2
4.1 Site Physical Characteristics 2
4.2 Soil Landscape 4
4.3 Soil Survey & Physical Characteristics 4
4.4 Soil Chemical Characteristics 5
5 Buffers 8
6 Mitigation Measures 9
6.1 Vegetation Establishment and Management 9
6.2 Soil Improvement 9
6.2.1 Soil Sodicity 9
6.2.2 Recycled Water Salinity 10
7 Conclusions and Recommendations 11
8 References (Cited and Used) 12

Appendix A 13
Appendix B 15
Appendix C 26

List of Tables

Table 1 Site Physical Conditions & Constraints 2
Table 2 Soil Physical & Chemical Constraints 5

1 Introduction

Whitehead & Associates Environmental Consultants Pty Ltd (“W&A”) was engaged by RPS Australia Pty Ltd (“the Client”) on behalf of Flow Systems to undertake a Land Capability Assessment (LCA) for recycled water management for the proposed staged subdivision named Box Hill North (“the Site”). The Site is some 3km north of Windsor Road at Box Hill and broadly contained by Boundary Road to the West, Old Pitt Town Road to the South, Janpieter Road to the East and Maguires Road to the North. The site is as shown in Figure 1, Appendix A.

This LCA focuses on the Site’s capacity to sustainably accommodate ‘excess’ recycled water generated by a proposed Local Water Centre (LWC) at Box Hill North (owned and operated by Flow Systems), once the LWC is commissioned and operational.

The Site is located on the northern urban fringe of the Baulkham Hills Shire Council (“Council”) local government area (LGA), immediately to the west of the Hawkesbury City Council LGA. The Site, as shown on Figure 1, covers an area of around 390 hectares. The site is gently undulating with slopes less than 10% across almost the entire site. An electricity transmission line crosses the north-western corner of the site. Drainage across the site is generally to the north, and the proposed creek lines mirror the existing topography. At present, these natural drainage lines have been intercepted by a number of farm dams and are not permanently connected.

Field investigations were undertaken by David Wainwright and Jasmin Kable of W&A on the 4th December 2014. This LCA report provides the results of our investigations and provides input into a subsequent Staging Plan and report for the preferred Recycled Water Irrigation Zones (RWIZs) that will be developed to manage excess recycled water once the Box Hill LWC recycled water network is operational.

2 Overview of Proposed Development

Figure 1 also shows the general arrangement of streets within the proposed subdivision. The development aims to accommodate 4,100 dwellings within a range of densities and a town centre comprising up to 10,000m^2 of retail/commercial floor space. The development proposal also includes a school, community facilities, sports fields, public open space, environmental buffers and other improvements including roads and infrastructure (utilities).

Flow Systems is assisting the developer, EJ Cooper and Son (EJC) in delivering sewerage, recycled water and drinking water infrastructure to the Box Hill North development. The Box Hill North LWC will treat wastewater generated by the proposed residential and commercial developments (separate trade waste agreements may be required for certain types of commercial uses). The LWC facility is intended to operate 24 hours, 7 days per week, and will be housed in a low-scale, single level building within an open space setting. The proposed LWC will incorporate a dual reticulation (‘third pipe’) system to distribute recycled water to households for non-potable water reuse such as toilet flushing, washing machine supply, irrigation and external washing, thus reducing potable water demand.

The intended capacity of the LWC is 3,000kL (3ML) per day, although it will achieve this capacity over time in line with the uptake in residential area surrounding the development. At this stage in development planning, it is intended that the remaining excess recycled water will be irrigated in the undeveloped land associated with later development stages, in the proposed RWIZs.

3 Site Description

The Site is dominated by cleared and grassed land that has been used for low-density/rural residential land uses, including grazing land for cattle, horse stables and a small number of market gardens. A Site Plan is provided in Figure 1, Appendix A. Section 4 (below) provides the results of the Land Capability Assessment (LCA) investigations undertaken for the development with respect to recycled water management.

4 Site & Soil Assessment

4.1 Site Physical Characteristics

A Site and Soil Assessment was undertaken on the 4th December, 2014 by David Wainwright and Jasmin Kable of W&A. A description of the Site physical conditions and the degree of limitation they pose to recycled water management is provided in Table 1 below. Reference is made to the rating scales described in NSW DEC (2004) and NSW DLG (1998).

Table 1 Site Physical Conditions & Constraints

Parameter	Constraint
Climate: Mean monthly rainfall data was sourced from the BoM for Glenorie (Old Northern Road) Station 67010 for 1902-2013. Mean monthly evaporation data was sourced from the BoM for Richmond RAAF (067033) for 1970-1994. Mean annual rainfall for Glenorie is 963mm; ranging from an average of 52mm in September to an average of 113mm in February. Mean annual pan evaporation is 1,554mm, ranging from an average of 54mm in June to an average of 217mm in January. On average, there is a net evaporation deficit (soil moisture surplus) in May and June, which is typical for temperate regions.	Minor
Aspect and Exposure: Site aspects vary depending on position on the undulating slopes, but generally have good solar and wind exposure across the property.	Minor
Vegetation: The Site has been almost completely cleared of native bushland and used as open pasture for stock grazing. The proposed RWIZs will be vegetated, either with the existing cover or with new areas of pasture or turf.	Minor
Landform and Slope: The Site contains undulating and rolling low-hills, with moderate slopes typically less than 5%. Recycled water irrigation using moveable or fixed pipes with spray or sprinkler heads is feasible on slopes up to 12%; however, use of a travelling irrigator is constrained to areas of gentler slope. We consider that the slopes less than 5% will be appropriate for travelling irrigator use.	Minor
Rocks and Rock Outcrops: Rock outcrops were rare across the Site, with the exception of soils near TP10 and TP7. These two test pits were located within areas mapped as *Lucas Heights* and *Hawkesbury* soil landscapes respectively (See section 4.2 for a description of Soil Landscapes). Those areas are isolated and account for less than 2% of the total Site area. At these sites, bedrock was encountered at	Moderate

Parameter	Constraint
depths of 0.5 and 0.6m below ground level (BGL), respectively The vast majority of the Site is covered by the *Blacktown* soil landscape, and within the remainder of Test Pits, bedrock was typically observed at depths between 1.0 and 1.5m. However, at locations TP5 and TP8, a layer of shale was encountered at around 0.7-0.8 m depth.	
Fill: We found no evidence of imported fill in the test pits excavated as part of the site investigation.	Minor
Erosion Potential: At present the Site is generally stable with minor existing erosion, which is limited to cleared areas (road verges and property access ways). Minor sheet and gully erosion could be expected on the *Blacktown* Soils that cover most of the Site, if vegetation is not maintained.	Minor
Groundwater and Site Drainage: A search of the National Groundwater Information System database, hosted by the Australian Bureau of Meteorology, was undertaken. Those groundwater bores located in the vicinity of the Site, but outside the site boundary, are shown on Figure 1 (Appendix A). For assessment purposes, buffers of 250m have been applied around those bores. These buffers do overlap the Site slightly in some locations: • GW070265, a groundwater bore supplying water for domestic use. Its buffer intersects a small part of the south western fringes of the Site. • GW100184, a groundwater bore with unknown status. Its buffer intersects a small part of the south eastern fringes of the Site. • GW072199, a groundwater bore supplying water for domestic use. Its buffer intersects a small portion of the Site adjacent to Maguire's Rd. Surface drainage is considered to be generally very good throughout the Site. During the evening preceding our site investigation, some 30-50 mm of rain had fallen in the area yet we found minimal evidence of surface ponding. Mottling within some of the excavated subsoils indicated inhibited subsurface drainage in some locations (discussed in Table 2).	Minor
Proximity to Surface Waters: The Site primarily drains via unnamed tributaries to Cataract and Cattai Creeks. The main tributary drains in a northerly direction with drainage depressions joining this main creek from the east and west. There are some additional minor drainage pathways draining in other directions from the fringes of the Site. Adherence to standard practice (e.g. DLG, 1998) would allow for a 40m buffer around ephemeral waterways although DEC, 2004 notes that a site specific assessment can be made. A buffer of 40m is shown in Figure 1 (Appendix A). Therein, it has been assumed that all existing dams will be decommissioned and filled in during development. Excess recycled water (irrigation) will be applied to undeveloped stages of the Site as the development progresses. Therefore, the staged irrigation plan may also need to consider the status of any existing dams prior to decommissioning. A buffer of 40m would also need to be applied to any dam.	Minor-Moderate

Parameter	Constraint
Flood Potential We have not investigated the flood potential of the Site, and mapping of flood controlled areas does not appear to be available from Council's web site. However, as a first pass assessment, we note that the Site is located at the upper portions of the catchment and we expect that the 1 in 20 year flood, which is typically used as the design event for on-site sewage considerations, would not extend beyond the 40m buffers surrounding the watercourses.	Minor

4.2 Soil Landscape

We reviewed the Soil Landscapes of the Penrith 1:100,000 Sheet (Bannerman and Hazelton, 1990) which indicates that Site soils belong almost entirely to the Blacktown (**bt**) soil landscape. The descriptions below are taken from Bannerman and Hazelton (1990); soil characteristics as surveyed by W&A are provided in Section 4.3.

The '**bt**' soil landscape is located on gently undulating rises upon shales of the Wianamatta Group with slopes usually less than 5% and local relief to 30m. Topography is characterised by broad crests and ridges and gently inclined slopes. The underlying geology can be either (i) Ashfield Shale comprising laminite and dark grey siltstone, (ii) Bringelly Shale comprising shale and occasional calcareous claystone, laminite and sometimes coal, or (iii) Minchinbury Sandstone comprising fine to medium-grained quartz lithic sandstone.

Dominant soils comprise **(i) bt1:** a friable brownish black loam to clay loam with moderately pedal structure as the topsoil (A horizon) overlying, **(ii) bt2:** a hardsetting dark brown to dark reddish brown clay loam to silty clay loam with massive structure as the A2 horizon. Shale fragments may be present overlying, (iii) **bt3:** Strongly pedal, reddish brown to brown light clay with red, yellow or grey mottles as the subsoil (B horizon), overlying (iv) **bt4**: a light grey plastic clay with red yellow or grey mottles and moderate structure occurring as a deep subsoil above the shale bedrock. Weathered ironstone concretions and rock fragments are common.

On crests, up to 30cm of **bt1** typically overlies 10-20cm of **bt2** and 90cm of **bt3**; the total soil depth is typically less than 100cm. On upper slopes and mid slopes, up to 30cm of **bt1** overlies 10-20cm of **bt2** and 20-50cm of **bt3** which, in turn, overlies up to 1m of **bt4**. The total soil depth is normally less than 200cm. On lower side slopes, up to 30cm of **bt1** overlies 10-30cm of **bt2** and 40-100 cm of **bt3**. There is usually >100cm of **bt4** and the total soil depth is more than 2m.

Two other soils of limited distribution are mapped as occurring on the Site:

- Lucas Heights (**lh**): with a small area adjacent to the northern fringe of the Site. 'l**h'** typically comprises yellowish brown sandy loams, grading through sandy clay loams to yellowish brown clays at depth. The total soil depth is typically less than 1m.
- Hawkesbury (**ha**): with a small area adjacent to the eastern fringe of the Site. 'h**a'** typically comprises loose quartz sand overlying earthy, yellowish brown sand resulting in a limited depth profile of less than 50cm on ridges and 70cm on side slopes.

Sections 4.3 and 4.4 below describe the soil physical characteristics as surveyed by W&A on 4th December, 2014.

4.3 Soil Survey & Physical Characteristics

Site soils were observed and examined by excavating ten (10) test pits (TPs) using an excavator. The locations of these test pits are illustrated in Figure 1 (Appendix A). Soil characteristics showed some consistency across the Site although variations were encountered where the **ha** and **lh** soil landscapes were targeted. Within the **bt** landscape, the profile depth and composition tended to vary with position on the slope (crest profiles shallower than depression profiles etc.). The soil survey had two principal aims – to verify regional soil landscape mapping information and to assess local soil conditions and variability in areas where recycled water irrigation might occur.

Generally, topsoils throughout the Site are composed of dark brown, clay loam material ranging from 100-150mm depth. Subsoils tended to comprise sandy clays or sandy clay loams overlying light or medium clays grading to heavy clays with depth. At the two sites on the less dominant soil landscapes (TP7 & TP10), the shallow sandy clay loam subsoils comprised weathered sandstone. At the two sites where shale bedrock was encountered (TP5 and TP8) the subsoils comprised heavy and light clays respectively, extending to the depth of refusal (~800mm). Subsoils were commonly mottled and/or gleyed, but this was most prominent within lower slope areas. This indicates intermittent saturation of the subsoils, increasing with depth.

Our investigation of site conditions indicated that medium to heavy clays are common throughout the Site.

Table 2 summarises the key soil physical and chemical constraints and the degree of limitation they pose to recycled water management is provided in Table 2 below. Reference is made to the rating scales described in NSW DEC (2004) and NSW DLG (1998). Appendix B provides soil borelog summaries for each test pit.

4.4 Soil Chemical Characteristics

Samples of all discrete soil horizons were collected for subsequent laboratory analysis. Fifteen (15) samples from nine (9) of the test pits were analysed in-house for pH, Electrical Conductivity (ECe) and Emerson Aggregate Class. Four composite samples and two discrete samples of the dominant clay and silty clay subsoils were analysed by an independent, NATA accredited soil testing laboratory for sodicity (Exchangeable Sodium Percentage or ESP), Cation Exchange Capacity (CEC) and Phosphorous Sorption Capacity (P-sorption).

Table 2 provides a summary of the results and discussion of the soil chemistry with respect to soil constraints for recycled water irrigation. Reference is made to the rating scales described in NSW DEC (2004) and NSW DLG (1998). Raw data and interpretation is presented in Appendix C.

Table 2 Soil Physical & Chemical Constraints

Parameter	Constraint
Soil Depth: Bedrock was encountered in a number of the TPs during the Site investigations. The shallowest bedrock was encountered in TP's 7 and 10 (0.6 and 0.5m); but minimum refusal depths in all other test pits was greater than 0.8m.	Minor to Moderate
Depth to water table: Ground water was not commonly encountered during the investigation. Where encountered, this was at depths of greater than 1.5m. However, based on soil gleying and mottling characteristics, the depth to seasonal groundwater can be shallower (??m BGL) than this. Based on this, depth to the seasonal watertable is unlikely to pose a significant constraint	Minor

Parameter	Constraint
Coarse Fragments (%): Coarse fragments may impede plant growth by reducing soil water holding capacity, nutrient retention capacity and overall fertility because of the reduced fine earth fraction and increased permeability. The surface soils typically contained <10% coarse fragments, while some subsoils contained up to 50% coarse fragments (typically less than 30mm in diameter). Based on the proposed land application method (irrigation), coarse fragments are expected to present a minor limitation to recycled water management.	Minor
Soil Permeability and Design Loading Rates: Soil permeability was not directly measured but can be inferred from observed soil properties. AS/NZS 1547:2012 describes conservative Design Irrigation Rates (DIRs) for irrigation systems (Table 5.2), depending on two important soil properties – texture and structure. Soil depth, colour, mottling and drainage characteristics are also important to consider and guide selection of appropriate loading rates. Best-practice land application (irrigation) design recommends that the characteristics of the soil occurring at 0.6m below the point of application (limiting horizon) are used to determine appropriate soil loading (recycled water application) rates. This allows for additional renovation of applied irrigation water within the unsaturated (vadose zone) soils and ensures that 'limiting' subsoil permeability is considered. The observed clay loam topsoils were too shallow to be used to determine the DIR (50-200mm). The observed subsoils were dominated by sandy clays and sandy clay loams, grading to clays that get heavier with depth. Within test pits the most commonly dominant subsoil is strongly structured medium clay. AS/NZS 1547:2012 classifies these as Category 6 soils, with an indicative permeability (K_{sat}) ranging from **<0.06m/day** (2.5mm/hr) to **0.5m/day** (21mm/hr). Based upon slope and soil characteristics, the following DIR is recommended for sizing all of the required RWIZs: • **2mm/day** (surface spray irrigation).	Severe
pH: The pH of 1:5 soil/water suspensions were measured in-house using a *Hanna*™ hand held pH / EC meter. The measured pH of the soil samples (topsoils and subsoils) ranged from 6.3 to 4.6, respectively. Soils range from very strongly acidic to moderately acidic; however, plant growth did not appear to be affected by soil acidity and this is not expected to pose a significant constraint to recycled water management.	Moderate
Electrical Conductivity (EC_e): Electrical conductivity of the saturated extract (EC_e) was calculated by first measuring the electrical conductivity of 1:5 soil in water suspensions and using appropriate multiplier factors (based on soil texture) to convert the 1:5 suspension EC to EC_e. Soil samples were found to range from non-saline to highly saline; having EC_e values of 0.00 – 11.6 dS/m. Overall, salinity of the topsoil was non-saline to moderately saline, with moderately saline to highly saline soils becoming more prevalent with depth. Considering the high quality of the recycled water (<TDS), and the fact that the highly saline conditions are present at some depth, we	Minor to Moderate

Parameter	Constraint
consider it unlikely that this will pose a significant limitation to recycled water management. Relatively saline soils are not uncommon in Western Sydney.	
Emerson Aggregate Class: The modified Emerson Aggregate Test (EAT) is a measure of soil dispersibility and susceptibility to erosion and structural degradation. It assesses the physical changes that occur in a single air-dried ped (naturally forming aggregate) of soil when immersed in water; specifically whether the soil slakes and falls apart or disperses and clouds the water. The test was performed on representative samples covering the range of soil horizons encountered in all test pits (TP1 – TP10). Emerson Aggregate Classes of 5 or above for all topsoils, and 2(2) or 3(3) for subsoils were recorded. EAT Class 2 indicates high levels of slaking with moderate dispersion. This poses a moderate constraint for recycled water management (as well as erosion control), though is mitigated by an appropriately low DIR of 2mm/day, in accordance with best-practice irrigation procedure. EAT Class 3 soils are slightly more suitable for the application of wastewater.	Moderate
Sodicity (Exchangeable Sodium Percentage- ESP) (%): The Exchangeable Sodium Percentage (ESP) is the proportion of sodium on the cation exchange sites reported as percentage of exchangeable cations and is an important indicator of sodicity, which affects soil structural stability and susceptibility to dispersion. The ESP is a measure of how readily the soils allow sodium from recycled water to be substituted in the soil lattice for other cations. Once accepted, the weak sodium bonds allow increased structural degradation of the soil, increasing erosion risk. It is calculated as [% Na / CEC] x 100. Hazelton & Murphy (2007) suggest: • ESP values less than 6 are rated as non-sodic; • ESP values between 6 and 15 are rated as sodic; • ESP values between 15 and 25 are rated as strongly sodic; and • ESP values greater than 25 are rated as very strongly sodic. Six (6) composite soil samples were analysed for ESP. Three (3) yielded values <6 (non-sodic), while the remaining three (3) samples yielded values of >15 (strongly and very strongly sodic). The presence of sodic soils presents a moderate to major limitation for recycled water management; however, it can be managed through conservative soil loading rates, soil amendment and pasture management practices. Further discussion on proposed mitigation measures is provided in Section 6.	Moderate to Major
Cation Exchange Capacity (cmol/kg): The Cation Exchange Capacity (CEC) is the capacity of the soil to hold and exchange cations [aluminium, calcium, magnesium, potassium and sodium]. It is a major controlling agent for soil structural stability, nutrient availability for plants and the soils' reaction to fertilisers and other ameliorants (Hazelton & Murphy, 2007). Like ESP, the CEC is a measure of how easily the soils accept excess cations from the recycled water. These cations are used by plants as a nutrient source; so the higher the CEC the more likely plant growth will be aided by the application of recycled water. The CEC of the six (6) composite soil samples analysed, was measured	Moderate

Parameter	Constraint
between 5.9 and 17.2cmol/kg. The samples ranged from a very low to medium CEC rating. The lower CEC values indicate that plant growth may be inhibited by increased soil sodium (sodicity) and a lack of trace nutrients such as magnesium/calcium, and the application of gypsum may be beneficial. This presents a moderate constraint for recycled water management and can be managed through appropriate pasture management practices. Further discussion on proposed mitigation measures is provided in Section 6.	
Phosphorus Sorption Capacity (kg/ha): The Phosphorous Sorption Capacity (P-sorption) is used to calculate the potential immobilisation rate of phosphorous by the soil. The P-sorption capacity of a soil is an important feature that relates to the potential for a soil to bind any phosphorus that may not be utilised by the plants within an available RWIZ. Phosphorous is required only to a limited extent by plants as a trace nutrient, but if there is an excess of phosphorous in environments where other limiting factors are not present (such as waterways), excess phosphorous can result in very high plant growth. Typically, on land, excess phosphorous is taken up by soil adsorption, or is flushed out of the soil into groundwater or surface water bodies. In many instances, P-sorption will be the dominant phosphorus removal mechanism when applying recycled water to the land. P-sorption analysis was undertaken on the six (6) soil samples by Lanfax laboratories, Armidale. For the laboratory sample a five point isotherm of P-sorption capacity was generated. The methodology is described further in Patterson (2001). For the analysed soils, a nominal threshold P-sorption value (in mg/kg) is selected as the value that equates to roughly 70% of complete sorption. The P-sorption of the six (6) composite samples tested ranged from 200 to 730mg/kg. The average of the samples is 460mg/kg and the median is 415mg/kg. For modelling purposes, we have adopted the lowest value of 200mg/kg. In a phosphorus-limiting system, this would be a major limitation; however, the low permeability and relatively low DIR recommended will likely result in a hydraulically-limited irrigation design and therefore the impact is considered minor to moderate.	Minor to Moderate

5 Buffers

Buffer distances from irrigation areas are recommended to minimise risk to public health, maintain public amenity and protect sensitive environments. The Australian Guidelines for Water Recycling (NRMMC et al. 2006) recommends that spray irrigation buffer zones are generally not required for high-quality recycled water suitable for domestic non-drinking water use, as is the case with the proposed LWC/RWI schemes at the Site. However, buffer zones are recommended as they provide a form of mitigation against unidentified hazards and reduce potential pathways of human and environmental exposure.

W&A recommend the following environmental buffers for surface spray irrigation based on NSW DEC (2004) guidelines:

- 250 metres from domestic groundwater bores;
- 50-100 metres from permanent watercourses;
- 40 metres from intermittent watercourses and dams; and

- 50 metres from houses, schools, playing fields, roads and public open space[1].

It should be noted that once development commences, relevant setbacks, in accordance with AGWR (2006), from dwellings will need to be applied. Recommendations to prevent off-lot discharge include the use of low-throw sprinklers, 180º inward-throwing sprinklers and/or tree or shrub screens.

6 Mitigation Measures

6.1 Vegetation Establishment and Management

Vegetation should be established within the proposed RWIZs. A complete vegetation cover is important to reduce the erosion hazard and optimise water and nutrient uptake. A good cover of managed pasture (lucerne, ryegrass etc.) will be suitable for surface irrigation as suggested in this report. Achieving a nutrient balance within an irrigation area relies on nutrients being taken up by vegetation and then exported with the cut vegetation (e.g. baled or rolled). This balance can only be maintained by removing the cut material from the area.

6.2 Soil Improvement

6.2.1 Soil Sodicity

Sodic soils are soils with an excess of sodium compared with calcium and magnesium on the soils' cation exchange sites. Generally, sodic soils can be highly susceptible to dispersion, erosion, structural decline and surface crusting, and can have very low infiltration capacities, low hydraulic conductivity and high shrink/swell properties on wetting and drying. These properties can reduce the soils' capacity to sustainably manage recycled water.

Soil sodicity is variable at the Site, with some topsoil and subsoil samples returning ESP results greater than 6%, the threshold at which soil is considered to be sodic. While soils do not appear to be currently experiencing any significant drainage problems, erosion or structural decline; prolonged application of elevated-sodium recycled water could exacerbate the situation.

Application of gypsum is a recognised way of mitigating the effects of soil sodicity. It does this by supplying calcium to the affected soil and thereby elevating calcium concentrations with respect to sodium. It is recommended that gypsum be applied to soils in the RWIZs to reduce the potential for soil structural degradation and dispersion. Gypsum is only slowly soluble in water so simply broadcasting it at the surface can be relatively difficult as it can take a long time for the calcium to penetrate the soil and reach the deeper soil layers. Therefore, it is necessary to incorporate gypsum into the limiting soil horizon at the time of application. One way to achieve this is to dose the irrigation water with a pre-mixed gypsum solution during the irrigation cycle. At scheme commencement, this practice should be undertaken for each irrigation area at an application rate of approximately 0.5kg/m^2 of gypsum. In the long term, soil sodicity within the RWIZs can be managed by the annual surface application of gypsum at a rate not less than 0.2kg/m^2.

Incorporation of organic matter (OM) into the upper soil profile is another recognised method for improving soil structural stability as well as improving nutrient retention and available water holding capacity. These benefits serve to improve aeration and biological activity in soils; thereby increasing vegetation health, vigour and rooting depth. Studies have shown that the direct incorporation of OM such as composts. Manure and other recycled organic materials can substantially improve the performance of irrigated pasture areas.

[1] Assumes spray irrigation. If sub-surface irrigation techniques are used, these buffers may be relaxed for some public open space uses.

6.2.2 Recycled Water Salinity

The response of sodic soils to the application of recycled water is also controlled to an extent by soil/water salinity. Studies have shown that with increasing [soil] EC at depth, and the increased occurrence of carbonates and high clay content, dispersion and swelling (in sodic soils) may be suppressed (Rengasamy & Olsson, 1993).

Sodium adsorption ratio (SAR) is the term that applies to the ratio of sodium ions to calcium and magnesium ions in water. The ratio is a numerical value with no units. Rengasamy *et al*., (1984) report that the soil ESP is approximately twice the SAR of a 1:5 soil water suspension. The term SAR applies to water and ESP applies to soil and their different calculation formulas infer they are measuring different properties (Patterson, 2006).

The ANZECC (2000) water quality guidelines (Vol. 1, Figure 4.2.2) suggest that an analysis of recycled water quality should be incorporated into scheme design to determine the extent that soil salinity and the SAR of irrigation water will 'interact' to exert control over soil stability.

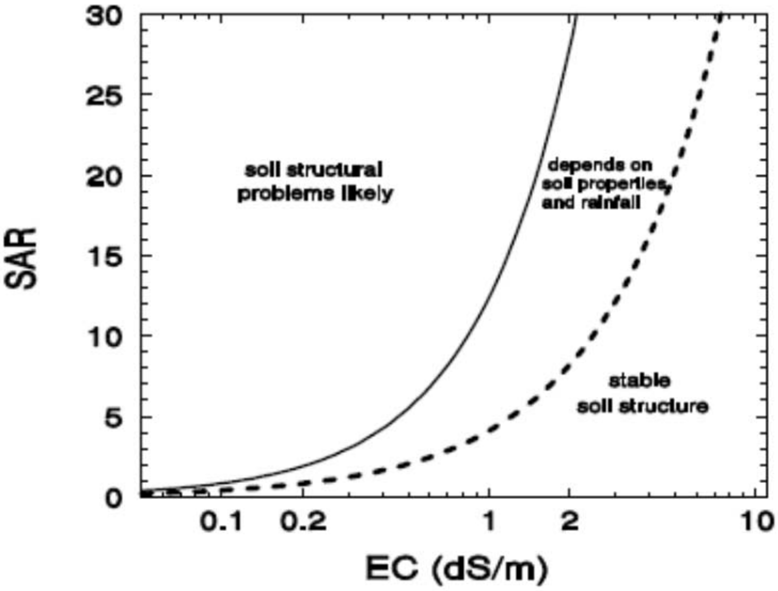

Figure 4.2.2 Relationship between SAR and EC of irrigation water for prediction of soil structural stability (from DNR 1997a, adapted from DNR 1997b; note that 1 dS/m = 1000 µS/cm)

It is recommended that a comprehensive investigation of soil dissolved salt content is undertaken prior to the commissioning of each RWIZ to ensure that soil structural impacts are appropriately mitigated.

7 Conclusions and Recommendations

This report provides the results and recommendations of our preliminary investigations, including detailed site and soil investigations and constraints to recycled water management.

The LCA shows that the Site is diverse in terms of its physical characteristics such as topography, soil depth and characteristics, drainage and the presence of intermittent watercourses; all of which influence the design and proposed location of the RWIZs for surface irrigation of recycled water. However, all required buffers are achievable with regard to the location of the proposed RWIZs.

Having undertaken a land capability assessment of the Site at Box Hill North, W&A consider that, with mitigation, on-site surface irrigation is generally appropriate on identified land throughout the Site.

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Appendix A

Figures & Site Plans

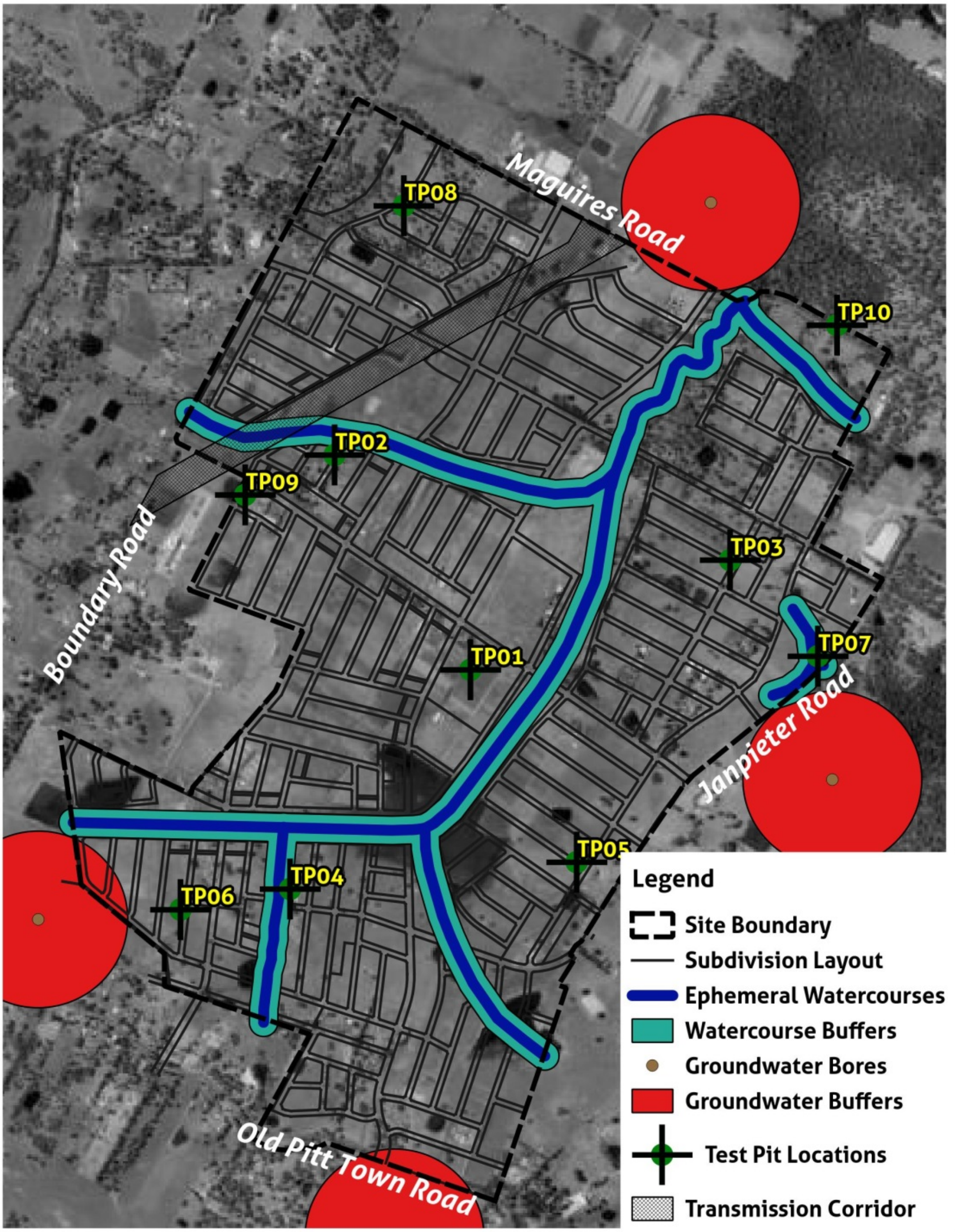

Figure 1: Site Location

Box Hill North Masterplan Land Capability Assessment

Whitehead & Associates Environmental Consultants	0 250 500 750 m (Approx Scale)	Revision	A
		Drawn	DJW
		Approved	DJW

N

Appendix B

Soil Borelogs

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP1**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	19 April 2014	Excavation type:	Excavator
Notes:	Location 150.90746, -33.62649, Mid Slope on Gently undulating topography. Previously Cropped, presently weedy.		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1		No External Laboratory Sample	O	SCL	Strong	Very Dark Greyish-Brown	N/A	5%		Similar to Top layer TP7 and TP3
0.2–0.3			A	SC	Friable / Layered	Dark Brown	N/A	30%		Small fragments <2mm. Same as TP2/2, 3/2 & 9/2
0.4–0.8			B1	MC-HC (Sticky)	Strong	Red	Red	<1%		Same as 4/3, 6/2 and 9/3
0.9–1.6			B2	HC	Massive	Light Brown / Greyish Pink	Gleyed and Red Mottles	No		Weathered Bedrock. Similar to 3/4, 4/4 and 9/4

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP2**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.90349, -33.62097, Mid Slope on Gently undulating topography. Presently used for Horse Pasture. Kikuyu surface cover.		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1			O	SiCL	Strong	Brown to Dark Brown	N/A	<1%	Dry	
0.2–0.6		X	A	SC	Friable / Layered	Dark Brown	N/A	30%		Similar to TP1/2, 3/2 & 9/2
0.7–1.5			B	LC	Strong but Massive when Moist	Orange / Brown	Minimal	<1%	Moist	Similar gleying to TP1

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP3**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.91540, -33.62383, Mid Slope on Gently undulating topography. Presently used for Cow Pasture. Grassed (Kikuyu & Couch)		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1			O	SCL	Strong	Very Dark Greyish-Brown	N/A			
0.2–0.3		Composite Sample	A	SC	Friable / Layered	Dark Brown	N/A	N/A		Similar to 1/2, 2/2 and 9/2
0.4–0.7			B	LC	Moderate	Yellowish Brown	N/A	N/A		Similar to 3/2 and 2/2 but Yellower
0.8–1.2			C	MC	Friable Medium Structure	Very Pale Brown	Variable Mottling, Red / Yellow / Creamy Grey	N/A		Weathered Sandstone

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP4**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.90187, -33.63195, Lower Slope on Gently undulating topography. Presently used for Horse Pasture.		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1		No External Laboratory Sample	O	SiCL	Strong	Brown to Dark Brown	N/A			
0.2–0.5			A	Fine SCL to SiCL	Strong but Powdery	Dark Yellowish Brown	N/A	N/A	Very Dry	
0.6–1.5			B	MC-HC	Strong	Red	Red		Moist	Same as 1/3, 6/2 and 9/3
Below 1.5			C	HC	Weak	Yellow/Brown	Red Gleying	<20%, <1mm	Wet	Seepage in Base of Pit

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP5**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.91057, -33.63140, Mid Slope on Gently undulating topography. At edge of Long Grass behind mown portion of property.		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1		Composite Sample	A	SiCL	Strong	Brown to Dark Brown	N/A	N/A	Dry	Similar to 2/1, 4/1, 6/1, 8/1 and 9/1
0.2										
0.3										
0.4			B	MC	Strong	Light Yellowish Brown	Minor, Red	Shale up to 5-10 cm	Dry	Grades to Weathered Shale
0.5										
0.6										
0.7										
0.8										

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP6**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.89854, -33.63242, Mid - Upper Slope on Gently undulating topography. Mown grass of backyard.		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1–0.2		Composite Sample	A	SiCL	Strong	Brown to Dark Brown	N/A	N/A	Dry	Similar to 2/1, 4/1, 5/1, 8/1 and 9/1
0.3–0.8			B	HC	Strong	Red	N/A	10% large angular 5mm fragments		Refusal Depth at 850mm hitting very stiff gleyed clay
0.9										

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP7**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.91800, -33.62632, Crest on Relatively steep topography. Sandstone rocks present on surface. Lower slope areas have rock outcrops. Sandstone encountered at 600mm		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1		Composite Sample	A	SCL	Strong	Very Dark Greyish Brown	N/A	N/A	Dry	Similar to 1/1 and 3/1
0.2–0.6			B	SCL	Weak	Very Dark Greyish Brown	N/A	Large weathered Sandstone Fragments, 70 - 80% at depth	Dry	Weathered Sandstone

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP8**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.90573, -33.61468, Lower Slope on Gently undulating topography. Presently used for Cow Pasture Kikuyu		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1 0.2 0.3		No External Laboratory Sample	A	SiCL	Strong	Brown to Dark Brown	N/A	N/A	Dry	Similar to 2/1, 4/1, 5/1, 6/1 and 9/1
0.4 0.5 0.6 0.7 0.8			B	LC	Strong	Reddish Brown	Red	Minimal Shall Fragments 50% (5mm to 100mm)		Weathered Shale Refusal at 0.8m

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP9**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.90075, -33.62193, Lower Slope on Gently undulating topography.		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1			O	SiCL	Strong	Brown to Dark Brown	N/A	N/A	Dry	
0.2–0.4			A	SC	Friable/ Layered	Dark Brown	N/A	N/A		Similar to TP 1/2, 2/2 and 3/2
0.5–1.5		X	B	MC/HC	Strong	Red	Red and Orange with Gleying	N/A		Similar to 1/3, 4/3 and 6/3

Soil Bore Log

Whitehead & Associates
Environmental Consultants Pty Ltd

Client:	RPS	**Test Pit No:**	**TP10**
Site:	Box Hill North	Excavated/logged by:	Jasmin Kable
Date:	4 December 2014	Excavation type:	Excavator
Notes:	Location 150.91880, -33.61790, Crest on Gently undulating topography. Presently used for Horse Pasture. Mown Couch. Rock Outcops on Surface		

PROFILE DESCRIPTION

Depth (m)	Graphic Log	Sampling depth/name	Horizon	Texture	Structure	Colour	Mottles	Coarse Fragments	Moisture Condition	Comments
0.1		No External Sample	A	LS	Weak	Very Dark Greyish Brown	N/A	Minimal	Dry	
0.2–0.5			B	SCL	Weak	Very Dark Greyish Brown	N/A	Large Weathered Sandstone Fragments	Dry	Weathered Sandstone

Appendix C

Raw Soil Data and Analytical Results

Box Hill North Masterplan, Land Capability Assessment												
Site	**Sample Name**	**Sample Depth** (mm)	**Texture Class**	**EAT** [1]	**Rating** [2]	**pH** 1:5 [3]	**Rating**	**EC** 1:5 (µS/cm)	**ECe** (dS/m) [4]	**Rating**	**Other analysis** [5]
TP1	1/1	100	CL	5/6	Mod	6.0	Moderately acid	173	1.56	Non-saline	See External Results
	1/2	225	LC	5/6	Mod	6.3	Slightly acid	340	2.72	Slightly saline	
	1/3	650	MC	3(3)	Mod	4.7	Very strongly acid	1368	9.58	Highly saline	
	1/4	1200	HC	2(2)	Mod	5.4	Strongly acid	658	3.95	Slightly saline	
TP2	2/1	100	CL	8	Low	5.2	Strongly acid	77	0.69	Non-saline	
	2/3	1000	LC	3(3)	Mod	4.6	Very strongly acid	1454	11.63	Highly saline	
TP3	3/3	500	LC	3(3)	Mod	5.7	Moderately acid	41	0.33	Non-saline	
	3/4	1000	MC	2(2)	Mod	5.7	Moderately acid	12	0.08	Non-saline	
TP4	4/2	800	CL	5	Low	5.0	Strongly acid	736	6.62	Moderately saline	
	4/4	1000	HC	2(2)	Mod	5.1	Strongly acid	921	5.53	Moderately saline	
TP5	5/2	500	MC	3(3)	Mod	5.1	Strongly acid	57	0.40	Non-saline	
TP6	6/2	500	HC	3(3)	Mod	5.3	Strongly acid	224	1.34	Non-saline	
TP7	7/2	400	CL	-	n/a	5.9	Moderately acid	11	0.10	Non-saline	
TP8	8/2	500	LC	5	Low	5.3	Strongly acid	47	0.38	Non-saline	
TP10	10/1	300	S	8	Low	6.1	Slightly acid	10	0.17	Non-saline	

Notes:- (also refer Interpretation Sheet 1)

[1] The modified Emerson Aggregate Test (EAT) provides an indication of soil susceptibility to dispersion.

[2] Ratings describe the likely hazard associated with land application of treated wastewater.

[3] pH measured on 1:5 soil:water suspensions using a *Hanna Combo* hand-held pH/EC/temp meter.

[4] Electrical conductivity of the saturated extract (ECe) = $EC_{1:5}$(µS/cm) x MF / 1000. Units are dS/m. MF is a soil texture multiplication factor.

[5] External laboratories used for the following analyses, if indicated:

- CEC (Cation exchange capacity)
- Psorb (Phosphorus sorption capacity)
- Bray Phosphorus
- Organic carbon
- Total nitrogen

Interpretation Sheet 1 - pH, EC & Emerson Aggregate Class

Interpretation of Soil pH (1:5 Soil:Water)
(rating based on Hazelton & Murphy (2007))

pH			Rating	
0.00	to	4.50	Extremely acid	
4.51	to	5.00	Very strongly acid	
5.01	to	5.50	Strongly acid	preferred range
5.51	to	6.00	Moderately acid	preferred range
6.01	to	6.50	Slightly acid	preferred range
6.51	to	7.30	Neutral	preferred range
7.31	to	7.80	Mildly alkaline	preferred range
7.81	to	8.40	Moderately alkaline	
8.41	to	9.00	Strongly alkaline	
9.01	to	14.00	Very strongly alkaline	

Multiplier Factors for Calculating ECe
(taken from Hazelton & Murphy (2007))

Texture Class	Applicable Soil Textures	MF
S	Sand, loamy sand, clayey sand	17
SL	sandy loam, fine sandy loam	11
L	loam, loam fine sandy, silty loam	10
CL	clay loam, sandy clay loam	9
LC	light clay, sandy clay	8
MC	medium clay	7
HC	heavy clay	6

Interpretation of ECe (1:5 Soil:Water)
(rating based on Hazelton & Murphy (2007))

Ece (dS/m)			Rating
0.00	to	2.00	Non-saline
2.01	to	4.00	Slightly saline
4.01	to	8.00	Moderately saline
8.01	to	16.00	Highly saline
16.00	up		Extremely saline

increasing hazard

Interpretation of Emerson Aggregate Class
(rating describes likelihood of dispersion)

EAT Class	Rating
1	High
2(1)	Mod
2(2)	Mod
2(3)	High
2(4)	High
3(1)	Low
3(2)	Low
3(3)	Mod
3(4)	Mod
4	Low
5	Low
6	Low
7	Low
8	Low

Box Hill North Masterplan Land Capability Assessment - Results of External Laboratory Analysis																	
Site	Name	Depth (mm)	CEC (me/100g)	Rating	Ca (mg/kg)	Rating	Mg (mg/kg)	Rating	Na (mg/kg)	Rating	K (mg/kg)	Rating	ESP (%)	Rating	P-sorp. (mg/kg)	Rating
TP 1	Composite	850mm	12.1	M	417	VH	642	H	977	VH	109	L	35.0	VSS	300	MH
TP 5	Composite	750mm	9.7	L	693	VH	372	H	106	M	132	M	4.7	NS	510	H
TP 6	Composite	850mm	10.8	L	338	VH	692	H	428	H	179	M	17.2	SS	730	VH
TP 7	Composite	600mm	5.9	VL	896	VH	121	L	18	VL	76	VL	1.3	NS	320	MH
TP 2/2	Composite	500mm	9.8	L	1015	VH	273	M	99	M	759	H	4.4	NS	200	M
TP 9/3	Composite	900mm	17.2	M	45	VH	1074	VH	###	VH	86	L	44.3	VSS	700	VH

Interpretation Sheet 2 - CEC, P-Sorption, Bray P, Organic carbon, Total nitrogen

Interpretation of CEC

(rating based on Hazelton & Murphy (2007))

Rating	CEC (me/100g)			Ca (mg/kg)			Mg (mg/kg)			Na (mg/kg)			K (mg/kg)		
VL	0.00	to	6.00	0.00	to	400.00	0.00	to	36.50	0.00	to	23.00	0.00	to	78.20
L	6.01	to	12.00	400.01	to	1000.00	36.51	to	121.50	23.01	to	69.00	78.21	to	117.00
M	12.01	to	25.00	1000.01	to	2000.00	121.51	to	365.00	69.01	to	161.00	117.01	to	274.00
H	25.01	to	40.00	2000.01	to	4000.00	365.01	to	972.00	161.01	to	460.00	274.01	to	782.00
VH	40.01	up		4000.01	up		972.01	up		460.01	up		782.01	up	

VL=very low, L=low, M=medium, H=high, VH=very high

Interpretation of ESP

(rating based on Hazelton & Murphy (2007))

Rating	ESP (%)			Description
NS	0.00	to	6.00	Non-sodic
S	6.01	to	15.00	Sodic
SS	15.01	to	25.00	Strongly sodic
VSS	25.01	up		Very strongly sodic

increasing hazard

Interpretation of Phosphorus Sorption Capacity

(rating based on Hazelton & Murphy (2007))

Rating	P-sorption (mg/kg)			Description
L	0.00	to	125.00	Low
M	125.01	to	250.00	Medium
MH	250.01	to	400.00	Medium-High
H	400.01	to	600.00	High
VH	600.01	up		Very high

increasing hazard

Interpretation of Bray Phosphorus

(rating based on Hazelton & Murphy (2007))

Rating	Bray P (mg/kg)			Description
VL	0.00	to	5.00	Very Low
L	5.01	to	10.00	Low
M	10.01	to	17.00	Moderate
H	17.01	to	25.00	High
VH	25.01	up		Very high

Interpretation of Soil Nitrogen (TN)

(rating based on Hazelton & Murphy (2007))

Rating	TN (%)			Description
VL	0.000	to	0.050	Very Low
L	0.051	to	0.150	Low
M	0.151	to	0.250	Medium
H	0.251	to	0.500	High
VH	0.501	up		Very high

Interpretation of Soil Organic Carbon (OC)

(rating based on Hazelton & Murphy (2007))

Rating	OC (%)			Description
VL	0.00	to	1.50	Very Low
L	1.51	to	2.00	Low
M	2.01	to	3.00	Medium
H	3.01	to	5.00	High
VH	5.01	up		Very high

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Staging Assessment for Recycled Water Management Scheme at Proposed Box Hill North Development, NSW

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Disclaimer

The information contained in this report is based on independent research undertaken by David Wainwright of Whitehead & Associates Environmental Consultants Pty Ltd (W&A). To our knowledge, it does not contain any false, misleading or incomplete information. Recommendations are based on an appraisal of the site conditions subject to the limited scope and resources available for this project, and follow relevant industry standards. The work performed by W&A included a desktop review and limited soil sampling only, and the conclusions made in this report are based on the information gained and the assumptions as outlined. Under no circumstances, can it be considered that these results represent the actual state of the site at all points as subsurface conditions are inherently variable. Concentrations of contaminants may also change with time, and the conclusions in this report have a limited lifespan.

Copyright Note

Executive Summary

Whitehead & Associates were engaged by RPS Australia Pty Ltd to undertake a Land Capability Assessment and Staging Assessment for a Recycled Water Scheme at the proposed Box Hill North Development, bounded generally by Boundary Road, Maguires Road, Janpieter Road and Old Pitt Town Road in Box Hill. A corresponding Land Capability Assessment (LCA) report has been prepared. Based on plans provided by RPS, it is proposed to subdivide the existing, approximately 390ha Site in multiple stages for primarily residential development, comprising approximately 4,100 lots, accompanied by an area designated for commercial/retail development and associated open space, recreational facilities and infrastructure.

It is proposed to develop a water supply and recycling scheme for the entire development. The recycled water would be produced at a proposed Local Water Centre (LWC). The LWC would supply the subdivision with a reticulated recycled water supply (i.e. 'third pipe'). As the development progresses, any unused recycled water (i.e. that not being reused internally or externally on individual residential properties) will be irrigated on managed pasture in the land set aside for the subsequent development stages of the subdivision. Two sets of wastewater load data were used in modelling, one derived from first principles by W&A and a second set of data provided by Box Hill North Water. Our analysis found that permanent irrigation areas would need to be established on community or/and privately owned lands (e.g. parks, sporting fields) for any unused recycled water towards the latter stages of the development. Using W&A's load data, this was found to be necessary prior to construction of Stage 6 of the development. Alternatively, modelling with the data of Box Hill North Water found that this could be deferred to before the construction of Stage 7. The analysis used to estimate the amount of land required is in accordance with standard practice and conservative (risk-averse) by nature. It is possible that further field testing to confirm / refine the estimated soil infiltration rates would result in a lower estimate of the amount of required irrigation area. Alternatively, a different customer for the excess recycled water may be found at build out stage, or the excess recycled water could be discharged to sewer or the environment in compliance with the environmental protection legislation in force at that time.

A site and soil assessment was conducted on the 4th December, 2014, in accordance with the Australian Guidelines for Water Recycling (2006) under the requirements of the Water Industry Competition Act (WICA, 2006), to determine the limitations (if any) for the irrigation of the Site. Overall, the Site constraints for Recycled Water Irrigation (RWI) were generally minor with the exception of soil sodicity. It is recommended that a comprehensive investigation of dissolved salts in the soil and its interaction with recycled water be undertaken to inform the steps needed to appropriately mitigate soils.

Design household (ET) water demands and wastewater generation rates were determined in accordance with the Building Sustainability (BASIX) and Water Efficiency Labelling Scheme (WELS) requirements. The household water demands have been estimated as 741L/ET/day based on the determined occupancy data and 'pre BASIX' benchmark home condition. Each design household has a potential to offset approximately 40% of the total potable water demand using recycled water, on an annual basis.

Monthly water and nutrient balances as well as daily-timestep modelling have been undertaken to determine sustainable irrigation rates for community land in the subdivision and ultimate irrigation capacity to determine the maximum development potential of the subdivision before an alternative end-use must be found for the recycled water.

The assessment demonstrates that the hydraulic load is limiting across the Site. Daily modelling indicates that irrigation of recycled water can be sustainably managed on site for the first 5 stages of the development. This assumes that stages will be developed in approximately the order in which they are listed in this Report and on the Site plans.

Model results indicate that nutrient loads in surface surcharge and deep drainage of recycled water represent <1% increase on the background nutrient loads in runoff from the Site. This figure is considered to be relatively insignificant. It is assumed that further attenuation rates for nutrients in soil are more than sufficient to capture these minor nutrient contributions. It is anticipated that the nutrient loads in the recycled water will have no appreciable impact on environmental and/or public health.

Table of Contents

1 Introduction 7
2 Overview of Proposed Development 7
3 Regulatory Requirements and Guidelines 8
4 Recycled Water Analysis 9
4.1 Local Water Centre 9
4.2 Recycled Water Generation 9
4.3 Recycled Water Quality 9
4.4 Recycled Water Quantity 10
4.4.1 Residential Development 10
4.5 Wastewater Loads from Box Hill North Water (Flow Systems) 14
5 Buffers 16
6 Recycled Water Management 17
6.1 Recommended Recycled Water Irrigation Zones 17
6.2 Water and Nutrient Balance for Irrigation Area Sizing 20
6.3 Daily Time Step Modelling 23
6.3.1 Overview of the DSM Model 23
6.3.2 Model Results 24
6.4 Pathogen Transport Modelling 29
6.4.1 Overview 29
6.4.2 Assumptions and Inputs 29
6.4.3 Interpretation of Results 31
7 Conclusions and Recommendations 32
8 References (Cited and Used) 34
Appendix A 36
Appendix B 37

List of Tables

Table 1 Household (ET) Potable / Recycled Water Demand Scenarios 14
Table 2 Development Areas, Equivalent Tenement and Usable Area Analysis .. 18
Table 3 Wastewater Loads and Available RWIZ for Development Stages 20
Table 4 Data Inputs for Monthly Water Balance 21
Table 5 Data Inputs for Annual Nutrient Balance 22
Table 6 Results of Water Balance for Box Hill North 23
Table 7 DSM Inputs 25
Table 8 Average Annual Nutrient Concentrations 26
Table 9 Average Annual Hydraulic Export Results 26
Table 10 Assumptions and Results of Pathogen Transport Modelling 31

1 Introduction

Whitehead & Associates Environmental Consultants Pty Ltd ("W&A") were engaged by RPS Australia Pty Ltd ("the Client") on behalf of Flow Systems to undertake a Land Capability and Staging Assessment for recycled water management for the proposed staged subdivision to be known as Box Hill North ("the Site"). The Site is bounded generally by Boundary Road, Maguires Road, Janpieter Road and Old Pitt Town Road in Box Hill, as shown in Figure 3 (Page 19).

This Staging Assessment report focuses on the Site's capacity to sustainably accommodate recycled water that is not reused internally or externally by residential developments, once the proposed Local Water Centre (LWC) at Box Hill is commissioned and operational. The LWC will be owned and operated by Flow Systems Operations, trading as Box Hill North Water. The proportion of recycled water that is reused by households will fluctuate throughout the year (and can be as high as 100% in warmer months); however this report deals with averages for simplicity.

The Site is located entirely within the Hills Shire Council ("Council") local government area (LGA). Field investigations were undertaken by David Wainwright and Jasmin Kable of W&A on the 4th December 2014. The Land Capability Assessment summarises those investigations and this report provides the results of our analysis and recommendations for Recycled Water Irrigation Zones (RWIZs) proposed to be developed to manage unused recycled water once the Box Hill North LWC recycled water scheme is operational. It should be read in conjunction with the Land Capability Assessment (LCA) Report prepared for the project (Report_01366_001).

2 Overview of Proposed Development

Figure 1 shows the general arrangement of streets within the proposed subdivision and the different stages of development. The development aims to accommodate 4,100 dwellings with a range of densities and a town centre comprising up to 10,000m^2 of retail/commercial floor space. The development proposal also includes a school, community facilities, sports fields, public open space, environmental buffers and other improvements including roads and infrastructure. Development is expected to be staged in 8 separate areas (A-H on Figure 1), totalling 390 hectares.

Box Hill North Water is assisting the developer, EJC Developments (EJC) in delivering sewerage, recycled water and drinking water infrastructure to the Box Hill North development. The Box Hill North LWC will treat wastewater generated by the proposed residential and commercial developments (separate trade waste agreements may be required for certain types of commercial uses). The LWC facility is intended to operate 24 hours, 7 days per week, housed in a low-scale, single level building within an open space setting. The proposed LWC will incorporate a dual reticulation ('third pipe') system to distribute recycled water to households for non-potable water reuse such as toilet flushing, washing machine supply, irrigation and car washing, thus reducing potable water demand. The eventual hydraulic capacity of the LWC will be around 3,000kL per day although this will be achieved as residential uptake within the development increases. At this stage in development planning, it is intended that the remaining excess recycled water will be irrigated in the undeveloped land associated with later development stages, in the proposed RWIZs.

3 Regulatory Requirements and Guidelines

The Independent Pricing and Regulatory Tribunal (IPART, NSW) regulate the licensing of private water schemes under the *Water Industry Competition Act (WICA) 2006*. Under the Act, a corporation must obtain a licence to construct, maintain or operate any water industry infrastructure (network operators' licence), or to supply potable or non-potable water, or provide sewerage services by means of any water industry infrastructure (retail suppliers licence). Both the network operators' and retail suppliers' licences are applicable for the development of the recycled water scheme at the Site.

Under the *Water Industry Competition (General) Regulation (WICR) 2008*, network operator licensees for sewerage schemes are required to produce a Sewage Management Plan (SMP) and subsequent audit reports on the SMP before commercial operation of the scheme. The sustainability assessment is an audit of relevant components of the SMP, with the aim of helping to determine whether the proposed infrastructure will provide sewerage services which are sustainable and do not present a risk to the environment.

This report, along with the LCA report, will address the 'sustainability assessment' requirements set out by *WICR (2008)*, that deal with the application of recycled water to land, including water balance calculations for the scheme. The sustainable rate of application of the recycled water will be determined; and general storage capacity requirements will also be outlined for the recycled water scheme based on the water balance calculations. The remaining sections of the sustainability assessment will be completed by the licensee. The outstanding SMP audit components can be completed after commencement of construction.

The Australian Guidelines for Water Recycling: Managing health and environmental risks (Phase 1) (NRMMC, 2006), were developed to provide guidance on the supply, use and regulation of recycled water schemes. The guidelines use a risk management framework comprising twelve (12) elements with multiple barriers to control hazards. The framework is summarised by four (4) main categories: commitment to responsible use and management of recycled water; system analysis and management; supporting requirements; and review.

The principles of sustainable use of recycled water are based on the following principles:

- protection of public and environmental health is of paramount importance and should never be compromised;
- protection of public and environmental health depends on implementing a preventative risk management approach; and
- application of preventative measures and requirements for water quality should be commensurate with the source of recycled water and the intended uses.

Land application (irrigation) of tertiary treated and disinfected recycled water, as proposed for Box Hill North, requires relatively few restrictions in regards to public health. End use controls and onsite constraints can also be used to minimise both human exposure to hazards and the impact on receiving environments; such as signage, use of appropriate buffer zones as necessary, and control of plumbing and distribution systems.

The licensed network operator must submit to IPART an Infrastructure Operating Plan and a Water Quality Plan which is consistent with the AGWR (2006) and addressing the Framework for Management of Recycled Water Quality and Use.

4 Recycled Water Analysis

4.1 Local Water Centre

It is our understanding that Box Hill North Water will supply the LWC, which will incorporate a multi-stage process incorporating screening, anaerobic and aerobic processing, chemical treatment, membrane filtration, ultraviolet disinfection and chlorination for the treatment of wastewater from the Box Hill North development. The Membrane Bioreactor (MBR) system effectively combines two proven wastewater treatment processes (i.e. microbial digestion and membrane separation) into a single process where suspended solids and microorganisms responsible for biodegradation are separated from the treated water by an ultra-filtration (UF) system.

We understand that the proposed LWC will be designed to accommodate the maximum daily load from Box Hill North at build out, with required provisions for peak flow management (flow-balancing) and emergency storage.

4.2 Recycled Water Generation

Wastewater generation for the proposed development will include domestic sources as well as commercial and community sources within the designated precinct. Generally, wastewater from each future lot will be generated from the entire (combined) wastewater stream including blackwater (toilet flushing and kitchen wastes), and greywater (laundry and shower/bath/hand basin wastes). The exception to this may include particular types of trade waste generated in commercial premises, which may require separate collection and disposal. At this stage, the exact types of commercial premises to occupy the Commercial Centre are not known. However, most (if not all) of them are expected to generate wastes that are appropriate for treatment in the LWC (such as supermarkets, retail, takeaway food, etc.). Box Hill North Water has provided estimations of the equivalent tenement (ET) for the proposed retail and community developments, which have been used in our analysis.

It is proposed to provide dual reticulation to distribute recycled water to households and public open space, whilst any unused recycled water will be irrigated in the undeveloped land associated with later development stages (and ultimately to other permanent uses once build-out is complete).

4.3 Recycled Water Quality

The recycled water produced by the LWC will be of tertiary quality; that is, it is expected to meet, or exceed, the following criteria:

- Total Nitrogen: ≤15mg/L;
- Total Phosphorus: <5mg/L;
- BOD_5: ≤10mg/L;
- Suspended Solids: ≤10mg/L;
- Faecal Coliforms: ≤10cfu/100mL;
- Total Dissolved Solids: 700mg/L; and
- EC: ~1,000µS/cm.

RWIZs will likely be accessible to the public and residents either through direct exposure or inadvertent/secondary contact. Appropriate signage must be employed to identify the use of recycled water for irrigation. The proposed LWC will treat recycled water to a quality which would be considered low risk for direct human contact (DWE, 2008). The proposed recycled water quality will enable urban irrigation of community areas with unrestricted access.

4.4 Recycled Water Quantity

The Building & Sustainability Index (BASIX), implemented under the NSW State Environmental Planning Policy Sustainability Index 2004 (BASIX SEPP), mandates water and energy saving targets for all new residential construction in NSW. BASIX requires fixtures, fittings and appliances to have minimum ratings in accordance with AS/NZS 6400:2005 (Water Efficient Products) under the Water Efficiency Labelling and Standards (WELS) scheme.

For BASIX approval a new residential development is required to demonstrate up to 40% less potable water usage than the average 'pre BASIX' benchmark home of 90.34kL/person/year or 247L/person/day. The 'pre BASIX' benchmark home was determined from data collated by the then NSW Department of Water and Energy (DWE) and included regional data reflecting both demographic and climate considerations. The whole of The Hills Shire Local Government Area is located within a 40% water reduction target zone. The BASIX reduction targets were determined from data provided by state and federal water and energy utilities as well as long-term climate data obtained from the Bureau of Meteorology. It is noted that the reduction targets are currently under review, with a proposal to increase the target to 50% in some areas currently prescribed with a 40% reduction target.

BASIX encourages reductions in the consumption of potable water through any of the following strategies: landscape uses, fixtures, alternative water sources, shades and covers for pools and spas, and central systems. The Site will utilise an alternative water source through the reticulation of recycled water, for garden and lawns, toilets and laundry (cold water only) use, to meet the BASIX reduction targets. Additional listed strategies, i.e. fixtures, may also need to be used in addition to the alternative water source to meet the target.

4.4.1 Residential Development

Design Household

An ET occupancy value (capita per new residence) was determined based on population density information collated by W&A from the most recent ABS Census of Population and Housing (2011). An ET occupancy value of three (3) persons per new residence was adopted, the same as that recorded for the more developed statistical local area of The Hills Shire (The Hills Shire (A) – Central) in the 2011 census. We consider that this is an appropriate figure to adopt for design purposes for the proposed Box Hill North development.

Household Water Usage

Subsequently, peak seasonal (summer) household water demand has been estimated for each new residence as 741L/ET/day (3 persons x 247L/person/day). Assuming a minimum requirement to meet the 40% BASIX reduction target, a reduction of 297L/ET/day is required from the total household water demand for each new residence. Figure 4 illustrates the proportional breakdown of the water use within a residential household based on BASIX targets and WELS scheme criteria.

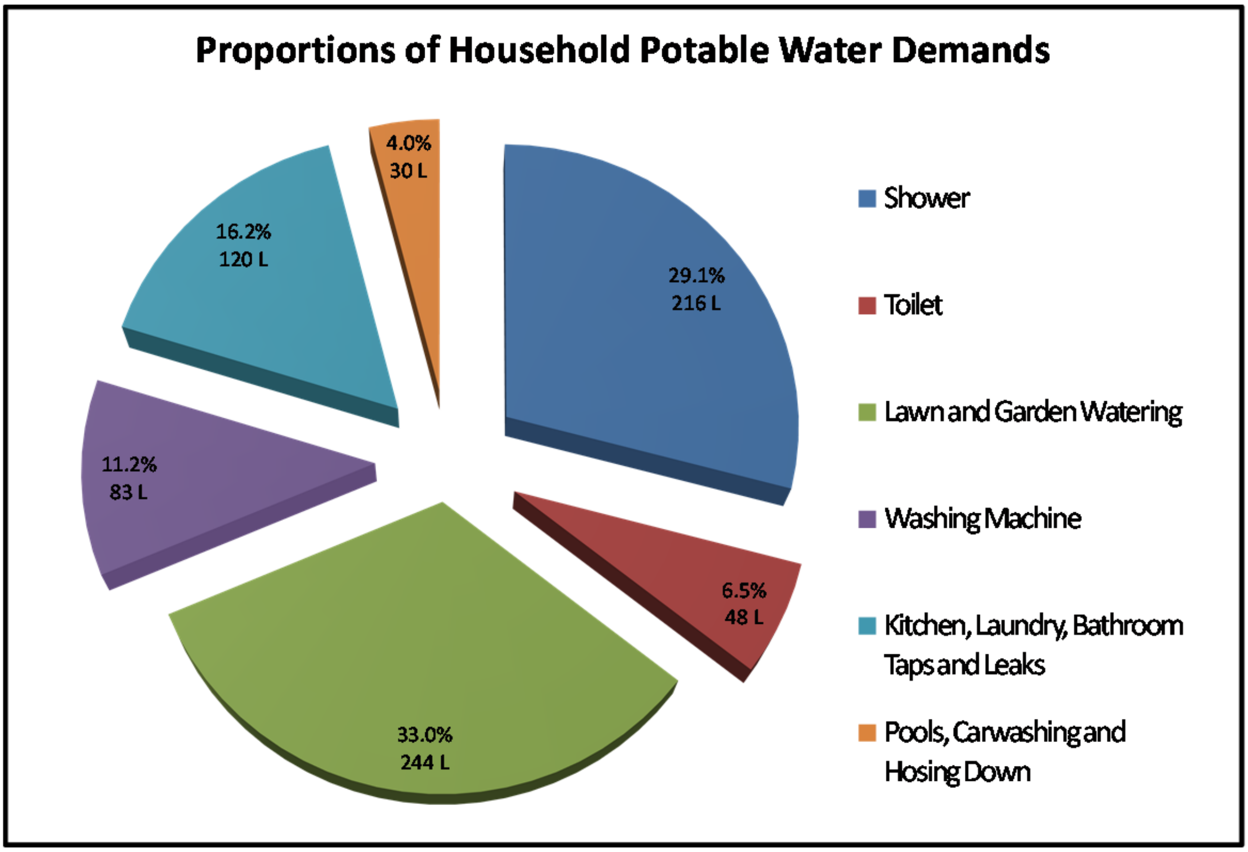

Figure 1 Proportion water usage within a residential household (internal and external water use)

The calculations and assumptions used by BASIX and WELS to proportion expected household usage are further described below.

Toilets

Based on the installation of retrofitted flush valves for single flush toilets only, 5.5L/full flush is the maximum WELS scheme registered water consumption for toilets. The maximum water consumption for dual flush toilets, which will likely be installed, is 4L/flush (6L full flush / 3L half flush). We have assumed an average of 4 flushes/person/day (13 per weekend and 3 per weekday, averaged over the week). Therefore, the total water demand for toilets would be 48L/ET/day. This equates to approximately 6.5% of the total household water demand.

Showers

The minimum NSW requirement, as per the Building Code Australia, for showerheads in new developments is a 3-star rating with a water consumption ranging between 4.5-9L/min. As per BASIX calculations, for an assumed shower duration of 8 minutes (one shower a day), with a maximum allowable showerhead flow rate of 9L/min, the total water consumption for showers would be 216L/ET/day. This equates to approximately 29.1% of the total household water demand.

Washing Machines

BASIX requires the following WELS scheme (star) ratings to be met for washing machines: a load capacity greater than 5kg requires a greater than 3-star rating and for capacities less than 5kg a rating greater than 2.5-star is required. The maximum consumption per load for a 2.5-star and a 3-star washing machine is 76 and 97L/load, respectively. We have assumed the larger machine would be installed in each new residence and also that a 'typical' 3-person household would do six (6) loads per week. Based on this, we estimate that, at 97L/load, the total household water consumption for washing machines would be 83L/ET/day. This equates to approximately 11.2% of the total household water demand. Approximately one-third of washing machine water usage is assumed to be hot water (28L/ET/day) with the remaining two-thirds being cold water (55L/ET/day).

Kitchen, Laundry, Bathroom Taps and Leaks

The minimum BASIX requirements for taps are 3-star outlet tap sets with a maximum water consumption of 9.5L/min and an average of 8.4L/min. Assuming a 'typical' resident uses the taps for approximately 4min/day at 8.4L/min, then the estimated water consumption for taps is approximately 101L/ET/day. This equates to approximately 13.5% of the total household water demand.

The water consumption of a dishwasher as a proportion of the total 'kitchen, laundry, bathroom taps and leaks' component was also determined. The minimum WELS scheme rating for dishwashers is 1.5-star, with a maximum water consumption of 18.6L/wash. We have assumed a typical 3-person household does at least one wash per day. Therefore, the total water consumption for dishwashers is 18.6L/ET/day. This equates to approximately 2.5% of the total household water demand. When combined with expected tap uses, this results in an estimated 16.2% total household water demand for 'kitchen, laundry, bathroom taps and leaks'.

The estimate of 16.2% for this particular household demand is validated by Sydney Water (2008) and Brisbane Water (QLD Department of Housing and Public Works, 2006) figures.

Pool, Car Washing and Hosing Down

An approximate demand of 4% was adopted for (non-garden) external uses such as pool, car washing and hosing down. This equates to approximately 30L/ET/day of the total household water demand. This was based on figures adopted by both Sydney Water (2008) and Brisbane Water (QLD Department of Housing and Public Works, 2006). (Note that we have not assumed any reuse of recycled water for this purpose at this stage).

Lawn and Garden Watering

As lawn and garden watering can include seasonal variability, it was the most difficult type of water demand to estimate. By adopting the aforementioned proportions, the remaining 33% of on-lot usage is assigned for lawn and garden watering, which equates to approximately 244L/ET/day. This value compares to an (approximate) average of other published values from Brisbane Water 42% (QLD Department of Housing and Public Works, 2006) and Sydney Water 24% (2008), respectively.

Household Wastewater Generation

For the purposes of this report, the expected wastewater generation from the design household (ET) with a reticulated water supply is 467L/ET/day, which is approximately 63% of the total potable water demand of 741L/ET/day. The breakdown of the wastewater generating components of household fixtures is shown in Figure 5. The values are based on the BASIX and WELS scheme requirements and applied in the relative proportions as discussed in the previous section. It should be noted that the external household uses, lawn and garden watering and pools, car washing, and hosing down, do not contribute to the wastewater load.

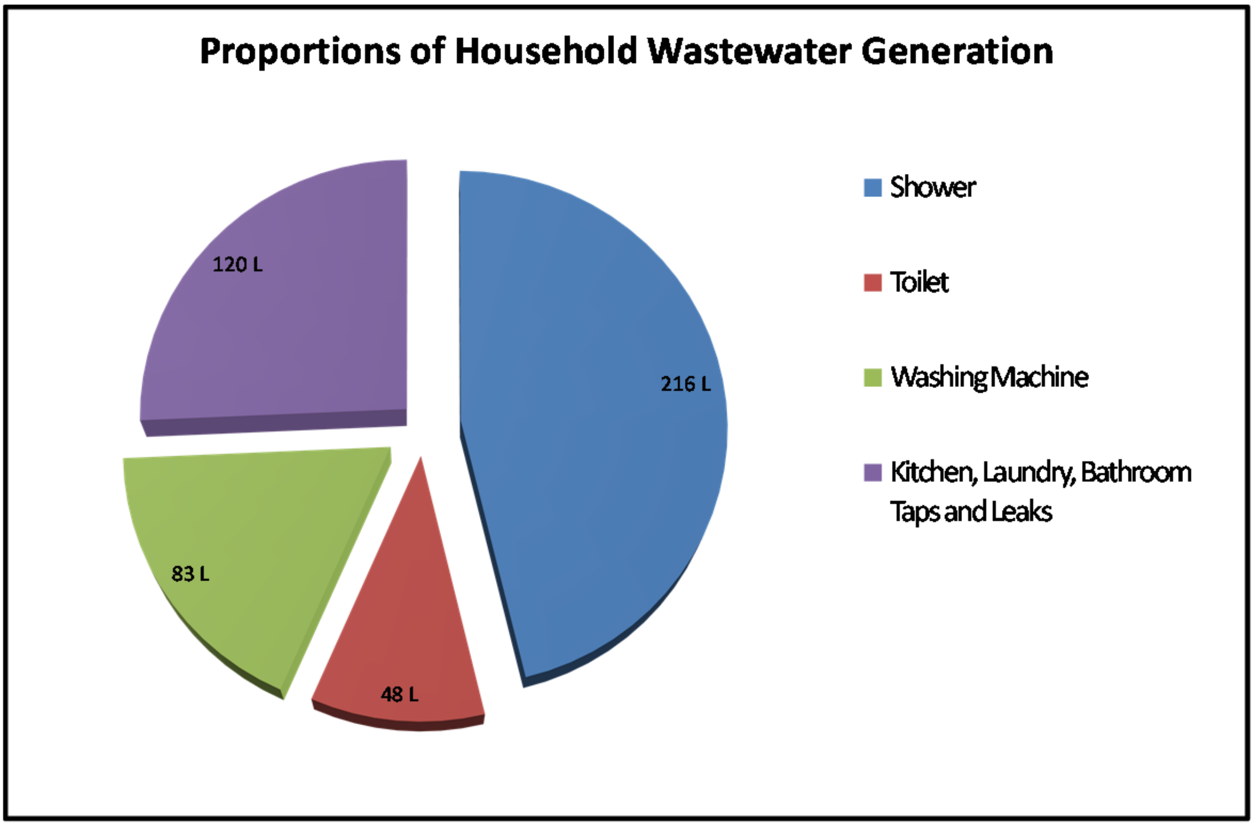

Figure 2 Proportional wastewater generation within a residential household

To determine the potential demand for recycled water returned to the dwellings in a dual-reticulation (third pipe) scenario, we investigated three different reuse scenarios representing annual seasonality (peak, shoulder and low). The 'shoulder' season (autumn and spring outdoor use) has been adopted as an appropriate figure for approximating year-round reuse rates. Table 1 below shows the breakdown of wastewater generation and recycled water reuse for proposed residential development. This includes the reuse of recycled water to replace potable water demand for the following uses: toilet (6.5%), lawn and garden watering (25% in shoulder seasons) and cold water washing machine only (7.5%).

The total reuse potential (indoor and outdoor) based on the shoulder ('average') scenario is 286L/ET/day with the remaining 181L/ET/day unused recycled water requiring irrigation within an undeveloped stage elsewhere in Box Hill North (and ultimately beyond the Box Hill North development as it is progressively built out).

Based on our assessment, each household has a potential to off-set approximately 40% of the total potable water demand through the use of an alternative water (recycled water) source, on an annual basis.

Therefore, the BASIX target of a 40% reduction in the total household water demand is achievable under the shoulder scenario. However, other methods, such as the installation of higher WELS scheme star rated fixtures, may need to be implemented in order to ensure that the BASIX target criteria is met for the entire year.

Table 1 Household (ET) Potable / Recycled Water Demand Scenarios

Water Use	Potable Water Use (L/ET/day)	Wastewater Generation (L/ET/day)	Shoulder[1] (Autumn/Spring) recycled Water Reuse Potential
Shower/Bath	**216**	**216**	**0**
Toilet	**48**	**48**	**48**
Lawn & Garden Watering[1]	**244**	**0**	**183**
Washing Machine[2]	**83**	**83**	**55**
Kitchen, Laundry, Bathroom Taps & Leaks	**120**	**120**	**0**
Pools, Car-washing and hosing down	**30**	**0**	**0**
TOTAL	**741**	**467**	**286**
Recycled Water Requiring Irrigation (L/ET/day)			**181**
Potable Water Demand After Reuse of Recycled Water (L/ET/day)			**455**

[1]75% of external uses (annual average, including 50% in winter and 100% in summer);

[2]Washing machine reuse is for cold water supply only; therefore reuse potential is estimated as 2/3 of total demand for washing machine.

4.5 Wastewater Loads from Box Hill North Water (Flow Systems)

As the owner/operator of similar Recycled Water Centres at a number of communities around New South Wales, Flow Systems (t/as Box Hill North Water) have experience in the determination of actual demands and wastewater generation rates once these systems are installed. Box Hill North Water provided water demand, including recycled water demand, and wastewater generation data based on their own calculations for comparative modelling. Box Hill North Water has advised that their values:

> *"recognise that BASIX 40 has driven and will continue to drive (over the course of the 20-year development roll-out) a change in behaviour and a change in water fittings and appliances available in the market. The 'average' installation therefore has a lower water demand in new developments"*

Ultimately, the balance of excess irrigation water predicted results from the difference between wastewater generated (which needs to be recycled) and the demand for recycled water. Wastewater generation rates are clearly influenced by the overall demand for water. A comparison between the rates derived by W&A and those derived by Box Hill North Water are presented in **Table 2**. We highlight that the figures from the right column of **Table 2** have been modelled to provide an alternative analysis, specifically at the request of Box Hill North Water.

Table 2 Comparison between W&A and Box Hill North Water Demand Figures

Quantity	W&A Figures (L/ET/day)	Box Hill North Water Figures (L/ET/day)
Total Water Demand	741	499
Recycled Water Demand	286	248
Wastewater Generated	467	302
Balance for Irrigation	181	54

5 Buffers

A risk based approach was followed and buffer zones from irrigation areas are recommended as they provide a form of mitigation against unidentified hazards and minimise risk to public health, maintain public amenity and protect sensitive environments. The AGWR (2006) guideline recommends restricted access and 25-30m (Table 3.5 & 3.8) buffer zones from the land application area to the nearest point of public access for spray irrigation of high-quality recycled water suitable for domestic non-drinking water use, as is the case with the proposed LWC/RWI schemes at the Site. The application of the recommended buffer zones will provide a minimum 1-log (equivalent) reduction in pathogen loads from the RWIZs. Recommendations to prevent off-lot discharge also include the use of low-throw sprinklers, part-circle (180º inward-throwing) sprinklers and/or tree or shrub screens.

W&A also recommends the following environmental buffers for surface spray irrigation based on NSW DEC (2004) guidelines;

- 250 metres from domestic groundwater bores;
- 50-100 metres from permanent watercourses; and
- 40 metres from intermittent watercourses and dams.

This recommendation is principally due to limitations identified in the site and soil assessment, including periodically waterlogged soils and potential inundation of low-lying areas following intense rainfall.

The land parcel containing the LWC and associated infrastructure, and the buffer zones, were excluded from the determination of the available RWIZs. Based on advice from RPS Australia, apart from the normal buffers outlined above, no additional limitations to irrigation areas (e.g. for endangered ecological communities, or associated offsets) were considered.

6 Recycled Water Management

6.1 Recommended Recycled Water Irrigation Zones

As discussed, all recycled water that is not used on residential lots via dual reticulation is to be irrigated at sustainable loading rates on undeveloped (future) stages of the proposed Box Hill North development. Due to the nature of the development, which is to proceed in stages over a number of years, the (preliminary) recycled water irrigation scheme has been developed in a manner compatible with the proposed development staging plan.

For modelling, each *stage* of development has been represented by the complete build out of a number of *development areas*. Each *development area* has been delineated as a potential discrete Recycled Water Irrigation Zone (RWIZ), (as shown on Figure 1). The characteristics of each *development area*, including the breakdown of proposed allotment types, total ET, and the total area (without consideration of buffers) are summarised in Table 43.

Each of the development areas includes land parcels earmarked for residential development. The number of lots and appropriate ET value for each development area were provided to us in a range of diverse formats, required some processing in GIS and spreadsheet software before they could be used.

Values for the number of Traditional/Courtyard and Villa Lots in *planned* development areas A, B and D were provided to us directly by PS Solutions at the request of Box Hill North Water. The ET for villas in these areas was set at the number of lots multiplied by 0.85 on the basis of the apparent multiplication factor used within remaining development areas.

For the remaining ("*unplanned*") development areas, data were provided to us as a CAD file where lots were agglomerated into "blocks" with an accompanying number of lots and ET value for each block provided in a spreadsheet. Following processing in GIS to determine the development area containing each "block", and then summarising in Microsoft Excel, the residential values for each unplanned area in Table 3 were completed.

For other types of land uses (such as the proposed primary school), the presence and size varies between stages. The ET associated with other uses was determined directly from annotations provided in the CAD file as follows:

- Sports Field (Development Area C): 2ET;
- School (Development Area C): 9ET;
- Retail/Commercial (Development Area E): 35ET; and
- Apartments (Development Area E): 200ET.

Table 3 Development Areas, Equivalent Tenement and Usable Area Analysis

Development Area[1]	Traditional/ Courtyard / Low Density / Environmental Living (No. Lots)	Villas and Rear Loaded (No. Lots)	Residential ET	Other ET (see text)	Total ET	Gross Area[2] (ha)
A	285	248	496	0	496	43
B	304	376	624	0	624	42
C	402	116	489	11	500	54
D	180	132	292	0	292	36
E	159	115	257	235	492	44
F	381	153	493	0	493	42
G	137	0	137	0	137	24
H	435	0	435	0	435	42
I	473	0	473	0	473	65

[1]Areas A, B and D are referred to as "planned" in CAD drawings provided to W&A; the remaining areas are referred to as "unplanned";

[2]Does not include the Effect of Buffers.

The proposed staging, including Total ET, excess recycled water load and remaining area for irrigation are outlined in Table 4. Note that the remaining area is affected in a non-uniform way by development areas as they are being built out due to the changing boundary of the developed area. A 50m buffer has been applied to the total developed area for each stage. This is based on an assumption that impact sprinklers will be used for irrigation and the potential of these sprinklers to aerosolise, following the recommendations of DEC (2004).

The remaining RWIZ of each stage was calculated using GIS. That area includes parts of the development which are considered unsuitable for recycled water irrigation due to physical constraints such as rock outcrops and setback buffers from intermittent drainage lines or stage boundaries. The recommended setback buffers were applied from water courses and drainage lines, and stage/development boundaries using GIS. The residual areas considered 'usable' for recycled water irrigation during each stage were then calculated using GIS and are also provided in Table 4. In determining useable areas, small snippets (<< 1ha in size) of land that were effectively orphaned from larger contiguous potential irrigation areas were not considered.

Figure 3: Development Stages

Box Hill North Masterplan Staging Assessment

Whitehead & Associates
Environmental Consultants

Revision	A
Drawn	DJW
Approved	DJW

Table 4 Excess Recycled Water Loads and Available RWIZ for Development Stages

Stage	Built out Development Areas	Total ET	Remaining RWIZ Area (ha)[1]	Excess Recycled Water Load (L/day)[2]	
				W&A	Box Hill North Water
1	A,H,C	1,431	181	259,011	77,274
2	Stage 1 + B	2,055	148	371,955	110,970
3	Stage 2 + D	2,347	122	424,807	126,738
4	Stage 3 + E	2,839	88	513,859	153,306
5	Stage 4 + F	3,332	56	603,092	179,928
6	Stage 5 + G	3,469	40	627,889	187,326
7	Stage 6 + I	3,942	0	713,502	212,868

[1]Includes Effect of Buffers

[2]Refer to Section 4 for a discussion on the source of per ET rates of Excess Recycled Water

6.2 Water and Nutrient Balance for Irrigation Area Sizing

The capacity of the RWIZs to manage the predicted hydraulic loads under seasonal variation has been assessed to determine the sustainability of the proposed recycled water irrigation scheme at the Site. Both water and nutrient balances have been undertaken to determine sustainable irrigation rates for the remaining RWIZ area in the subdivision and the ultimate irrigation capacity to determine the maximum development potential of the subdivision before an alternative end-use must be found for the recycled water. The key assumptions of the water and nutrient balance modelling are as follows:

- Average total recycled water reuse of ~40% for residential development demand (Section 4.4);
- Average Design Recycled Water Irrigation load (ET_{IRR}) of either 181L/ET/day (W&A loads) or 54L/ET/day (Box Hill North Water loads); and
- 'Worst-case' soil characteristics (including profile depth and chemistry) throughout the Site.

For preliminary design analysis, the water balance used is a 'lumped' monthly model adapted from the "Nominated Area Method" described in DLG (1998). These calculations determine minimum irrigation area requirements for given recycled water loads for each month of the year. The water balance can be expressed by the following equation:

Precipitation + Recycled Water Applied = Evapotranspiration + Percolation + Storage

Ideally, irrigation areas are calculated to achieve no net excess of water (recycled water and percolated rainfall) and hence zero need for wet weather storage for all months. A Design Irrigation Rate (DIR) of 2mm/day was adopted for the Site based on the most limiting site and soil characteristics as described in the associated LCA report.

Conservative nutrient balances (annual mass balance) were also undertaken to calculate the minimum area requirements to enable nutrients to be assimilated by the Site soils and vegetation. The nutrient balance used is based on the DLG (1998) methodology, but improves on this by more accurately accounting for natural nutrient cycles and processes. It acknowledges that a proportion of nitrogen will be retained in the soil through processes such as ammonification (the conversion of organic nitrogen to ammonia) and that a certain amount will be lost by denitrification, microbial digestion and volatilisation (Patterson, 2003). Patterson (2002) estimated that these processes may account for up to 40% loss of total nitrogen. We have adopted a more conservative estimate of 15% for the nitrogen losses due to soil processes. Tables 5and 6 below provide details of the inputs for the preliminary water and nutrient balances for the RWI systems.

Table 5 Data Inputs for Monthly Water Balance

Data Parameter	Units	Value	Comments
Design Recycled Water Irrigation load (ET_{IRR})	L/ET/day	181 (W&A) / 54 (Box Hill North Water)	Refer to Section 4 for source/derivations
Precipitation	mm/month	Mean rainfall	From BoM Monitoring Station (Glenorie #067010) precipitation data (111 years)
Pan Evaporation	mm/month	Mean pan evaporation	From BoM Monitoring Station ((Richmond RAAF #067033) evaporation data (24 years)
Retained Rainfall	unitless	0.8	Proportion of rainfall that falls on the RWIZs and infiltrates the soil (80%), allowing for up to 20% runoff from a well pastured gently sloping site
Crop Factor	unitless	0.7-0.8	Expected annual range based on good ground cover and exposure
Design Irrigation Rate (DIR)	mm/day	2	Category 6 soils from AS1547:2012, for most constrained conditions in proposed RWIZs

Table 6 Data Inputs for Annual Nutrient Balance

Data Parameter	Units	Value	Comments
Recycled Water total nitrogen (TN)	mg/L	15	Minimum target recycled water quality from tertiary treatment system
Nitrogen lost to soil processes (denitrification and volatilisation)	annual percentage	15	Minimum expected, per Patterson (2002). Very conservative
Recycled Water total phosphorus (TP)	mg/L	5 (expected 2–5)	Upper end of target range recycled water quality from tertiary treatment system
Soil phosphorus sorption capacity	mg/kg	140	Conservative 'worst-case' i.e. lowest P-sorb result (range 140-780mg/kg)
Nitrogen uptake rate by plants	kg/Ha/yr	250	Less than half that expected of irrigated pasture grass (DECCW, 2004 Table 4.2)
Phosphorus uptake rate by plants	kg/Ha/yr	25	Less than half that expected of irrigated pasture grass (DECCW, 2004 Table 4.2)

The model results show that the hydraulic load is limiting across the Site. The nitrogen and phosphorus balances require less area for sustainable assimilation, and therefore are not considered limiting.

Table 7 summarises the results of the monthly water balances for the unused recycled water to be irrigated, assuming the average value of 181L/ET/day.

Table 7 Results of Water Balance for Box Hill North

Stage	Irrigation Area Required (m^2)[1]		Available RWIZ area (m^2) once stage is developed
	W&A	Box Hill North Water	
1	360,500	107,524	1,814,185
2	517,563	154,411	1,483,828
3	591,104	176,352	1,223,991
4	715,017	213,320	882,235
5	839,182	250,364	557,755
6	873,686	260,658	404,041
7	992,814	296,199	0

Based on the results of the monthly water balance model, it is predicted that the maximum capacity of the Box Hill North development to sustain irrigation of unused recycled water would be reached:

- once stage 4 is built out, based on the wastewater loads calculated by W&A
- Once stage 6 is build out based on the wastewater loads provided by Box Hill North Water.

These analyses assume that stages are developed in the order in which they are listed in Table 7. However, the monthly water balance is a coarse, often conservative assessment, and more accurate, daily time step modelling which doesn't average out the monthly irrigation volumes, has been undertaken as described below.

A copy of the monthly water balance for the complete build out of the development is provided in Appendix A.

6.3 Daily Time Step Modelling

6.3.1 Overview of the DSM Model

The DSM is a GIS-based tool that was developed jointly by W&A and BMT WBM for the purpose of providing a rapid-assessment tool to predict the performance of on-site and decentralised wastewater management systems under varying environmental conditions. It has the ability to assess long-term environmental and human health performance of wastewater treatment and land application systems. Background information and general methodology of the DSM is provided in the DSM User Manual (BMT WBM, 2011).

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[1] Based on a 2mm/day loading rate; the hydraulic load is limiting, therefore the results for nutrient balances are not included.

The inputs to, and results of, the preliminary water and nutrient balances were used as to guide use of the DSM.

The DSM does not predict the minimum area required to achieve zero surface runoff or deep drainage, instead, like the nominated area approach of the monthly water balance, the model predicts the surface and subsurface discharges based on a set of nominated conditions such as receiving node sensitivity, soil, slope, weather, recycled water input and land application area. The model developed for this study simulates a 64 year time period and is designed to provide conservative estimates of the performance of the proposed recycled water irrigation scheme over that timeframe.

For this project, the model was used primarily to confirm the 'carrying capacity' of the Site and individual stages to sustainably accommodate unused recycled water, as well as the minimum irrigation area required following complete build out of the Site. These modelling scenarios take into consideration the available storage to be provided by the proposed recycled water storage tanks. The model has capacity to use a fluctuating application rate, depending on soil moisture (measured by in-ground sensors); however, we have maintained a nominal 2mm/day application rate due to the limiting soil chemical constraints, namely sodicity. The recycled water will contain sodium and other compounds which can be problematic for sodic soils at higher loading rates. Options for soil amelioration are discussed in the LCA report.

A summary of the model inputs is provided in Table 8.

6.3.2 Model Results

The DSM was run iteratively, using input values corresponding to the sequential development of each stage and the associated reduction in available RWIZs. There were two aims:

1. To determine at what stage irrigation becomes unsustainable;
2. To determine how much land, (assumed to have similar soil and landscape characteristics to that present on the site) would be needed to sustainably dispose of the recycled water at build out.

To address item 1, simulations began with Stage 4, the sustainability *tipping point* derived from monthly balance modelling using the W&A derived wastewater loads. In comparison, the Box Hill North Water' derived wastewater load simulation commenced at Stage 6. Sustainability was defined as the following:

1. Zero Surface Surcharge; and
2. Less than 5% increase in nutrient export above background values.

The background nutrient export values were derived following the methods of Fletcher et al. 2004. The estimated values for the entire development, were 468kg/yr of Phosphorus (before Development, falling to 342 kg/yr after development) and 2,452kg/yr of Nitrogen (before development falling to 2,110kg/yr after development). These values assumed around 50% imperviousness of the developed site.

<u>Nutrient Loading</u>

A summary of the nutrient export results of the DSM is provided in Table 9. The simulation was run for a period of 64 years (1950-2013). When compared to the background values, it is clear that all are several orders of magnitude lower than the background values, with the exception of phosphorus for Stage 6, when adopting the W&A wastewater loads. In this case, it is the relatively high rate of irrigation which acts to flush phosphorus from the soil profile, resulting in phosphorus entering the environment via the deep drainage pathway. Nevertheless, the results here (45.6kg/yr c.f. 342kg/yr) indicate that building out stage 6 without finding alternative areas for effluent irrigation (in addition to "Area I") would have an unacceptable impact on the environment. Conversely, the simulated export of nutrients when applying the Box Hill North Water wastewater loads results in minimal additional nutrient export.

Hydraulic Loading: Deep Drainage and Surface Surcharge

A summary of the deep drainage and surface surcharge results of the DSM is provided in Table 10. Again, the simulation was run for a period of 64 years (1950-2013).

Table 8 DSM Inputs

Input Parameter	Unit	Onsite Scenario
Unused Recycled Water for Irrigation	L/day	As per Table 5 (for modelled stage)
Recycled Water Total Nitrogen Concentration	mg/L	15
Design Irrigation Rate[3]	mm/day	2.0
Recycled Water Total Phosphorus Concentration	mg/L	5
Recycled Water Virus Concentration[1]	MPN/100ml	<10
Daily Rainfall (1889-2013)	mm	From SILO Data Drill, Box Hill North
Daily Pan Evaporation (1889-2013)	mm	From SILO Data Drill, Box Hill North
Average Air Temperature (in lieu of ground temperature) (1889-2013)	ºC	From SILO Data Drill, Box Hill North
Crop Factor[2]	unitless	1.0
Buffer From Waterways	m	≥40
Buffer From Boundaries of Existing Development and Overall Site Boundary	m	50
Slope	%	Digital Elevation Model
Required Recycled Water Irrigation Area	m^2	Various
Available Recycled Water Irrigation Area	m^2	Various
Soil Phosphorus Adsorption (P-sorb) Capacity	mg/kg	140
Soil Depth for P-sorb (assumed)	m	0.7
Crop Nitrogen Uptake	kg/ha/year	250
Crop Phosphorus Uptake	kg/ha/year	25
Total Recycled Water Storage Capacity	ML	5.0

Notes
[1] Most Probable Number.
[2] Daily effective evapotranspiration ET_0 values have been used from SILO data, meaning that the effect of crops is already considered. Crop Factors of 1.0 have been used.
[3] Target DIR. Will be exceeded if storage tank overflows, and is limited if tank empties.

Table 9 Average Annual Nutrient Export Results

Nutrient Concentration	Parameter	Background Loads (Fletcher et al., 2004)	Stage 4 (W&A Loads)	Stage 5 (W&A Loads)	Stage 6 (W&A Loads)	Stage 6 (Box Hill North Water Loads)
TP (kg/year)	**DSM Surface Surcharge + Deep Drainage Outputs**	468	0.03	0.24	45.6	0.000
TN (kg/year)	**DSM Surface Surcharge + Deep Drainage Outputs**	2452	0.000	0.003	0.068	0.000

Table 10 Average Annual Hydraulic Export Results

Parameter	Stage 4 (W&A Loads)	Stage 5 (W&A Loads)	Stage 6 (W&A Loads)	Stage 6 (Box Hill North Water Loads)
Annual Surface Surcharge (m^3)	0	0.003	0.16	0.00
Annual Deep Drainage (m^3)	59.6	121.8	223.4	52.40

Although we aim for a “zero surface surcharge” condition, interrogation of the results indicates that surcharge occurred during just one of the 64 years simulated during the Stage 5 build out scenario that used the W&A wastewater loads. Furthermore, the single year during which surcharge occurred results in a simulated total surcharge of $0.17m^3$ (170L).

In perspective this would be a surcharge of 17mm, for one day, over a single square metre of ground. Considering the high quality of effluent being used for irrigation, we believe this is acceptable. Conversely, surcharge occurs during eight years for the simulation where Stage 6 is complete, and the W&A loads are used, and the total volume is a couple of orders of magnitude larger than for the Stage 5 build out scenario. On this basis, we consider that hydraulic constraints at the site will mean that additional area for irrigation may need to be sought prior to the construction of Stage 6.

It is useful to provide further analysis of the Stage 6 build out scenario, examining the volume of excess recycled water that causes surcharge. Essentially, surcharge occurs when the amount of storage present in the soil pores is exceeded. For this analysis the soil storage equals difference in volume held when the soil profile is saturated (“Saturated Capacity”) and the volume held once the profile is allowed to drain under the influence of gravity (“field capacity”).

The model results indicate that, for the Stage 6 build out scenario, if Area “I” is the only irrigation area available, that the soil store is rarely full. Indeed, the results indicate that, for 50% of the time, the soil store is empty (i.e. moisture is at or below field capacity). Furthermore, for only 10% of the time, is the soil store more than around 2.6% full. The proportion that the soil store is full for the remaining 10% of the time is charted in Figure 4.

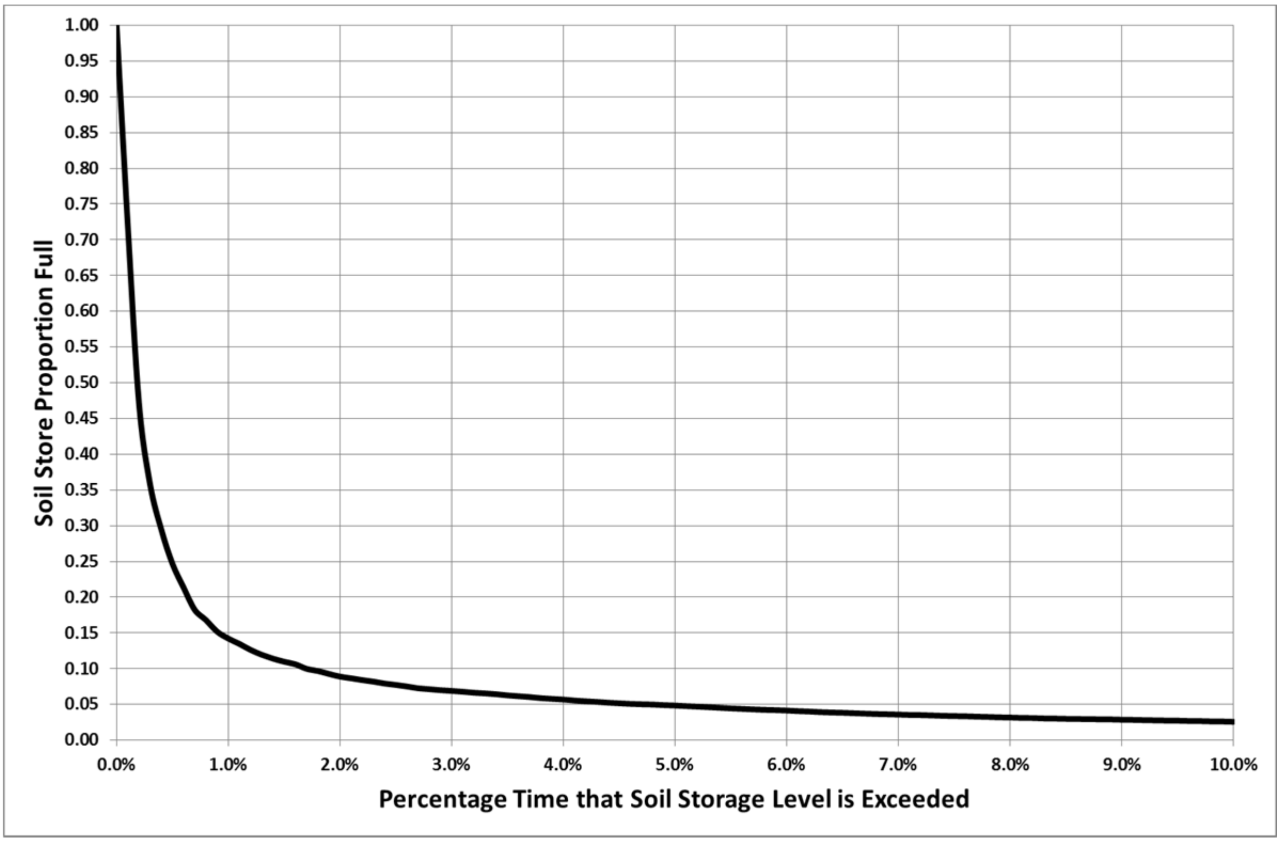

Figure 4 Proportional Fullness of Soil Store vs. Percentage of Time Exceeded (Stage 6 build out, using W&A wastewater loads)

Figure 4, indicates that, over the 64 year period modelled the soil store is more than 50% full for less than 0.25% of the time.

Analysis of the excess water associated with surcharge events is also instructive. The model indicates that surcharge would have occurred on 10 days throughout the 64 year period (less than 0.05% of days) or less than once every 6 years. The predicted surcharge volumes over the entire irrigation area (40 hectares at the build out of Stage 6 for those 10 years) are listed in Table 11.

That table shows a maximum surcharge volume of less than $2m^3$ (2kL, or 0.002ML). This volume is very small when considering the amount of area over which it is to be applied, and the daily load of generated recycled water. Through management of the irrigation by monitoring soil moisture to control irrigation, these types of surcharge events could be avoided.

Table 11 Modelled Surcharge Events – Stage 6 build out with Irrigation of Area "I" only. W&A wastewater loads

Modelled Surcharge Date	Surcharge Volume (m^3)
30/08/63	0.30
14/08/52	0.52
02/04/89	0.98
14/05/62	1.08
30/04/88	1.22
08/05/63	1.24
28/04/63	1.28
08/08/98	1.29
05/06/74	1.61
12/06/64	1.84

Alternatively, if applying the Box Hill North Water' derived wastewater loads, the model results indicate that the increase above background is minimal, and development could proceed to the completion of Stage 6 before an alternative use is sought for excess recycled water.

Irrigation Area Requirements for full build out assuming W&A wastewater loads

For the build out of the entire estate, we have estimated the amount of irrigation area (assuming similar soils to those within the site being developed) based on the almost perfect balance between irrigation area and water requiring land application for the Stage 5 build out scenario, when applying the W&A derived wastewater loads. For Stage 5, an irrigation load of 603,092L is managed sustainably on an irrigation area of 557,755m^2. Proportionally, the Stage 7 build out irrigation load of 713,502 would correspond to an irrigation area of 659,865m^2, or around 66 hectares. 66 hectares was subsequently simulated with the Stage 7 irrigation load as a test. As expected, the model results showed minimal surcharge during one year, as for the Stage 5 build out scenarios, and it is estimated that around 66 hectares of land, in an area with similar soil characteristics to Box Hill North would be required to dispose of the excess irrigation water from the fully built development. However, given that the surcharge events resulting from build out of Stage 6 are relatively small, it appears likely that a excess recycled water could be managed on a significantly lower area (~45 ha), if additional management strategies (e.g. monitoring of soil moisture to prevent surcharge with additional backup storage) are implemented within the final irrigation area.

Irrigation Area Requirements for full build out assuming Box Hill North Water wastewater loads

Using the alternative figures of Box Hill North Water, the model was run iteratively assuming that around 213kL/day would require land application (refer Table 4). To achieve zero surface discharge, an offsite irrigation area of around 20ha would be required; assuming an area with similar soil characteristics to Box Hill North is found. It is possible that a site with more favourable soil conditions could be identified; however constraints relating to water course buffers and the like would need to be assessed at the chosen site to confirm sustainability.

Summary

For this site, the monthly water and nutrient balance method provided a conservative estimate of when additional area, beyond the development bounds, would need to be sought to sustainably manage recycled irrigation water. The monthly balances indicated that the site was hydraulically limited and that additional area would need to be sought before construction of Stage 5. In comparison, the daily balance modelling, which included the effects of 5ML recycled water storage volume, indicated that this could be delayed until before the construction of Stage 6. Again, the daily balance model indicated that the site was hydraulically limited. Alternatively, if the demand and wastewater generation figures provided by Box Hill North Water prove to be more accurate, then the search for alternative uses/sites for excess recycled water needn't occur until before the construction of Stage 7. Area "I", which is earmarked as the last area to be built out, has nearly twice the area required to sustainably manage the excess recycled water in this case.

In all cases of our analysis, including the original monthly water balance calculations, we note that the capacity to assimilate the water for irrigation is controlled by the volume of water and the rates at which water can infiltrate the surface and/or drain further into the soil profile (below the root zone), without significantly impacting shallow groundwater. Accordingly, while we have selected conservative values for the nutrient analysis (e.g. P-sorption values), the capacity of irrigation areas at this site to assimilate nutrients is far less constrained than the capacity to assimilate water. When selecting a future area for the land application of excess water, possibly not required until construction of the final stage for the entire development, we recommend a thorough investigation of that area, including constant head permeameter testing, to confirm the hydraulic conductivity of the soils.

6.4 Pathogen Transport Modelling

6.4.1 Overview

We have modelled the fate of viral pathogens in the environment to assess the performance of the proposed recycled water irrigation systems at the Site and to assess potential impact (if any) on receiving waters. The modelling is based on the viral die-off method developed by Beavers and Gardner (1993) and refined by Cromer et al. (2001). Details of the methodology can be found in Cromer et al. (2001).

The model generally applies to recycled water moving in saturated soils, i.e. in shallow groundwater beneath a land application area. These conditions are considered most conducive to pathogen transport. In unsaturated (vadose zone) soils the travel distance will be substantially less. As such, the method is very conservative when applied to areas with well drained soils and deep groundwater tables, such as the Site. Surface transport in rainfall/stormwater runoff is another obvious transport pathway for pathogens; however, irrigation of recycled water will cease during rainfall and while the soil is saturated.

6.4.2 Assumptions and Inputs

Some key assumptions used in the modelling are provided below:

- Bacteria have lesser die-off times than viruses and can therefore be assumed to be eliminated within a shorter distance than viruses (Cromer *et al*., 2001);
- Viral reduction has been set at one order of magnitude, due to the high quality of the recycled water with disinfection (resulting in very low pathogen levels prior to reuse and irrigation);
- The average groundwater temperature is conservatively estimated as 11°C, based on the average minimum air temperature recorded at the nearby BOM station at Glenorie (#067010). Cooler temperatures allow viruses to reside longer in the soil, hence provide potentially greater travel distances. Groundwater temperatures are significantly less variable than air temperatures and are rarely less than 13°C in temperate areas, therefore the adoption of this figure is considered to be conservative;
- We have used the expected hydraulic conductivity (K_{sat}) of the dominant upper soil horizon materials, sandy and silty clay loams (depths ranging from ~200mm), based on Table 5.2 of AS/NZS 1547:2012,; and
- Depth to groundwater is conservatively assumed to be 0.5m, as mottling was present at depths of at least 500mm (generally at deeper depths or not encountered at all), indicating seasonally perched watertables or saturated soil conditions at some of the lower locations in the landscape.

The assumptions used in the pathogen transport modelling and predicted maximum viral transport distances are provided in Table 12. Appendix B provides full results of the pathogen transport modelling.

Table 12 Assumptions and Results of Pathogen Transport Modelling

Model Input Parameter	Value
Groundwater temperature (^{o}C)	11
Porosity of soil (decimal)	0.61 (40%)
Saturated Hydraulic Conductivity (K_{sat}) (m/day)	1.5
Groundwater gradient (%)	0.1
Depth to groundwater (m)	0.5
Horizontal distance travelled in groundwater to achieve a log 1 reduction in viral numbers (m)	4.9

* based on highest rate for soil category 5, from *AS/NZS 1547:2012*.

6.4.3 Interpretation of Results

The pathogen transport and die-off modelling demonstrates that log 1 reduction of pathogens is expected to occur within 5m horizontal distance, under saturated (worst-case) soil conditions. We note that shallow groundwater (i.e. saturated soil) was not encountered within 1m of the ground surface anywhere on the Site during our investigations (although mottling indicates that this occurs at some locations on a seasonal basis).

At Box Hill North, the proposed recycled water plant will produce high quality and disinfected recycled water with greater than 6.5 log removal of viruses, 5.5 log removal of protozoa and complete bacterial elimination, thus providing an even higher level of security. Ziebell et al. in USEPA (2002) describe the widely acknowledged principle that by lowering hydraulic loading rates and ensuring unsaturated flows through the soil, better in-soil removal of bacteria and other pathogens can be achieved.

7 Conclusions and Recommendations

This report provides the results and recommendations of our preliminary investigations, including constraints relating to recycled water management at different stages of the Box Hill North development.

Having undertaken a Land Capability Assessment (previous report) and Staging Assessment of the Site at Box Hill North, W&A consider that on-site surface irrigation is generally appropriate on identified land throughout the Site. The site and soil investigation in the LCA report shows that the Site is diverse in terms of its physical characteristics such as topography, soil depth and characteristics, drainage and the presence of intermittent watercourses; all of which influence the design and proposed location of the RWIZs for surface irrigation of recycled water. However, all required buffers are achievable with these constraints.

This report provides assessment of the recycled water volumes from various stages of the development and the associated ability to manage recycled water within the development's boundaries at different stages of development. Our daily balance modelling predicts that on-site surface irrigation should be achievable up to, and including, the completion of Stage 5 if internal and external reuse of recycled water is provided to each new property (via dual-reticulation). This is based on the assumption that no conservation areas which would preclude the use of recycled water for irrigation will be present outside of the normal buffers applied to features such as watercourses. A plan for the sustainable and permanent usage of recycled water generated by Stages 6-7 would need to be finalised prior to the commencement of construction on Stage 6 of the development. Within this plan, we recommend that soil moisture monitoring to control irrigation be considered. It is highly likely that, if this strategy is adopted, the need to source additional area (or alternative uses) for recycled water could be delayed until after Stage 6 has been developed, as only 10 modelled surcharge events resulted from modelling a 64 year simulation period and all of these surcharge events involved surface surcharge volumes that were very small (< $2m^3$). When considered over an area of some 40 hectares (i.e. "Area I"), these surcharges are insignificant.

Alternatively, using demand figures provided by Box Hill North Water, we found that the need to develop this plan could certainly be postponed until commencement of construction on Stage 7 (the final stage) of the development, if the Box Hill North Water values are found to be more realistic.

Pathogen die-off modelling undertaken as part of the analysis indicated that viral numbers would decrease by a factor of 10 within 5m of the boundaries of the irrigation areas. This compares favourably to the buffer of 50m which has been adopted between irrigation areas and any areas of existing development (including the boundary of the entire developable site).

In all cases of our analysis, including the original monthly water balance calculations, we note that the capacity to assimilate the water for irrigation is controlled by the volume of water and the rates at which water can infiltrate the surface and/or drain further into the soil profile (below the root zone). Accordingly, while we have selected conservative values for the nutrient analysis (e.g. P-sorption values), the capacity of irrigation at this site to assimilate nutrients is far less constrained than the capacity for assimilate water. When selecting a further area for the land application of excess water, at build out stage for the development, we recommend a thorough investigation of that area, including constant head permeameter testing, to confirm the hydraulic conductivity of the soils.

Throughout the present assessment, W&A have adopted conservative values, informed by our own judgment and standard practice which is conservative by nature. The methodology adopted aims to minimise any risk associated with human contact of recycled water or effects on the environment. Accordingly, the result will err on the conservative side. As experience with the site progresses, and monitoring data gathered, the constraints on the rate of recycled water irrigation per unit area could be relaxed if warranted. One key area where this could be improved is by properly assessing the rate of deep drainage, which ultimately controls the flow of water through the base of the soil profile, when saturated. For our purposes, we have adopted a very low hydraulic conductivity values in this layer (~60mm/day, corresponding to a poorly structured medium to heavy clay). While this errs on the side of conservatism, constant head permeameter testing may provide the data necessary to confidently relax this value. Unfortunately, such testing can take a significant amount of time, particularly when testing slowly draining soils.

In addition to testing areas for future irrigation, the total amount of land that may need to be acquired could be limited by planting and maintaining a vegetation screen. Such a screen would reduce the distance buffer required between an irrigation area and any existing development. Furthermore, selecting land that is sufficiently distant from any watercourses (either permanent or ephemeral) will also minimise the amount of additional land requiring acquisition.

Alternatively, a different customer for the excess recycled water may be found at build out stage, or the excess recycled water could be discharged to sewer or the environment in compliance with the environmental protection legislation in force at that time.

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Appendix A

Monthly Water & Nutrient Balance Modelling

Nominated Area Water Balance & Storage Calculations - W&A Wastewater Loads

Site Address: Box Hill North: Stage 4

INPUT DATA

Design Wastewater Flow	Q	513,859	L/day	
Design Irrigation Rate	DIPR	14	mm/week	
Daily DIR		2.0	mm/day	Litres per sq.m. per day - based on Table M1 AS/NZS 1547:2012 for secondary effluent
Nominated Land Application Area	L	882,235	m sq	
Crop Factor	C	0.7-0.8	unitless	Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type
Runoff Coefficient		0.8	untiless	Proportion of rainfall that remains onsite and infiltrates; function of slope/cover, allowing for any runoff
Rainfall Data	Glenorie (067010)			Mean Monthly Data (1902 - 2013
Evaporation Data	Richmond RAAF (067033)			Mean Monthly Data (1970 - 1994)

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	**365**
Rainfall	R	\	mm/month	99	113.2	105	81.4	78.2	95.3	52	60.8	51.5	70.8	80	75.4	**962.6**
Evaporation	E	\	mm/month	195.3	151.2	136.4	99	65.1	54	65.1	96.1	129	167.4	177	217	**1,552.6**
Daily Evaporation				6.3	5.4	4.4	3.3	2.1	1.8	2.1	3.1	4.3	5.4	5.9	7	
Crop Factor	C			0.80	0.80	0.70	0.70	0.70	0.70	0.70	0.70	0.80	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	156	121	95	69	46	38	46	67	103	134	142	174	**1,190.5**
Percolation	B	(DPR/7)xD	mm/month	62.0	56	62.0	60.0	62.0	60.0	62.0	62.0	60.0	62.0	60.0	62.0	**730.0**
Outputs		ET+B	mm/month	218.2	176.96	157.5	129.3	107.6	97.8	107.6	129.3	163.2	195.9	201.6	235.6	**1,920.5**
INPUTS																
Retained Rainfall	RR	R*runoff coef	mm/month	79.2	90.56	84	65.12	62.56	76.24	41.6	48.64	41.2	56.64	64	60.32	**770.1**
Effluent Irrigation	W	(QxD)/L	mm/month	18.1	16.3	18.1	17.5	18.1	17.5	18.1	18.1	17.5	18.1	17.5	18.1	**212.6**
Inputs		RR+W	mm/month	97.3	106.9	102.1	82.6	80.6	93.7	59.7	66.7	58.7	74.7	81.5	78.4	**982.7**
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-121.0	-70.1	-55.4	-46.7	-27.0	-4.1	-47.9	-62.6	-104.5	-121.2	-120.1	-157.2	**-313.8**
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Maximum Storage for Nominated Area	N		mm	**0.00**												
	V	NxL	L	**0**												
LAND AREA REQUIRED FOR ZERO STORAGE			m^2	114569	166528	216789	240196	353913	715017	241468	197565	126359	114371	112033	90881	

MINIMUM AREA REQUIRED FOR ZERO STORAGE: **715,017** m^2

Nutrient Balance - W&A Wastewater Loads

Site Address: Box Hill North: Stage 4

Please read the attached notes before using this spreadsheet.

SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON THE MOST LIMITING BALANCE = **236,220 m^2**

INPUT DATA [1]

Wastewater Loading			Nutrient Crop Uptake					
Hydraulic Load	513,859	L/Day	Crop N Uptake	250	kg/ha/yr	which equals	68	mg/m²/day
Effluent N Concentration	15	mg/L	Crop P Uptake	25	kg/ha/yr	which equals	7	mg/m²/day
% Lost to Soil Processes (Geary & Gardner 1996)	0.15	Decimal	**Phosphorus Sorption**					
Total N Loss to Soil	1,156,183	mg/day	P-sorption result	140	mg/kg	which equals	1,470	kg/ha
Remaining N Load after soil loss	6,551,702	mg/day	Bulk Density	1.5	g/cm3		or	
Effluent P Concentration	5	mg/L	Depth of Soil	0.7	m		1,470	kg/ha
Design Life of System	50	yrs	% of Predicted P-sorp. [2]	0.5	Decimal		140	mg/kg

METHOD 1: NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer

Nitrogen	95,655	m^2
Phosphorus	236,220	m^2

Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)

Nominated LAA Size	252	m^2
Predicted N Export from LAA	2385.07	kg/year
Predicted P Export from LAA	936.79	kg/year
Phosphorus Longevity for LAA	0	Years
Minimum Buffer Required for excess nutrient	235968	m^2

PHOSPHORUS BALANCE
STEP 1: Using the nominated LAA Size

Nominated LAA Size	**252**	m^2
Daily P Load	2.569295	kg/day
Daily Uptake	0.001726027	kg/day
Measured p-sorption capacity	0.147	kg/m^2
Assumed p-sorption capacity	0.074	kg/m^2
Site P-sorption capacity	18.52	kg
P-load to be sorbed	937.16	kg/year

→ Phosphorus generated over life of system	46889.6338	kg
→ Phosphorus vegetative uptake for life of system	0.125	kg/m^2
→ Phosphorus adsorbed in 50 years	0.074	kg/m^2
→ Desired Annual P Application Rate	1.000	kg/year
which equals	0.00274	kg/day

NOTES

[1]. Model sensitivity to input parameters will affect the accuracy of the result obtained. Where possible site specific data should be used. Otherwise data should be obtained from a reliable source such as,

- *Environment and Health Protection Guidelines: Onsite Sewage Management for Single Households*
- *Appropriate Peer Reviewed Papers*
- *EPA Guidelines for Effluent Irrigation*
- *USEPA Onsite Systems Manual.*

[2]. Conservative estimate based on work by Geary & Gardner (1996) and Patterson (2002).

[3]. A multiplier, normally between 0.25 and 0.75, is used to estimate actual P-sorption under field conditions which is assumed to be less than laboratory estimates.

Nominated Area Water Balance & Storage Calculations - BHN Water Loads

Site Address: Box Hill North: Stage 7

INPUT DATA

Design Wastewater Flow	Q	212,868	L/day	
Design Irrigation Rate	DIPR	14	mm/week	
Daily DIR		2.0	mm/day	Litres per sq.m. per day - based on Table M1 AS/NZS 1547:2012 for secondary effluent
Nominated Land Application Area	L	296,199	m sq	
Crop Factor	C	0.7-0.8	unitless	Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type
Runoff Coefficient		0.8	untiless	Proportion of rainfall that remains onsite and infiltrates; function of slope/cover, allowing for any runoff
Rainfall Data		Glenorie (067010)		Mean Monthly Data (1902 - 2013)
Evaporation Data		Richmond RAAF (067033)		Mean Monthly Data (1970 - 1994)

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	**365**
Rainfall	R	\	mm/month	99	113.2	105	81.4	78.2	95.3	52	60.8	51.5	70.8	80	75.4	**962.6**
Evaporation	E	\	mm/month	195.3	151.2	136.4	99	65.1	54	65.1	96.1	129	167.4	177	217	**1,552.6**
Daily Evaporation				6.3	5.4	4.4	3.3	2.1	1.8	2.1	3.1	4.3	5.4	5.9	7	
Crop Factor	C			0.80	0.80	0.70	0.70	0.70	0.70	0.70	0.70	0.80	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	156	121	95	69	46	38	46	67	103	134	142	174	**1,190.5**
Percolation	B	(DPR/7)xD	mm/month	62.0	56	62.0	60.0	62.0	60.0	62.0	62.0	60.0	62.0	60.0	62.0	**730.0**
Outputs		ET+B	mm/month	218.2	176.96	157.5	129.3	107.6	97.8	107.6	129.3	163.2	195.9	201.6	235.6	**1,920.5**
INPUTS																
Retained Rainfall	RR	R*runoff coef	mm/month	79.2	90.56	84	65.12	62.56	76.24	41.6	48.64	41.2	56.64	64	60.32	**770.1**
Effluent Irrigation	W	(QxD)/L	mm/month	22.3	20.1	22.3	21.6	22.3	21.6	22.3	22.3	21.6	22.3	21.6	22.3	**262.3**
Inputs		RR+W	mm/month	101.5	110.7	106.3	86.7	84.8	97.8	63.9	70.9	62.8	78.9	85.6	82.6	**1,032.4**
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-116.8	-66.3	-51.2	-42.6	-22.7	0.0	-43.7	-58.4	-100.4	-117.0	-116.0	-153.0	**-284.9**
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Maximum Storage for Nominated Area	N		mm	**0.00**												
	V	NxL	L	**0**												
LAND AREA REQUIRED FOR ZERO STORAGE			m^2	47461	68985	89805	99502	146610	296199	100029	81842	52345	47379	46410	37648	

MINIMUM AREA REQUIRED FOR ZERO STORAGE: **296,199** m^2

Nutrient Balance - BHN Water Loads

Site Address: Box Hill North: Stage 7

Please read the attached notes before using this spreadsheet.

SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON THE MOST LIMITING BALANCE = **97,855 m^2**

INPUT DATA [1]

Wastewater Loading			Nutrient Crop Uptake					
Hydraulic Load	212,868	L/Day	Crop N Uptake	250	kg/ha/yr	which equals	68	$mg/m^2/day$
Effluent N Concentration	15	mg/L	Crop P Uptake	25	kg/ha/yr	which equals	7	$mg/m^2/day$
% Lost to Soil Processes (Geary & Gardner 1996)	0.15	Decimal	**Phosphorus Sorption**					
Total N Loss to Soil	478,953	mg/day	P-sorption result	140	mg/kg	which equals	1,470	kg/ha
Remaining N Load after soil loss	2,714,067	mg/day	Bulk Density	1.5	g/cm3		or	
Effluent P Concentration	5	mg/L	Depth of Soil	0.7	m		1,470	kg/ha
Design Life of System	50	yrs	% of Predicted P-sorp. [2]	0.5	Decimal		140	mg/kg

METHOD 1: NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer

Nitrogen	39,625	m^2
Phosphorus	97,855	m^2

Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)

Nominated LAA Size	252	m^2
Predicted N Export from LAA	984.33	kg/year
Predicted P Export from LAA	387.48	kg/year
Phosphorus Longevity for LAA	0	Years
Minimum Buffer Required for excess nutrient	97603	m^2

PHOSPHORUS BALANCE
STEP 1: Using the nominated LAA Size

Nominated LAA Size	**252**	m^2			
Daily P Load	1.06434	kg/day	→ Phosphorus generated over life of system	19424.205	kg
Daily Uptake	0.001726027	kg/day	→ Phosphorus vegetative uptake for life of system	0.125	kg/m^2
Measured p-sorption capacity	0.147	kg/m^2			
Assumed p-sorption capacity	0.074	kg/m^2	→ Phosphorus adsorbed in 50 years	0.074	kg/m^2
Site P-sorption capacity	18.52	kg	→ Desired Annual P Application Rate	1.000	kg/year
			which equals	0.00274	kg/day
P-load to be sorbed	387.85	kg/year			

NOTES

[1]. Model sensitivity to input parameters will affect the accuracy of the result obtained. Where possible site specific data should be used. Otherwise data should be obtained from a reliable source such as,

- *Environment and Health Protection Guidelines: Onsite Sewage Management for Single Households*
- *Appropriate Peer Reviewed Papers*
- *EPA Guidelines for Effluent Irrigation*
- *USEPA Onsite Systems Manual.*

[2]. Conservative estimate based on work by Geary & Gardner (1996) and Patterson (2002).

[3]. A multiplier, normally between 0.25 and 0.75, is used to estimate actual P-sorption under field conditions which is assumed to be less than laboratory estimates.

Appendix B

Viral Die-Off Modelling

Beavers, Cromer, Gardner Viral Dieoff Model (refer Cromer *et al.*, 2001)

Site: Box Hill North.

Step 1	Use Figure 1 in Cromer *et al.* (2001) (reproduced below) to determine days travel time using groundwater temperature* and a selected order of magnitude reduction.
	* If mean groundwater temperature is unavailable, mean daily air temperature can be used in most cases.

Groundwater Temperature (^{o}C)	11	
Order of magnitude reduction	1	
Days required for viral reduction	**20**	(from Figure 1, below)

Step 2	Calculate the predicted travel distance using Equation 4 from Cromer *et al.* (2001). Dg = (t-d_v.P/K)/(P/K.I)

Time in days	t =	20	days	See notes below for description of values
Effective porosity of soil (fraction)	P =	0.61		
Saturated hydraulic conductivity	K =	1.5	m/day	
Groundwater gradient (fraction)	I =	0.1		
Vertical drainage before entering groundwater	d_v =	0.5	m	

Setback Distance	**Distance travelled in groundwater**	**d_g =**	**4.9**	**m**

Notes:

Porosity (P):	Porosity of 0.61 adopted as maximum for a loam
Ksat (K):	Maximum for clay loam insitu surface layer soils
Groundwater gradient (I):	Assume groundwater gradient of 10% (Maximum across site).
Vertical drainage (d_v):	Assume 0.5m of unsaturated flow before reaching groundwater (based on minimum depth to mottling observed in test pits)

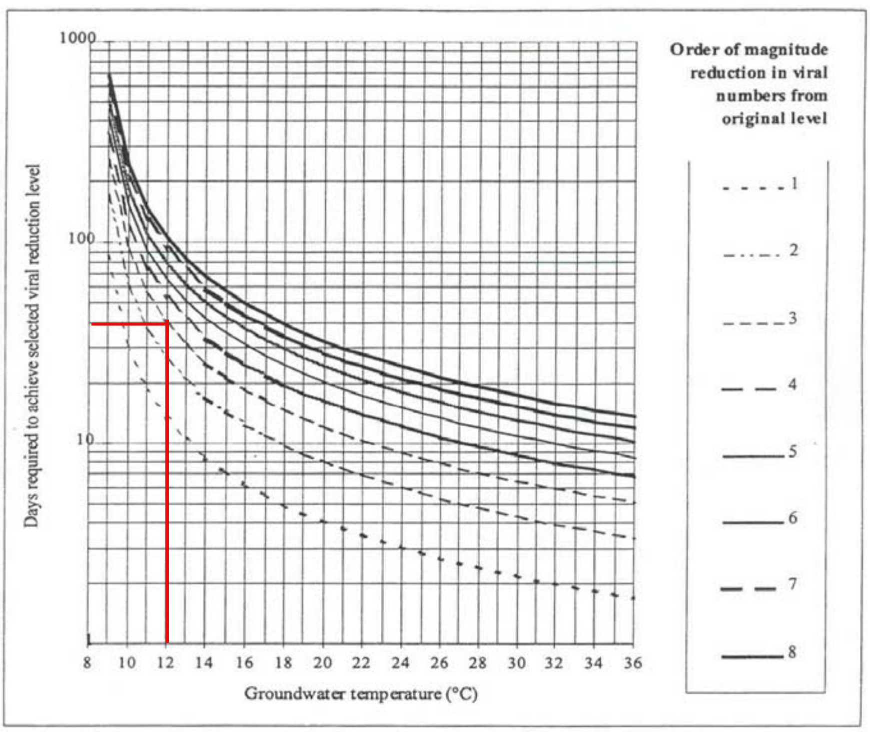

Figure 1. Relationship between Groundwater Temperature and Viral Die-Off Time for Various Order-of-Magnitude Reductions in Viral Numbers

(Figure 1 taken from Cromer et al., 2001)

Appendix 7

Species Impact Statement

(Appendix available on request)

Appendix 8

Vegetation Management Plan

BOX HILL NORTH MASTERPLAN

Vegetation Management Plan

For:

OCULUS

May 2015

Final

CUMBERLAND ECOLOGY

PO Box 2474

Carlingford Court 2118

CUMBERLAND ECOLOGY

Report No. 15029RP1

The preparation of this report has been in accordance with the brief provided by the Client and has relied upon the data and results collected at or under the times and conditions specified in the report. All findings, conclusions or recommendations contained within the report are based only on the aforementioned circumstances. The report has been prepared for use by the Client and no responsibility for its use by other parties is accepted by Cumberland Ecology.

Version	Date Issued	Amended by	Details
1	22/4/15	DR	
2	28/4/15	DR	
3			

Approved by: David Robertson

Position: Director

Signed: David Robertson

Date: *8 May, 2015*

CUMBERLAND ECOLOGY

Table of Contents

1 INTRODUCTION

1.1 Purpose 1.1

1.2 Background 1.2

1.2.1 Location 1.2

1.2.2 Description 1.3

1.2.3 Vegetation 1.3

1.2.4 Zoning 1.3

1.3 Proposed Development 1.6

1.3.1 Vegetation 1.7

1.3.2 Fire Protection Zones 1.7

1.3.3 Development Stages 1.8

1.3.4 Vegetation to be Removed 1.8

1.4 Relevant Legislation 1.8

1.5 State and Local Government Planning Instruments 1.8

2 METHODS

2.1 Literature Review 2.1

2.2 Flora Survey Effort 2.1

3 EXISTING BIODIVERSITY VALUES

3.1.1 Vegetation Communities of the Study Area 3.1

3.1.2 Threatened Flora Species 3.10

4 VEGETATION CLEARING PROTOCOLS

4.1 Introduction 4.1

4.2 Marking Limits of Vegetation Clearing 4.1

4.3 Fencing of Native Vegetation to be Retained 4.1

4.4 Pre-clearing Surveys 4.1

4.4.1 Flora Pre-clearing Surveys 4.2

4.4.2 Fauna Pre-clearing Surveys 4.2

4.5 Fauna Relocation and Clearing Protocols 4.3

Table of Contents *(Cont'd)*

	4.5.1	All Fauna	4.3
	4.5.2	Dam Dewatering Protocol	4.4
	4.5.3	Cumberland Plain Land Snail	4.5
4.6		Weed Management during Construction	4.6
4.7		Salvage of Hollow-Bearing Trees, Hollow-bearing Logs, and other Woody Material	4.6
	4.7.1	Tree Hollows	4.6
	4.7.2	Log Hollows	4.7
	4.7.3	Other Woody Material	4.7
4.8		Seed Collection / Harvest	4.7
5		**VEGETATION MANAGEMENT ZONES**	
5.1		Introduction	5.1
5.2		Management Zones and Specific Objectives	5.2
	5.2.1	Zone 1 - Existing Cumberland Plain Woodland	5.2
	5.2.2	Zone 2 - Cumberland Plain Woodland Revegetation on Existing Landform	5.2
	5.2.3	Zone 3 – Cumberland Plain Woodland – Reconstruction After Major Earthworks	5.3
	5.2.4	Zone 4 – Cumberland Plain Woodland – Revegetation under Power line Easement	5.4
	5.2.5	Zone 5 – Existing Shale Sandstone Transition Forest	5.4
	5.2.6	Zone 6 – Shale Sandstone Transition Forest Revegetation on Existing Landform	5.5
	5.2.7	Zone 7 - Shale Sandstone Transition Forest – Reconstruction After Major Earthworks	5.6
6		**WEED MANAGEMENT PLAN**	
6.1		Introduction	6.1
	6.1.1	Definition of Terms Used in this Chapter	6.1
	6.1.2	Species Lists	6.1
	6.1.3	Relevant Legislation	6.2

Table of Contents *(Cont'd)*

	6.1.4	Best Management Practice	6.3
	6.1.5	Weed Control Methods	6.3
	6.1.6	Types of Weed Control	6.4
6.2		Weed Management in the Study Area	6.5
	6.2.1	Site Preparation for Bushland Reconstruction Areas	6.5
	6.2.2	Initial Weed Treatment of Regeneration Areas	6.7
	6.2.3	Ongoing Weed Maintenance in Reconstruction and Regeneration Areas	6.8
6.3		Weed Control Methods	6.9

7 RECONSTRUCTION AND REGENERATION PLAN

7.1		Introduction	7.1
7.2		Objectives	7.1
7.3		Recommended Revegetation techniques	7.2
	7.3.1	Species Selection and Planting Densities	7.2
	7.3.2	Characteristic Planting Units	7.3
	7.3.3	Plant Supply	7.3
	7.3.4	Re-vegetation Objectives to Maximise Fauna Utilisation	7.3
7.4		Regeneration Site Preparation	7.4
7.5		Maintenance of Regeneration Zones	7.5
7.6		Reconstruction Site Preparation	7.5
7.7		Maintenance of Reconstruction Zones	7.6
7.8		Ongoing Management during Operation of the Study Area	7.6
	7.8.1	Weed Control	7.6
	7.8.2	Monitoring of Regenerating Vegetation	7.7
	7.8.3	Management of Ground Fuel Loads	7.7
7.9		Schedule of Works	7.7

8 MONITORING AND REPORTING

8.1	Monitoring Program	8.1
8.2	Reporting	8.2

Table of Contents *(Cont'd)*

9 TIMING AND RESPONSIBILITIES

REFERENCES

List of Appendices

A. FLORA QUADRAT DATA

B. NATIVE FLORA SPECIES RECORDED IN THE STUDY AREA

C. EXOTIC FLORA SPECIES RECORDED IN THE STUDY AREA

D. SPECIES PLANTING LISTS

E. WEED CONTROL METHODS

List of Tables

4.1	Veterinary clinics within the locality	4.4
6.1	Noxious weeds and WONS recorded in the study area	6.2
9.1	Timing and responsibilities within management zones	9.1
9.2	Timing and responsibilities for fauna during clearing	9.1
A.1	Flora data from quadrats and rapid points	A.1
B.1	Endemic native flora species recorded in the study area	B.1
C.1	Exotic flora species recorded in the study area	C.1
D.1	Species planting list – Cumberland Plain Woodland	D.1
D.2	Species planting list – Shale Sandstone Transition Forest	D.6
E.1	Weed control methods	E.1

List of Figures

1.1	Location of the study area	1.10
1.2	Native vegetation within the study area	1.11
1.3	Indicative layout plan of the proposed development	1.12
1.4	Proposed stages of the development of the study area	1.13
1.5	Vegetation to be removed at the study area	1.14
1.6	Zoning of the study area	1.15
2.1	Survey locations within the study area (flora only)	2.3
5.1	Management zones	5.7

List of Photographs

3.1	CPW dominated by young mature *Eucalyptus moluccana* and *Eucalyptus tereticornis*.	3.2
3.2	SSTF showing exposed sandstone outcropping on the edge of Cataract Creek	3.4
3.3	SSTF regrowth	3.4
3.4	SSTF remnant	3.5
3.5	Dam in the study area lacking fringing aquatic vegetation	3.6
3.6	Dam in the northern area of the study area with fringing vegetation dominated by *Typha orientalis*	3.6
3.7	Cultivated lands used for horticulture	3.7
3.8	Exotic grassland	3.8
3.9	*Eucalyptus crebra* stag with exotic grassland	3.9
3.10	Scattered *Eucalyptus crebra* with exotic understorey	3.9

Glossary of Terms

APZ	Asset Protection Zone
BRC	Bushland Regeneration Contractor
CEEC	Critically Endangered Ecological Community
CPW	Cumberland Plain Woodland
DA	Development Application
DotE	Department of the Environment
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
LGA	Local Government Area
NW Act	NSW *Noxious Weeds Act 1993*
OEH	NSW Office of Environment and Heritage
OoW	NSW Office of Water
PPE	Personal Protective Equipment
RFS	Rural Fire Service
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
SSTF	Shale Sandstone Transition Forest
Study area	The area of land encompassed by the current DA that is likely to be affected (Figure 1.1), either directly or indirectly, by future development. For the purposes of this VMP, the study area includes land within the Box Hill North Precinct (also referred to as Box Hill North).
The Hills LEP 2012	*The Hills Local Environment Plan 2012*
TSC Act	NSW *Threatened Species Conservation Act 1995*
VMP	Vegetation Management Plan
WONS	Weeds of National Significance

Chapter 1

Introduction

1.1 Purpose

The purpose of this Vegetation Management Plan (VMP) is to prescribe management of vegetation occurring on an area of land in Box Hill North (hereafter referred to as the "study area") to be the subject of a future Development Application (DA). Under the DA the study area is to be developed as residential and open space areas.

The VMP has been prepared to allow the retention and restoration of two Critically Endangered Ecological Communities (CEECs) currently occurring on the study area, Shale Sandstone Transition Forest (SSTF) and Cumberland Plain Woodland (CPW), using bushland regeneration techniques. The VMP provides instruction of ameliorative measures to reduce the impact of the proposed development on threatened flora and fauna species, and threatened ecological communities.

The VMP contains the following pre-construction guidance:

- Pre-clearing surveys for threatened flora species and fauna;
- Management of vegetation during clearing activities;
- Protection of vegetation to be retained under the DA; and
- Management and relocation of fauna and habitat during clearing activities.

Remnant patches of CPW in the north-west of the study area, and a large patch of SSTF in the central northern area, currently in degraded states due to past land uses, are to be retained in the study area and to be restored under the DA. In addition to this a number of open space areas currently existing as grasslands dominated by exotic weed species are to be reconstructed as CPW and SSTF. This includes areas in which the landscape and form is to be retained and areas in which the landscape is to be cleared and reconstructed following major earthworks, including construction of riparian corridors. Seven vegetation zones with different management objectives have been created based on restoration of current occurrences of CPW and SSTF, and techniques for revegetation and reconstruction of these communities in open space areas. These zones are:

- Zone 1 – Existing CPW;
- Zone 2 – CPW - Revegetation on Existing Landform;
- Zone 3 – CPW – Reconstruction Following Major Earthworks;
- Zone 4 – CPW- Revegetation under Powerline Easement;
- Zone 5 – Existing SSTF;
- Zone 6 – SSTF – Revegetation on Existing Landform; and
- Zone 7 – SSTF – Reconstruction Following Major Earthworks.

Zones 1 and 5 are to be restored using bushland regeneration to remove exotic weed species, with limited revegetation. Zones 2, 4 and 6 are to be revegetated to supplement existing remnant native herbaceous species where possible, and completely reconstructed in areas containing little remnant native ground cover, using existing landform and landscape features. Zones 3, , and 7 are to be completely reconstructed patches of woodland, following major earthworks, and are to consist only of endemic, native plantings, containing no remnant vegetation.

1.2 Background

1.2.1 Location

The study area at Box Hill North is bound by Maguires Road to the north, Janpieter Road to the east, Old Pitt Town Road to the south and Boundary Road to the west, and is located within The Hills Shire Local Government Area (LGA). It includes the following lots:

- Lots 15-18, Lots, 21, 23, Lots 25-27, Lots 29-31, Lots 40 & 41, and Lots 43-47; in DP 255616;
- Lots 1 -3 in DP 11126;
- Lots 4A & 4B in DP 135304;
- Lot 1 in DP 207750;
- Lots 9 & 10 in DP 593517;
- Lot 5 in DP 658286; and
- Lot 1 in DP 564211.

The boundary of the study area is shown in **Figure 1.1**.

1.2.2 Description

The terrain within the study area is gently undulating with well-structured clay soils derived from Wianamatta Shale and Tertiary and Quaternary alluvial soils associated with the Hawkesbury-Nepean River system. Several small tributaries drain into the main stream feature within the study area, Cataract Creek in the north east. This area also supports a different underlying geology with sandstone outcroppings occurring within the stream bank area.

A total of 62 dams and water bodies exist on the study area as well as numerous farmhouses, sheds and other infrastructure. These are mainly concentrated along the road accesses bordering and bisecting the study are, Boundary Road, Maguires Road, Janpieter Road, Old Pitt Town Road and Red Gables Road. The study area is currently used for cattle grazing, cropping and hobby farming purposes.

1.2.3 Vegetation

The study area is largely cleared of native vegetation and is dominated by exotic grasses. Treed vegetation is mainly represented by a mosaic of regenerating patches of open forest and woodland at various stages of canopy regeneration. These comprise patches of CPW and SSTF (**Figure 1.2**). These communities are both listed as CEECs under both the NSW *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The most intact and mature patches of woodland are found in the north-west (extending south-east from the corner of Boundary Road and Maguires Road) and north-east (bordering the riparian zone of Cataract Creek) of the study area. In the south, centre and north-east corner of the study area scattered paddock trees also occur. Although they are comprised of canopy species indicative of CPW (*Eucalyptus crebra*, *Eucalyptus moluccana* and *Eucalyptus tereticornis*) they lack understorey and ground cover vegetation and do not comprise CPW.

1.2.4 Zoning

The study area has recently been rezoned from RU6 Transition to R1 General Residential, R2 Low Density, R3 Medium Density, R4 High Density, E4 Environmental Living, B2 Local Centre, and RE1 Public Recreation under *The Hills Local Environment Plan 2012* ('The Hills LEP 2012'). A description of the objectives and permitted activities within each zone is detailed below.

i. R1 General Residential

a. Objectives of the zone

- To provide for the housing needs of the community;
- To provide for a variety of housing types and densities;

- To enable other land uses that provide facilities or services to meet the day to day needs of residents; and
- To enable other land uses that support the adjoining or nearby commercial centres and protect the amenity of the adjoining or nearby residential areas.

b. Permitted actions with consent within the zone

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building; identification signs; Business identification signs; Business premises; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Home-based child care; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Office premises; Places of public worship; Residential flat buildings; Respite day care centres; Restaurants or cafés; Roads; Semi-detached dwellings; Seniors housing; and Shop top housing

ii. R2 Low Density Residential

a. Objectives of the zone

- To provide for the housing needs of the community within a low density residential environment;
- To enable other land uses that provide facilities or services to meet the day to day needs of residents; and
- To maintain the existing low density residential character of the area.

b. Permitted actions with consent within the zone

Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Dual occupancies; Dwelling houses; Group homes; Health consulting rooms; Home-based child care; and Roads.

iii. R3 Medium Density residential

a. Objectives of the zone

- To provide for the housing needs of the community within a medium density residential environment;
- To provide a variety of housing types within a medium density residential environment;
- To enable other land uses that provide facilities or services to meet the day to day needs of residents; and
- To encourage medium density residential development in locations that are close to population centres and public transport routes.

b. Permitted actions with consent within the zone

Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Home-based child care; Multi dwelling housing; Neighbourhood shops; Places of public worship; Respite day care centres; Roads; and Seniors housing.

iv. R4 High Density Residential

a. Objectives of the zone

- To provide for the housing needs of the community within a high density residential environment;
- To provide a variety of housing types within a high density residential environment;
- To enable other land uses that provide facilities or services to meet the day to day needs of residents; and
- To encourage high density residential development in locations that are close to population centres and public transport routes.

b. Permitted actions with consent within the zone

Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Home-based child care; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Roads; and Shop top housing.

v. E4 Environmental Living

a. Objectives of the zone

- To provide for low-impact residential development in areas with special ecological, scientific or aesthetic values; and
- To ensure that residential development does not have an adverse effect on those values.

b. Permitted actions with consent within the zone

Bed and breakfast accommodation; Building identification signs; Business identification signs; Community facilities; Dual occupancies (attached); Dwelling houses; Emergency services facilities; Environmental protection works; Home-based child care; Home businesses; Roads; and Secondary dwellings.

vi. *B2 Local Centre*

a. Objectives of the zone

- To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area;
- To encourage employment opportunities in accessible locations; and
- To maximise public transport patronage and encourage walking and cycling.

b. Permitted actions with consent within the zone

Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Child care centres; Commercial premises; Community facilities; Educational establishments; Entertainment facilities; Function centres; Home-based child care; Information and education facilities; Medical centres; Multi dwelling housing; Passenger transport facilities; Recreation facilities (indoor); Registered clubs; Residential flat buildings; Respite day care centres; Restricted premises; Roads; Service stations; Shop top housing; and Tourist and visitor accommodation.

vii. *RE1 Public Recreation*

a. Objectives of the zone

- To enable land to be used for public open space or recreational purposes;
- To provide a range of recreational settings and activities and compatible land uses; and
- To protect and enhance the natural environment for recreational purposes.

b. Permitted actions with consent within the zone

Building identification signs; Business identification signs; Car parks; Child care centres; Community facilities; Emergency service facilities; Environmental facilities; Information and education facilities; Kiosks; Markets; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafés; Roads; Take away food and drink premises; and Water recreation structures.

1.3 Proposed Development

The proposed development of the study area will result in approximately 320 ha of urban development. The development will involve construction of approximately 4,100 residential dwellings and associated infrastructure, including commercial areas.

Land zoned as low, medium and high density residential is intended to primarily accommodate residential uses, with some limited non-residential development, such as local retail and commercial uses. The development plan submitted by Oculus will guide the future development of the study area.

The indicative layout plan (**Figure 1.3**) illustrates the manner in which the study area is to be developed. As illustrated in the indicative layout plan, the proposed development of the study area entails:

- A village centre, comprising a mix of retail, commercial, community, open space and residential uses, in the central part of the precinct;
- Predominantly residential development in the remainder of the precinct;
- Construction of roads, including external connections to Boundary Road; and
- Provision of local open space, riparian corridors and stormwater basins.

It is anticipated that once fully developed the study area will accommodate approximately 4,100 residential dwellings.

1.3.1 Vegetation

Under the proposed development approximately 1.5 ha of the CPW occurring in the north-western corner of the study area will be retained under the zoning of RE1 Public Recreation, and will undergo bushland regeneration works as per the instruction in this VMP.

The SSTF occurring in the central-northern area of the study area will be retained within areas zoned as RE1 Public Recreation, and will occur in areas to be used as open space and riparian corridors. The SSTF is to undergo bushland regeneration works as per the instruction in this VMP.

Under this VMP, RE1 Public Recreation outside of the remnant SSTF area in open space and riparian corridor areas will be landscaped using endemic SSTF and CPW plant species as per instruction in this VMP. Landscaping will include street tree planting, and planting along the central riparian area. Landscaping will also include parks and areas of open passive space within the riparian corridor. All species used in planting are to be selected in accordance with Council requirements and avoid the use of species that may invade bushland.

Throughout the rest of the development area endemic trees are planned to be retained where possible. The development of the study area will result in clearance of both native and exotic vegetation which will be cleared as per the protocols outlines in this VMP.

1.3.2 Fire Protection Zones

Asset Protection Zones (APZs) are required for all urban areas within 100 metres of a high or medium bushfire hazard and 30 metres of a low bushfire hazard. In accordance with the "Planning for Bushfire Protection 2006" guidelines and in agreement with the NSW Rural Fire Services (RFS), it is proposed to construct APZs between the areas of proposed works and the areas of hazard. The temporary APZs will be managed by the landowner, in accordance with the NSW RFS guidelines until such time as permanent APZs have been put in place. The permanent APZs will be established through future stages of subdivision in accordance with the provisions of the RFS.

The details of the specific APZ requirements are outlined in the Preliminary Bushfire Constraints Report (Australian Bushfire Protection Planners Pty Ltd 2013). A more detailed Bushfire Report will be produced at a later date.

1.3.3 Development Stages

The development of the study area is to be broken up in to ten stages as shown on **Figure 1.4**.

1.3.4 Vegetation to be Removed

Due to the large scale earthworks required for the project, a significant portion of the study area will undergo complete restoration.

An indicative plan of the area of vegetation to be removed is shown on **Figure 1.5**.

The map of vegetation to be removed in only indicative in nature. Vegetation within parcels zoned E4 – Environmental Living will be retained where possible. These areas however will not be subjected to the VMP and will be treated as vegetation to be removed within this document.

1.4 Relevant Legislation

Legislation relevant to this VMP includes:

- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*;
- NSW *Environmental Planning and Assessment Act 1979*;
- NSW *Noxious Weeds Act 1993* (NW Act);
- NSW *Pesticides Act 1999*; and
- NSW *Threatened Species Conservation Act 1995*.

1.5 State and Local Government Planning Instruments

Planning instruments that relate to the development of the study area include:

- *State Environmental Planning Policy 19 – Bushland in Urban Areas*; and
- *The Hills Local Environment Plan 2012*.

i. SEPP 19 – Bushland in Urban Areas

State Environmental Planning Policies (SEPPs) deal with issues significant to the state and people of NSW. They are made by the Governor on the recommendation of the Minister for Planning and may be exhibited in draft form for public comment before being gazetted as a legal document

SEPP 19 is designed to protect bushland in public open space zones and reservations, and to ensure that bush preservation is given a high priority when local environmental plans for urban development are prepared. This SEPP applies to several areas or part areas, including The Hills Shire LGA (listed in Schedule 1 as Baulkham Hills).

ii. The Hills Local Environment Plan 2012

The study area is located within The Hills Shire LGA and falls under The Hills LEP 2012. The Hills LEP 2012 is prepared by Council and is vetted by the State Government to ensure consistency with the NSW *Environmental Planning and Assessment Act 1979* and SEPPS before being gazetted by the Minister for Planning and Infrastructure. The study area is currently zoned as RU6 - Transitional under The Hills LEP 2012. The rezoning of the study area is shown in **Figure 1.6**.

Coordinate System: MGA Zone 56 (GDA 94)

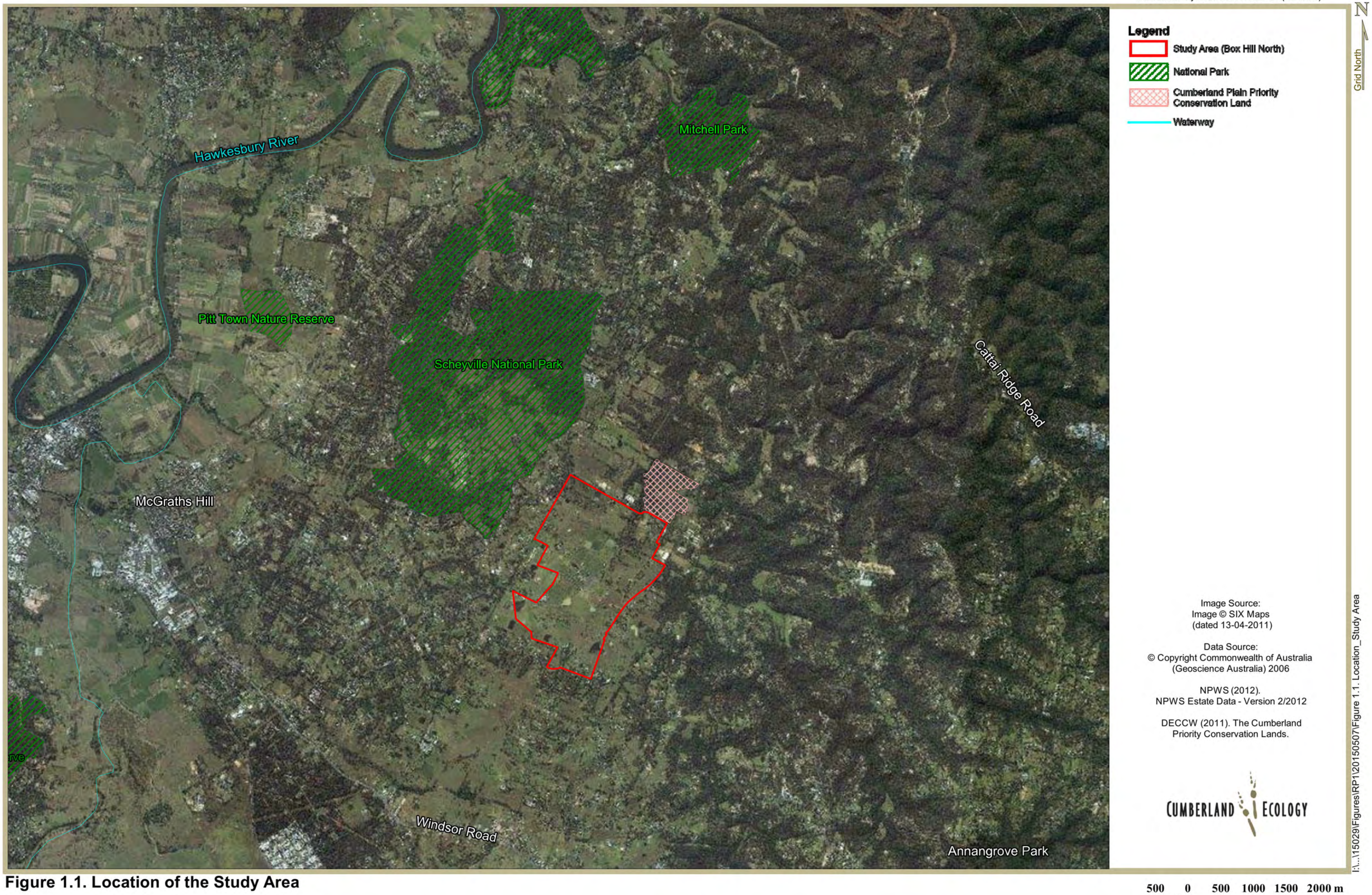

Figure 1.1. Location of the Study Area

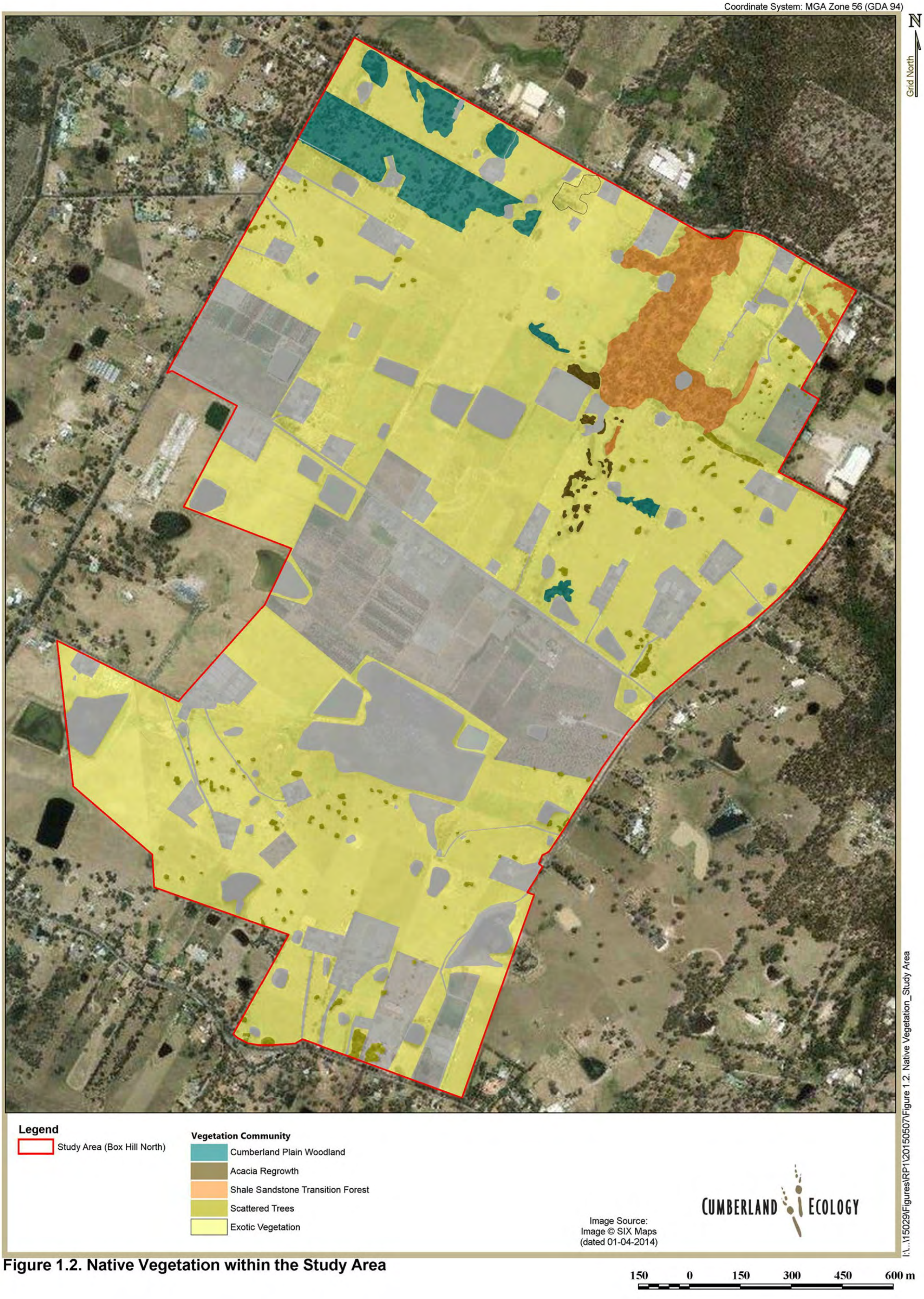

Figure 1.2. Native Vegetation within the Study Area

I:\...\15029\Figures\RP1\20150507\Figure 1.3. Indicative Layout

Figure 1.3. Indicative Layout Plan of the Proposed Development

Figure 1.4. Proposed Stages of the Development of the Study Area

Coordinate System: MGA Zone 56 (GDA 94)

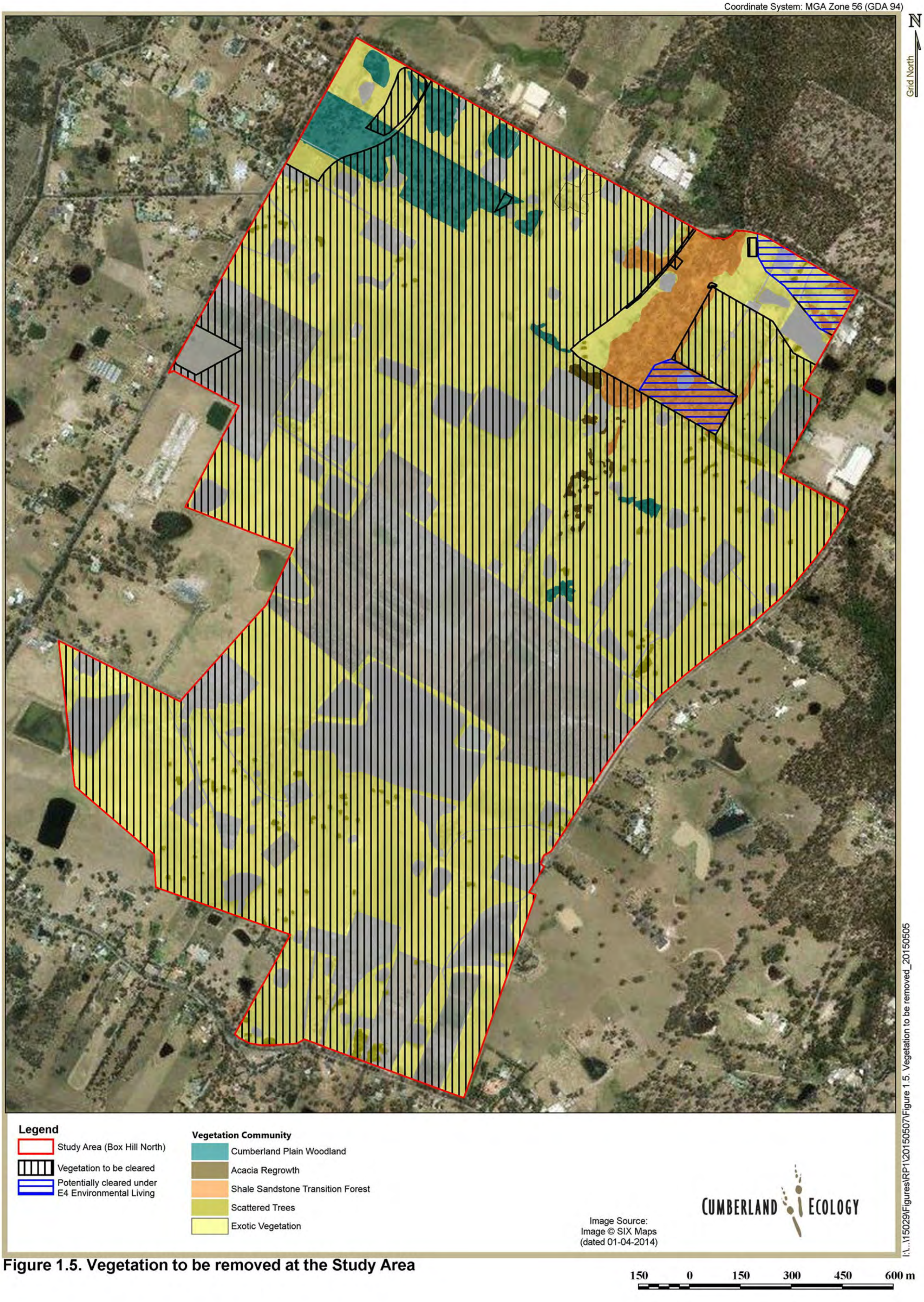

Figure 1.5. Vegetation to be removed at the Study Area

Coordinate System: MGA Zone 56 (GDA 94)

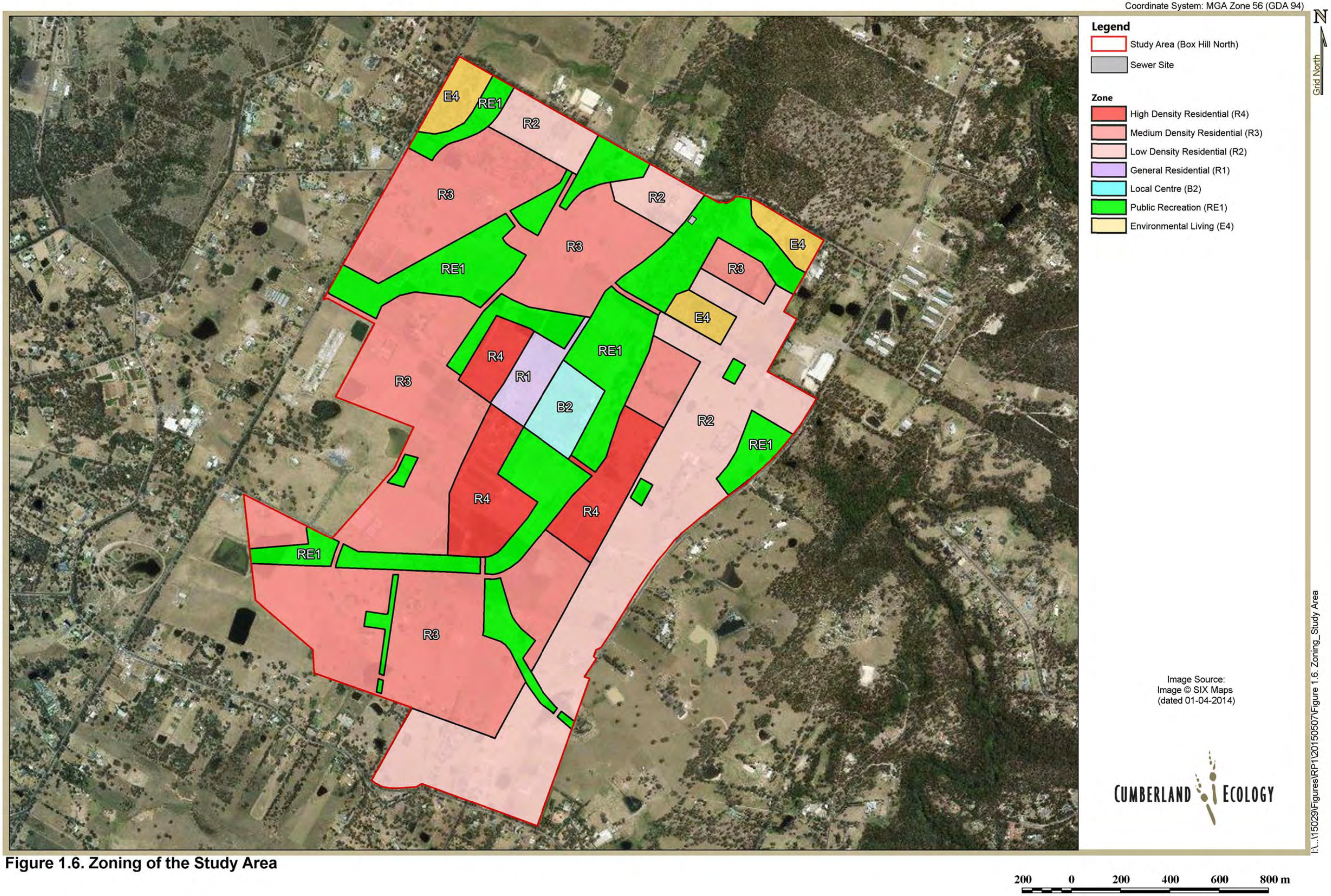

Figure 1.6. Zoning of the Study Area

Chapter 2

Methods

2.1 Literature Review

The preparation of the VMP involved a literature review to determine the most up to date methods of weed control for exotic species that are present in the study area. This literature review involved a variety of sources including government fact sheets and websites. Personal experience of a Cumberland Ecology botanist formerly employed in bushland maintenance was also utilised.

In order to prepare species planting lists for revegetation, and revegetation strategies, for SSTF and CPW patches to be retained in the study area, survey data was reviewed along with:

- Shale Sandstone Transition Forest – Final Determination (NSW Scientific Committee 2015);
- Cumberland Plain Woodland in the Sydney Basin Bioregion – Final Determination (NSW Scientific Committee 2009);
- Restoring Bushland on the Cumberland Plain (DEC (NSW) 2005); and
- Cumberland Plain Recovery Plan (DECCW 2011).

Species list prepared for revegetation areas in the study area therefore not only include species listed as diagnostic for the vegetation communities to be revegetated, but additionally include species that were recorded as naturally occurring, local endemics within these communities in the study area, that are not listed under the final determination for the communities. Species listed under final determinations are a broad view of characteristic species for a particular community, and do not take into account natural variation at the site level.

2.2 Flora Survey Effort

Cumberland Ecology has surveyed the study area extensively during preparation of a Fauna and Flora Assessment (Cumberland Ecology 2012) for the study area and a Species Impact Statement (SIS) (Cumberland Ecology 2014). The site has also undergone surveys by NGH Environmental in 2012 (NGH Environmental 2013).

Species lists for weed species and native species present in the study area used in this VMP have been compiled from quadrat data, random meander transects, photopoints, and rapid assessment points undertaken during these surveys. A total of 20 quadrates have been undertaken by Cumberland Ecology across the study area, and further flora species were recorded during random meander transects and targeted threatened species searches. Flora surveys occurred on 26 June 2013, 26-27 September 2013, 8 October 2013, 18 July 2014 and 24 July 2014.

The locations of these quadrats were chosen so that sampling was conducted in areas most representative of the condition and composition of the vegetation patch. The quadrat locations are shown in **Figure 2.1**. Flora quadrat data is provided in **Appendix A**. In each quadrat, the following information was recorded as a minimum:

- All vascular flora species present within the plot;
- The stratum in which each species occurred;
- The relative frequency of occurrence of each plant species;
- Vegetation structural data (i.e. height and percentage cover of each stratum);
- Number of hollows in canopy trees;
- The diameter at breast height of canopy trees containing hollows;
- Number of logs (and total length);
- The ground cover composition (exotic groundcover, native grasses, native shrubs, every meter along a 50 m transect;
- Quantum and species of regenerating trees;
- A waypoint to mark the location of the quadrat, using a handheld GPS; and
- Photographs of vegetation within each quadrat.

Coordinate System: MGA Zone 56 (GDA 94)

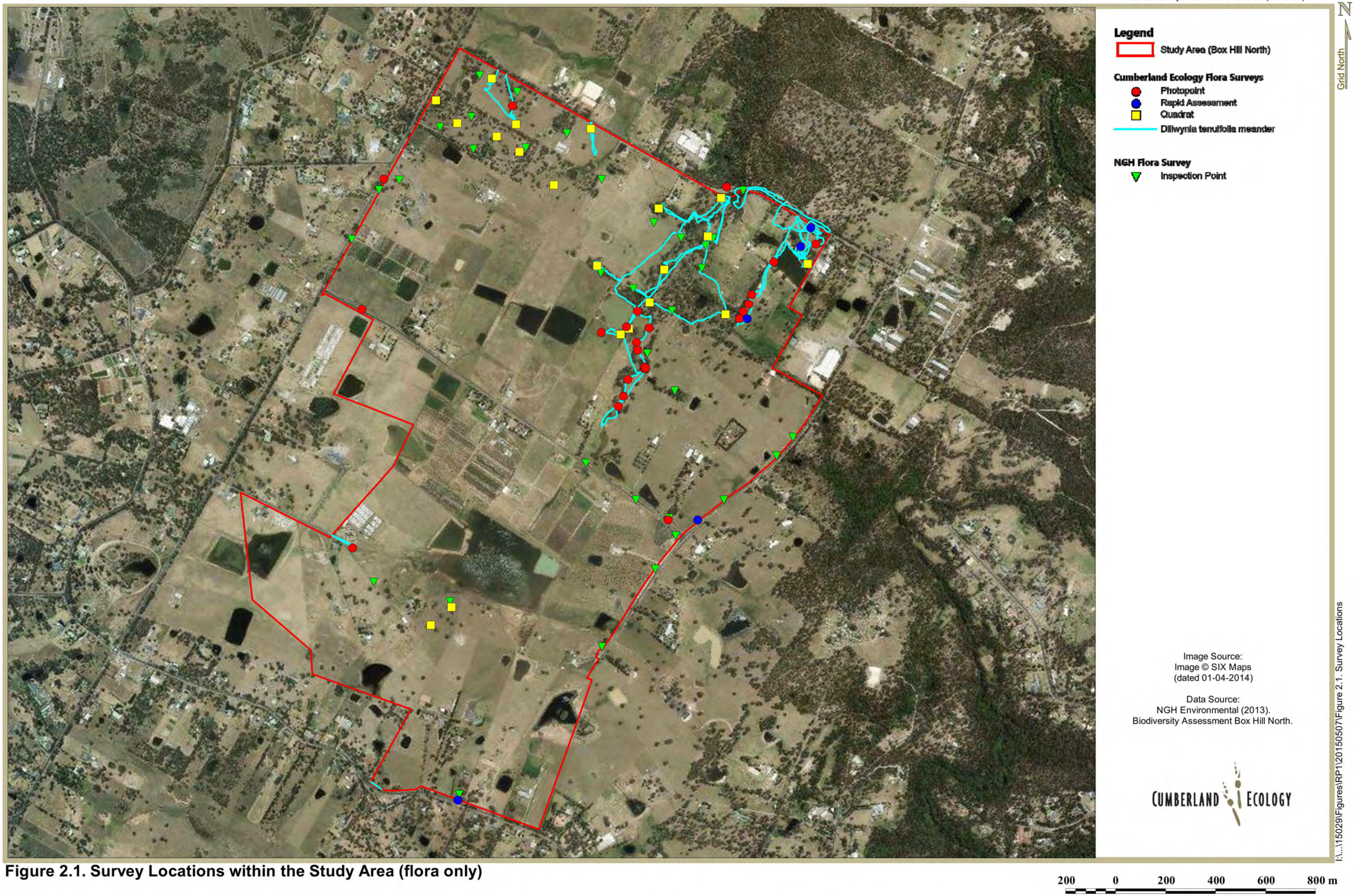

Figure 2.1. Survey Locations within the Study Area (flora only)

Chapter **3**

Existing Biodiversity Values

This chapter presents the results of recent surveys and describes the flora of the study area, taking into account information obtained from previous surveys.

3.1.1 Vegetation Communities of the Study Area

The study area has been extensively cleared due to a history of agricultural use. The majority of the study area has also likely to have undergone pasture improvement in the past for stock grazing. Historically, the vegetation of the study area would have comprised native woodland communities and would have included CPW and SSTF, which are both now largely restricted to the northern portions of the study area (**Figure 1.2**)

The widespread occurrence of vegetation now consist of exotic grasslands, dominated by such exotic species as *Pennisetum clandestinum* (Kikuyu), *Paspalum dilatatum* (Paspalum), *Eragrostis curvula* (African Love Grass), and *Chloris gayana* (Rhodes Grass), in areas almost to the exclusion of any other understorey species. A small number of native grass and forb species are present, but these species occur in low abundances. A list of the biometric data and flora survey quadrat results is provided in **Appendix A** and the native plant species recorded are presented in **Appendix B**, and exotic species in **Appendix C**.

Woodlands and open forests occur within the study area in remnant patches, varying widely in their size and quality. The largest and highest quality patches occur in the north of the study area. Five patches of low and moderate quality CPW occur in the north-west corner of the study area. These patches are characterised by a variable shrub and ground layer with invasive species common in most patches. Additionally a single patch of low and moderate quality SSTF occurs in the north-east of the study area, along Cataract Creek. This patch represents the most intact habitat on the study area, with many hollow-bearing trees (27 hollows present) and a more intact understorey than the CPW remnants.

Scattered paddock trees also occur in the south, centre and north-east corner of the study area. The ground layer beneath these trees is dominated by invasive grass and forb species and the shrub layer is largely absent. Although the tree species include trees such as *Eucalyptus crebra* (Narrow-leaved Ironbark), which are characteristic of CPW, these areas are highly degraded habitat which do not constitute viable CPW.

i. Cumberland Plain Woodland

Approximately 13 ha of CPW occurs as five patches in the north-west corner of the study area, and two smaller degraded patches in the middle of the study area (**Figure 1.2**). The dominant canopy species present in this community are *Eucalyptus moluccana* (Grey Box) and *Eucalyptus tereticornis* (Forest Red Gum), with *Eucalyptus crebra* (Narrow-leaved Ironbark) also common.

The patches in the north-west corner of the study area represent woodland which has recovered since the initial clearing of the study area and although they contain many tall trees, hollow-bearing trees are almost absent (see **Photograph 3.1**). The ground stratum of the more intact north-western CPW patches displays a variable mixture of native and exotic grass and forb species, depending on the condition of the remnant patch. Common native species include *Microlaena stipoides* (Weeping Grass), *Aristida vagans* (Threeawn Speargrass), *Eragrostis leptostachya* (Paddock Lovegrass) and *Chloris ventricosa* (Plump Windmill Grass). Common invasive grasses include *Setaria pumila* (Whorled Pigeon Grass) and *Paspalum dilatatum* (Paspalum). Native forbs were also present in all remnant patches, with common species including *Dichondra repens* (Kidney Weed) and *Desmodium varians* (Tick-trefoil). More disturbance sensitive species are also present such as *Asperula conferta* (Common Woodruff) and *Gonocarpus teucrioides* (Raspwort).

The understorey in the north-west remnant patches is similarly varied, being either absent or dominated by exotics such as *Rubus fruticosus* (Blackberry). Other patches support some native understorey in places, dominated by shrub *Bursaria spinosa* (Blackthorn).

Photograph 3.1 CPW dominated by young mature *Eucalyptus moluccana* and *Eucalyptus tereticornis*.

ii. Shale Sandstone Transition Forest

One large patch (approximately 13 ha) of SSTF exists in the study area and represents the most intact, remnant vegetation in the study area (**Figure 1.2**). This community extends either side of the base of Cataract Creek and has a total length of approximately 600m from Maguires Road to the north (**Photograph 3.2**).

Dominant tree species vary through the patch from north to south. Eucalyptus tereticornis with *Angophora floribunda* (Rough-barked Apple) closer to the creek line are common in the north. Other species present include *Eucalyptus sclerophylla* (Hard-leaved Scribbly Gum), and *Eucalyptus fibrosa* (Broad-leaved Ironbark). Further south *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus moluccana* (Grey Box) and *Eucalyptus crebra* (Narrow-leaved Ironbark) become increasingly common as the community grades towards CPW. However diagnostic SSTF tree species are co-dominant throughout this section, therefore the entire vegetation community has been classified as SSTF.

The understorey is dominated by a similar grass and forb assemblage as the CPW patches described above. Common native grasses include *Aristida vagans* (Threeawn Speargrass), *Dichelachne micrantha* (Plume Grass) and *Eragrostis leptostachya*. *Paspalum dilatatum* (Paspalum) and *Setaria pumila* (Whorled Pigeon Grass) are common invasive grasses in this area, particularly in the southern section of this community.

The understorey is similarly variable with *Bursaria spinosa* (Blackthorn) common in the southern portion of the community grading into *Ozothamnus diosmifolius* (White Dogwood) and *Kunzea ambigua* (Tick Bush) further north. At the northern extremity this community appears to be grading into the moister forest present on the other side of Maguires Road with species such as *Daviesia ulicifolia* (Gorse Bitter Pea) occurring.

A distinct 'bulge' exists low on the eastern edge of the main patch. This area is dominated by younger, smaller tree communities with tree hollows absent, representing lower habitat value than the main adjacent patch (**Figure 1.2**, **Photograph 3.3**). This area is considered to represent recent regrowth and the most intact portions of this community are centred on the creek line base.

Smaller remnant patches of SSTF exist in the north-eastern corner of the study area and south of the larger patch.

Vegetation in the north eastern corner of the study area is indicative of SSTF (**Photograph 3.4**). Canopy species include *Eucalyptus amplifolia* (Cabbage Gum), *Eucalyptus punctata* (Grey Gum) and *Eucalyptus tereticornis* (Forest Red Gum). The ground cover is dominated throughout by Pennisetum clandestinum, but there are also areas where *Cynodon dactylon* (Couch) and *Microlaena stipoides* (Weeping Grass) are present. The shrub layer is absent in these patches and there are no fallen logs. There are no hollow-bearing trees in the patch as the majority of the trees are regrowth with a diameter at breast height of < 80cm.

Photograph 3.2 SSTF showing exposed sandstone outcropping on the edge of Cataract Creek

Photograph 3.3 SSTF regrowth

Photograph 3.4 SSTF remnant

iii. Wetland/Dams

The study area has been used for intensive cropping requiring irrigation, and in other places grazing of livestock. It is well endowed with artificial water storages of variable sizes and shapes. Sixty-two (62) dams or water bodies exist across the study area.

The majority of dams within the study area are devoid of fringing wetland vegetation. The ongoing disturbance from cattle and steep bathymetry of the edges of these man-made dams are not suitable for growth of emergent macrophytes and other wetland vegetation. These dams have been identified as 'farm dams' and are shown in **Photograph 3.5** and **Photograph 3.6**. Sixteen (16) dams in the study area have marginal fringing vegetation such as *Typha* spp. The occurrence of the fringing vegetation is sporadic and limited to small patches, even within a dam (**Photograph 3.6**).

Photograph 3.5 Dam in the study area lacking fringing aquatic vegetation

Photograph 3.6 Dam in the northern area of the study area with fringing vegetation dominated by *Typha orientalis*

iv. Exotic Vegetation

Exotic grasslands and cultivated lands comprise the majority of the study area. Cultivated lands are used for market gardens for growing broccoli and lettuce variants. Crops requiring irrigation are shown in **Photograph 3.7**.Exotic grasslands are dominated by pasture grasses. Canopy trees, shrubs, fallen logs and stumps have been entirely removed from this community on the study area (**Photograph 3.8**). Six flora quadrates were undertaken across the study area to confirm the assemblage of flora species. Exotic grasslands have been cleared of native vegetation, and are unlikely to regenerate. These areas do not comprise areas of Derived Native Grasslands of either CPW or SSTF, as the ground cover composition is dominated by exotic species. The only native grass species present in exotic grassland plots was *Microlaena stipoides* (Weeping Grass) which occurs as only several individuals per 20m x 20m quadrat.

In the south of the study area there are scattered *Eucalyptus crebra* (Narrow-leaved Ironbark) within the exotic grasslands. These areas are considered to form the community of exotic grassland for this VMP; however the justification for assigning this vegetation type is expanded in ***Section 3.1.1.v***.

Photograph 3.7 Cultivated lands used for horticulture

Photograph 3.8 Exotic grassland

v. Scattered Trees

Scattered *Eucalyptus crebra* (Narrow-leaved Ironbark) trees exist across the study area, which are likely remnant trees from formerly existing native vegetation communities from the locality (**Photograph 3.9** and **Photograph 3.10**).

The scattered paddock trees in the south, and centre of the study area (marked as scattered trees in **Figure 1.2**) lack a native understorey and have a stratum dominated by exotic pasture grass and forb species, including grasses such as *Setaria pumila* (Whorled Pigeon Grass) and *Paspalum dilatatum* (Paspalum). Due to the lack of shrub layer, ground cover and connectivity characteristics, these scattered trees do not comply with the NSW or Commonwealth listing for CPW or SSTF.

Photograph 3.9 *Eucalyptus crebra* stag with exotic grassland

Photograph 3.10 Scattered *Eucalyptus crebra* with exotic understorey

3.1.2 General Flora Species

A total of 138 native plant species were recorded as occurring in the study area. A total of 83 weed species were recorded including one non-endemic native species. A full list of native and weed species recorded is provided in Appendix B and Appendix C, respectively.

3.1.3 Threatened Flora Species

Flora surveys have been undertaken at the study area by NGH and Cumberland Ecology and have recorded a wide diversity of plants; however no threatened species were recorded in the study area. The following threatened flora species are considered to have potential to occur within the study area:

- *Acacia pubescens* (Downy Wattle) – Vulnerable, TSC Act, Vulnerable EPBC Act;
- *Dillwynia tenuifolia* – Vulnerable, TSC Act;
- *Epacris purpurascens* var. *purpurascens*– Vulnerable, TSC Act;
- *Grevillia juniperina* subsp. *juniperina* (Juniper-leaved Grevillia) – Vulnerable, TSC Act;
- *Pimelea curviflora* var. *curviflora* – Vulnerable, TSC Act; Vulnerable, EPBC Act;
- *Pimelea spicata* – Endangered, TSC Act; Endangered, EPBC Act; and
- *Pultenaea parvifolia* (Sydney Bush-pea) – Endangered, TSC Act; Vulnerable, EPBC Act.

Acacia pubescens, *Dillwynia tenuifolia*, *Grevillea juniperina* subsp. *juniperina* and *Pultenaea parviflora* are considered to have the greatest likelihood of occurring on the study area, as individuals of these species have been recorded as occurring on nearby properties and in the forest patch to the north-east.

3.1.4 Threatened Fauna Species

The following threatened fauna species are known to inhabit the study area:

- Spotted Harrier (*Circus assimilis*) - TSC Act Vulnerable;
- Grey-headed Flying-fox (*Pteropus poliocephalus*) - EPBC Act Vulnerable;
- Eastern Freetail-bat (*Mormopterus norfolkensis*) - TSC Act Vulnerable;
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*) – TSC Act Vulnerable;
- Eastern Bentwing-bat (*Miniopterus schrebersii oceansis*) – TSC Act Vulnerable;
- Southern Myotis (*Myotis macropus*) – TSC Act Vulnerable;

- Cumberland Plain Land Snail (*Meliodorum corneovirens*) TSC Act Endangered;
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*) EPBC Act Migratory; and
- Cattle Egret (*Ardea ibis*) – EPBC Act Migratory;

Chapter **4**

Vegetation Clearing Protocols

4.1 Introduction

This chapter outlines the protocols to be followed during clearing to minimise the impacts on native flora and fauna. The development will be undertaken in twelve stages with the following protocols repeated for each stage.

4.2 Marking Limits of Vegetation Clearing

Disturbance will be limited to the minimum necessary for clearing during each stage of the development. Prior to clearing being undertaken the edge of the vegetation to be cleared needs to be clearly delineated. Clearing limits can be marked with high visibility tape, fencing, or other appropriate boundary markers. To avoid unnecessary damage to vegetation or inadvertent habitat removal, disturbance is to be restricted to the delineated area. No stockpiling of equipment, soils, or machinery will occur beyond the boundary.

The person responsible for the clearance activities will be responsible for ensuring that the boundary markers are installed to enable the suitable environmental and technical inspections of the proposed disturbance to be undertaken.

4.3 Fencing of Native Vegetation to be Retained

All native vegetation that is to be retained on site in each stage needs to be fenced off with temporary exclosure fencing to prevent inadvertent damage to vegetation by machinery. Temporary fencing should be of a metal construction fence so it physically protects vegetation as well as visually delineates native vegetation to be retained. This fencing is to remain in place until all works have been finished in the area. No vehicles or machinery will be permitted to enter areas of native vegetation to be retained.

4.4 Pre-clearing Surveys

Prior to the commencement of clearing in each stage of development a pre-clearing survey needs to be undertaken by a certified ecological consultant. During the survey native flora and fauna that have the potential to be disturbed during clearing will be identified.

4.4.1 Flora Pre-clearing Surveys

Prior to clearing, a pre-clearing flora survey will be conducted by the certified ecological consultant to search for threatened plant species that have potential to occur, based on habitat available. These include (but are not limited to):

- *Acacia pubescens* (Downy Wattle) – Vulnerable, TSC Act, Vulnerable EPBC Act;
- *Dillwynia tenuifolia* – Vulnerable, TSC Act;
- *Epacris purpurascens* var. *purpurascens*– Vulnerable, TSC Act;
- *Grevillia juniperina* ssp. *juniperina* (Juniper-leaved Grevillia) – Vulnerable, TSC Act;
- *Pimelea curviflora* var. *curviflora* – Vulnerable, TSC Act; Vulnerable, EPBC Act;
- *Pimelea spicata* – Endangered, TSC Act; Endangered, EPBC Act; and
- *Pultenaea parvifolia* (Sydney Bush-pea) – Endangered, TSC Act; Vulnerable, EPBC Act.

If a threatened plant species is identified, the numbers of plants will be counted and/or the population estimated/mapped. A review of translocation methods, collection of propagules, and propagation from seeds or cuttings from plants within the disturbance area and/or surrounds will be undertaken. Following this review, a translocation/propagation program will be developed and implemented where appropriate in consultation with the NSW Office of Environment and Heritage (OEH), and the Commonwealth Department of the Environment (DotE) where relevant.

All threatened plant species identified during pre-clearing will be reported to OEH and to DotE (for relevant Matters of National Environmental Significance species).

4.4.2 Fauna Pre-clearing Surveys

Habitat features that have a high potential to support native fauna species will be identified prior to any clearing activities. These include significant rock outcrops and in particular trees bearing hollows that have potential to contain species such as bats, gliders, possums, reptiles and birds. Trees containing hollows or nests that have a high potential to contain fauna will be identified, recorded, flagged with fluorescent marking tape, and marked with a large (>1 m) "H" using spray paint on two sides of the tree.

The location of suitable nearby habitat for the release of fauna that may be encountered during the pre-clearing process will be identified and marked on a map. These areas on the study area will be the area of CPW to be retained and rehabilitated in the north-west and the STIF to be retained and rehabilitated in the central-northern area.

Within one week prior to clearing trees, a pre-clearing fauna survey will be conducted by the ecologist for the presence of fauna species that were identified in the Flora and Fauna Assessment and SIS as likely to occur, in order to identify and minimise impacts to resident fauna. Any fauna utilising the area will be recorded, and where possible, these will be encouraged to leave the area. The ground around each tree will be inspected for scats, and the trees for scratch marks.

4.5 Fauna Relocation and Clearing Protocols

4.5.1 All Fauna

On the day of any clearing, licensed wildlife carers and/or ecologists will capture and/or remove fauna that have the potential to be disturbed as a result of clearing activities. These fauna will be relocated into pre-determined habitat identified for fauna release (see ***Section 3.4.2***). All fauna handling will be carried out by licensed wildlife carers and/or ecologists.

The clearing will be conducted using a two-stage clearing process:

1. Trees marked with an "H" by the ecologist will not be cleared during the first instance of vegetation clearing in an area; however all vegetation around the tree will be so that the tree is isolated. Other habitat features marked with an "H", such as logs and log piles, will be supervised during clearing.

2. Identified habitat trees will be will be left to stand overnight after stage 1 clearing to allow resident fauna to voluntarily move from the area. Then, the habitat trees will be cleared using the following protocols:

    a. If possible, trees marked as containing hollows will be shaken by machinery prior to clearing to encourage any animals remaining to leave the hollows and move on;

    b. Use a bulldozer to start pushing the tree over. Move the bulldozer over the roots and continue gently pushing the tree over. The tree should not fall heavily to the ground;

    c. Remove branches with hollows and sections of trunk and set aside for immediate transfer to a storage area for placement within rehabilitation areas;

    d. The ecologist will investigate all hollows for the presence of fauna following felling of the tree; and

    e. The felled habitat tree will be left overnight to allow any remaining fauna time to leave the hollows and move on.

The two-stage clearing process enables fauna to feel secure whilst clearing occurs around their tree, and allows them a chance to self-relocate upon nightfall, when foraging typically occurs. Fauna are not likely to re-inhabit trees, as they are not likely to feel secure in their tree with all trees around it cleared.

The ecologist will be present while clearing to rescue animals injured during the clearance operation. Any fauna found will be captured and relocated to nearby remnant vegetation and released after nightfall to minimise the risk of predation by diurnal predators. Any animals that are inadvertently injured will be taken to the nearest veterinary clinic for treatment, or if the animal is unlikely to survive, it will be humanely euthanized. The closest veterinary clinics to the study area are detailed within **Table 4.1**. The clinics should be notified prior animal transportation to ensure they are willing to treat injured animals.

Table 4.1 Veterinary clinics within the locality

Name	Address	Contact Number
Box Hill Vet Clinic	10 Nelson Road, Box Hill NSW	(02) 9679 1749
Vineyard Veterinary Hospital	703 Windsor Road, Vineyard NSW	02) 9267 1257
Riverstone Veterinary Hospital	159 Garfield Road, East Riverstone NSW	(02) 9627 4011

All persons working on the vegetation clearing will be briefed about the possible fauna present at the time of construction, and what procedures should be undertaken in the event of an animal being injured or disturbed. A qualified animal rescue person, the ecologist will be on call at all times during clearing.

Results and outcomes of pre-clearing and clearing fauna surveys shall be documented by the ecologist and submitted to the proponent. This includes:

- Species and numbers of individuals recorded;
- Incidence of sick or injured animals and the actions taken to care for the fauna; and
- The species and numbers of individuals that were relocated.

If a new threatened species is identified that has not previously been identified as having potential to occur, the occurrence will be surveyed and fully documented. Results will be made available to OEH and to DotE (if it is a species that is a MNES).

4.5.2 Dam Dewatering Protocol

The development at the study area involves dewatering of numerous water bodies across the site. These water bodies are occasionally used as a freshwater drinking resource by the fauna known to the study area and locality. As a compensatory measure for the drainage of water bodies, a permanent pond will be constructed within the study area.

The purpose of the dewatering supervision is to ensure that any aquatic fauna that currently utilise water bodies are identified and translocated into other suitable habitats to avoid impacts to these individuals.

Dewatering is only to be carried out when an ecologist is present. As water is pumped out the supervising ecologist will be prepared to catch aquatic fauna. Aquatic fauna species, including amphibians, reptiles and fish, are likely to inhabit the water bodies and will be captured and released into suitable aquatic habitat nearby. If any exotic fish such as Gambusia are captured during dewatering then they will not be translocated but will be humanely euthanized.

Dewatering can occur at any time of day as long as an ecologist is present. The Site Manager will be responsible for ensuring an ecologist is present when dewatering commences.

All species captured during dewatering will be recorded. Documentation of all threatened species captured and released will be kept. Any pest species such as Gambusia that are euthanised will also be recorded.

4.5.3 Cumberland Plain Land Snail

The Cumberland Plain Land Snail (*Meridolum corneovirens*) is restricted to the Cumberland Plain and Castlereagh Woodlands of western Sydney. It also occurs along the fringes of River Flat Eucalypt Forest, especially where it meets CPW. The species typically occurs under logs and other debris, amongst leaf and bark accumulations around bases of trees, where it burrows into loose soil. Whilst it can occur in disturbed areas, the species is more commonly found in less disturbed woodland areas (OEH 2013).

i. Relocation

The following protocol has been developed to guide the inspection and relocation of the species as it is known to inhabit the site.

1. In areas of CPW to be removed (see **Figure 1.5**), pre-clearing surveys will be carried out targeting the Cumberland Plain Land Snail;

2. All areas of the site with a canopy will have the leaf litter and loose soil around the base of large trees, logs or other debris inspected for the presence of the Cumberland Plain Land Snail;

3. Inspections must be carried out by personnel with adequate experience in the identification of the Cumberland Plain Land Snail;

4. Any Cumberland Plain Land Snails found during the clearance surveys will be relocated into similar adjacent habitat (within the patch of CPW to be retained and revegetated on site, or nearby off-site CPW) that will not be disturbed, taking into account aspect, shade and other microhabitat features; and

5. All Cumberland Plain Land Snails found during the clearance process will be documented and provided to the OEH as per licensing requirements.

ii. Habitat Enrichment

Cumberland Plain Land Snail habitat enrichment will occur within the site following the completion of the development. Logs stockpiled during the clearing phase of works will be relocated into the CPW area to be retained and rehabilitated and will provide suitable habitat for the species as CPW is restored.

4.6 Weed Management during Construction

Prior to clearance, infestations of significant weeds (noxious weeds listed under the NW Act or Weeds of National Significance (WONS)) will be recorded in the study area and mapped. If recommended by the ecologist, control of weeds will be undertaken to minimise the risk of spread of weeds during clearing. Weed control measures will be species specific.

Prior to clearing, all plant equipment entering the site will be inspected and recommended for wash down (in designated wash down areas) as required to ensure weed material from off-site locations do not establish or spread into native vegetation within the study area.

Any weed materials will need to be carefully removed off site in a manner appropriate to the species or at the direction of the ecologist and The Hills Shire Council guidelines so as to prevent the spread of propagules to uncleared areas of native vegetation, both on and off site.

Machinery involved in weed management will also be washed down prior to removal from site to prevent weeds from spreading into off site areas.

After construction is complete, a final inspection will be undertaken by the ecologist to check that weeds have been successfully contained.

4.7 Salvage of Hollow-Bearing Trees, Hollow-bearing Logs, and other Woody Material

The following fauna habitat features are to be salvaged during clearing and stockpiled for future use in restoration of the CPW and SSTF vegetation areas to be retained and restored on-site. Habitat features are to be stored until such time as restoration of the retained vegetation commences. Placement of stored habitat features within retained bushland areas will be undertaken in co-ordination with the Bushland Regeneration Contractor (BRC) or the ecologist.

4.7.1 Tree Hollows

Trees and stags containing hollows felled during the clearing process will be relocated within the on-site future CPW and SSTF reserves. Hollows will be trimmed by a tree removal specialist and relocated in trees within vegetation to be retained. When the relocation of a hollow is not possible, a nest box will be placed in a tree within the CPW and SSTF patches to ensure that all lost arboreal habitat is offset. Hollows to be translocated will be those that are structurally sound to the extent that they survive the trees felling and subsequent translocation.

4.7.2 Log Hollows

Any logs with hollows from clearing areas are to be salvaged for relocation into the CPW and SSTF patches of vegetation to be retained on site. Any logs that are not structurally sound to the extent that they will survive translocation do not need to be translocated.

The following method will be applied to rationalise the salvage of habitat resources to ensure that key habitat resources are retained and utilised in rehabilitation and offset areas (where appropriate).

4.7.3 Other Woody Material

Tree trunks and branches > 20 mm diameter should be cut into logs of varying lengths and stockpiled during clearing. Areas of CPW and SSTF to be retained exist in varying states of regrowth and lack habitat complexity. Fallen logs are used by a variety of invertebrate and vertebrate species as microhabitat areas, and for activities such as basking for reptiles.

In areas of on-site vegetation to be retained that lack fallen logs, logs of varying sizes should be translocated and placed in areas where they will do minimal harm to existing native vegetation. Large logs should not be placed at densities of closer than 10 m to each other following translocation.

4.8 Seed Collection / Harvest

Seed collection of native plants occurring within the study area should commence immediately. Seed collection will be undertaken by a company that specialises in growing endemic native plants from seed collected in bushland areas. This work can be undertaken by the BRC if the BRC chosen has a suitable native plant nursery. Seed collection visits should occur in each season across the site to obtain a seed collection from as many native species as possible, as flowering and seed setting times vary with species. Seed should be collected from all strata including grass and herb species. During clearing supervision works the ecologist should collect any seed present on felled trees to be passed on to the BRC or nursery staff.

Seeds collected should be germinated, and grown in a nursery for later planting during bushland restoration works in retained CPW and SSTF patches on-site. Plants grown from on-site sourced seed should also be used in the open space and riparian corridor landscaping wherever possible. Use of seed sourced on site for plantings will maintain local genetic diversity of species occurring on site.

Chapter 5

Vegetation Management Zones

5.1 Introduction

As discussed in **Chapter 3**, the study area has been significantly altered prior to its original state. Under this VMP areas of remnant CPW, SSTF, and former paddocks and stream banks are to be regenerated and revegetated with native, endemic plant species. Areas to be restored and revegetated have been divided into management zones based on the community of remnant vegetation and the specific management objectives required for each area. Management zones are shown in **Figure 5.1**. See **Chapter 6** for definitions of terms "Reconstruction" and "Regeneration".

Seven (7) vegetation zones with different management objectives have been created based on restoration of current occurrences of CPW and SSTF, and techniques for revegetation and reconstruction of these communities in open space areas. These zones are:

- Zone 1 – Existing CPW;
- Zone 2 – CPW – Revegetation on Existing Landform;
- Zone 3 – CPW – Reconstruction Following Major Earthworks;
- Zone 4 – CPW- Revegetation under Power line Easement;
- Zone 5 – Existing SSTF;
- Zone 6 – SSTF – Revegetation on Existing Landform; and
- Zone 7 – SSTF – Reconstruction Major Earthworks.

Zones 1 and 5 are to be restored using bushland regeneration to remove exotic weed species, with limited revegetation. Zones 2, 4 and 6 are to be revegetated to supplement existing remnant native herbaceous species where possible, and completely reconstructed in areas containing little remnant native ground cover, using existing landform and landscape features. Zones 3,, and 7 are to be completely reconstructed patches of woodland, following major earthworks, and are to consist only of endemic, native plantings, containing no remnant vegetation.

Importantly, Zone 3, Zone 4, Zone 6, and Zone 7 will have shared uses, including open recreation and parklands. As such the objectives for these zones will only apply to a portion of the management zone whereby bush land restoration is required. The exact quantum of areas for bush land regeneration within each zone will be identified at the Precinct DA stage.

5.2 Management Zones and Specific Objectives

5.2.1 Zone 1 - Existing Cumberland Plain Woodland

Zone 1 consists of degraded patches of CPW in the north-west of the study area containing remnant/regrowth canopy species, and remnant native understorey and ground layer species. The patches of woodland have relatively high densities of exotic species in the ground layer.

i. Objective

- Retain and protect existing CPW remnants in the zone;
- Control exotic weed species; and
- Supplement existing native vegetation with planting for diversity where required.

ii. Actions

Initial actions within this management zone will be the fencing of existing vegetation to ensure the protection of CPW. The existing area will be managed by a BRC, including as a first priority weed management.

Natural regeneration will be encouraged in currently wooded areas, with planting of canopy species only undertaken where needed if natural regeneration does not occur in months following weed removal. If required, CPW canopy species will be planted in bare patches within the existing canopy, and planting of understorey and ground layer species will be undertaken to restore areas where dense weed infestations have been removed, and for the purposes of increasing species diversity in these strata. A species list for CPW planting is provided in **Appendix D**, **Table D.1**.

5.2.2 Zone 2 - Cumberland Plain Woodland Revegetation on Existing Landform

Zone 2 consists of areas of land currently consisting of exotic dominated grassland, occurring adjacent to the Zone 1 patches of remnant CPW, a single patch further to the South. While these areas are dominated by exotic grasses, they are not degraded to the extent that the grasslands further south are, and still contain native elements, mostly scattered grasses and herbs. These areas will not undergo major earthworks and restoration of CPW will be undertaken on the currently existing landform.

i. Objective

- Control weeds;

- Retain native, remnant elements of ground layer and understorey where possible;
- Revegetate areas with a diverse array of native canopy, understorey, and ground layer species; and
- Link remnant CPW patches with revegetation areas to create larger CPW patch.

ii. Actions

This zone will be revegetated using CPW canopy species, shrubs, and a diverse array of herbs and grasses to restore cleared patches. The aim is to create a large patch of CPW in the north-west of the site, by linking remnant, existing patches of CPW (Zone 1) currently in this area. A list of suitable species for planting is provided in **Appendix D**, **Table D.1**. The restoration strategies for these areas will consist of a combination of regeneration and reconstruction depending on the dominance in specific areas of native ground cover/shrubs species.

5.2.3 Zone 3 – Cumberland Plain Woodland – Reconstruction After Major Earthworks

These areas will be completely cleared of vegetation during construction, with the landform to be changed following major earthworks. These areas are to be revegetated (reconstructed) as CPW to satisfy requirements of the SIS prepared for the site. The areas to be revegetated occur predominately along riparian corridors.

i. Objectives

- Restore cleared areas to form contiguous high-quality riparian corridor of CPW;
- Replace exotic species with locally endemic natives; and
- Utilise endemic, native species in landscaped open areas not to be fully revegetated.

ii. Actions

This management zone is to undergo weed management by the BRC of any exotic species remaining or regrowing following clearing for development. Areas within this zone to be revegetated are to be planted with a diverse range of the CPW species listed in **Appendix D**, **Table D.1**. In addition to species listed in the CPW species list, the following canopy species should be planted in riparian corridor areas: *Eucalyptus amplifolia* subsp. *amplifolia* (Cabbage Gum), *Angophora floribunda* (Rough-barked Apple), and *Angophora subvelutina* (Broad-leaved Apple). These species have been recorded in riparian areas on the study area, and are species consistent with the community River-Flat Eucalypt Forest, a community which occurs adjoining CPW in floodplain areas of the Cumberland Plain.

5.2.4 Zone 4 – Cumberland Plain Woodland – Revegetation under Power line Easement

Zone 4 consists of areas of land predominately consisting of exotic dominated grassland. While these areas are dominated by exotic grasses, they are not degraded to the extent that the grasslands further south are, and still contain native elements, mostly scattered grasses and herbs. These areas will undergo some earthworks involved in the construction of a power line and associated easement.

i. Objective

- Control weeds;
- Retain native, remnant elements of ground layer and understorey where possible; and
- Revegetate areas with a diverse array of native understorey, and ground layer species.

ii. Actions

This zone will be revegetated using CPW shrubs, and a diverse array of herbs and grasses to restore cleared patches (to be selected from **Appendix D**, **Table D.1**). Canopy species are not to be planted due to the area consisting of a power line easement, and shrubs to be planted will be species that grow no higher than four metres in height. The aim is to create an area that will allow genetic continuity of CPW flora species through reconstructed and regeneration areas elsewhere on the site, and provide habitat values and dispersal corridors for native fauna species. The restoration strategy for these areas will consist of a combination of regeneration and reconstruction depending on the dominance in specific areas of native ground cover/shrubs species remaining following power line construction.

5.2.5 Zone 5 – Existing Shale Sandstone Transition Forest

Zone 5 consists of a patch of SSTF in the centre of the northern area of the site. The community occurs along and surrounding reaches of Cataract Creek. The patch of SSTF contains the majority of the largest, remnant trees on the study area, the highest fauna habitat values, and contains a greater diversity of native flora species in all strata than other vegetation patches on the site. The ground layer however suffers in areas from significant coverage of exotic weed species (the grass *Cynodon dactylon* is particularly problematic), and occurrences of exotic shrub species are present throughout the patch.

i. Objective

- Control exotic weed species;
- Retain and protect existing SSTF remnants in the zone;
- Plant canopy species where significant gaps exist in the canopy;

- Plant understorey and ground layer species where required.

ii. Actions

Initial actions within this management zone will be the fencing of existing vegetation to ensure the protection of SSTF. The area will be managed by a BRC and initial works will focus on weed management. Natural regeneration will be encouraged in currently wooded areas, and canopy species will only be planted in areas where natural regeneration does not occur in the months following weed management. Canopy species will only be planted in areas where significant gaps occur in the canopy.

Regeneration of understorey and ground layer vegetation will also be encouraged, with the focus on assisted natural regeneration by removal of competing weed species. Planting will only occur in areas where natural diversity has been degraded due to former land uses and out competition by exotic species, and natural regeneration is not observed to be occurring.

A list of suitable species for planting in this area is provided in **Appendix D**, **Table D.2**.

5.2.6 Zone 6 – Shale Sandstone Transition Forest Revegetation on Existing Landform

Zone 6 consists of areas of land currently consisting of exotic dominated grassland, occurring adjacent to the Zone 5 patches of remnant SSTF, and a single patch further to the East. While these areas are dominated by exotic grasses, they are not degraded to the extent that the grasslands further south are, and still contain native elements, mostly scattered grasses and herbs. These areas will not undergo major earthworks and restoration of SSTF will be undertaken on the currently existing landform.

i. Objective

- Control weeds;
- Retain native, remnant elements of ground layer and understorey where possible;
- Revegetate areas with a diverse array of native canopy, understorey, and ground layer species; and
- Link remnant SSTF patches with revegetation areas to create larger SSTF patch in central northern area of the study area.

ii. Actions

This zone will be revegetated using SSTF canopy species, shrubs, and a diverse array of herbs and grasses to restore cleared patches. The aim is to create a large patch of CPW in the north-west of the site, by linking remnant, existing patches of CPW (Zone One) currently in this area. A list of suitable species for planting is provided in **Appendix D**, **Table D.2**. The restoration strategies for these areas will consist of a combination of regeneration and reconstruction depending on the dominance in specific areas of native ground cover/shrubs species.

5.2.7 Zone 7 - Shale Sandstone Transition Forest – Reconstruction After Major Earthworks

These areas will be completely cleared of vegetation during construction, with the landform to be changed following major earthworks. These areas are to be revegetated (reconstructed) as SSTF to satisfy requirements of the SIS prepared for the site. The areas to be revegetated occur predominately along riparian corridors.

i. Objectives

- Restore cleared areas to form contiguous high-quality riparian corridor of SSTF;
- Replace exotic species with locally endemic natives; and
- Utilise endemic, native species in landscaped open areas not to be fully revegetated.

ii. Actions

This management zone is to undergo weed management by the BRC of any exotic species remaining or regrowing following clearing for development. Areas within this zone to be revegetated are to be planted with a diverse range of the SSTF species listed in **Appendix D, Table D.2**.

Figure 5.1. Management Zones

150 0 150 300 450 600 m

Chapter **6**

Weed Management Plan

6.1 Introduction

6.1.1 Definition of Terms Used in this Chapter

Regeneration:

- DIPNR (2003) define "Assisted Natural Regeneration" as: *aiming to trigger the growth of native propagules (such as seed, tubers or rhizomes etc.) already present on site or having the ability to migrate onto the site, and aided by suitable management, to allow natural regeneration processes to occur.*

This form of *in-situ* restoration will be collectively referred to as: "Regeneration" in this report.

Reconstruction:

- DIPNR (2003) define Reconstruction through Re-vegetation as: *involving the introduction of locally indigenous plant species, modeled on the diversity and structural characteristics of the original plant community. It is carried-out by planting or re-introducing propagules.*

This form of *ex-situ* restoration will is referred to as: "Reconstruction" and "Revegetation" in this report.

6.1.2 Species Lists

Weeds identified by Cumberland Ecology (2012) make up the weed species lists used for the basis of this Weed Management Plan (refer to **Appendix C**). A list of control methods for specific weeds recorded on the site is provided in **Appendix E**.

Noxious weeds listed in The Hills Shire LGA and WONS recorded on site are listed in **Table 6.1**.

Table 6.1 Noxious weeds and WONS recorded in the study area

Species	Common Name	Category	Legal Requirements
Asparagus asparagoides	Bridal Creeper	WONS/Noxious Class 4	The growth of the plant must be managed in a manner that continuously inhibits the ability of the plant to spread and the plant must not be sold, propagated or knowingly distributed.
Ligustrum sinense	Small-leaved Privet	WONS/Noxious Class 4	The plant must not be sold, propagated or knowingly distributed
Rubus fruticosus	Blackberry	WONS/Noxious Class 4	The plant must be fully and continuously suppressed and destroyed and the plant must not be sold, propagated or knowingly distributed
Senecio madagascariensis	Fireweed	WONS	N/A

6.1.3 Relevant Legislation

The NW Act provides for the identification, classification and control of noxious weeds in New South Wales. Changes to the Act came into force in March 2006 via the *Noxious Weeds Amendment Act 2005.* Plants that are declared noxious weeds by the Minister are placed into the following weed control categories:

- Class 1 – State prohibited weeds:
  - These are plants that pose a potentially serious threat to primary production or the environment and are not present in the State or are present only to a limited extent.
- Class 2 – regionally prohibited weeds:
  - These are plants that pose a potentially serious threat to primary production or the environment of a region to which the order applies and are not present in the region or are present only to a limited extent.
- Class 3 – regionally controlled weeds:
  - These are plants that pose a serious threat to primary production or the environment of an area to which the order applies, are not widely distributed in the area and are likely to spread in the area or to another area.

- Class 4 – locally controlled weeds:
    - These are plants that pose a threat to primary production, the environment or human health, are widely distributed in an area to which the order applies and are likely to spread in the area or to another area.
- Class 5 – restricted plants:
    - These are plants that are likely, by their sale or the sale of their seeds or movement within the State or an area of the State, to spread in the State or outside the State.

A noxious weed that is classified as a Class 1, 2 or 5 noxious weed is referred to in the Noxious Weed Act as a notifiable weed.

6.1.4 Best Management Practice

Contractors for weed removal within the study area will have regard to the following, to minimise impacts upon existing vegetation and habitats:

- The main principles of the Bradley Method of bush regeneration, i.e. not over-clearing (remove only targeted species), employment of minimal disturbance techniques to avoid soil and surrounding vegetation disturbance, and replacement of disturbed mulch/leaf-litter;
- Removal of fruiting/seeding parts of weeds carefully, to minimise spread of plant propagules;
- Use of chemicals and sprays only during suitable weather conditions (i.e. not during wet or windy conditions), and only during appropriate seasons;
- All equipment should be thoroughly cleaned prior to entering the site to minimise contamination;
- Proximity to watercourses and swampy areas; and
- Presence of native fauna or nesting/breeding sites.

6.1.5 Weed Control Methods

Bush regeneration weed control is to be implemented for the management zones 1-6. Regeneration works should be approached using the strategies outlined below.

i. Manual Weed Removal

Manual removal, or hand weeding, is an effective form of weed control when all viable parts of the plant are removed from the soil (roots, fruiting material and rhizomes) and site. All weeds removed by hand will be handled according to best practice bush regeneration techniques to prevent subsequent seed set from the removed weeds, and the unviable plant material will be retained on site to provide mulch and natural leaf litter to protect the soil surface.

ii. Use of Herbicides

All herbicides should be used according to recommendations on the herbicide label. Appropriate Personal Protective Equipment (PPE) should be worn and consideration given to time of day, likelihood of rainfall, wind direction and likely impact on native species as per guidelines on the label. Use of glyphosate will be appropriate for most species. Glyphosphate is the preferred herbicide for use in environmentally sensitive areas as it is rapidly broken down by microbes in the soil so residue is short lived and will not affect remnant and planted native individuals in the long term following application. In areas near water courses, an appropriate form of the herbicide should be used to minimise impact to aquatic life and amphibians. Herbicide use should be avoided within 2m of the riparian edges. Examples of appropriate herbicide forms are Roundup Biactive and Clearup Bio 360 which have surfactants that are formulated to minimise harm to amphibians. As runoff is a likely way for herbicide residue to enter watercourses, chemical treatment should be avoided prior to or directly after rains.

It is important to note that there can be legal restrictions and permit requirements for use of specific herbicides for specific plants, and chemical labels and permit requirements always need to be researched prior to herbicide application. While the recommended methods for weed treatment detailed in **Table E.1** are effective, some will require a permit to be undertaken. The relevant permit numbers are PER9907, and PER11916. These permits need to be obtained from the Federal Government body, the Australian Pesticides and Veterinary Management Authority.

Manual removal will be an appropriate form of control for some species, and all chemical treatment should be carried out according to best practice guidelines.

Planting should not occur within 10 days of herbicide application.

6.1.6 Types of Weed Control

i. Primary Weeding

Primary weeding is the first stage of bushland regeneration and is recommended for zones 1, 2, 5 and 6.

Primary weeding may involve techniques such as:

- The selective spraying of weeds, with selective and non-selective herbicides (targeting weeds listed in **Table 6.1**);
- Cutting/scraping and painting deep rooted woody weeds and climbers with hand tools, chainsaws and brush cutters and painting cut stumps with herbicides containing Glyphosate or Picloram;

- Target drilling and injecting certain large tree weeds such as willow with herbicides such as Glyphosate and a Garlon/diesel mix; and

- Selective hand removal of weeds and wicker wiping of tall herbaceous weeds in situations where damage to proximate, low growing native plants can be avoided.

Primary weeding in the areas supporting remnant native vegetation can be implemented over the course of the initial project period, whereas primary weeding in areas proposed for planting can be implemented just before plantings are undertaken.

ii. Maintenance Weeding

Follow-up weeding should be undertaken in areas that have received past primary weeding treatments in the following months, to treat any regrowth of woody weeds.

Follow-up weeding involves the selective removal or treatment of weeds, whilst allowing regenerating or planted native plants to increase in size, abundance and percentage cover. All weeds should be targeted during the follow-up weeding phase. The follow-up bushland regeneration works are likely to be required at least every month per zone until weeds are at negligible levels. Site visits may be more frequent if it is determined necessary.

It is recommended that woody weeds, climbers, and key herbaceous weeds are subject to a programme of intense follow up weeding around any patches of regenerating native herbaceous plants to encourage the spread of the native plant species.

Follow-up weeding should be implemented for a minimum period of five continuous years, after primary weeding and erosion control and revegetation works have been completed. After the five-year follow-up and maintenance period has been completed, a review should be conducted to determine on-site maintenance requirements.

6.2 Weed Management in the Study Area

6.2.1 Site Preparation for Bushland Reconstruction Areas

The directions under the following headings should be undertaken sequentially during site preparation of bushland reconstruction areas.

i. Sediment Fencing

Areas within the management zones that currently exist as exotic grassland in which complete revegetation is to be undertaken need to be prepared prior to revegetation. Initially it should be determined whether the topography of the land will result in runoff of surface soil after initial weed management works. In areas where soil runoff is likely to occur temporary silt sediment fencing will be installed around the area to be revegetated, to prevent soil runoff during rain into drainage lines. Sediment fencing should be installed as close as possible to fences installed initially to delineate the reconstruction areas and prevent damage to native plantings by easy traversal of areas by members of the public.

ii. Installation of Tree Guards around Native Plants

Prior to commencing the initial weed management each area in which bushland reconstruction is to be undertaken should be searched for remnant, endemic native herbs and grasses occurring throughout the area. These plants should have a plastic tree guard around them where located. This will protect them from herbicide drift during spraying.

iii. Initial Weed Treatment

After installation of sediment fencing and installation of tree guards around native herbs and grasses has been completed initial weed treatment will commence. This will consist of spraying the entire vegetative surface with glyphosphate 360g/L at a concentration of 10 mL herbicide to 1L of water. This strength is commonly used in bushland regeneration works as it will effectively kill most herbaceous weed species. A marker dye should be used in the herbicide solution to ensure areas of exotic grasses and herbs are not missed. Knapsack sprayers with a spray cone to direct the spray towards the ground should be used to prevent herbicide drift into adjacent vegetated areas.

Following the initial spraying of exotic grassland areas in which revegetation is to take place the site should be left for three weeks to allow time for treated weeds to die back. After this period the entire area should be resprayed with glyphosphate again, with a focus made on treating any exotic plant species that still have green colouring left in foliage, and any juvenile germinated exotic grasses.

iv. Laying of Weed Suppression Materials

Several days after the second application of herbicide across the bushland reconstruction areas weed suppression materials will be installed across the entire soil surface. This will inhibit germination rates of exotic weed seed in the soil, inhibit vegetative regrowth of resilient exotic weed species, and prevent soil runoff of surface soils during rain in the period until native plantings have become established enough to prevent erosion. Weed suppression material can be a form of biodegradable matting such as jute matting, or mulch.

Jute matting is a commonly used biodegradable form of matting for bushland regeneration works. The heavier available forms of this product suppress weed growth. Holes would be needed to be cut in the matting if used to allow it to be placed around remnant native plant individuals occurring on the site, and holes would also need to be cut to plant tube stock into. As this is quite labour intensive, the most cost-effective method of weed suppression for the reconstruction areas would be using mulch.

Mulch can be easily laid across the study area in areas that contain no native plants. In areas containing native plants, the mulch can be spread on the ground surface around the occurrences of remnant native plants. If mulch is used a certified weed-free mulch of known provenance should be used. While mulch, or any other form of weed suppressing layer across the ground will inhibit regrowth of weeds, it will also inhibit regrowth of native plants from seed. For this reason, weed suppression matting or mulch should only be used initially to establish the revegetation site while intensive weed control is needed, and be allowed to biodegrade over time without being reapplied, unless required during the establishment period. Following application of weed suppression materials the reconstructed bushland areas will be planted out with native plants as per **Chapter 7**.

Tree guards should remain installed around remnant, native herbaceous plants until such time as they mature and set seed. This will prevent predation by exotic herbivorous animal species such as rabbits before they contribute seed to the soil seed bank, and protect them from herbicide drift during maintenance site visits by the bushland contractor.

6.2.2 Initial Weed Treatment of Regeneration Areas

Weed control methods for all weeds recorded as occurring on the site are provided in **Table E.1**.

i. Noxious Weeds

The first priority for weed treatment in regeneration areas will be targeting mature individuals of the three Noxious weed species recorded on the site, *Rubus fruticosus* (Blackberry), *Asparagus asparagoides* (Bridal Creeper), and *Ligustrum sinense* (Small-leaved Privet). These species are perennial and take several years to reach reproductive maturity so are easily controlled providing juveniles are continuously eradicated before reaching maturity.

ii. Primary Weeding

Following control of mature individuals of the two noxious weed species, primary weeding should be undertaken throughout the regeneration areas. The aims of primary weeding will be:

- Eliminating any woody weed species;
- Eliminating any mature Moth Vine (*Araujia sericifera*) individuals – This species can cover trees after several years of growth and outcompete them in access to light resources. The fruit pods are large and contain many wind dispersed seeds;
- Eliminating mature Fireweed (*Senecio madagascariensis*) individuals – This species is listed as a Weed of National Significance, is quick to mature and has wind dispersed seed, making it difficult to eradicate; and
- Targeting and eliminating any large, dominant infestations of exotic herbs and grasses. Prior to chemical treatment any seed on mature exotic plants should be bagged to prevent seed fall and addition to the exotic soil seed bank of propagules.

In areas where remnant native herbs and grasses occur sporadically amongst dominant infestations of exotic weeds, plastic tree guards should be installed around them to protect them from herbicide drift during spraying. The goal of primary weeding for the regeneration areas will be to eliminate all the larger weed infestations to allow planting to take place to fill gaps in the understorey and canopy without competition from weed species.

During site visits for primary weeding the bushland maintenance team should start from one end of each regeneration area and work towards the other end to achieve the aims listed above through the entirety of each area, and prepare the site for planting. Spot spraying with herbicide will be used in any areas where there is negligible risk to collateral damage of native vegetation as it is more cost and time effective than hand weeding techniques.

6.2.3 Ongoing Weed Maintenance in Reconstruction and Regeneration Areas

Weed suppression methods such as mulching/matting will suppress mass regrowth of weeds in reconstruction areas initially, but not entirely prevent regrowth of weeds. The most cost and time effective method of controlling weed regrowth in a revegetation area or weedy bushland area is by spraying a non-selective glyphosphate herbicide. A list of effective methods for control of weeds on site is found in **Appendix E**.

Ongoing maintenance of the reconstruction and regeneration areas should occur for a five year period by the contracted bushland regeneration company, and each area should be covered in its entirety once every month, to diminish the soil seed bank of exotic weed species present on site. In order to eliminate the occurrence of these species they need to be controlled before they have a chance to set seed, otherwise progress on the site will not be made.

Tree guards should remain around native remnant plants, and native plants that have been planted, for at least 6 months to protect them from herbivory. Rabbits can devastate revegetation areas soon after planting, if tree guards are not used. Tree guards will also allow herbicide to be used for control of the majority of regrowth weeds, without damage to native plants by herbicide drift.

The following sequential steps are recommended to manage each area of the site effectively for each site visit:

1. Initially the bushland regeneration team visiting the site should sweep from one end of each area to the other. During this sweep weeds occurring within each tree guard alongside native plants should be removed by hand and any weed occurring within a patch of dominant native plants (such as a patch of grasses). During this sweep regrowth individuals of harder to manage weeds that require other techniques such as sawing, digging, drilling etc. should be targeted.
2. A member of the team should then sweep the entire area, spraying all regrowth weeds between native plantings/remnant natives in open areas with herbicide, and spot spraying where possible in regeneration areas.

It is important during site visits for ongoing weed maintenance that as many weeds as possible are controlled so individuals are not able to achieve maturity and set seed between site visits. Some weed species such as *Bidens pilosa* (Cobbler's Pegs), and *Ehrharta erecta* (Panic Veldtgrass) are prolific seeders, and many exotic plants can have seed that remains viable in the soil for long periods of time. In order to effectively diminish the soil seed bank occurrences of exotic species it is important that individuals are not allowed to set seed.

During site visits for weed control, noxious weeds and WONS (**Table 6.1**) should be prioritised for control. Individual plants of these species on site should not be allowed to achieve a reproductive stage in their life cycles.

Temporary sediment fencing should be retained until it is determined plants have established enough to prevent surface soil runoff.

6.3 Weed Control Methods

Weed control methods for all exotic and non-endemic species recorded on the site are located in **Appendix E**. The preparation of weed control methods involved a literature review to determine the most up-to-date methods of weed control for exotic species that are present on the site. This literature review involved a variety of sources including government fact sheets and websites. Previous professional experience of a Cumberland Ecology botanist formerly employed in bushland maintenance was also utilised. This list includes additional species not recorded on the site that are common, exotic weed species in the Sydney Region. Exotic species recorded in the study area can be located in **Appendix C**.

Chapter 7

Reconstruction and Regeneration Plan

7.1 Introduction

This chapter outlines the techniques and strategies to fulfil the objectives listed below. The Reconstruction and Regeneration Plan is proposed to maintain and improve the vegetation condition across the site specific to the CEECs and enhance the value of the site as a habitat resource for threatened fauna species. The definitions of "Regeneration" and "Reconstruction" used in this chapter are as follows:

Regeneration:

- DIPNR (2003) define "Assisted Natural Regeneration" as: *aiming to trigger the growth of native propagules (such as seed, tubers or rhizomes etc.) already present on site or having the ability to migrate onto the site, and aided by suitable management, to allow natural regeneration processes to occur.*

This form of *in-situ* restoration will be collectively referred to as: "Regeneration" in this report.

Reconstruction:

- DIPNR (2003) define Reconstruction through revegetation as: *involving the introduction of locally indigenous plant species, modeled on the diversity and structural characteristics of the original plant community. It is carried-out by planting or re-introducing propagules.*

This form of *ex-situ* restoration is referred to as: "Reconstruction" and "Revegetation" in this report.

7.2 Objectives

This chapter provides details of restoration specific to the CEECs CPW and SSTF which both have been identified within study area and guidelines for ongoing maintenance of vegetated areas (including weed control).

The aim for the vegetation to be retained is to achieve the following performance based outcomes;

- Control threats affecting the health of regenerating native vegetation and inhibiting the future regeneration potential of these plant communities;
- Increase species diversity and percentage cover of native vegetation plant species in retained bushland areas;
- Improve the resistance of native vegetation within the retained bushland areas to future weed colonization and establishment and related threats, by initiating the two above aims;
- Use measurable indicators to monitor regeneration responses and to assist in prioritizing bushland regeneration works during the proposed works program.

7.3 Recommended Revegetation techniques

Appropriate plants species for CPW and SSTF within the study area are provided in **Appendix D**, and are to be used for selection for re-vegetation of the site in Zones 1-6. Plantings to be planted will be sourced from Local Provenance; these may come from seed collections or cuttings from within the existing remnant vegetation within Zone 1 and Zone 3.

7.3.1 Species Selection and Planting Densities

i. Species Selection

It is recommended that a mix of local native trees, shrubs, and ground layer plants are replanted at the specified densities outlined below. Lists of suitable plant species for reconstruction areas are provided in **Appendix D**. Plant species selection is to be based on the descriptions of the zones (**Chapter 5**).

All plants will be disease and pest-free, hardened off and well-watered at the time of planting. All plants are to be provided in a healthy condition. They must have good root development and a sturdy shoot system.

Final species selection will be based upon:

- Availability of seed material;
- Exclusion of plants likely to naturally regenerate on the site; and
- Previous experience with species re-vegetation performance.

ii. Planting Densities

a. CPW

The recommended reconstruction planting specifications for CPW are as follows:

- Canopy Trees @ 1 unit / $16m^2$

- Shrubs @ 1 unit / 16 m^2
- Groundcovers @ 1 unit / 1m^2 planted in clumps/thickets over.

b. SSTF

The recommended reconstruction planting specifications for CPW are as follows:

- Canopy Trees @ 1 unit / 10m^2
- Shrubs @ 1 unit / 5 m^2
- Groundcovers @ 1 unit / 1m^2 planted in clumps/thickets over.

7.3.2 Characteristic Planting Units

It is advised that species should be planted in characteristic planting units to correspond with the topology, aspect, soil type and proximity to water.

Grasses may be planted in clumps of 3+ (spaced 15–20 cm apart within clumps) to generate physical / structural support for each other and microclimates. Wind pollinated grasses such as *Themeda australis* may be particularly planted in clumps to aid fertilisation and to create a natural grassland understorey within the restoration areas.

7.3.3 Plant Supply

Prior to the initiation of planting procedures it may be necessary to collect or source suitable quantities of local native seed in Zone 1 and Zone 5 to ensure suitable numbers of local provenance vegetation seed are available for the plant propagation phase of the proposed bushland reconstruction works programme.

Local native plant species should be collected using principles prescribed in *'Bringing the Bush back to Western Sydney'* (DIPNR 2003). Seeds and vegetative propagules should be of local provenance from within The Hills Shire LGA, and not more than 10 kilometres from the site, be used for collection and propagation in a local commercial or community nursery.

It may be necessary to get the required amounts of seed and vegetative material contract-collected and grown-on by specialist nurseries. Local native plants should be grown in "Hiko" tube, maxi cell or viro-tube, or Forestry Tube-type containers.

7.3.4 Re-vegetation Objectives to Maximise Fauna Utilisation

In order to improve habitat on site for fauna, plant species will be chosen that provide food, shelter and refuge opportunities for native and threatened fauna. Plant species selection has taken account of the following principles:

i. Cumberland Plain Woodland

- Increase winter flowering Eucalypts for threatened bird species such as the Regent Honeyeater and Swift Parrot;

- Include marsupial feed trees such as Grey Gum and Forest Red Gum;
- Increase trees and groundcovers favoured by arboreal mammals such as flowering Eucalypts; and
- Include species that mature to become good hollow-bearing trees (such as Eucalypts) for hollow-dependent fauna such as parrots, owls, gliders and microchiropteran bats.

ii. *Shale Sandstone Transition Forest*

- Increase shrubs species to increase small bird habitat; and
- Increase Casuarinaceae species that may provide forage resources for threatened cockatoos.

7.4 Regeneration Site Preparation

Site preparation activities for Zone 1 and Zone 5 will include preliminary weed control. Areas with currently existing canopy coverage will largely be left to re-generate naturally with ongoing and sustained weed eradication.

Recommended strategies should include:

- Initial and ongoing control of weeds and competing grasses using bushland regeneration techniques and conventional best practice chemical and physical strategies;
- Stabilising soils within areas using square jute fibre mats, (or woodchip leaf mulch) to in areas following weed control where regeneration is not occurring;
- Planting of tree, shrubs, and ground cover species only when required to fill strata gaps if natural regeneration does not occur following weed control, and to increase species diversity in depauperate areas; and
- Maintaining regeneration treatments (weeding, replacing dead plantings and repairing / replacing weed mat/mulch if need during the planting establishment period), as a part of an ongoing maintenance programme.

Jute matting/mulching should only be used in remnant bushland areas to curtail erosion in cases where natural regeneration is not occurring. However, it is preferable to use lengths of natural logs from felled trees elsewhere, pinned into the ground with wooden stakes, and further stabilise surface with plantings. The logs and wooden stakes will decompose over time during which plantings will grow to stabilise soils.

7.5 Maintenance of Regeneration Zones

After Regeneration Site Preparation and planting works have been completed in Zone 1 and Zone 5, treated areas should be maintained by appropriately qualified personnel, selectively spot spraying and hand weeding around native plants, watering plants and replacing dead planting if needed.

Re-growing environmental weeds such as vines, woody trees and shrubs, broadleaf annuals and naturalised grasses should be closely monitored and controlled using ecologically sensitive bushland regeneration hand weeding and spot-spraying methods, to ensure adequate weed control and native plant establishment. Weeding within regeneration areas using selective herbicides will be required.

7.6 Reconstruction Site Preparation

Site preparation activities for Zone 2, Zone 4, Zone 6, and Zone 7 will also include preliminary weed control. Areas within these zones should be identified where full reconstruction is needed, and areas should be identified where sufficient native flora remnants persist in the shrub/ground layer to justify retention of layers, weed control, and revegetation to fill gaps in strata. Zone 3 areas will require complete reconstruction.

The replanting of individuals from seed or tube stock will require the treatment of soils, the installation of protective plant fencing, and ongoing maintenance treatments such as watering and weeding.

Recommended reconstruction strategies should include:

- Initial and ongoing control of weeds and competing grasses using bushland regeneration techniques and conventional best practice chemical and physical strategies;
- Specifically collecting local plant seed and subsequent propagation in cell-grown seedling containers;
- Treatment of soils within each planted tube stock plant hole with a plant establishment aid that contains a mix of materials such as slow and quick release fertilisers, water holding crystals, rooting hormones and wetting agents, (i.e. products such as Terra Cottem by TC Advantage Pty Ltd or Sure Start by Barmac). These agents assist in establishing newly installed plants and can reduce establishment watering resources by up to 50%;
- Installing suitable propagated cell-grown seedlings, using specified techniques, species composition schedules and rates, using hand planting or mechanical planting techniques;
- Stabilising soils and suppressing weeds around individual reconstruction plantings using products, such as 40cm square jute fibre mats or clean straw (straw recycled

from slashing the Pasture Precinct is recommended) or woodchip leaf mulch to a 50cm diameter and 75mm depth;

- Protecting individual plantings with a tree guard from feral animal grazing, frost and maintenance herbicide spraying overspray. Bamboo stakes 3 x 10-12mm x 750 mm and 1 x 350 mm x 450 mm plastic tree guards are suitable for this purpose; and

- Maintaining reconstruction treatments (including watering, weeding, replacing dead plant material and repairing / replacing weed mat/mulch), as a part of an ongoing maintenance programme.

7.7 Maintenance of Reconstruction Zones

After planting works have been completed, treated areas should be maintained by appropriately by qualified personnel, selectively spot spraying and hand weeding around native plants, watering plants and replacing dead plants as needed.

Provision should be made to irrigate newly reconstructed areas, as required, in the first 3 months after installation, (on at least 4-5 occasions, depending on rainfall conditions, more watering if required). Irrigation water may be sourced by pumping from the river and local dams. A permit from the NSW Office of Water may be sought to use water for watering-in newly installed plants.

Re-growing environmental weeds such as vines, woody trees and shrubs, broadleaf annuals and naturalised grasses should be closely monitored and controlled using ecologically sensitive bushland regeneration hand weeding and spot-spraying methods, to ensure adequate weed control and native plant establishment. Weeding inside each planting bag by hand or selective herbicides will be required, as well as in an approximate 50 cm radius around the outside of each plant and tree guard.

Plants that have died due to drought or pest and disease damage should be replaced as required. Plants that are observed to have died should be replaced by the bushland maintenance team with a planting of the same form during the next site visit by the team. At the end of the maintenance period the density of living planted plants should be as outlined in ***Section 7.3.1 ii***.

7.8 Ongoing Management during Operation of the Study Area

A five year maintenance period has been allowed for this plan. Maintenance works are outlined below.

7.8.1 Weed Control

This is the greatest component of long-term management at the site. Eradication of noxious and / or serious weeds will occur along with the suppression of introduced grasses, annuals, vines and perennial weeds. A strategic weed control plan is included in this report (**Chapter 6**) for a maintenance period of five years.

7.8.2 Monitoring of Regenerating Vegetation

Inspection of the regeneration areas should be undertaken by the supervisor / project manager monthly thereafter for the duration of the project. Areas where noxious / serious weeds have been treated should be inspected on a fortnightly basis following initial treatment to assess when and if repeat treatments are necessary. This can be done by maintenance personnel during normal maintenance tasks and reported back to the supervisor / project manager.

7.8.3 Management of Ground Fuel Loads

Following the establishment of canopy plantings, a ground fuel assessment will be undertaken by a suitably qualified bushfire ecologist. This assessment will inform the future management of the site with regards to the manual removal of ground fuels and hazard reduction burns. The assessment will provide clear directions as to the amount of ground fuel to be removed annually, and a timeline for works. Annual monitoring will be undertaken by a bushfire ecologist to ensure that targets are being met.

7.9 Schedule of Works

This Reconstruction and Regeneration Plan covers work to be carried out on site over five years. The measures that are planned over this time period within management Zones 1 and 2 are as follows:

i. Short term: years 1 and 2 (during each development stage)

- Fencing;
- Weed control;
- Planting of canopy species;
- Planting of canopy, shrub, and groundcover species;
- Replacement of any tube stock individuals that have died between site visits;
- Management fuel loads within APZs; and
- Monitoring, management and reporting.

ii. Long Term: years 3, 4, and 5

- On-going weed control in accordance with Hills Shire Council weed management practices;
- Replacement of any tube stock individuals that have died between site visits; and

- Monitoring, management and reporting in accordance with Hills Shire Council policy.

Chapter **8**

Monitoring and Reporting

It is recommended that a project manager/supervisor with the BRC be assigned to co-ordinate, supervise and manage all works and correspondence with respect to the restoration of the CEECs. The project manager must be available for the duration of the project and become familiar with the site and progress of all aspects of works undertaken.

The project manager will be responsible for allocation of maintenance tasks to personnel in response to establishment issues and other factors as monitoring results are reported (e.g.: plant losses/re-planting, weed control, irrigation). Regular monitoring and feedback from personnel will assist in the allocation of labour relative to available funds.

8.1 Monitoring Program

The following activities are to be conducted as part of the monitoring program:

- Establish a series of fixed monitoring points. Three monitoring points should be established as a minimum within management zones 1 and 2 but additional points can be established for areas with particular weed problems;

- Take photographs annually from each monitoring point. Compare photographs to previous years;

- Use the photograph point to form a corner of a 20x20m quadrat at each monitoring point. Note any weeds occurring in the quadrat and state relative abundance of weed species (using Braun-Blanquet scale), as well as projective foliage cover of native species in each strata. Record numbers of failed plantings in each quadrat; and

- Note any other weed outbreaks in the regeneration and restoration areas. This can be done while walking between monitoring points.

Monitoring will be conducted before weed control commences, then once every month while reconstruction works are undertaken. Once initial plantings are complete, monitoring will be conducted every three months for the next year, then every six months after that for the life of the VMP.

During the period of six-monthly monitoring, if maintenance weeding is conducted, each patch of land where weed control has occurred should be checked approximately a month afterwards, or after rain, in order to determine whether more weeding is required.

8.2 Reporting

A brief and concise report should be submitted every six months for the life of the VMP. This report will be forwarded to The Hills Shire Council and will provide a record of the implementation of the VMP. The report will:

- Describe the reconstruction works undertaken;
- State the findings of the monitoring activities;
- Discuss any problems encountered in implementing the VMP; and
- Recommend any adaptations or additions to the VMP.

The report should contain the photographs, as well as a short description of weeds in each quadrat and a short comparison of the photographs to the previous years. Any other notable occurrences of weeds should also be reported. The report should also recommend and prioritise areas where weed control should be targeted.

Chapter 9

Timing and Responsibilities

The study area is to be managed in a series of phases as follows:

- Phase 1 – Site Preparation
- Phase 2 – Restoration Works Commence
- Phase 3 – Maintennance
- Phase 4 – Monitoring and Reporting

Timing and responsibilities at each phase of management within the management zones are shown within **Table 9.1**. The timing and responsibilities during fauna clearing is shown in **Table 9.2**. These tables assign each activity for the management zone within each phase to those responsible.

Table 9.1 Timing and responsibilities within management zones

Management Zone	Action	Responsibility	Performance Criteria	Timing
Phase 1 Site Preparation				
Zone 1, 5	Seed Collection	Bush Regeneration Contractor	Seed collected from native plants and germinated	Immediately
All areas adjacent to vegetation to be retained within Zone 1, 2, 5, and 6.	Delineation of clearing boundary	Property Owner or Subcontractor	Marking using GPS and high visibility tape, fencing and boundary markers.	Before construction works commence
Zone 1-7	Establish fixed monitoring points	Bush Regeneration Contracotr or Ecologist	Using star pickets and GPS establish a series of monitoring sites that can be used for photograph comparison, measuring weed and plant retention.	Prior to commencement of Bushland Restoration and Weeding works
All zones with vegetation to be retained	Fence installation to delineate and protect retained native vegetation	Property Owner or Subcontractor	Metal temporary fence installed around existing native vegetation to exclude vehicles and machines for the duration of works	Prior to construction works commencing
All areas – prior to any vegetation clearing	Flora Pre-clearing Surveys	Ecologist	Identify any threatened plant species within areas. If encountered, Threatened plants will be counted and/or population estimated and considered for Translocation. All records will be reported to OEH and DotE.	Prior to any vegetation clearing
All areas with vegetation clearing	Clearance	Contractor	Removal of native vegetation	X
All areas with canopy species to	Salvage Habitat Features	Contractor	Tree hollows, Log hollows and other	1-2 weeks after Clearing

Table 9.1 Timing and responsibilities within management zones

Management Zone	Action	Responsibility	Performance Criteria	Timing
be felled			woody material will be salvaged and stockpiled for future use in revegetation areas and for habitat complexity	
Phase 2 - Restoration Works Commence				
Zone 1-7	Fixed Point Monitoring.	Bush Regeneration Contractor	Photographs of fixed monitoring sites before initial weeding	Prior to commencement of restoration works for each area
Zones 1-7	Carry out primary weeding.	Bush Regeneration Contractor	Main weed infestations and noxious weeds and WONS removed - Reproductively mature plants absent from site.	First month of restoration works for each Zone
Zone 1-7	Fixed Point Monitoring.	Bush Regeneration Contractor	Photographs of fixed monitoring sites prior to weeding each month.	Once a month for duration of VMP restoration works
Zone 1, 5	Revegetate where natural SSTF regeneration has not occurred, or in depauperate areas not representing diversity of intact SSTF/CPW.	Bush Regeneration Contractor	Native plants have been planted (species from Table D.1) in areas where there are gaps in any vegetation strata in which natural SSTF revegetation has not occurred following primary weeding.	6 months after commencement of weed control
Zone 2, 3, 4, 6, 7	Revegetate reconstruction areas. In this zone canopy, small tree,	Bush Regeneration Contractor	Native plants have been planted (species from Appendix D) in all	Immediately upon establishment of

Table 9.1 Timing and responsibilities within management zones

Management Zone	Action	Responsibility	Performance Criteria	Timing
	shrub, and some ground cover CPW species will need to be planted along the riparian corridor. Plantings may need to be undertaken in various strata.		vegetation strata.	reconstruction areas
Zone 2, 3, 4, 6, 7	Fixed Point Monitoring.	Bush Regeneration Contractor	Photographs of fixed monitoring sites to compare the survival and retention of plantings.	Every 3 months after the first year of plantings. Every 6 months following the initial year for the life of the VMP.
Zones 1 - 7	Carry out secondary weeding.	Bush Regeneration Contractor	Weed regrowth following primary weeding removed. Work has commenced on control of annual weed species.	Following primary weeding, site visits monthly.
Phase 3 - Maintenance				
Zones 1-7	Carry out maintenance weeding throughout vegetation zones	Bush Regeneration Contractor	Existing weed growth minimised or controlled; Regrowth following secondary weeding controlled No new weed species or infestations	Monthly for each zone for duration of 5 year maintenance period under VMP

Table 9.1 Timing and responsibilities within management zones

Management Zone	Action	Responsibility	Performance Criteria	Timing
Zones 1-7	Maintenance of plantings.	Bush Regeneration Contractor	Any dead plantings replaced Plants watered when drought stressed Additional plantings where required due to observed gaps in any strata	Monthly for each zone for duration of 5 year maintenance period under VMP
Phase 4 - Monitoring and reporting				
Zones 1 - 7	Biannual inspection of site.	Bushland Management or Ecologist	Site inspection completed as outlined in Chapter 8	Every 6 months for 5 year maintenance period of VMP
Zones 1 - 7	Progress report preparation.	Bushland Management or Ecologist	Annual Report prepared on progress of restoration works.	Once a year for the 5 year maintenance period of VMP
Zones 1 - 7	Final Inspection of Site.	Bushland Management or Ecologist	Final Inspection carried out at completion of VMP.	After 5 years of maintenance under VMP
Zones 1 - 7	Final Report.	Bushland Management or Ecologist	Final report detailing success of restoration or outlining further works needed.	After 5 years of maintenance under VMP

Table 9.2 Timing and responsibilities for fauna during clearing

Management Zone(s)	Action	Responsibility	Performance Criteria	Timing (Since commencement of VMP)
Zone 1, 3	Habitat Assessment	Licensed Wildlife Carers or Ecologist	Spray paint trees and habitat features e.g. Hollows, logs with 'H'	1-2 weeks prior to Clearing
Zone 1, 3	Fauna Pre-clearing Surveys	Ecologist	Identify any fauna species within Zone 1 and Zone 3 that may be likely to occur (as per SIS). Fauna species will be relocated or encouraged to leave.	1 week prior to clearing
Zone 1, 3	Fauna Relocation and Clearing	Licensed Wildlife Carers or Ecologist	Capture and/or remove fauna to pre-determined habitat for release.	Day of clearing
Zone 1, 3	Relocation of Cumberland Land Snail (CLS)	Licensed Wildlife Carers or Ecologist	Identified, Captured and Relocated to similar adjacent habitat	Day of clearing
Zone 1, 3	CLS Habitat Enrichment	Contractor	Stockpiled logs will be relocated in the Zone 3 to provide habitat for CLS	1-2 weeks after Clearing
Zone 1, 3	Salvage Habitat Features	Contractor	Tree hollows, Log hollows and other woody material will be salvaged and stockpiled for future use in revegetation areas and for habitat complexity	1-2 weeks after Clearing
Zone 1,3	Nest Box	Contractor	Where hollow relocation not possible, nest box placed in tree.	Prior to clearing

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Appendix A

Flora Quadrat Data

Table A.1 Flora data from quadrats and rapid points

Form	Native/ Exotic	Family	Species	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R1	R2	R3	R4	R5
Trees	native	Myrtaceae	*Angophora bakeri*	Narrow-leaved Apple																					X				
Trees	native	Myrtaceae	*Eucalyptus amplifolia*	Cabbage Gum																			5			X			
Trees	native	Myrtaceae	*Eucalyptus crebra*	Narrow Leaved Ironbark	5		1	1										6	5							X			X
Trees	native	Myrtaceae	*Eucalyptus eugenioides*	Thin-leaved Stringybark																									
Trees	native	Myrtaceae	*Eucalyptus fibrosa*	Red Ironbark																					X				
Trees	native	Myrtaceae	*Eucalyptus moluccana*	Grey Box	2		1	5						5															
Trees	native	Myrtaceae	*Eucalyptus parramattensis subsp. parramattensis*	Parramatta Red Gum																					X				
Trees	native	Myrtaceae	*Eucalyptus punctata*	Grey Gum																			6		X				
Trees	native	Myrtaceae	*Eucalyptus racemosa*	Snappy Gum																						X			
Trees	native	Myrtaceae	*Eucalyptus resinifera*	Red Mahogany						5			5																
Trees	native	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum	1		1	5		5	6	5	6	5		6	5						5		X	X			
Small Trees	native	Fabaceae (Mimosoideae)	*Acacia parramattensis*	Parramatta wattle											5		5												
Small Trees	native	Myrtaceae	*Eucalyptus crebra*	Narrow Leaved Ironbark														X											
Small Trees	native	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum							5		5	5	6	5	5												
Small Trees	native	Myrtaceae	*Eucalyptus resinifera*	Red Mahogany						5																			
Small Trees	native	Myrtaceae	*Melaleuca decora*									5																	
Small Trees	native	Myrtaceae	*Melaleuca nodosa*																							X			
Small Trees	native	Myrtaceae	*Melaleuca thymifolia*																						X				
Shrubs	native	Asteraceae	*Ozothamnus diosmifolius*	Rice Flower						3		2	X	4			5						1						
Shrubs	exotic	Cactaceae	*Opuntia stricta*	Common Prickly Pear										1															
Shrubs	native	Fabaceae (Faboideae)	*Daviesia ulicifolia*	Gorse Bitter Pea	1							X					5									X			
Shrubs	native	Fabaceae (Faboideae)	*Daviesia ulicifolia subsp. ulicifolia*	Gorse Bitter Pea						1																			
Shrubs	native	Fabaceae (Mimosoideae)	*Acacia parramattensis*	Parramatta wattle							1				4		5												
Shrubs	native	Fabaceae (Mimosoideae)	*Acacia sp.*										X	4			5												
Shrubs	exotic	Malvaceae	*Sida rhombifolia*	Paddy's Lucerne	2		2	2																					
Shrubs	native/exotic	Meliaceae	*Melia azedarach*	White Cedar						1																			
Shrubs	native	Myrtaceae	*Eucalyptus moluccana*	Grey Box	2																								

Table A.1 Flora data from quadrats and rapid points

Form	Native/ Exotic	Family	Species	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R1	R2	R3	R4	R5
Shrubs	native	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum	2		3								5														
Shrubs	native	Myrtaceae	*Melaleuca decora*	Flax-leaved Paperbark								5	1																
Shrubs	native	Myrtaceae	*Melaleuca linariifolia*									1	1																
Shrubs	native	Phyllanthaceae	*Breynia oblongifolia*	Coffee Bush						2																			
Shrubs	native	Pittosporaceae	*Bursaria spinosa*	Blackthorn	2		1			3	2	2	X	5		2													
Shrubs	native	Proteaceae	*Persoonia linearis*	Narrow-leaved Geebung						1																			
Shrubs	exotic	Rosaceae	*Rubus fruticosus*	Blackberry						2		1		5		1	4								X				
Shrubs	native	Santalaceae	*Exocarpos cupressiformis*	Cherry Ballart						1					1														
Shrubs	exotic	Solanaceae	*Solanum mauritianum*	Tobacco Bush				1																					
Dicots	native	Acanthaceae	*Brunoniella australis*	Blue Trumpet	1			2		2																			X
Dicots	native	Amaranthaceae	*Alternanthera denticulata*	Lesser Joyweed						1																			
Dicots	native	Apiaceae	*Centella asiatica*	Indian Pennywort	2	4	2		3				3				3					2							
Dicots	native	Apiaceae	*Cyclospermum leptophyllum*	Slender Celery						2										2									
Dicots	exotic	Apiaceae	*Foeniculum vulgare*																					3					
Dicots	exotic	Apocynaceae	*Araujia sericifera*	Moth Vine						2																			
Dicots	exotic	Asteraceae	*Bidens pilosa*	Cobblers Pegs																2									X
Dicots	exotic	Asteraceae	*Cirsium vulgare*	Spear Thistle	2	1	2			2	3	3	3	3	2	1			2		X	2		2					
Dicots	exotic	Asteraceae	*Conyza bonariensis*	Flax-leaf Fleabane	2	2		1	1												7								
Dicots	exotic	Asteraceae	*Conyza sp.*							3			3		3														
Dicots	native	Asteraceae	*Cotula australis*	Common Cotula																									
Dicots	exotic	Asteraceae	*Gnaphalium sp.*	-					2																				
Dicots	exotic	Asteraceae	*Hypochaeris microcephala*	White Flat Weed												3		3	4	2	X								
Dicots	exotic	Asteraceae	*Hypochaeris radicata*	Catsear		1														3	X	4						X	
Dicots	exotic	Asteraceae	*Lactuca saligna*	Willow-leaved Lettuce						2																			
Dicots	exotic	Asteraceae	*Senecio madagascariensis*	Fireweed	2	3	2		2	3	4	4	3	3	3	4		4	4	4	X	3	3	3	X		X	X	
Dicots	exotic	Asteraceae	*Senecio sp*			3				1																			
Dicots	native	Asteraceae	*Sigesbeckia orientalis*		2	2	1		2	2																			
Dicots	exotic	Asteraceae	*Soliva sessilis*	Jo-jo															2		X								
Dicots	exotic	Asteraceae	*Sonchus oleraceus*	Common Sowthistle						2				2								2							
Dicots	exotic	Asteraceae	*Tagetes minuta*	Stinking Roger												1													
Dicots	exotic	Asteraceae	*Taraxacum officinale*	Dandelion												2								3					

Table A.1 Flora data from quadrats and rapid points

Form	Native/ Exotic	Family	Species	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R1	R2	R3	R4	R5
Dicots	exotic	Boraginaceae	*Echium plantagineum*	Paterson's Curse																	X								
Dicots	exotic	Brassicaceae	*Cardamine hirsuta*	Common Bittercress						2				3						2	X								
Dicots	exotic	Brassicaceae	*Lepidium africanum*															2											
Dicots	native	Campanulaceae	*Wahlenbergia gracilis*	Sprawling Bluebell							X																		
Dicots	exotic	Caryophyllaceae	*Cerastium glomeratum*	Mouse-ear Chickweed																3				2					
Dicots	exotic	Caryophyllaceae	*Paronychia brasiliana*	Chilean Whitlow Wort							1	2																	
Dicots	exotic	Caryophyllaceae	*Silene gallica var. gallica*																1										
Dicots	exotic	Caryophyllaceae	*Stellaria media*	Common Chickweed						2		3								2									
Dicots	native	Casuarinaceae	*Allocasuarina littoralis*	black she-oak																					X				
Dicots	native	Chenopodiaceae	*Atriplex semibaccata*																										X
Dicots	native	Chenopodiaceae	*Einadia hastata*	Berry Saltbush									X	4			4												X
Dicots	native	Chenopodiaceae	*Einadia nutans*	Climbing Saltbush									1																
Dicots	native	Chenopodiaceae	*Einadia polygonoides*											3															
Dicots	native	Chenopodiaceae	*Einadia sp.*							1																			
Dicots	native	Chenopodiaceae	*Einadia trigonos*	Fish Weed							3					4							2						
Dicots	native	Clusiaceae	*Hypericum gramineum*	Small St John's Wort	2	2	1		2													2							
Dicots	exotic	Clusiaceae	*Hypericum perforatum*	St. Johns Wort													2												
Dicots	native	Commelinaceae	*Commelina cyanea*	Native Wandering Jew						2						3													
Dicots	native	Convolvulaceae	*Dichondra repens*	Kidney Weed	2		3	3	3	3	3	4	3			3	2		X		X								X
Dicots	native	Convolvulaceae	*Dichondra sp. A*									2																	
Dicots	native	Dilleniaceae	*Hibbertia sp.*										2																
Dicots	exotic	Fabaceae (Faboideae)	*Lotus uliginosus*	Greater Bird's Foot trefoil			4	2	4											4	X	4		3					
Dicots	exotic	Fabaceae (Faboideae)	*Medicago minima*	Woolly Burr Medic								4			3		3	4	4		X	4							
Dicots	exotic	Fabaceae (Faboideae)	*Medicago polymorpha*	Burr Medic																2				2					
Dicots	exotic	Fabaceae (Faboideae)	*Trifolium repens*	White Clover														3		3									
Dicots	exotic	Fabaceae (Faboideae)	*Vicia hirsuta*	Tiny Vetch					1																				
Dicots	exotic	Gentianaceae	*Centaurium erythraea*	Common Centaury																									
Dicots	exotic	Gentianaceae	*Centaurium tenuiflorum*																	2	X								

Table A.1 Flora data from quadrats and rapid points

Form	Native/ Exotic	Family	Species	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R1	R2	R3	R4	R5
Dicots	native	Geraniaceae	*Erodium crinitum*	Blue Storksbill												2													
Dicots	native	Geraniaceae	*Geranium homeanum*																	2									
Dicots	native	Geraniaceae	*Geranium solanderi*	Native Geranium									1	3		1								2					
Dicots	native	Goodeniaceae	*Goodenia hederacea*																							X			
Dicots	native	Lobeliaceae	*Pratia purpurascens*	Whiteroot	3					3		3	3	3	4								2			X			
Dicots	exotic	Malvaceae	*Malva parviflora*	Small-flowered Mallow																									X
Dicots	exotic	Malvaceae	*Modiola caroliniana*	Red-flowered Mallow							3					3			2		X								X
Dicots	exotic	Malvaceae	*Sida rhombifolia*	Paddy's Lucerne						3	4	3	2	4	3	4	3	3	4	2			2						X
Dicots	exotic	Myrsinaceae	*Anagallis arvensis*	Scarlet/Blue Pimpernel	2	1	1	2	2	2	3				3	2		3	2	3	X	2		3					
Dicots	native	Oxalidaceae	*Oxalis perennans*	-	1	2	1	2	2	X										4	X								
Dicots	native	Phyllanthaceae	*Poranthera microphylla*							1																			
Dicots	exotic	Phytolaccaceae	*Phytolacca octandra*	Inkweed										3															
Dicots	exotic	Plantaginaceae	*Plantago lanceolata*	Lamb's Tongues	3	2	4	3	4								3	4	4	4	X	4		2	X				X
Dicots	exotic	Plantaginaceae	*Veronica arvensis*	Wall Speedwell															2	2									
Dicots	native	Plantaginaceae	*Veronica plebeia*	Creeping Speedwell				2		2																			
Dicots	exotic	Poaceae	*Sporobolus africanus*	Parramatta Grass						2																			
Dicots	native	Polygonaceae	*Persicaria lapathifolia*	Pale Knotweed										2															
Dicots	native	Polygonaceae	*Rumex brownii*	Swamp Dock			1			2	X		2	3		2	2			1									
Dicots	native	Ranunculaceae	*Ranunculus sessiliflorus*	Small-flowered Buttercup																2	X	2							
Dicots	exotic	Ranunculaceae	*Ranunculus sp.*							2																			
Dicots	native	Rubiaceae	*Opercularia aspera*	Coarse Stinkweed						X																			
Dicots	native	Solanaceae	*Solanum americanum*	Glossy Nightshade							2																		
Dicots	exotic	Solanaceae	*Solanum mauritianum*	Wild Tobacco Bush						1																			
Dicots	exotic	Solanaceae	*Solanum nigrum*	Black-berry Nightshade						2		1		2		2													
Dicots	native	Solanaceae	*Solanum prinophyllum*	Forest Nightshade				2		1			2	2															
Dicots	exotic	Solanaceae	*Solanum pseudocapsicum*	Madeira Winter							3																		
Dicots	exotic	Solanaceae	*Solanum sisymbriifolium*																				3		X				
Dicots	exotic	Solanaceae	*Solanum sp.*									1																	
Dicots	exotic	Verbenaceae	*Verbena bonariensis*	Purpletop						2	2			3	3	2				3	X			4					
Dicots	exotic	Verbenaceae	*Verbena rigida*	Veined Verbena	1	1		2												3		3							
Monocot-grasses	Unknown	Poaceae	*Paspalum distans*									1																	

Table A.1 Flora data from quadrats and rapid points

Form	Native/ Exotic	Family	Species	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R1	R2	R3	R4	R5
Monocot-grasses	native	Poaceae	*Andropogon virginicus*	Whisky Grass											1														
Monocot-grasses	native	Poaceae	*Aristida ramosa*	Purple Wiregrass			2	3	3																	X			
Monocot-grasses	native	Poaceae	*Aristida vagans*	Threeawn Speargrass	3			5		2												3							
Monocot-grasses	native	Poaceae	*Aristida sp.*																										X
Monocot-grasses	exotic	Poaceae	*Axonopus fissifolius*	Narrow-leaf Carpet Grass		5	7		7			1					2				3	3						X	
Monocot-grasses	native	Poaceae	*Bothriochloa decipiens*	Pitted Bluegrass					3												5	4							
Monocot-grasses	native	Poaceae	*Bothriochloa macra*	Red-leg grass		2	2													5	3								
Monocot-grasses	exotic	Poaceae	*Briza maxima*																					2					
Monocot-grasses	native	Poaceae	*Briza minor*	Shivery Grass									2																
Monocot-grasses	exotic	Poaceae	*Briza subaristata*																			2							
Monocot-grasses	native	Poaceae	*Bromus catharticus*	Prairie Grass										3	1	3	2	2	5								X		
Monocot-grasses	exotic	Poaceae	*Chloris gayana*	Rhodes Grass										4	2		7												X
Monocot-grasses	native	Poaceae	*Chloris ventricosa*	Tall Chloris			4	4													2								X
Monocot-grasses	native	Poaceae	*Cymbopogon refractus*	Barbwire Grass	5			4							1														
Monocot-grasses	native	Poaceae	*Cynodon dactylon*	Couch Grass	5	5		5	5	6	6	6	6	6	6	7		7	7	7		5	6	5	X	X	X	X	X
Monocot-grasses	native	Poaceae	*Dichelachne micrantha*	Shorthair Plumegrass		1	2															3		2					
Monocot-grasses	native	Poaceae	*Dichelachne parva*	Plumegrass	4				5																				
Monocot-grasses	native	Poaceae	*Dichelachne sp.*							1							1												
Monocot-grasses	native	Poaceae	*Echinopogon caespitosus*	Bushy Hedgehog-grass	2																		3						
Monocot-grasses	exotic	Poaceae	*Ehrharta erecta*	Panic Veldtgrass						3	2																		
Monocot-grasses	native	Poaceae	*Entolasia stricta*	Wiry Panic						2				2															
Monocot-grasses	native	Poaceae	*Eragrostis brownii*	Brown's Lovegrass								6	4		6				2										
Monocot-grasses	exotic	Poaceae	*Eragrostis curvula*	African Lovegrass	2															4	5								
Monocot-grasses	native	Poaceae	*Eragrostis leptostachya*	Paddock Lovegrass	3			4	2			4	2	2						2	3		2						
Monocot-grasses	native	Poaceae	*Imperata cylindrica*	Blady Grass		1																							
Monocot-grasses	native	Poaceae	*Lachnagrostis filiformis*												1														
Monocot-grasses	exotic	Poaceae	*Lolium perenne*	Perennial Ryegrass												3		6	7	3									
Monocot-grasses	native	Poaceae	*Microlaena stipoides*	Weeping Meadow Grass	3	3		7		6	6	6	7	7	6	5	5	4	3	4		5	5		X	X		X	X
Monocot-grasses	native	Poaceae	*Oplismenus aemulus*	Australian Basket Grass						3																			
Monocot-grasses	native	Poaceae	*Panicum sp.*							1																			

Table A.1 Flora data from quadrats and rapid points

Form	Native/ Exotic	Family	Species	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R1	R2	R3	R4	R5
	native	Poaceae	*Paspalidium distans*																				2						
Monocot-grasses	exotic	Poaceae	*Paspalum dilatatum*	Paspalum	5	7	7		7											6	6	7		3	X		X	X	X
Monocot-grasses	exotic	Poaceae	*Paspalum sp.*								2		3		3	3	2	5	4										
Monocot-grasses	exotic	Poaceae	*Pennisetum clandestinum*	Kikuyu Grass							4		2	4		6	3	6	5				5	7					X
Monocot-grasses	exotic	Poaceae	*Poa annua*	Winter Grass																3									
Monocot-grasses	native	Poaceae	*Rytidosperma sp.*							2																			
Monocot-grasses	exotic	Poaceae	*Setaria parviflora*	Slender Pigeon Grass		4	2	4	4			1			4				2	3	2			3					
Monocot-grasses	exotic	Poaceae	*Sporobolus africanus*	Parramatta Grass						2		1							2	2	3	2							
Monocot-grasses	native	Poaceae	*Sporobolus creber*	Slender Rat's Tail Grass	2	1	2		5			3			X					2	2	3						X	
Monocot-grasses	native	Poaceae	*Sporobolus elongatus*	Slender Rat's Tail Grass																X									
Monocot-grasses	exotic	Poaceae	*Stenotaphrum secundatum*	Buffalo Grass										1															
Monocot-grasses	native	Poaceae	*Vulpia myuros*	Rat's Tail Fescue	2																								
Monocot-other	native	Cyperaceae	*Carex appressa*	Tall Sedge									3	3			1												
Monocot-other	native	Cyperaceae	*Carex inversa*	-	1															4	4	3		3					
Monocot-other	exotic	Cyperaceae	*Cyperus gracilis*	Slender Flat-sedge														2	2		2								
Monocot-other	exotic	Cyperaceae	*Cyperus sesquiflorus*																1										
Monocot-other	exotic	Cyperaceae	*Cyperus tenellus*																										
Monocot-other	native	Cyperaceae	*Gahnia sp.*	Rough Saw-sedge						2		1			4														
Monocot-other	native	Cyperaceae	*Gahnia aspera*	Rough Saw-sedge																						X			
Monocot-other	native	Juncaceae	*Juncus homalocaulis*																	2									
Monocot-other	native	Juncaceae	*Juncus sp.2*							2		1																	
Monocot-other	native	Juncaceae	*Juncus sp.*							2		1	2	2			1												
Monocot-other	native	Juncaceae	*Juncus planifolius*																										
Monocot-other	native	Juncaceae	*Juncus usitatus*	Common Rush	1	2														4	4	2		3	X			X	
Monocot-other	native	Lomandraceae	*Lomandra filiformis*	Wattle Mat-rush						3	1					3		3											
Monocot-other	native	Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush						2			1																
Monocot-other	native	Lomandraceae	*Lomandra multiflora subsp. Multiflora*	Many-flowered Mat-rush														1											
Ferns and Allies	native	Pteridaceae	*Adiantum aethiopicum*	Common Maidenhair						3																			
Ferns and Allies	native	Adiantaceae	*Cheilanthes sieberi*	Poison Rock Fern	2					X					1														
Climbers and	exotic	Apocynaceae	*Araujia sericifera*	Moth Vine						2	1		2			1													

Table A.1 Flora data from quadrats and rapid points

Form	Native/ Exotic	Family	Species	Common Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	R1	R2	R3	R4	R5
Vines																													
Climbers and Vines	exotic	Asparagaceae	*Asparagus asparagoides*	Bridal Creeper	1					2			1				2												
Climbers and Vines	native	Fabaceae (Faboideae)	*Glycine clandestina*	Love Creeper	3																								
Climbers and Vines	native	Fabaceae (Faboideae)	*Glycine microphylla*	Small-leaf glycine				2		3	X	1	4	3	3	3	3												
Climbers and Vines	native	Fabaceae (Faboideae)	*Glycine tabacina*	Love Creeper	3	2	2	3	2								2					3							X
Climbers and Vines	exotic	Fabaceae (Faboideae)	*Vicia sativa*												2														
Climbers and Vines	exotic	Rosaceae	*Rubus fruticosus*	Blackberry complex		2																							
Climbers and Vines	native	Thymelaeaceae	*Pimelea linifolia*	Slender Rice Flower																						X			

Appendix B

Native Flora Species Recorded in the Study Area

Table B.1 Endemic native flora species recorded in the study area

Form	Family	Species	Common Name
Trees	Myrtaceae	*Angophora bakeri*	Narrow-leaved Apple
Trees	Myrtaceae	*Angophora floribunda*	Rough-barked Apple
Trees	Myrtaceae	*Corymbia maculata*	Spotted Gum
Trees	Myrtaceae	*Eucalyptus amplifolia*	Cabbage Gum
Trees	Myrtaceae	*Eucalyptus crebra*	Narrow Leaved Ironbark
Trees	Myrtaceae	*Eucalyptus eugenioides*	Thin-leaved Stringybark
Trees	Myrtaceae	*Eucalyptus fibrosa*	Red Ironbark
Trees	Myrtaceae	*Eucalyptus moluccana*	Grey Box
Trees	Myrtaceae	*Eucalyptus parramattensis* subsp. *parramattensis*	Parramatta Red Gum
Trees	Myrtaceae	*Eucalyptus punctata*	Grey Gum
Trees	Myrtaceae	*Eucalyptus resinifera*	Red Mahogany
Trees	Myrtaceae	*Eucalyptus sclerophylla*	Hard-leaved Scribbly Gum
Trees	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum
Small Trees	Casuarinaceae	*Allocasuarina littoralis*	black she-oak
Small Trees	Fabaceae (Mimosoideae)	*Acacia parramattensis*	Parramatta wattle
Small Trees	Myrtaceae	*Eucalyptus crebra*	Narrow Leaved Ironbark
Small Trees	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum
Small Trees	Myrtaceae	*Eucalyptus resinifera*	Red Mahogany
Small Trees	Myrtaceae	*Melaleuca decora*	
Small Trees	Myrtaceae	*Melaleuca linariifolia*	Flax-leaved Paperbark
Small Trees	Myrtaceae	*Melaleuca nodosa*	
Small Trees	Proteaceae	*Persoonia linearis*	Narrow-leaved Geebung
Shrubs	Asteraceae	*Ozothamnus diosmifolius*	Rice Flower
Shrubs	Fabaceae (Faboideae)	*Daviesia ulicifolia* subsp. *ulicifolia*	Gorse Bitter Pea
Shrubs	Fabaceae (Mimosoideae)	*Acacia sp.*	
Shrubs	Fabaceae (Mimosoideae)	*Acacia falcata*	Falcate Wattle
Shrubs	Fabaceae (Mimosoideae)	*Acacia floribunda*	White Sally Wattle
Shrubs	Fabaceae	*Acacia parramattensis*	Parramatta wattle

Table B.1 Endemic native flora species recorded in the study area

Form	Family	Species	Common Name
	(Mimosoideae)		
Shrubs	Myrsinaceae	*Myrsine variabilis*	Variable Muttonwood
Shrubs	Myrtaceae	*Eucalyptus moluccana*	Grey Box
Shrubs	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum
Shrubs	Myrtaceae	*Kunzea ambigua*	Tick Bush
Shrubs	Myrtaceae	*Melaleuca decora*	Flax-leaved Paperbark
Shrubs	Myrtaceae	*Melaleuca linariifolia*	
Shrubs	Myrtaceae	*Melaleuca thymifolia*	
Shrubs	Oleaceae	*Notelaea longifolia*	Large Mock-olive
Shrubs	Phyllanthaceae	*Breynia oblongifolia*	Coffee Bush
Shrubs	Pittosporaceae	*Bursaria spinosa*	Blackthorn
Shrubs	Proteaceae	*Persoonia linearis*	Narrow-leaved Geebung
Shrubs	Santalaceae	*Exocarpos cupressiformis*	Cherry Ballart
Shrubs	Thymelaeaceae	*Pimelea linifolia*	Slender Rice Flower
Dicots	Acanthaceae	*Brunoniella australis*	Blue Trumpet
Dicots	Amaranthaceae	*Alternanthera denticulata*	Lesser Joyweed
Dicots	Apiaceae	*Centella asiatica*	Indian Pennywort
Dicots	Apiaceae	*Hydrocotyle laxiflora*	Stinking Pennywort
Dicots	Asteraceae	*Cotula australis*	Common Cotula
Dicots	Asteraceae	*Senecio linearifolius*	Fireweed Groundsel
Dicots	Asteraceae	*Sigesbeckia orientalis* subsp. *Orientalis*	
Dicots	Campanulaceae	*Wahlenbergia gracilis*	Sprawling Bluebell
Dicots	Chenopodiaceae	*Atriplex semibaccata*	
Dicots	Chenopodiaceae	*Einadia hastata*	Berry Saltbush
Dicots	Chenopodiaceae	*Einadia nutans*	Climbing Saltbush
Dicots	Chenopodiaceae	*Einadia polygonoides*	
Dicots	Chenopodiaceae	*Einadia trigonos*	Fish Weed
Dicots	Clusiaceae	*Hypericum gramineum*	Small St John's Wort
Dicots	Convolvulaceae	*Dichondra repens*	Kidney Weed
Dicots	Convolvulaceae	*Dichondra sp. A*	
Dicots	Dilleniaceae	*Hibbertia sp.*	
Dicots	Geraniaceae	*Erodium crinitum*	Blue Storksbill

Table B.1 Endemic native flora species recorded in the study area

Form	Family	Species	Common Name
Dicots	Geraniaceae	*Geranium homeanum*	
Dicots	Geraniaceae	*Geranium solanderi*	Native Geranium
Dicots	Goodeniaceae	*Goodenia hederacea*	
Dicots	Haloragaceae	*Gonocarpus tetragynus*	Raspwort
Dicots	Haloragaceae	*Gonocarpus teucrioides*	Raspwort
Dicots	Lobeliaceae	*Pratia purpurascens*	Whiteroot
Dicots	Oxalidaceae	*Oxalis perennans*	-
Dicots	Phyllanthaceae	*Poranthera microphylla*	
Dicots	Plantaginaceae	*Veronica plebeia*	Creeping Speedwell
Dicots	Polygonaceae	*Persicaria decipiens*	Slender Knotweed
Dicots	Polygonaceae	*Persicaria lapathifolia*	Pale Knotweed
Dicots	Polygonaceae	*Rumex brownii*	Swamp Dock
Dicots	Ranunculaceae	*Ranunculus sessiliflorus*	Small-flowered Buttercup
Dicots	Rubiaceae	*Asperula conferta*	Common Woodruff
Dicots	Rubiaceae	*Opercularia aspera*	Coarse Stinkweed
Dicots	Solanaceae	*Solanum prinophyllum*	Forest Nightshade
Dicots	Violaceae	*Viola hederacea*	Ivy-leaved Violet
Monocot-grasses	Poaceae	*Andropogon virginicus*	Whisky Grass
Monocot-grasses	Poaceae	*Aristida ramosa*	Purple Wiregrass
Monocot-grasses	Poaceae	*Aristida vagans*	Threeawn Speargrass
Monocot-grasses	Poaceae	*Aristida sp.*	
Monocot-grasses	Poaceae	*Bothriochloa decipiens*	Pitted Bluegrass
Monocot-grasses	Poaceae	*Bothriochloa macra*	Red-leg grass
Monocot-grasses	Poaceae	*Briza minor*	Shivery Grass
Monocot-grasses	Poaceae	*Bromus catharticus*	Prairie Grass
Monocot-grasses	Poaceae	*Chloris ventricosa*	Tall Chloris
Monocot-grasses	Poaceae	*Cymbopogon refractus*	Barbwire Grass
Monocot-grasses	Poaceae	*Dichelachne micrantha*	Shorthair Plumegrass
Monocot-grasses	Poaceae	*Dichelachne parva*	Plumegrass
Monocot-grasses	Poaceae	*Echinopogon caespitosus*	Bushy Hedgehog-grass
Monocot-grasses	Poaceae	*Echinopogon ovatus*	Forest Hedgehog Grass
Monocot-grasses	Poaceae	*Elymus scaber*	Common Wheatgrass
Monocot-grasses	Poaceae	*Entolasia marginata*	Bordered Panic

Table B.1 Endemic native flora species recorded in the study area

Form	Family	Species	Common Name
Monocot-grasses	Poaceae	*Entolasia stricta*	Wiry Panic
Monocot-grasses	Poaceae	*Eragrostis brownii*	Brown's Lovegrass
Monocot-grasses	Poaceae	*Eragrostis leptostachya*	Paddock Lovegrass
Monocot-grasses	Poaceae	*Imperata cylindrica*	Blady Grass
Monocot-grasses	Poaceae	*Lachnagrostis filiformis*	
Monocot-grasses	Poaceae	*Microlaena stipoides*	Weeping Meadow Grass
Monocot-grasses	Poaceae	*Oplismenus aemulus*	Australian Basket Grass
Monocot-grasses	Poaceae	*Panicum effusum*	Hairy Panic
Monocot-grasses	Poaceae	*Panicum simile*	Two-colour Panic
Monocot-grasses	Poaceae	*Paspalidium distans*	
Monocot-grasses	Poaceae	*Phragmites australis*	Phragmites
Monocot-grasses	Poaceae	*Rytidosperma sp.*	Wallaby Grass
Monocot-grasses	Poaceae	*Sporobolus creber*	Slender Rat's Tail Grass
Monocot-grasses	Poaceae	*Sporobolus elongatus*	Slender Rat's Tail Grass
Monocot-grasses	Poaceae	*Themeda australis*	Kangaroo Grass
Monocot-other	Commelinaceae	*Commelina cyanea*	Scurvy Weed
Monocot-other	Cyperaceae	*Carex appressa*	Tall Sedge
Monocot-other	Cyperaceae	*Carex inversa*	
Monocot-other	Cyperaceae	*Cyperus difformis*	Dirty Dora
Monocot-other	Cyperaceae	*Gahnia aspera*	Rough Saw-sedge
Monocot-other	Cyperaceae	*Lepidosperma laterale*	
Monocot-other	Cyperaceae	*Schoenus apogon*	Common Bog-Rush
Monocot-other	Juncaceae	*Juncus homalocaulis*	
Monocot-other	Juncaceae	*Juncus sp.2*	
Monocot-other	Juncaceae	*Juncus sp.*	
Monocot-other	Juncaceae	*Juncus planifolius*	
Monocot-other	Juncaceae	*Juncus usitatus*	Common Rush
Monocot-other	Lomandraceae	*Lomandra filiformis*	Wattle Mat-rush
Monocot-other	Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush
Monocot-other	Lomandraceae	*Lomandra multiflora* subsp. *multiflora*	Many-flowered Mat-rush
Monocot-other	Phormiaceae	*Dianella longifolia*	Blueberry Lily
Monocot-other	Typhaceae	*Typha orientalis*	Broad-leaved Cumbungi

Table B.1 Endemic native flora species recorded in the study area

Form	Family	Species	Common Name
Ferns and Allies	Aspleniaceae	*Asplenium flabellifolium*	Necklace Fern
Ferns and Allies	Dennstaedtiaceae	*Pteridium esculentum*	Bracken Fern
Ferns and Allies	Pteridaceae	*Adiantum aethiopicum*	Common Maidenhair
Ferns and Allies	Pteridaceae	*Cheilanthes sieberi*	Poison Rock Fern
Climbers and Vines	Apocynaceae	*Marsdenia rostrata*	Milk Vine
Climbers and Vines	Fabaceae (Faboideae)	*Desmodium varians*	Slender Tick-trefoil
Climbers and Vines	Fabaceae (Faboideae)	*Glycine clandestina*	Love Creeper
Climbers and Vines	Fabaceae (Faboideae)	*Glycine microphylla*	Small-leaf glycine
Climbers and Vines	Fabaceae (Faboideae)	*Glycine tabacina*	Love Creeper
Climbers and Vines	Fabaceae (Faboideae)	*Hardenbergia violacea*	False Sarsparilla
Climbers and Vines	Luzuriagaceae	*Eustrephus latifolius*	Wombat Berry
Climbers and Vines	Ranunculaceae	*Clematis aristata*	Old Man's Beard
Climbers and Vines	Ranunculaceae	*Clematis glycinoides*	Headache Vine
Climbers and Vines	Rosaceae	*Rubus parvifolius*	Native Raspberry

Appendix C

Exotic Flora Species Recorded in the Study Area

Table C.1 Exotic flora species recorded in the study area

Form	Family	Scientific Name	Common Name
Shrubs	Cactaceae	*Opuntia stricta*	Common Prickly Pear
Shrubs	Oleaceae	*Ligustrum sinense*	Narrow-leafed Privet
Shrubs	Malvaceae	*Sida rhombifolia*	Paddy's Lucerne
Shrubs	Meliaceae	*Melia azedarach*	White Cedar
Shrubs	Rosaceae	*Rubus fruticosus*	Blackberry
Shrubs	Solanaceae	*Solanum mauritianum*	Tobacco Bush
Forbs (Dicot)	Amaranthaceae	*Amaranthus caudatus*	Love-lies Bleeding
Forbs (Dicot)	Apiaceae	*Foeniculum vulgare*	Fennel
Forbs (Dicot)	Apocynaceae	*Araujia sericifera*	Moth Vine
Forbs (Dicot)	Asteraceae	*Bidens pilosa*	Cobblers Pegs
Forbs (Dicot)	Asteraceae	*Cirsium vulgare*	Spear Thistle
Forbs (Dicot)	Asteraceae	*Conyza bonariensis*	Flax-leaf Fleabane
Forbs (Dicot)	Asteraceae	*Gnaphalium sp.*	
Forbs (Dicot)	Asteraceae	*Hypochaeris microcephala*	White Flat Weed
Forbs (Dicot)	Asteraceae	*Hypochaeris radicata*	Catsear
Forbs (Dicot)	Asteraceae	*Lactuca saligna*	Willow-leaved Lettuce
Forbs (Dicot)	Asteraceae	*Senecio madagascariensis*	Fireweed
Forbs (Dicot)	Asteraceae	*Soliva sessilis*	Jo-jo
Forbs (Dicot)	Asteraceae	*Sonchus oleraceus*	Common Sow Thistle
Forbs (Dicot)	Asteraceae	*Tagetes minuta*	Stinking Roger
Forbs (Dicot)	Asteraceae	*Taraxacum officinale*	Dandelion
Forbs (Dicot)	Asteraceae	*Xanthium occidentale*	Noogoora Burr
Forbs (Dicot)	Boraginaceae	*Echium plantagineum*	Paterson's Curse
Forbs (Dicot)	Brassicaceae	*Cardamine hirsuta*	Common Bittercress
Forbs (Dicot)	Brassicaceae	*Lepidium africanum*	
Forbs (Dicot)	Caryophyllaceae	*Cerastium glomeratum*	Mouse-ear Chickweed
Forbs (Dicot)	Caryophyllaceae	*Paronychia brasiliana*	Chilean Whitlow Wort
Forbs (Dicot)	Caryophyllaceae	*Petrorhagia nanteuilii*	Proliferous Pink
Forbs (Dicot)	Caryophyllaceae	*Silene gallica var. gallica*	
Forbs (Dicot)	Caryophyllaceae	*Stellaria media*	Common Chickweed
Forbs (Dicot)	Clusiaceae	*Hypericum perforatum*	St. Johns Wort
Forbs (Dicot)	Fabaceae (Faboideae)	*Lotus uliginosus*	Greater Bird's Foot

Table C.1 Exotic flora species recorded in the study area

Form	Family	Scientific Name	Common Name
			trefoil
Forbs (Dicot)	Fabaceae (Faboideae)	*Medicago minima*	Woolly Burr Medic
Forbs (Dicot)	Fabaceae (Faboideae)	*Medicago polymorpha*	Burr Medic
Forbs (Dicot)	Fabaceae (Faboideae)	*Trifolium dubium*	Yellow Suckling Clover
Forbs (Dicot)	Fabaceae (Faboideae)	*Trifolium repens*	White Clover
Forbs (Dicot)	Fabaceae (Faboideae)	*Vicia hirsuta*	Tiny Vetch
Forbs (Dicot)	Gentianaceae	*Centaurium erythraea*	Common Centaury
Forbs (Dicot)	Gentianaceae	*Centaurium tenuiflorum*	
Forbs (Dicot)	Malvaceae	*Malva parviflora*	Small-flowered Mallow
Forbs (Dicot)	Malvaceae	*Modiola caroliniana*	Red-flowered Mallow
Forbs (Dicot)	Malvaceae	*Sida rhombifolia*	Paddy's Lucerne
Forbs (Dicot)	Myrsinaceae	*Anagallis arvensis*	Scarlet/Blue Pimpernel
Forbs (Dicot)	Phytolaccaceae	*Phytolacca octandra*	Inkweed
Forbs (Dicot)	Plantaginaceae	*Plantago lanceolata*	Lamb's Tongues
Forbs (Dicot)	Plantaginaceae	*Veronica arvensis*	Wall Speedwell
Forbs (Dicot)	Polygonaceae	*Acetosella vulgaris*	Sheep Sorrel
Forbs (Dicot)	Ranunculaceae	*Ranunculus repens*	Creeping Buttercup
Forbs (Dicot)	Solanaceae	*Solanum mauritianum*	Wild Tobacco Bush
Forbs (Dicot)	Solanaceae	*Solanum nigrum*	Black-berry Nightshade
Forbs (Dicot)	Solanaceae	*Solanum linnaeanum*	Apple of Sodom
Forbs (Dicot)	Solanaceae	*Solanum pseudocapsicum*	Madeira Winter
Forbs (Dicot)	Solanaceae	*Solanum sisymbriifolium*	
Forbs (Dicot)	Verbenaceae	*Verbena bonariensis*	Purpletop
Forbs (Dicot)	Verbenaceae	*Verbena rigida*	Veined Verbena
Forbs (Monocot)	Asparagaceae	*Asparagus officinalis*	Asparagus
Grasses	Poaceae	*Andropogon virginicus*	Whisky Grass
Grasses	Poaceae	*Axonopus fissifolius*	Narrow-leaf Carpet Grass
Grasses	Poaceae	*Briza maxima*	Giant Shivery Grass
Grasses	Poaceae	*Briza subaristata*	
Grasses	Poaceae	*Bromus catharticus*	Prairie Grass
Grasses	Poaceae	*Chloris gayana*	Rhodes Grass
Grasses	Poaceae	*Ehrharta erecta*	Panic Veldtgrass

Table C.1 Exotic flora species recorded in the study area

Form	Family	Scientific Name	Common Name
Grasses	Poaceae	*Eragrostis cilianensis*	Stinking Lovegrass
Grasses	Poaceae	*Eragrostis curvula*	African Lovegrass
Grasses	Poaceae	*Holcus lanatus*	Yorkshire Fog
Grasses	Poaceae	*Lolium perenne*	Perennial Ryegrass
Grasses	Poaceae	*Paspalum dilatatum*	Paspalum
Grasses	Poaceae	*Phalaris aquatica*	Phalaris
Grasses	Poaceae	*Pennisetum clandestinum*	Kikuyu Grass
Grasses	Poaceae	*Poa annua*	Winter Grass
Grasses	Poaceae	*Setaria parviflora*	Slender Pigeon Grass
Grasses	Poaceae	*Sporobolus africanus*	Parramatta Grass
Grasses	Poaceae	*Stenotaphrum secundatum*	Buffalo Grass
Sedges and Rushes	Cyperaceae	*Cyperus eragrostis*	Umbrella Sedge
Sedges and Rushes	Cyperaceae	*Cyperus rotundus*	Nutgrass
Sedges and Rushes	Cyperaceae	*Cyperus sesquiflorus*	
Sedges and Rushes	Cyperaceae	*Isolepis levynsiana*	Tiny Flat Sedge
Climbers and Vines	Apocynaceae	*Araujia sericifera*	Moth Vine
Climbers and Vines	Asparagaceae	*Asparagus asparagoides*	Bridal Creeper
Climbers and Vines	Fabaceae (Faboideae)	*Vicia sativa*	Common Vetch
Climbers and Vines	Passifloraceae	*Passiflora edulis*	Passionfruit
Climbers and Vines	Rosaceae	*Rubus fruticosus*	Blackberry complex

Appendix D

Species Planting Lists

Table D.1 Species planting list – Cumberland Plain Woodland

Form	Family	Scientific Name	Common Name
Trees	Fabaceae (Mimosoideae)	*Acacia parramattensis*	Parramatta Wattle
Trees	Myrtaceae	*Angophora floribunda*	Rough-barked Apple
Trees	Myrtaceae	*Eucalyptus crebra*	Narrow-leaved Ironbark
Trees	Myrtaceae	*Eucalyptus eugenioides*	Narrow-leaved Stringybark
Trees	Myrtaceae	*Eucalyptus moluccana*	Grey Box
Trees	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum
Trees	Myrtaceae	*Melaleuca decora*	
Trees	Santalaceae	*Exocarpos cupressiformis*	Native Cherry
Shrubs	Asteraceae	*Ozothamnus diosmifolius*	Dogwood
Shrubs	Fabaceae (Mimosoideae)	*Acacia falcata*	
Shrubs	Fabaceae (Mimosoideae)	*Acacia floribunda*	White Sally Wattle
Shrubs	Fabaceae (Mimosoideae)	*Acacia implexa*	Hickory Wattle
Shrubs	Fabaceae (Faboideae)	*Bossiaea prostrata*	Creeping Bossiaea
Shrubs	Fabaceae (Faboideae)	*Chorizema parviflorum*	Eastern Flame Pea
Shrubs	Fabaceae (Faboideae)	*Daviesia ulicifolia*	Gorse Bitter Pea
Shrubs	Fabaceae (Faboideae)	*Dillwynia sieberi*	
Shrubs	Fabaceae (Faboideae)	*Indigofera australis*	Australian Indigo
Shrubs	Fabaceae (Faboideae)	*Pultenaea microphylla*	
Shrubs	Myrtaceae	*Kunzea ambigua*	Tick Bush
Shrubs	Phyllanthaceae	*Breynia oblongifolia*	Coffee Bush
Shrubs	Pittosporaceae	*Bursaria spinosa subsp. spinosa*	Blackthorn
Shrubs	Rosaceae	*Rubus parvifolius*	Native Raspberry
Shrubs	Sapindaceae	*Dodonaea viscosa*	Sticky Hop Bush
Shrubs	Scrophulariaceae	*Eremophila debilis*	Winter Apple

Table D.1 Species planting list – Cumberland Plain Woodland

Form	Family	Scientific Name	Common Name
Forbs (Dicot)	Acanthaceae	*Brunoniella australis*	Blue Trumpet
Forbs (Dicot)	Apiaceae	*Centella asiatica*	Indian Pennywort
Forbs (Dicot)	Apiaceae	*Daucus glochidiatus*	Native Carrot
Forbs (Dicot)	Apiaceae	*Hydrocotyle laxiflora*	Stinking Pennywort
Forbs (Dicot)	Asteraceae	*Chrysocephalum apiculatum*	Yellow Buttons
Forbs (Dicot)	Asteraceae	*Cymbonotus lawsonianus*	Bear's Ears
Forbs (Dicot)	Asteraceae	*Euchiton sphaericus*	
Forbs (Dicot)	Asteraceae	*Glossocardia bidens*	Cobbler's Tack
Forbs (Dicot)	Asteraceae	*Senecio diaschides*	
Forbs (Dicot)	Asteraceae	*Senecio hispidulus*	Hill Fireweed
Forbs (Dicot)	Asteraceae	*Senecio linearifolius*	Fireweed Groundsel
Forbs (Dicot)	Asteraceae	*Sigesbeckia orientalis subsp. Orientalis*	Indian Weed
Forbs (Dicot)	Asteraceae	*Vernonia cinerea*	
Forbs (Dicot)	Campanulaceae	*Wahlenbergia gracilis*	Small Bluebell
Forbs (Dicot)	Campanulaceae	*Wahlenbergia stricta subsp. stricta*	Australian Bluebell
Forbs (Dicot)	Chenopodiaceae	*Einadia hastata*	Berry Saltbush
Forbs (Dicot)	Chenopodiaceae	*Einadia nutans*	Climbing Saltbush
Forbs (Dicot)	Chenopodiaceae	*Einadia polygonoides*	
Forbs (Dicot)	Chenopodiaceae	*Einadia trigonos*	Fishweed
Forbs (Dicot)	Clusiaceae	*Hypericum gramineum*	Small St Johns Wort
Forbs (Dicot)	Convolvulaceae	*Dichondra repens*	Kidney Weed
Forbs (Dicot)	Crassulaceae	*Crassula sieberiana*	Australian Stonecrop
Forbs (Dicot)	Fabaceae	*Desmodium varians*	Slender Tick-trefoil
Forbs (Dicot)	Fabaceae	*Zornia dyctiocarpa var. Dyctiocarpa*	Zornia
Forbs (Dicot)	Geraniaceae	*Geranium homeanum*	
Forbs (Dicot)	Geraniaceae	*Geranium solanderi*	Native Geranium
Forbs (Dicot)	Goodeniaceae	*Goodenia hederacea*	Forest Goodenia
Forbs (Dicot)	Lamiaceae	*Ajuga australis*	Austral Bugle
Forbs (Dicot)	Lamiaceae	*Mentha satureioides*	Slender Mint
Forbs (Dicot)	Lamiaceae	*Plectranthus parviflorus*	Cockspur Flower
Forbs (Dicot)	Lamiaceae	*Scutellaria humilis*	Dwarf Skullcap

Table D.1 Species planting list – Cumberland Plain Woodland

Form	Family	Scientific Name	Common Name
Forbs (Dicot)	Lobeliaceae	*Pratia purpurascens*	Whiteroot
Forbs (Dicot)	Malvaceae	*Sida corrugata*	Corrugated Sida
Forbs (Dicot)	Oxalidaceae	*Oxalis perennans*	Native oxalis
Forbs (Dicot)	Phyllanthaceae	*Phyllanthus virgatus*	
Forbs (Dicot)	Phyllanthaceae	*Poranthera microphylla*	Small-leaved Poranthera
Forbs (Dicot)	Plantaginaceae	*Plantago debilis*	
Forbs (Dicot)	Plantaginaceae	*Plantago gaudichaudii*	Narow Plantain
Forbs (Dicot)	Plantaginaceae	*Veronica plebeia*	Trailing Speedwell
Forbs (Dicot)	Polygonaceae	*Persicaria decipiens*	Slender Knotweed
Forbs (Dicot)	Rubiaceae	*Asperula conferta*	Common Woodruff
Forbs (Dicot)	Rubiaceae	*Opercularia diphylla*	
Forbs (Dicot)	Solanaceae	*Solanum cinereum*	
Forbs (Dicot)	Solanaceae	*Solanum prinophyllum*	Forest Nightshade
Forbs (Dicot)	Stackhousiaceae	*Stackhousia viminea*	Slender Stackhousia
Forbs (Monocot)	Anthericaceae	*Arthropodium milleflorum*	Pale Vanilla Lily
Forbs (Monocot)	Anthericaceae	*Arthropodium minus*	
Forbs (Monocot)	Anthericaceae	*Dichopogon fimbriatus*	Chocolate Lily
Forbs (Monocot)	Anthericaceae	*Dichopogon strictus*	Nodding Chocolate Lily
Forbs (Monocot)	Anthericaceae	*Tricoryne elatior*	Yellow Autumn Lily
Forbs (Monocot)	Colchicaceae	*Wurmbea dioica subsp. Dioica*	Early Nancy
Forbs (Monocot)	Commelinaceae	*Commelina cyanea*	Native Wandering Jew
Forbs (Monocot)	Hypoxidaceae	*Hypoxis hygrometrica*	Golden Weather-grass
Forbs (Monocot)	Phormiaceae	*Dianella longifolia*	Blueberry Lily
Grasses	Poaceae	*Aristida ramosa*	Purple Wiregrass
Grasses	Poaceae	*Aristida vagans*	Three awned Speargrass
Grasses	Poaceae	*Bothriochloa decipiens*	Pitted Bluegrass
Grasses	Poaceae	*Bothriochloa macra*	Red-leg Grass
Grasses	Poaceae	*Chloris truncata*	
Grasses	Poaceae	*Chloris ventricosa*	Plump Windmill Grass
Grasses	Poaceae	*Cymbopogon refractus*	Barbed Wire Grass

Table D.1 Species planting list – Cumberland Plain Woodland

Form	Family	Scientific Name	Common Name
Grasses	Poaceae	*Dichanthium sericeum*	Queensland Bluegrass
Grasses	Poaceae	*Dichelachne micrantha*	Shorthair Plume Grass
Grasses	Poaceae	*Dichelachne parva*	Plume Grass
Grasses	Poaceae	*Digitaria diffusa*	Open Summer-grass
Grasses	Poaceae	*Echinopogon caespitosus*	Tufted Hedgehog Grass
Grasses	Poaceae	*Echinopogon ovatus*	Forest Hedgehog Grass
Grasses	Poaceae	*Elymus scaber*	Common Wheatgrass
Grasses	Poaceae	*Eragrostis leptostachya*	Paddock lovegrass
Grasses	Poaceae	*Eriochloa pseudoacrotricha*	Early Spring Grass
Grasses	Poaceae	*Lachnagrostis filiformis*	Blown Grass
Grasses	Poaceae	*Microlaena stipoides*	Weeping Grass
Grasses	Poaceae	*Panicum effusum*	Hairy Panic
Grasses	Poaceae	*Paspalidium distans*	
Grasses	Poaceae	*Rytidosperma caespitosum*	Ringed Wallaby Grass
Grasses	Poaceae	*Rytidosperma racemosa var. Racemosa*	Wallaby Grass
Grasses	Poaceae	*Rytidosperma tenuius*	Wallaby Grass
Grasses	Poaceae	*Sorghum leiocladum*	Wild Sorghum
Grasses	Poaceae	*Sporobolus creber*	Slender Rat's Tail Grass
Grasses	Poaceae	*Sporobolus elongatus*	Slender Rat's Tail Grass
Grasses	Poaceae	*Themeda australis*	Kangaroo Grass
Sedges and Rushes	Cyperaceae	*Carex inversa*	
Sedges and Rushes	Cyperaceae	*Cyperus gracilis*	
Sedges and Rushes	Cyperaceae	*Fimbristylis dichotoma*	Common Fringe-sedge
Sedges and Rushes	Cyperaceae	*Scleria mackaviensis*	

Table D.1 Species planting list – Cumberland Plain Woodland

Form	Family	Scientific Name	Common Name
Sedges and Rushes	Juncaceae	*Juncus homalocaulis*	
Sedges and Rushes	Juncaceae	*Juncus usitatus*	
Sedges and Rushes	Lomandraceae	*Lomandra filiformis*	Wattle Mat-rush
Sedges and Rushes	Lomandraceae	*Lomandra multiflora*	Many-flowered Mat-rush
Ferns	Pteridaceae	*Cheilanthes distans*	Bristly Cloak Fern
Ferns	Pteridaceae	*Cheilanthes sieberi*	Rock Fern
Vines and Twiners	Fabaceae (Faboideae)	*Desmodium brachypodum*	Large Tick-trefoil
Vines and Twiners	Fabaceae (Faboideae)	*Desmodium varians*	Slender Tick-trefoil
Vines and Twiners	Fabaceae (Faboideae)	*Glycine clandestina*	Twining Glycine
Vines and Twiners	Fabaceae (Faboideae)	*Glycine microphylla*	Small-leaf Glycine
Vines and Twiners	Fabaceae (Faboideae)	*Glycine tabacina*	Twining Glycine
Vines and Twiners	Fabaceae (Faboideae)	*Hardenbergia violacea*	Purple Coral Pea
Vines and Twiners	Ranunculaceae	*Clematis glycinoides*	Headache Vine

Table D.2 Species planting list – Shale Sandstone Transition Forest

Form	Family	Scientific Name	Common Name
Trees	Casuarinaceae	*Allocasuarina littoralis*	Black She-oak
Trees	Casuarinaceae	*Allocasuarina torulosa*	Forest Oak
Trees	Fabaceae (Mimosoideae)	*Acacia parramattensis*	Parramatta Wattle
Trees	Myrtaceae	*Angophora bakeri*	Narrow-leaved Apple
Trees	Myrtaceae	*Angophora floribunda*	Rough-barked Apple
Trees	Myrtaceae	*Angophora subvelutina*	Broad-leaved Apple
Trees	Myrtaceae	*Corymbia eximia*	Yellow Bloodwood
Trees	Myrtaceae	*Corymbia gummifera*	Red Bloodwood
Trees	Myrtaceae	*Eucalyptus crebra*	Narrow-leaved Ironbark
Trees	Myrtaceae	*Eucalyptus eugenioides*	Narrow-leaved Stringybark
Trees	Myrtaceae	*Eucalyptus fibrosa*	Broad-leaved Ironbark
Trees	Myrtaceae	*Eucalyptus globoidea*	White Stringybark
Trees	Myrtaceae	*Eucalyptus moluccana*	Grey Box
Trees	Myrtaceae	*Eucalyptus punctata*	Grey Gum
Trees	Myrtaceae	*Eucalyptus resinifera*	Red Mahogany
Trees	Myrtaceae	*Eucalyptus parramattensis subsp. parramattensis*	
Trees	Myrtaceae	*Eucalyptus sclerophylla*	Hard-leaved Scribbly Gum
Trees	Myrtaceae	*Eucalyptus sparsifolia*	Narrow-leaved Stringybark
Trees	Myrtaceae	*Eucalyptus tereticornis*	Forest Red Gum
Trees	Santalaceae	*Exocarpos cupressiformis*	Native Cherry
Trees	Myrtaceae	*Melaleuca decora*	
Trees	Myrtaceae	*Melaleuca linariifolia*	Flax-leaved Paperbark
Trees	Proteaceae	*Persoonia linearis*	Narrow-leaved Geebung
Shrubs	Asteraceae	*Ozothamnus diosmifolius*	Dogwood
Shrubs	Dilleniaceae	*Hibbertia aspera*	Rough Guinea Flower
Shrubs	Dilleniaceae	*Hibbertia diffusa*	Wedge Guinea Flower
Shrubs	Ericaceae (Stypheliodeae)	*Leucopogon juniperinum*	Prickly Beard-heath
Shrubs	Ericaceae (Stypheliodeae)	*Leucopogon lanceolatus*	
Shrubs	Ericaceae (Stypheliodeae)	*Leucopogon microphyllus*	

Table D.2 Species planting list – Shale Sandstone Transition Forest

Form	Family	Scientific Name	Common Name
Shrubs	Ericaceae (Stypheliodeae)	*Styphelia laeta*	Five-corners
Shrubs	Fabaceae (Faboideae)	*Bossiaea obcordata*	Spiny Bossiaea
Shrubs	Fabaceae (Faboideae)	*Bossiaea prostrata*	Creeping Bossiaea
Shrubs	Fabaceae (Faboideae)	*Daviesia ulicifolia*	Gorse Bitter Pea
Shrubs	Fabaceae (Faboideae)	*Gompholobium grandiflorum*	Large Wedge Pea
Shrubs	Fabaceae (Faboideae)	*Indigofera australis*	Australian Indigo
Shrubs	Fabaceae (Faboideae)	*Pultenaea flexilis*	Graceful Bush Pea
Shrubs	Fabaceae (Faboideae)	*Pultenaea villosa*	Hairy Bush Pea
Shrubs	Fabaceae (Mimosoideae)	*Acacia falcata*	
Shrubs	Fabaceae (Mimosoideae)	*Acacia floribunda*	White Sally Wattle
Shrubs	Fabaceae (Mimosoideae)	*Acacia parvipinnula*	Silver-stemmed Wattle
Shrubs	Myrtaceae	*Kunzea ambigua*	Tick Bush
Shrubs	Myrtaceae	*Leptospermum trinervium*	Slender Teatree
Shrubs	Myrtaceae	*Melaleuca thymifolia*	Thyme Honey-myrtle
Shrubs	Phyllanthaceae	*Breynia oblongifolia*	Coffee Bush
Shrubs	Phyllanthaceae	*Phyllanthus hirtellus*	Thyme Spurge
Shrubs	Pittosporaceae	*Bursaria spinosa subsp. Spinosa*	Blackthorn
Shrubs	Proteaceae	*Banksia spinulosa*	Hairpin Banksia
Shrubs	Proteaceae	*Hakea dactyloides*	Finger Hakea
Shrubs	Proteaceae	*Hakea sericea*	Needle Hakea
Shrubs	Proteaceae	*Grevillea mucronulata*	
Shrubs	Proteaceae	*Lomatia silaifolia*	Crinkle Bush
Shrubs	Rhamnaceae	*Cryptandra amara*	Bitter Cryptandra
Shrubs	Rosaceae	*Rubus parvifolius*	Native Raspberry

Table D.2 Species planting list – Shale Sandstone Transition Forest

Form	Family	Scientific Name	Common Name
Shrubs	Rubiaceae	*Pomax umbellata*	
Shrubs	Santalaceae	*Exocarpos strictus*	Dwarf Cherry
Shrubs	Sapindaceae	*Dodonaea triquetra*	Hop Bush
Shrubs	Scrophulariaceae	*Eremophila debilis*	Winter Apple
Forbs (Dicot)	Apiaceae	*Centella asiatica*	Indian Pennywort
Forbs (Dicot)	Apiaceae	*Hydrocotyle laxiflora*	Stinking Pennywort
Forbs (Dicot)	Asteraceae	*Calotis cuneifolia*	Purple Burr Daisy
Forbs (Dicot)	Asteraceae	*Euchiton sphaericus*	
Forbs (Dicot)	Asteraceae	*Senecio linearifolius*	Fireweed Groundsel
Forbs (Dicot)	Asteraceae	*Sigesbeckia orientalis subsp. orientalis*	Indian Weed
Forbs (Dicot)	Asteraceae	*Vernonia cinerea*	
Forbs (Dicot)	Asteraceae	*Xerochrysum bracteatum*	Golden Everlasting
Forbs (Dicot)	Campanulaceae	*Wahlenbergia gracilis*	Small Bluebell
Forbs (Dicot)	Chenopodiaceae	*Einadia hastata*	Berry Saltbush
Forbs (Dicot)	Chenopodiaceae	*Einadia trigonos*	Fish Weed
Forbs (Dicot)	Clusiaceae	*Hypericum gramineum*	Small St Johns Wort
Forbs (Dicot)	Convolvulaceae	*Dichondra repens*	Kidney Weed
Forbs (Dicot)	Fabaceae	*Desmodium varians*	Slender Tick-trefoil
Forbs (Dicot)	Geraniaceae	*Geranium solanderi*	Native Geranium
Forbs (Dicot)	Goodeniaceae	*Goodenia hederacea*	Forest Goodenia
Forbs (Dicot)	Haloragaceae	*Gonocarpus tetragynus*	Raspwort
Forbs (Dicot)	Haloragaceae	*Gonocarpus teucrioides*	Raspwort
Forbs (Dicot)	Lobeliaceae	*Pratia purpurascens*	Whiteroot
Forbs (Dicot)	Oxalidaceae	*Oxalis perennans*	Native oxalis
Forbs (Dicot)	Phyllanthaceae	*Poranthera microphylla*	Small-leaved Poranthera
Forbs (Dicot)	Rubiaceae	*Asperula conferta*	Common Woodruff
Forbs (Dicot)	Solanaceae	*Solanum prinophyllum*	Forest Nightshade
Forbs (Dicot)	Stackhousiaceae	*Stackhousia muricata*	Western Stackhousia
Forbs (Dicot)	Violaceae	*Viola hederacea*	Ivy-leaved Violet
Forbs (Monocot)	Anthericaceae	*Arthropodium milleflorum*	Pale Vanilla Lily
Forbs	Commelinaceae	*Commelina cyanea*	Scurvy Weed

Table D.2 Species planting list – Shale Sandstone Transition Forest

Form	Family	Scientific Name	Common Name
(Monocot)			
Forbs (Monocot)	Lomandraceae	*Lomandra filiformis*	Wattle Mat-rush
Forbs (Monocot)	Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush
Forbs (Monocot)	Lomandraceae	*Lomandra multiflora*	Many-flowered Mat-rush
Forbs (Monocot)	Phormiaceae	*Dianella longifolia*	Blueberry Lily
Forbs (Monocot)	Phormiaceae	*Dianella prunina*	
Grasses	Poaceae	*Aristida vagans*	Three awned Speargrass
Grasses	Poaceae	*Chloris ventricosa*	Plump Windmill Grass
Grasses	Poaceae	*Cymbopogon refractus*	Barbed Wire Grass
Grasses	Poaceae	*Dichelachne micrantha*	Plume Grass
Grasses	Poaceae	*Echinopogon caespitosus*	Tufted Hedgehog Grass
Grasses	Poaceae	*Echinopogon ovatus*	Forest Hedgehog Grass
Grasses	Poaceae	*Elymus scaber*	Common Wheatgrass
Grasses	Poaceae	*Entolasia marginata*	Bordered Panic
Grasses	Poaceae	*Entolasia stricta*	Wiry Panic
Grasses	Poaceae	*Eragrostis brownii*	Brown's Lovegrass
Grasses	Poaceae	*Microlaena stipoides*	Weeping Grass
Grasses	Poaceae	*Panicum simile*	Two-colour Panic
Grasses	Poaceae	*Rytidosperma tenuius*	Wallaby grass
Grasses	Poaceae	*Sporobolus creber*	Slender Rat's Tail Grass
Grasses	Poaceae	*Themeda australis*	Kangaroo Grass
Sedges and Rushes	Cyperaceae	*Cyperus difformis*	Dirty Dora
Sedges and Rushes	Cyperaceae	*Gahnia aspera*	Rough Saw-sedge
Sedges and Rushes	Cyperaceae	*Lepidosperma laterale*	
Sedges and Rushes	Juncaceae	*Juncus usitatus*	
Sedges and	Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush

Table D.2 Species planting list – Shale Sandstone Transition Forest

Form	Family	Scientific Name	Common Name
Rushes			
Sedges and Rushes	Lomandraceae	*Lomandra multiflora*	Many-flowered Mat-rush
Ferns	Adiantaceae	*Adiantum aethiopicum*	Common Maidenhair
Ferns	Aspleniaceae	*Asplenium flabellifolium*	Necklace Fern
Ferns	Dennstaedtiaceae	*Pteridium esculentum*	Bracken Fern
Ferns	Pteridaceae	*Cheilanthes sieberi*	Rock Fern
Vines and Twiners	Fabaceae (Faboideae)	*Glycine clandestina*	Twining Glycine
Vines and Twiners	Fabaceae (Faboideae)	*Hardenbergia violacea*	Purple Coral Pea
Vines and Twiners	Luzuriagaceae	*Eustrephus latifolius*	Wombat Berry
Vines and Twiners	Ranunculaceae	*Clematis aristata*	Old Man's Beard
Vines and Twiners	Ranunculaceae	*Clematis glycinoides*	Headache Vine

Appendix E

Weed Control Methods

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
Acanthaceae	*Thunbergia alata*	Black-eyed Susan		- Hand Weed - Spot Spray - Glyphosphate 10mL/1L
Amaranthaceae	*Amaranthus caudatus*	Love Lies Bleeding		
Asteraceae	*Aster subulatus*	Wild Aster		
Asteraceae	*Bidens pilosa*	Cobbler's Pegs		
Asteraceae	*Arctotheca calendula*	Cape Weed		
Asteraceae	*Cirsium vulgare*	Spear Thistle		
Asteraceae	*Conyza bonariensis*	Flaxleaf Fleabane		
Asteraceae	*Conyza sumatrensis*	Tall Fleabane		
Asteraceae	*Gnaphalium sp.*	A Cudweed		
Asteraceae	*Hypochaeris microcephala*	White Flatweed		
Asteraceae	*Hypochaeris radicata*	Catsear		
Asteraceae	*Lactuca serriola*	Prickly Lettuce		
Asteraceae	*Senecio madagascariensis*	Fireweed	#	
Asteraceae	*Soliva sessilis*	Bindyi		
Asteraceae	*Sonchus oleraceus*	Milk Thistle		
Asteraceae	*Taraxacum officinale*	Dandelion		
Asteraceae	*Tagetes minuta*	Stinking Roger		
Asteraceae	*Xanthium occidentale*	Noogoora Burr		

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
Boraginaceae	*Echium plantagineum*	Paterson's Curse		
Brassicaceae	*Cardamine hirsuta*	Common Bittercress		
Brassicaceae	*Lepidium africanum*			
Caryophyllaceae	*Cerastium glomeratum*	Mouseear Chickweed		
Caryophyllaceae	*Paronychia brasiliana*	Chilean Whitlow Wort		
Caryophyllaceae	*Petrorhagia nanteuilii*	Chiding Pink		
Caryophyllaceae	*Silene gallica var. gallica*			
Caryophyllaceae	*Stellaria media*	Common Chickweed		
Cyperaceae	*Cyperus eragrostis*	Umbrella Sedge		
Cyperaceae	*Cyperus sesquiflorus*	Fragrant Kyllingia		
Cyperaceae	*Isolepis levynsiana*	Tiny Flat Sedge		
Fabaceae (Faboideae)	*Lotus uliginosus*	Greater Bird's Foot Trefoil		
Fabaceae (Faboideae)	*Medicago minima*	Woolly Burr Medic		
Fabaceae (Faboideae)	*Medicago polymorpha*	Burr Medic		
Fabaceae (Faboideae)	*Trifolium dubium*	Yellow Suckling Clover		
Fabaceae (Faboideae)	*Trifolium repens*	White Clover		

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
Fabaceae (Faboideae)	*Vicia hirsuta*	Tiny Vetch		
Fabaceae (Faboideae)	*Vicia sativa*	Common Vetch		
Iridaceae	*Sisyrinchium iridifolium*	Blue Pigroot		
Malvaceae	*Malva parviflora*	Small Flowered Mallow		
Malvaceae	*Modiola caroliniana*	Red-flowered Mallow		
Myrsinaceae	*Anagallis arvensis*	Scarlet Pimpernel		
Oxalidaceae	*Oxalis corniculata*	Yellow Wood Sorrel		
Phytolaccaceae	*Phytolacca octandra*	Inkweed		
Plantaginaceae	*Plantago lanceolata*	Lamb's Tongues		
Plantaginaceae	*Veronica arvensis*	Wall Speedwell		
Poaceae	*Andropogon virginicus*	Whisky Grass		
Poaceae	*Axonopus fissifolius*	Carpet Grass		
Poaceae	*Bromus catharticus*	Brome Grass		
Poaceae	*Briza maxima*	Quaking Grass		
Poaceae	*Briza subaristata*	Chilean Quaking Grass		
Poaceae	*Dactylis glomerata*	Orchardgrass		
Poaceae	*Echinochloa crus-galli*	Barnyard Grass		
Poaceae	*Ehrharta erecta*	Panic Veldtgrass		

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
Poaceae	*Eleusine indica*	Crow's Foot		
Poaceae	*Eragrostis cilianensis*	Stinkgrass		
Poaceae	*Holcus lanatus*	Yorkshire Fog		
Poaceae	*Lolium perenne*	Perennial Rygrass		
Poaceae	*Paspalum dilatatum*	Dallisgrass		
Poaceae	*Paspalum urvillei*	Vasey Grass		
Poaceae	*Pennisetum clandestinum*	Kikuyu Grass		
Poaceae	*Poa annua*	Winter Grass		
Poaceae	*Setaria parviflora*	Pigeon Grass		
Poaceae	*Sporobolus africanus*	Parramatta Grass		
Poaceae	*Stenotaphrum secundatum*	Buffalo Grass		
Polygonaceae	*Persicaria capitata*	Japanese Knotweed		
Polygonaceae	*Rumex crispus*	Curled Dock		
Rubiaceae	*Richardia stellaris*			
Scrophulariaceae	*Verbascum virgatum*	Twiggy Mullein		
Solanaceae	*Solanum americanum*	Glossy Nightshade		
Solanaceae	*Solanum linnaeanum*	Apple of Sodom		
Solanaceae	*Solanum nigrum*	Blackberry Nightshade		

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
Solanaceae	*Solanum pseudocapsicum*	Jerusalem Cherry		
Solanaceae	*Solanum sisymbriifolium*	Sticky Nightshade		
Verbenaceae	*Verbena bonariensis*	Purple Top		
Verbenaceae	*Verbena rigida var. rigida*	Veined Verbena		
Amaranthaceae	*Alternanthera pungens*	Khaki Weed		- Dig deep tap root out with hand tools - Care must be taken to bag and remove all vegetative material from the plant as it will regrow from fragments - Spot spray plant before flowering with Glyphosphate 10mL/1L
Apiaceae	*Foeniculum vulgare*	Fennel		- Hand weed or spot spray juveniles with glyphosphate 15mL/L or metsulfuron methyl 7 g/100 L + non-ionic surfactant - Tall, mature individuals can be removed with a mattock, with care taken to sever the tap root as deep below ground as possible - Spot spray mature individuals and regrowth with glyphosphate 15mL/L or metsulfuron methyl 7 g/100 L + non-ionic surfactant - Care needs to be taken to prevent damage to native vegetation when spraying tall individuals
Apiaceae	*Hydrocotyle bonariensis*	Pennywort		- Mechanical - Using a shovel or mattock dig up underground rhizomes - Extremely time consuming and impractical - Use a wick/wand to apply undiluted glyphosphate to leaf surface
Apocynaceae	*Araujia sericifera*	Moth Vine		- Hand Weed Juveniles - Spray juveniles with glyphosphate 10mL/1L - Skirt mature vines (cut through plant close to root) and then pull root manually or apply undiluted glyphosphate to cut surface

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				- Scrape and paint vine with undiluted glyphosphate
Apocynaceae	*Gomphocarpus fruticosus*	Narrow-leaved Cotton Bush		- Hand Weed Juveniles - Spot Spray Glyphosphate 15mL/1L - Cut and Paint Glyphosphate 50mL/100mL
Asparagaceae	*Asparagus aethiopicus*	Sprenger's Asparagus	#	- Any branches profuse with fruit should be cut with secateurs and bagged to prevent further spread of species by birds - Juvenile plants can be eased out of soil with a trowel or knife - care should be taken to remove below ground plant material - For large, mature plants the woody crown at the base can be cut around with a sharp knife, or hacked out with a mattock or peter lever and removed - it is easiest to cut all branches off near the base with secateurs prior to removing crown - plant will not resprout from water storing tubers or roots below ground so these can be left to rot to reduce soil disturbance. - Spray mature and juvenile plants with metsulfuron methyl 6g/100mL + surfactant
Asparagaceae	*Asparagus asparagoides*	Bridal Creeper	#	- Dig out with hand tools - Care needs to be taken to remove all tuberous masses and rhizomes. Tuberous masses need soil excavation around and careful levering with hand tools to remove without leaving plant material behind to resprout. - July-September - Spray foliage with glyphosphate 10mL/1L + surfactant - May to June - Spray foliage with metsulfuron methyl (e.g. Brush Off) 5g/100L + non-ionic surfactant
Asparagaceae	*Asparagus officinalis*	Asparagus		- Remove with secateurs and bag and reprodctive material - Plant can be dug out of ground with hand tools, however care needs to be taken to completely remove crown from base of plant as it will resprout - Foliar spray with 10mL/1L glyphosphate can be effective for large infestations however

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				regrowth will need to be resprayed over a number of months upon resprouting from crown
Asteraceae	*Ageratina adenophora*	Crofton Weed		- Hand Weed - Spot Spray with Glyphosphate 5mL/1L - Slash large individuals with brushcutter and spray regrowth foliage with glyphosphate 5mL/1L
Asteraceae	*Ageratina riparia*	Crofton Mistflower		- Hand Weed - Spot Spray with Glyphosphate 5mL/1L - Slash large individuals with brushcutter and spray regrowth foliage with glyphosphate 5mL/1L
Asteraceae	*Delairea odorata*	Cape Ivy		- Hand weed taking care to bag and remove all stem pieces - Spray with glyphosphate 10mL/1L (spraying of regrowth may be necessary in following site visits) - Cut stem aerial stems at 1m height and hand remove remaining rooted plant parts of treat cut surface with undiluted glyphosphate
Bignoniaceae	*Tecoma capensis*	Cape Honeysuckle		- Spray juveniles with glyphosphate 10mL/1L - Cut mature individuals with loppers near ground level and paint stump with undiluted glyphosphate - Spray foliage of mature and regrowth individuals with glyphosphate 10mL/1L
Cactaceae	*Opuntia stricta*	Common Prickly Pear	# X(4)	- This weed is difficult to treat with chemicals, and chemicals such as arsenic that do kill the plant are highly toxic to other plants and animals so should not be used in bushland - Due to the introduction of the Cactoblastis moth in 1926, which preys on the species, mature individuals of the plant occur only sporadically and are easily manually removed - As the plant reproduces vegetatively the entirety of the plant must be bagged and

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				removed from the site, including as much root material as possible. As the plant is soft the above ground areas of the plant are easily cut into pieces with a hand saw, and after removal of the upper areas of the plant the root material should be dug out with a hand mattock.
Caprifoliaceae	*Lonicera japonica*	Japanese Honeysuckle		- Cut and scrape vine stems with undiluted glyphosphate - Hand weed seedlings - Spray low lying foliage, regrowth foliage, and seedlings with 20mL/1L Glyphosphate & metsulfuron methyl(e.g. Brush-Off) 10.5g/10L + non ionic surfactant - Roots of plant can be dug up with mattock or shovel
Commelinaceae	*Tradescantia fluminensis*	Wandering Jew		- Small infestations can be removed by hand weeding - Care needs to be taken not to leave behind any plant material which will resprout. - Large infestations can be controlled by spraying with glyphosphate 10mL/1L, and the use of a surfactant will increase the efficacy of herbicide. Spraying needs to be repeated during every site visit. It can take several months before the mature plants appear to be affected but a sudden die off will occur after several months of treatment. Any regrowth material following die off of mature plants needs to be sprayed or removed by hand. - Large infestations can be raked up and bagged and removed from site. This is time consuming and labour intensive due to the large mass and weight of heavy infestations of healthy plants. - Large infestations can be covered with black plastic sheets for several months. The plants will die eventually due to lack of required sunlight. This method is not recommended for bushland regeneration as it also inhibits regrowth form seed of native plant species.
Convolvulaceae	*Ipomoea indica*	Morning Glory		- Hand pull taking care to remove root system and stem - plant will resprout from stem segments not removed from site

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				- Cut vine at 1m or less above ground height and pull remaining plant out of the ground at the roots - Spray any ground hugging vines with glyphosphate 10mL/1L (will require follow up spraying of regrowth over several months as plant will resprout)
Cyperaceae	*Cyperus rotundus*	Nut Grass		- Difficult Weed to control manually as it an has extensive underground root network with tubers from which it will resprout - if manual methods need entirety of underground mass needs to be dug up, bagged, and removed from site - Weed is resistant to most herbicides which will kill foliage though not tubers from which it will resprout - Use of glyphosphate 10 mL/1L will kill tubers eventually if foliage and resprouting foliage is sprayed repeatedly during each site visit - Spraying should occur monthly until no resprouting material is present, and area should be monitored following this for new folliage in the months after
Fabaceae (Caesalpinioideae)	*Senna pendula var. glabrata*			- Hand weed juveniles - Spray juvenile individuals with glyphosphate 10mL/1L - Cut and paint mature individuals with undiluted glyphosphate
Fabaceae (Mimosoideae)	*Acacia saligna*	Golden Wreath Wattle		- Hand weed juveniles - Cut mature plants as close as possible to the ground with loppers or a saw and apply undiluted glyphosphate to the stump
Iridaceae	*Gladiolus undulatus*	Wild Gladiolus		- Dig out with hand tools - Care needs to be taken to removal all small cormels present under the main corm - May require bagging and removal of soil around the main corm to remove all cormels - Spray regrowth seedlings with glyphosphate 10mL/1L
Iridaceae	*Romulus rosea*	Onion Grass		- Hand weed - Corms beneath the plant must be removed from the soil to prevent

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				resprouting - This can be done by digging down to the corm with a knife or trowel and carefully levering the corm out of the soil - Foliar spraying of the plant with glyphosphate 10 mL/1L plus non-ionic surfactant at 2mL/1L water or metsulfuron methyl (600g/kg) at 0.14g/L water plus 1ml/1L non-ionic surfactant is effective, though in order to kill corms spraying should take place when plants are 6-8 weeks old after emerging from the soil surface, when the old corm is exhausted and a new corm is developing
Liliaceae	*Lilium formosanum*	Formosan Lily		- Cut, bag, and remove any mature seed heads from site - Dig out with hand tools - Care must be taken to remove bulb and all bulbils from base of plant below soil surface - Dense infestations can be sprayed with glyphosphate 10mL/1L however follow up hand weeding will be needed to dig up bulbs and bulbils of resprouting plants
Malvaceae	*Sida rhombifolia*	Paddy's Lucerne		- Hand weed - Spray with glyphosphate 10mL/1L - Cut large, firmly rooted individuals at the base with secateurs and paint with undiluted glyphosphate
Meliaceae	*Melia azederach*	White Cedar	NE	- Native species that is considered a weed outside of rainforest areas. The leaves and fruit are toxic and caution should be used when handling the plant (dust mask and gloves when sawing) - Hand weed juveniles - Drill holes with power drill with thick drill bit into mature trees, around base of trunk and fill holes with undiluted glyphosphate. Once glyphosphate has been absorbed refill holes with undiluted glyphosphate several times. - Cut shrub and mature individuals as close to ground as possible with loppers or hand saw (or chainsaw) and treat stump with undiluted glyphosphate

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				- Spray juveniles and regrowth foliage of cut and painted individuals with glyphosphate 10mL/1L
Ochnaceae	*Ochna serrulata*	Mickey Mouse Bush		- Stems of all juvenile and mature plants should be scraped and painted with undiluted glyphosphate - follow up treatment may be needed on regrowth stems around base of plant in following monthly site visits - Mature fruits on plants should be bagged and removed from site
Oleaceae	*Ligustrum sinense* and *Ligustrum lucidum*	Small-leaved Privet and Broad-leaf Privet	X(4)	- Hand weed juveniles - Drill holes with power drill with thick drill bit into mature trees, around base of trunk and fill holes with undiluted glyphosphate. Once glyphosphate has been absorbed refill holes with undiluted glyphosphate several times. - Cut shrub and mature individuals as close to ground as possible with loppers or hand saw and treat stump with undiluted glyphosphate - Spray juveniles and regrowth foliage of cut and painted individuals with glyphosphate 10mL/1L
Oleaceae	*Olea europaea subsp. cuspidata*	African Olive		- Spray juveniles with glyphosphate 10mL/1L - Cut mature individuals with saw or loppers near ground level and paint stump with undiluted glyphosphate
Passifloraceae	*Passiflora edulis*	Passion Fruit		- Hand weed Juveniles - Dig roots out of ground for larger individuals or use secateurs to cut the vine near the base and treat cut surface with undiluted glyphosphate
Passifloraceae	*Passiflora subpeltata*	White Passion Flower		- Hand weed - Scrape stems with knife and paint exposed surface with undiluted glyphosphate - Spray foliage with glyphosphate 10mL/1L plus non-ionic surfactant
Poaceae	*Chloris gayana*	Rhodes Grass		- Hand weed juveniles

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				- Remove carefully with secateurs and bag seed plumes of mature plants - Dig mature plants out of the ground with a mattock; or - Brushcut mature plants to near ground level and spray with glyphosphate 10mL/1L - During subsequent site visits spray regrowth foliage with glyphosphate 10mL/1L
Poaceae	*Cortaderia selloana*	Pampas Grass		- Dig out large clumps with mattock - Spot spray with glyphosphate 10mL/1L - Large plants can be mown or brush cut to ground level, then regrowth sprayed with glyphosphate
Poaceae	*Cynodon dactylon*	Common Couch		- Hand Weed - Spot Spray with glyphosphate 10mL/1L - May require monthly treatment of regrowth individuals for up to six months
Poaceae	*Digitaria sanguinalis*	Summer Grass		- This species is present above ground generally only during the warmer months of the year when it grows densely, in large abundances, after seedlings germinate from soil seed. It seeds profusely and it is important to prevent seed from being deposited in the soil to prevent dense infestations the following year. It is important to control juveniles before they are able to produce and set seed. On any plant that is seeding the seed head needs to be cut off and bagged, with secateurs for individual plants, or use of shears in areas with large amounts of the grass seeding. - The most effective control methods is to spray all patches of juvenile plants with glyphosphate 10mL/1L before they reach maturity. This needs to be repeated during every site visit during the warmer months as germination of new plants will occur throughout this period.
Poaceae	*Eragrostis curvula*	African Lovegrass		- Dig large individuals out with a mattock - Juvenile individuals can be dug out using hand tools

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				- Spot spraying with glyphosphate 10mL/10L is effective during the growth period during Spring and Summer - During this period large individuals can be mown or brushcut to the ground level and regrowth foliage sprayed with glyphosphate
Poaceae	*Hyparrhenia hirta*	Coolatai Grass		- Hand weed - Remove using mechanical means, i.e. Mattock - Spray with 10mL/1L glyphosphate three times in one growth season
Poaceae	*Phalaris aquatica*	Canary Grass		- Spray using 10mL/1L glyphosphate - May need repeat spraying over several months - Hand weed taking care to remove rhizomes - Large plants may be mown or brushcut and regrowth sprayed during following site visits
Polygalaceae	*Polygala virgata*	Broom Milkwort		- Hand weed seedlings - Spray seedlings with glyphsophate 10mL/1L - Cut mature plants close to ground with secateurs and treat stump with undiluted glyphosphate
Polygonaceae	*Acetosa sagittata*	Turkey Rhubarb		- Bag and remove seed present on mature plants - Cut vines close to the ground and dig out as much as of root system and tubers as possible - Juvenile plants growing from seed can be dug out or hand pulled - Tuber at base of plant needs to be removed - On individuals with deep and difficult to remove tubers, stems can be scraped on one side with a blade for a length of 45cm and scraped area painted with undiluted glyphosphate - This treatment may need to be repeated on subsequent site visits - On plants with difficult and deep to remove tubers the tubers close to the surface can also be scraped and painted with undiluted glyphosphate

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
Polygonaceae	*Acetosella vulgaris*	Sheep Sorrel		- Plant is difficult to control manually due to regrowth and spread from any underground rhizomes not removed. Manual removal of small infestations requires that all underground rhizomes as well as above ground plant material are bagged and removed from site. Insufficient manual removal of rhizomes can lead to larger infestations of the species than to start with. - Species can be controlled with spot spraying of foliage with glyphsophate 10mL/1L, however plants need to be monitored for regrowth and resprayed monthly over at least a six month period. - Any reproductive features of the plant such as seed on mature individuals should be cut off with secateurs, bagged, and removed from site prior to spraying or manual removal
Proteaceae	*Grevillea robusta*	Silky Oak		- Hand weed juveniles or spot spray with glyphosphate 10mL/1L - Cut mature/shrub individuals with loppers or a saw as close to the ground as possible and paint stump with undiluted glyphosphate
Ranunculaceae	*Ranunculus repens*	Creeping Buttercup		- Hand weed - Care must be taken to remove all plant parts including runners to prevent vegetative reproduction - Spot spray with glyphosphate 10mL/1L - follow up treatment may be needed over subsequent visits to treat any regrowth
Rosaceae	*Rubus fruticosus sp. agg.*	Blackberry complex	# X(4)	- It is possible to spray with 10mL/1L glyphosphate however it will leave dangerous thorned stems - Wearing thick clothing and leather glove uses loppers to cut close to base and apply undiluted glyphosphate to cut stems (remove cut foliage and stems cautiously) - Spray regrowth foliage with glyphosphate 10mL/1L
Rutaceae	*Murraya paniculata*	Orange Jessamine		- Hand weed juveniles or spray with 10mL/1L glyphosphate - Cut mature plants close to the ground with a hand saw and apply undiluted

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				glyphosphate to cut stump surface - Spray any regrowth foliage from cut stumps with glyphosphate 10mL/1L
Sapindaceae	*Cardiospermum grandiflorum*	Balloon Vine		- Hand weed juveniles or spray with glyphosphate 10mL/1L - Hand pull roots of mature vines - Vines growing over trees, shrubs, or other objects should be skirted with shears as close to the ground as possible - Spray remaining ground coverage with glyphosphate 10mL/1L, or treat cut stems with undiluted glyphosphate - Bag and remove seed cases where possible
Solanaceae	*Cestrum parqui*	Green Cestrum		- Hand weed juveniles - Scrape stem and paint with undiluted glyphosphate - Cut all above ground suckering individuals with loppers or saw and paint stumps with undiluted glyphosphate - Spray regrowth foliage with glyphosphate 10mL/1L
Solanaceae	*Lycium ferocissimum*	African Boxthorn	#	- Heavy PPE such as leather gloves, and caution should be used when working with this plant due to the prescence of large thorns - Juvenile individuals can be hand weeded - Mature individuals should be cut at the base with a hand saw and undiluted glyphosphate painted on to the cut stump surface - Alternatively for large individuals a power drill can be used to drill holes 5 cm apart which should be filled with undiluted glyphosphate
Solanaceae	*Solanum mauritianum*	Wild Tobacco Bush		- When working with this plant additional PPE may be required as some individuals are sensitive to the shedding fine hairs of the species - Recommended PPE is a dustmask, long sleeve shirt and pants + gloves

Table E.1 Weed control methods

Family	Species	Common Name	Status	Treatment Methods
				- Hand weed juveniles - Mature individuals can be cut and painted with glyphosphate 10mL/1L
Verbenaceae	*Lantana camara*	Lantana	#	- Hand weed juveniles and regrowth from small pieces - Spot spray with glyphosphate 10mL/1L - Slash using brushcutter, or hand cut with loppers, and spray regrowth foliage with glyphosphate 10mL/1L - Cut near ground level and paint with undiluted glyphosphate - Some individuals will have stumps which will still regrow foliage, spray regrowth foliage with glyphosphate 10mL/1L
Zingiberaceae	*Hedychium gardnerianum*	Ginger Lily		- Cut, bag, and remove mature seed heads from plants - Dig up with mattock or hand pull mature plants, taking care to remove all fleshy rhizomes - Rhizomes need to be removed from site, or crushed and piled on site to rot (monitor for regrowth) - Cut plant as close to rhizome as possible and treat with undiluted metsulfuron methyl at 6g -1 L (winter) or 1g -1 L (summer)

 # Denotes Weeds of National Significance, X (No.) denotes Noxious Weed (Number is Class of Noxious Weed in the LGA)

Appendix 9

Dam Dewatering Report







Box Hill North

Flow Systems Site

Dam Dewatering Report

Celestino

22 October, 2015

CELESTINO

J. WYNDHAM PRINCE

CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS

Document Control

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Table of Contents

1 INTRODUCTION 1

2 PREVIOUS REPORTS 2

2.1 Box Hill North Proposed Flow Systems Water Services Centre Flood Impact Assessment 2

2.2 Box Hill North Flood Impact Assessment 2

3 THE SITE 3

3.1 Existing Dam to be Dewatered 3

4 DAM DECOMMISSIONING WORK METHOD PROCEDURE 6

4.1 Dam Dewatering and Relocation Methodology Summary 6

4.2 Inflow / Outflow Arrangement 6

4.3 Dam Dewatering Procedure 6

4.3.1 Water Quality Testing 6

4.3.2 Dewatering Discharge Rate and Method 6

4.3.3 Fauna Recovery 7

4.3.4 Sediment Testing and Removal 7

4.3.5 Dam Wall Removal and Associated Development Earthworks 8

4.3.6 Erosion Control and Scour Protection 8

4.3.7 Dewatering Monitoring and Responsibilities 8

5 CONCLUSIONS 9

6 REFERENCES 10

LIST OF PLATES

Plate 3.1 - Existing Site 4
Plate 3.2 - Proposed Development and Dam Decommissioning / Relocation 5

LIST OF TABLES

Table 1 – Health Investigation Levels for Residential with Accessible Soil 7

LIST OF APPENDICES

APPENDIX A – DAM DECOMMISSIONING & INTERIM DETENTION BASIN PROGRAM
APPENDIX B – GEOTECHNIQUE CONTAMINATION ASSESSMENT & DAM DEWATERING REPORTS
APPENDIX C – ENGINEERING PLANS FOR FLOW SYSTEMS DEVELOPMENT

1 INTRODUCTION

J. Wyndham Prince have been engaged by Celestino to prepare a Dam Dewatering Report to support a Development Application for a proposed Flow Systems Water Services Centre (FSWSC) at Box Hill North. The FSWSC will provide both potable and recycled water supply for the future 4500 lots within the Box Hill North development.

The FSWSC site is approximately 1 hectare and is located within the north-western extents of the Box Hill North development. The proposed development requires partial filling of an existing farm dam that is online to a first order watercourse and, therefore, will need to be dewatered to facilitate the development.

A flood impact assessment was previously undertaken for the Flow Systems development (JWP 2015). The assessment indicated that the dam cannot be removed without causing an adverse impact on the downstream properties. Therefore, it is intended to fill the portion of the dam required for the development and provide an interim detention basin within the adjacent downstream property with a similar volume of storage to the existing dam.

This report details the proposed methodology for dewatering the dam, the water quality testing procedures to be adopted prior to commencement of the dewatering process and the measures to be implemented to prevent scouring and erosion downstream of the proposed works. The dam dewatering methodology is generally consistent with the guideline provided by The Hills Shire Council (email correspondence dated 22 May 2015).

The Dam Dewatering procedure involves consideration of the following:

- The overall process to dewater and decommission the existing dam and provide an interim detention basin further to the east.
- The volume of water held by the dam, how it will be discharged and at what flow rate.
- A detailed sampling program to test the water and ensure it is suitable for irrigation, reuse or discharge to the downstream creek.
- Testing methodology for sediment within the dam walls and bed to confirm its suitability for reuse within the development.
- Sediment, erosion and scour protection control measures required to be implemented.
- Fauna recovery (refer to separate report prepared by Cumberland Ecology)
- Wall removal, filling and stabilisation works.
- New basin embankment construction.

2 PREVIOUS REPORTS

A previous investigation relating to flooding on the Flow System site within the Box Hill North Precinct has been undertaken. The investigation is described below.

2.1 Box Hill North Proposed Flow Systems Water Services Centre Flood Impact Assessment

This report (JWP 2015) was prepared to support a development application for the proposed Flow Systems Water Services Centre. The flood impact assessment demonstrated that the existing farm dam cannot be completely removed without creating an adverse flood impact on the property immediately downstream. Therefore, the dam will be effectively relocated further to the north to provide a similar volume of storage to the current conditions with the southern portion of the dam filled to create the development platform.

2.2 Box Hill North Flood Impact Assessment

This report (JWP 2015) was prepared to inform future development within the Box Hill North Precinct with respect to flooding and stormwater attenuation. Following assessment of the original Water Cycle and Flood Management Strategy (JWP 2013), an alternate hydrologic and flood modelling technique was discussed and agreed to with The Hills Shire Council. The alternate modelling was considered to provide a more detailed assessment of the impact of development on the existing flood regime, particularly with regards to the attenuation provided by the existing farm dams within the site and their ultimate removal as part of this development.

The investigation demonstrated that impacts of Box Hill North development on the flooding regime can be managed to acceptable levels. The provision of detention basins within the development will offset the impacts of urbanisation and the removal of the existing farm dams.

Flood levels in the 1% AEP event are reduced at the downstream boundary of the site. There are minor increases in flood levels further downstream at the confluence of other tributaries, however this is due to timing of flows and it was agreed with Council that these increases are considered to be acceptable.

3 THE SITE

The Box Hill North Precinct is located within The Hills Shire Council's Local Government Area in the suburbs of Box Hill and Maraylya. The Precinct consists of approximately 380 ha of land, which is bounded by Boundary Road to the west, Maguires Road to the north, Janpieter Road to the east and Old Pitt Town Road to the south. The Precinct currently consists of rural land holding in fragmented ownership.

The proposed Flow Systems Water Service Centre (FSWSC) site is located on Red Gables Road within the north-western extents of the Box Hill North Precinct. The site is relatively flat and consists mainly of grass fields and an existing farm dam.

3.1 Existing Dam to be Dewatered

The existing farm dam to be dewatered is located online to a first order watercourse in the northern extents of the Box Hill North site. The location of the FSWSC site and existing farm dam is shown below on Plate 3.1. The dam is approximately 6,300 square metres in area, with an estimated volume of 16,700 cubic metres to the outlet level.

To facilitate the Flow Systems development and minimise the flood impact on the adjacent properties, an interim detention basin of similar volume is to be constructed on the downstream property. The existing dam attenuation volume is effectively being relocated further to the east. This is shown diagrammatically on Plate 3.2.

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Flow System Development - Dam Dewatering
Existing Site Locality Plan

Plate 3.1

N W E S

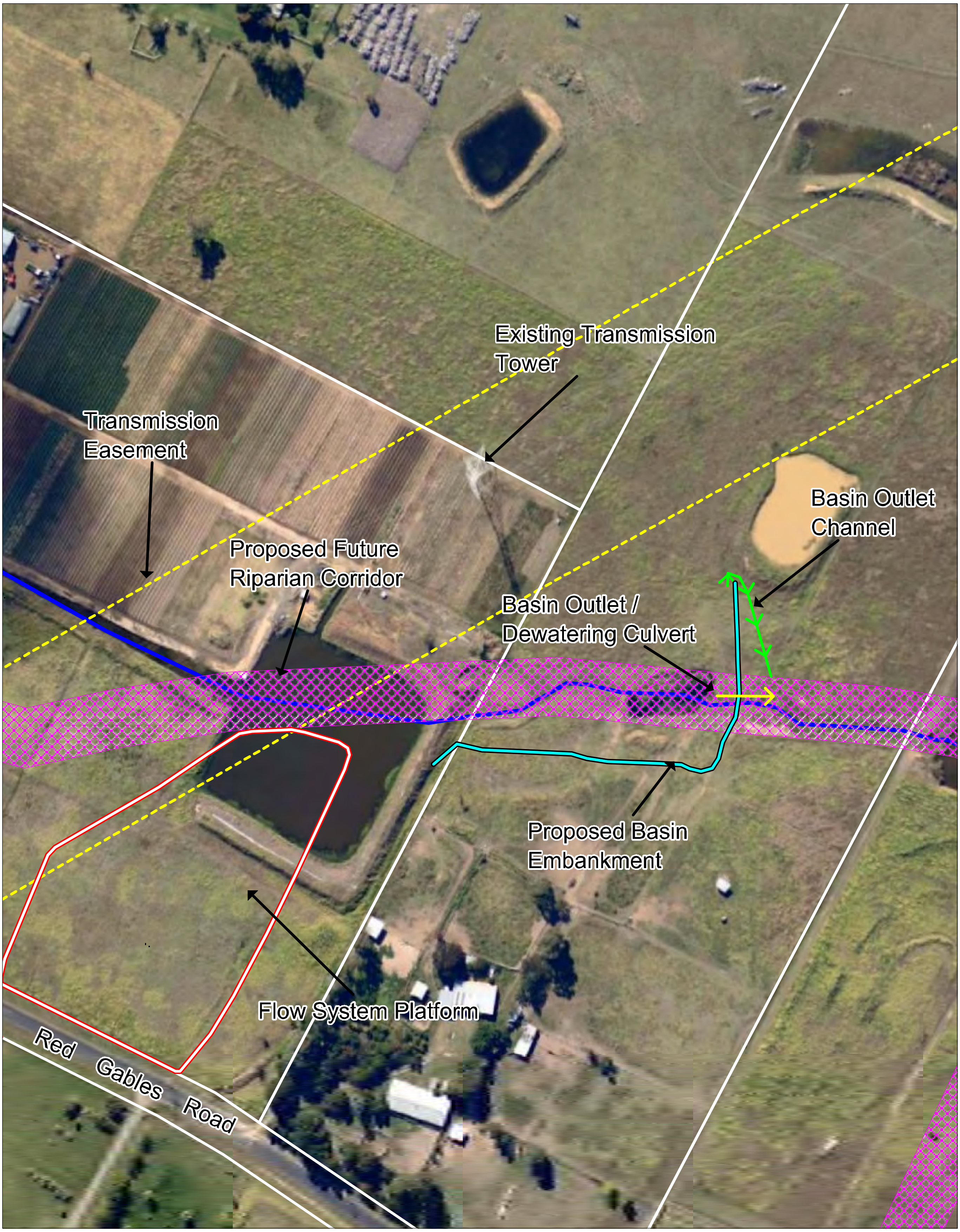
50 0 50 m

Scale 1: 2,000 @ A4

Date : 29/06/15

Issue : A

File Name: 9976_DD_Plate3.1



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Proposed Flow Systems Development **Plate 3.2**

N W E S

100 0 m

Scale 1: 2,272 @ A4

Date : 27/7/15

Issue A

File Name: 9976_DD_Plate3.2

4 DAM DECOMMISSIONING WORK METHOD PROCEDURE

Dewatering and decommissioning of the existing farm dam within the Flow Systems site is to be undertaken generally in accordance with the following procedures.

4.1 Dam Dewatering and Relocation Methodology Summary

Following is a summary of the proposed steps in dewatering and relocating the existing farm dam:

- Construct / place erosion and scour protection measures.
- Construct the interim detention basin downstream of the existing dam.
- Realign the creek inlet as necessary to allow for the Flow Systems development earthworks.
- Dewater the existing dam (see Section 4.3 below).
- Progressively lower and stabilise the dam spillway level during the dewatering process to prevent rainfall from continually refilling the dam. Maintain a similar spillway width to the current arrangement (as much as practical) to mimic the current hydraulic outlet performance while the dewatering process is being undertaken.
- Fauna recovery prior to dam being completely dewatered (refer to separate Ecological Work Method Procedure Report prepared by Cumberland Ecology).
- Completely breach the western embankment of the existing dam to the design levels.
- Desilt the existing dam.
- Fill the existing dam as required to create the Flow Systems development pad.
- Stabilise any disturbed areas and remove erosion and scour protection measures.

A program of the above process is also included in Appendix A.

4.2 Inflow / Outflow Arrangement

The dam within the site has an upstream catchment area of approximately 60 hectares. There are a number of online farm dams further upstream that impact on the catchment hydrology. The watercourse draining to the farm dam is intermittent in nature. Therefore, diversion of the watercourse around the dam is not absolutely necessary but recommended to undertake the decommissioning works given the time it will take to dewater the dam.

The proposed dewatering methodology includes progressively lowering and stabilising the existing dam spillway as the dam is dewatered. This will prevent the dam from refilling in the event of rainfall during the process.

4.3 Dam Dewatering Procedure

4.3.1 Water Quality Testing

Water quality testing of the existing dam within the Flow Systems site has been undertaken by Geotechnique (Geotechnique 2015). The results of the testing indicated that the water quality exceeds some of the ANZECC freshwater trigger values and is therefore not suitable for discharge directly into the watercourse. However, the water quality is suitable for use as irrigation. A copy of the Geotechnique Contamination Assessment Report is included in Appendix B.

4.3.2 Dewatering Discharge Rate and Method

The existing dam has an estimated volume of 16,000 cubic metres to the spillway. It is intended that the water will be irrigated to an area adjacent to the dam (south-west of the dam, as shown in the Geotechnique report). The report prepared by Geotechnique recommends irrigating an area of 3.2 hectares with an application rate of 75 m^3/day, which will prevent the soils becoming saturated.

A bund is to be constructed on the southern side of the watercourse to prevent irrigated water from re-entering the dam. Silt fence is also to be installed along Red Gables Road. This scheme is shown in the Geotechnique Dam Dewatering Report, included in Appendix B.

4.3.3 Fauna Recovery

Prior to the dam being completely emptied, a fauna recovery process is to be undertaken in accordance with the Dam Decommissioning Ecological Work Method Procedure, prepared by Cumberland Ecology (CE 2015).

4.3.4 Sediment Testing and Removal

Once the dam has been dewatered the remaining sediment is to be tested prior to removal. Sample testing would be undertaken by a NATA registered laboratory and assessed against the NEPM 1999 Health Investigation Levels for Residential with Accessible Soil. In accordance with this guideline the applicable levels are listed in Table 2. If the testing indicates elevated levels for any chemical tested, the results shall be referred to Council or other relevant authority for confirmation on whether the material is acceptable for reuse. Any material not deemed to be suitable for reuse on the site shall be removed and disposed of at an approved facility.

Table 1 – Health Investigation Levels for Residential with Accessible Soil

Chemical	Health-Based Investigation Level (mg/kg)
Metals and Inorganics	
Arsneic	100
Beryllium	60
Boron	4500
Cadmium	20
Chromium (VI)	100
Cobalt	100
Copper	6000
Lead	300
Manganese	3800
Mercury (Inorganic)	40
Methyl Mercury	10
Nickel	400
Selenium	200
Zinc	7400
Cyanide (free)	250
Polycyclic Aromatic Hydrocarbons (PAHs)	
Carcinogenic PAHs (as BaP TEQ)	3
Total PAHs	300
Phenols	
Phenol	3000
Pentachlorophenol	100
Cresols	400

Chemical	Health-Based Investigation Level (mg/kg)
Organochlorine Pesticides	
DDT+DDE+DDD	240
Aldrin and dieldrin	6
Chlordane	50
Endosulfan	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
Mirex	10
Toxaphene	20
Herbicides	
2,4,5-T	600
2,4-D	900
MCPA	600
MCPB	600
Mecoprop	600
Picloram	4500
Other Pesticides	
Artrazine	320
Chlorpyrifos	160
Bifenthrin	600
Other Organics	
PCBs	1
PBDE Flame Retardants (Br1-Br9)	1

4.3.5 Dam Wall Removal and Associated Development Earthworks

Once the interim detention basin has been completed and the existing dam has been desilted, the western embankment of the existing dam will be removed. Where possible, the material will be used as fill for the proposed Flow System development platform. Any unsuitable material will be disposed of appropriately.

The proposed finished surface levels for the development are shown on the engineering plans prepared by J. Wyndham Prince (Ref: 997603DA70-76), included in Appendix B.

4.3.6 Erosion Control and Scour Protection

As discussed in Section 4.3.2 above, the dam will be dewatered by irrigating at a very low flow rate to prevent the soils becoming saturated. Therefore, scour and erosion protection is not considered necessary using this dewatering methodology.

A separate soil and water management plan for the Flow Systems development has been prepared and is shown on plan 997603/DA75 in Appendix B.

4.3.7 Dewatering Monitoring and Responsibilities

As the dam dewatering (excluding the sediment removal) will be undertaken by irrigating, the control and monitoring will be the responsibility of the land owner or the site superintendent. The remaining dam decommissioning works, along with the construction of the interim detention basin, will be undertaken by a civil contractor (yet to be appointed). It will be the responsibility of the civil contractor's site supervisor to implement the dam decommissioning work method procedure in accordance with this report and subsequent directions from any authority.

5 CONCLUSIONS

The Dam Dewatering Report has been prepared to support a Development Application for a proposed Flow Systems Water Services Centre (FSWSC) at Box Hill North. The proposed development requires partial filling of an existing farm dam, which will need to be dewatered.

This report details the proposed methodology for dewatering the dam, the water quality testing results (already completed), sediment testing and disposal and removal of the existing dam wall The dam dewatering methodology is generally consistent with the guideline provided by The Hills Shire Council.

The Dam Dewatering procedure involves consideration of the following:

- The overall process to dewater and decommission the existing dam and construct an interim detention basin further to the east.
- The volume of water held by the dam, how it will be discharged and at what flow rate.
- Water quality testing (already completed) to ensure it is suitable for irrigation.
- Testing methodology for sediment within the dam walls and bed to confirm its suitability for reuse as a fill source within the development.
- Sediment, erosion and scour protection control measures associated with the works.
- Fauna recovery (in accordance with the separate Ecological Work Method Procedure Report prepared by Cumberland Ecology).
- Wall removal, filling and stabilisation works.
- Interim detention basin construction.

This procedure will ensure there are no detrimental environmental impacts from the proposed works, either in the short term or long term.

Yours faithfully

J. WYNDHAM PRINCE

DANIEL GARDINER
Senior Water Resources Engineer

6 REFERENCES

ANZECC (2000). Australian and New Zealand Guidelines for Fresh and Marine Water Quality

Cumberland Ecology (2015). Box Hill North - Dam Decommissioning Ecological Work Method Procedure

Geotechnique (2015). Lot 10 in DP593517, Off Red Gables Road, Box Hill North - Contamination Assessment of Dam Water (Letter dated 2 July 2015)

Geotechnique (2015). Lot 10 in DP593517, Off Red Gables Road, Box Hill North - Dam Decommissioning - Dewatering (Letter dated 2 July 2015)

J. Wyndham Prince (2015). Box Hill North - Flood Impact Assessment

J. Wyndham Prince (2015). Box Hill North - Proposed Flow Systems Water Services Centre - Flood Impact Assessment

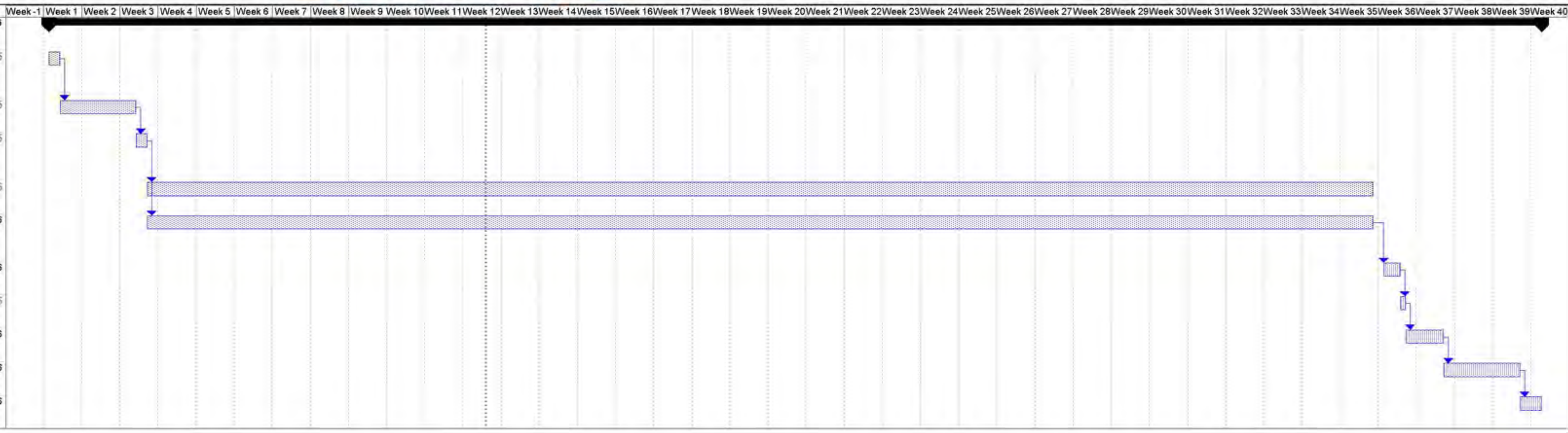
National Environment Protection (Assessment of Site Contamination) Measure (1999) - Volume 19: Schedule B7 - Guideline on Derivation of Health-Based Investigation Levels

APPENDIX A – DAM DECOMMISSIONING & INTERIM DETENTION BASIN PROGRAM

BOX HILL NORTH

Flow Systems Site - Dam Dewatering Program

ID	Task Name	Duration	Start	Finish
1	**DAM DECOMMISSIONING PROCEDURE**	**196 days**	**Mon 3/08/15**	**Mon 2/05/16**
2	Construct bund and erosion scour protection measures around irrigation area and extent of dam decommissioning works.	2 days	Mon 3/08/15	Tue 4/08/15
3	Construct the interim detention basin downstream of the existing farm dam.	10 days	Wed 5/08/15	Tue 18/08/15
4	Realign the creek inlet as necessary to allow for the Flow System development earthworks.	2 days	Wed 19/08/15	Thu 20/08/15
5	Dewater the existing dam.	161 days	Fri 21/08/15	Fri 1/04/16
6	Progressively lower and stabilise the dam spillway level during the dewatering process to prevent rainfall from continually refilling the dam.	161 days	Fri 21/08/15	Fri 1/04/16
7	Fauna Recovery	3 days	Mon 4/04/16	Wed 6/04/16
8	Completely breach the western embankment to the design levels.	1 day	Thu 7/04/16	Thu 7/04/16
9	Desilt the existing dam.	5 days	Fri 8/04/16	Thu 14/04/16
10	Fill the existing dam as required to create the Flow Systems development pad.	10 days	Fri 15/04/16	Thu 28/04/16
11	Stabilise any disturbed areas and remove erosion and scour protection measures.	2 days	Fri 29/04/16	Mon 2/05/16



APPENDIX B – GEOTECHNIQUE CONTAMINATION ASSESSMENT & DAM DEWATERING REPORTS

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ABN 64 002 841 063

Job No: 13494/1
Our Ref: 13494/1-AA
2 July 2015

EJC Corporate Services Pty Ltd
c/- J Wyndham Prince Pty Ltd
P O Box 4366
PENRITH WESTFIELD NSW 2750
Email: bstokes@jwprince.com.au

Attention: Mr B Stokes

Dear Sir

re: **Lot 10 in DP593517**
Off Red Gables Road, Box Hill North
Contamination Assessment of Dam Water

We have conducted a contamination assessment of dam water in a dam at the above site.

The objectives of the contamination assessment of the dam water were to ascertain the contamination status and to determine appropriate dewatering methods.

SCOPE OF WORK

The following scope of work was conducted:

- Measuring field parameters, using a water quality meter, of dam water at two sample locations DW1 to DW2 as shown on Drawing No 13494/1-AA1 in Attachment A.
- Collection of two dam water samples DW1 and DW2 for laboratory analysis.
- Assessment of the field parameters and laboratory analytical results.
- Assessment of the contamination status of the dam water.
- Recommendations for appropriate dewatering methods.

SAMPLING & LABORATORY TESTING

Two dam water samples DW1 and DW2 were recovered from the dam on 3 June 2015 by an Environmental Engineer from Geotechnique.

It should be noted that the sample locations (SW01 and SW02) were previously sampled locations as reported in the Phase 2 Environmental Site Assessment for Lot 10 DP593517 Red Gables Road, Box Hill North, prepared by JBS and G, dated 16th March 2015 (JBSG 2015).

A calibrated Water Quality Meter was used to measure field parameters including Temperature, Oxidation Reduction Potential (ORP), Dissolved Oxygen (DO), Turbidity, Salinity and pH of the dam water samples. Readings of the field parameters and the water quality meter calibration report are included in Attachments B and C respectively.

The recovered water samples were immediately transferred to be labelled, laboratory supplied, glass, plastic bottles and sterile containers, which were filled to zero headspace and sealed with an airtight, Teflon screw top lid. The fully filled bottles and containers were then placed in chilled containers.

The glass and plastic bottles in the chilled container were transported under Chain of Custody (COC) conditions to SGS Environmental Services (SGS). The sterile containers in the chilled container were forwarded under COC conditions to Sonic Food and Water Testing (Sonic). Both laboratories are National Association of Testing Authorities (NATA) accredited.

In addition to field parameters measured on-site, all the recovered dam water samples were analysed for the following:

- Heavy Metals, including arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn);
- Total recoverable Hydrocarbon (TRH);
- Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX);
- Organochlorine Pesticides (OCP);
- Polycyclic Aromatic Hydrocarbons(PAH);
- Nitrogen including Total Kjeldahl Nitrogen (TKN), ammonia (NH4-N), nitrite (NO^2-N), nitrate (NO^3-N) and Total Nitrogen;
- Phosphorous including Filterable Reactive Phosphorous and Total Phosphorous;
- Faecal Coliforms;
- pH.

On receipt of the samples, the laboratories returned the Sample Receipt Advice (SRA) / signed COC, verifying the integrity of the samples received.

ASSESSMENT CRITERIA

The available Trigger Values or Guideline Values presented in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, published by the Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, 2000 (ANZECC & ARMCANZ Guidelines 2000) are considered applicable for assessment of any potential dam water impact on the aquatic ecosystem and irrigation use.

The dam water test results were assessed against the available Trigger Values for slightly-moderate disturbed freshwater system, at protection level of 95% of species, extracted from the abovementioned guidelines.

The dam water test results were also assessed against the available Short-term Trigger Values for irrigation water, also extracted from the abovementioned guidelines.

The "Guidelines for Managing Risks in Recreation Water" 2008, published by the Australian Government National Health and Medical Research Council (NHMRC) are is adopted for assessing water for recreational purposes.

FIELD PARAMETERS, LABORATORY TEST RESULTS, ASSESSMENT & DISCUSSION

The field parameters and laboratory analytical results for the recovered dam water samples together with the available assessment criteria are presented in the attachment D. The laboratory analytical reports are kept in the offices of Geotechnique and are available upon request.

Field Parameters

Temperatures

As indicated in Table A, the temperatures of dam water samples were recorded as 16.9°C (DW1) and 16.8°C (DW2).

Oxidation Reduction Potential (ORP)

As presented in Table A, the ORP of dam water samples were recorded as 273 mV (DW1) and 264 mV (DW2).

Dissolved Oxygen (DO)

As shown in Table A, the DO concentrations of dam water samples were 8.17mg/L (DW1) and 8.21mg/L (DW2) were greater than the trigger value for low land river.

Turbidity

As indicated in Table A, the values of Turbidity in the dam water samples DW1 and DW2 were greater than the trigger values at the high end of the range.

Salinity

As shown in Table A, the values of salinity (expressed in term electrical conductivity, µS/cm) in the dam water samples DW1 DW2 was 671 µS/cm for both the samples, which was greater than the trigger values at the high end of the range for low land river.

pH

As presented in Table A, the pH values for the dam water samples 6.64 and 6.62 were within the ranges of the trigger values for low land river and the short-term trigger values for irrigation water in the ANZECC & ARMCANZ Guidelines 2000, as well as the health values for assessing water for recreational purposes in the NHMRC Guidelines 2008.

Laboratory Test Results

Metals (As, Cd, Cr, Cu, Pb, Hg, Ni & Zn)

The metals test results are presented in Table B and as shown, concentrations of all metals were below the relevant short-term trigger values for irrigation water and the relevant health and aesthetic values for water for recreational purposes. However, the concentrations of zinc and copper exceeded the trigger values for fresh water.

TRH and BTEX

The TRH (C6-C9) and TRH (C10-C40) test results are presented in Table C and as indicated, the concentrations of TPH/TRH were less than LOR and the BTEX test results were well below the relevant available guideline values for Fresh and Marine Waters and water for recreational purposes.

Polycyclic Aromatic Hydrocarbon (PAH)

The PAH test results are presented in Table D and as indicated, the concentrations of selected PAH were less than LOR.

OCP

As indicated in Table E, the concentrations of OCP for the dam water samples recovered and analysed were less than LOR and well below the relevant available guideline values for water for recreational purposes.

pH and Electrical Conductivity (EC)
As presented in Table F, the pH values for the dam water samples was 7.4 for both the samples, which was generally comparable with field measurements, and was within the ranges of the trigger values for low land river and the short-term trigger values for irrigation water.

The results for electrical conductivity in the dam water samples, which were generally comparable to the field measurement. The results for EC exceeded the trigger value for low land river.

Phosphorous including Filterable Reactive Phosphorous (FRP) and Total Phosphorous (TP)
As shown in Table F, the concentrations of TP, the concentrations of FRP were in excess of the relevant trigger values for low land river, however, the concentrations of TP were less than the short-term trigger value for irrigation water.

Nitrogen including Nitrate, Nitrite, Ammonia, Total Kjeldahl Nitrogen (TKN) & Total Nitrogen (TN)
As indicated in Table F;

- The Nitrate concentrations (0.88 mg/L and 0.92 mg/L) in the recovered dam water samples (DW1 and DW2) exceeded the trigger value for low land river and fresh water aquatic ecosystems in the ANZ Guidelines 2000, however, less than the health value for recreational water.
- The Nitrite concentrations (0.06 mg/L and 0.059 mg/L) exceeded the trigger value for low land river, however, the health value for recreational water.
- The Ammonia concentrations (0.62mg/L and 0.63 mg/L) were in excess of the trigger value for low land river, but were less than the trigger value for fresh water aquatic ecosystems.
- The TN concentrations were in excess of the trigger value for low land river, however, less than the trigger values at the low end of the range for the short-term trigger value for irrigation water.

Faecal Coliforms
As shown in Table F, the values of the faecal coliforms were less than the relevant trigger values for irrigation and health value for recreation water.

It should be noted the elevated pH, copper and zinc were reported based on the test results on dam water samples from SW01 and SW02 (Drawing No 13494/1-AA1) by JBSG in March 2015.

However based on the test results of dam water samples (DW1 and DW2) for this assessment, pH values during the field observation and laboratory testing were within the ranges of the trigger values for low land river and the short-term trigger values for irrigation water. The test results of copper and zinc for the dam water samples DW1 and DW2 indicated that the concentrations of zinc and copper exceeded the trigger values for fresh water aquatic ecosystem but were below the relevant short-term trigger values for irrigation water and the relevant health and aesthetic values for water for recreational purposes.

Based on the foregoing, it is indicated that the water in the dam is not suitable to be discharged into the local stormwater system and /or nearby creeks; however, it is suitable to be used as irrigation water within the site.

CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

Based on this assessment, it is considered that the water in the dam can be used as irrigation water and gradually discharged over the site in a controlled manner, to avoid any adverse impact on adjacent properties, roads and/or creek.

The discharge rate should be such that saturation of the ground surface does not occur. A saturated situation will reduce the effect of water absorption and increase surface water flow. To prevent dam water from entering adjacent properties, roads and/or creek, straw bales or silt fences MUST be placed along the lowest areas.

Suitable measures should be implemented to avoid abstracting or discharging any sedimentary materials with the water prior to proper characterisation and development of a suitable plan to manage the sediment, especially when pumping the water close to the bottom of the dams and the sediment being disturbed, abstracted and mixed with the water, pumping of the water shall be stopped and the following suitable measures taken before dewatering of the dams can continue.

- Allow the sediment to naturally settle in a day or so; and / or
- Flocculate the dam water by adding some lime / gypsum.

Reference should be made to a separate letter report (Report Ref. 13494/1-AB, dated 2 July 2015) outlining dam decommissioning work method procedure, which is also prepared by Geotechnique.

On completion of dewatering, the sediment should be excavated from the dams and stockpiled on site for contamination assessment. The objectives of contamination assessment of the sediment stockpile(s) are to determine whether the sediment presents a risk of harm to human health and / or the environment and to determine suitability for retention on-site.

This report is for the use of EJC Corporate Services Pty Ltd through J Wyndham Prince Pty Ltd, for the purposes stated within. The Hills Shire Council and any relevant authority can also rely on this report for development and building application assessment processes. Any reliance on this report by third parties shall be at such parties' sole risk, as the report might not contain sufficient information for the purposes of other parties or other uses. This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval is provided by Geotechnique.

If you have any questions, please do not hesitate to contact the undersigned.

Yours faithfully
GEOTECHNIQUE PTY LTD

DSapkota

<u>DANDA SAPKOTA</u>
Senior Environmental Engineer

Attachment A	Drawing No 13494/1-AA1 – Dam Water Sample Locations
Attachment B	Readings of Field Parameters – Dam Water Samples
Attachment C	Water Quality Meter Calibration Report
Attachment D	Field Parameters & Laboratory Analytical Results Summary Tables A to F

ATTACHMENT A

DRAWING NO 13494/1-AA1 – DAM WATER SAMPLE LOCATIONS

Imagery ©2015 NearMap.com

LEGEND

- Dam Water Sample (Geotechnique, June 2015)
- Dam Water Sample (JBS&G, March 2015)

0 30 60 90 120 150m

Scale 1:3000

PREPARED BY: GEOTECHNIQUE® PTY LTD PO Box 880 Penrith NSW 2750 Tel: 02 4722 2700 Fax: 02 4722 2777 e-mail:info@geotech.com.au www.geotech.com.au	J Wyndham Prince Pty Ltd Lot 10 in DP593517 Red Gables Road Box Hill North	Drawing No: 13494/1-AA1 Job No: 13494/1 Drawn By: MH Date: 1 July 2015 Checked By: DS
	Dam Water Sample Locations	File No: 13494-1 Layers: 0, AA1

ATTACHMENT B

READINGS OF FIELD PARAMETERS – DAM WATER SAMPLES

GEOTECHNIQUE PTY LTD

Readings of Field Parameters - Dam Water Samples

Lot 10 in DP593517, Off Red Gables Road, Box Hill North

Job No 13494/1

Date: 3/06/2015
Meter Type / Model: TPS 90FLT Water Quality Meter

Sample Location / ID	Temperature °C	Oxidation Reduction Potential (ORP) mV	Dissolved Oxygen mg/L	Turbidity NTU	Salinity µS/cm	pH
DW1	16.9	273	8.17	50.7	671	6.62
DW2	16.8	264	8.21	52.6	671	6.75

EJC Corporate Services Pty Ltd
c/- J Wyndham Prince Pty Ltd
DS.sf/2.07.2015

ATTACHMENT C

WATER QUALITY METER CALIBRATION REPORT

ThermoFisher SCIENTIFIC

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RENTALS

Equipment Certification Report – TPS 90FLT Water Quality Meter

This Water Quality Meter has been performance checked and calibrated as follows:

Sensor	Concentration	Span 1	Span 2	Traceability Lot #	Pass?
pH	pH 4.01 / pH 7.00	7.00 pH	4.00 pH	/	☑
Conductivity	12.88mS/cm	0.00 mS/cm	12.88 mS/cm		☑
TDS	36.0ppk	0.0 ppk	36.0 ppk	CHECK ONLY	☑
Dissolved Oxygen	Sodium Sulphite / Air	0.00 ppm in Sodium Sulphite	9.17 ppm Saturation in Air		☑
Turbidity	360NTU	0.0 NTU	360.0 NTU		☑
Redox (ORP)**	☑	Electrode operability test 240mV +/- 10%.	Actual: 240 mV		

☑ Battery Status 7.3 (min 7.2V)

☑ Electrical Safety Tag attached (AS/NZS 3760)

☑ Temperature 19.3 °C

☑ Electrodes Cleaned and checked

Tag No: 00040

Valid to: 07/07/2015

Date: 02/06/2015

Signed: [signature]

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
☑	☐	90FLMV Unit. Ops check/Battery status: 7.8
☑	☐	pH sensor with wetting cap, 5m
☑	☐	Conductivity/TDS/Temperature K=10 sensor, 5m
☑	☐	Dissolved oxygen YSI5739 sensor with wetting cap, 5m
☑	☐	Turbidity sensor, 5m
☑	☐	Power supply 240V to 12V DC 200mA
☑	☐	Instruction Manual
☑	☐	Quick Guide
☑	☐	Syringe with storage solution for pH and ORP sensors
☑	☐	Carry Case
☑	☐	Check to confirm electrical safety (tag must be valid)

Date: 02/06/2015

Signed: [signature]

TFS Reference	CS002732	Return Date: / /	
Customer Reference		Return Time:	
Equipment ID	90FLT -6	Condition on return:	
Equipment Serial No.	W4476		

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ATTACHMENT D

FIELD PARAMETERS & LABORATORY ANALYTICAL RESULTS
SUMMARY TABLES A to F

TABLE A

FIELD PARAMETERS INCLUDING TEMPARATURE, OXIDATION REDUCTION POTENTIAL (ORP), DISSOLVED OXYGEN (DO), TURBIDITY, SALINITY & pH

DAM WATER SAMPLES
(Ref No: 13494/1-AA)

Sample Location \ Analyte	TEMPERATURE (° C)	ORP (mV)	DO DO, mg/L	TURBIDITY (NTU)	SALINITY (µS/cm)	pH
DW1	16.9	273	8.17	**50.7**	**671**	6.62
DW2	16.8	264	8.21	**52.6**	**671**	6.75
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000)						
Aquatic Ecosystems (Trigger Values)						
Low land River			>6	6-50	200-300	6.5-8.0
Irrigation Water (Trigger Values)						
STV						6-9
NHMRC [b] Guidelines for Managing Risks in Recreational Water (2008)						
Health Values						6.5-8.5

Notes : a : ANZ = Australia and New Zealand
b : Australian Government National Health and Medical Research Council
STV : Short Term Trigger Value (up to 20 years)

TABLE B
HEAVY METALS TEST RESULTS
DAM WATER SAMPLES
Ref No: 13494/1-AA

Analyte / Sample Location	HEAVY METALS (µg/L)							
	ARSENIC (As) - Total	CADMIUM (Cd)	CHROMIUM (Cr) - Total	COPPER (Cu)	LEAD (Pb)	MERCURY (Hg)	NICKEL (Ni)	ZINC (Zn)
Damwater DW1	2	<0.1	<1	**3**	1	<0.1	2	**80**
Damwater DW2	2	<0.1	<1	**6**	1	<0.1	2	**63**
Limit of Reporting (LOR)	1	0.1	1	1	1	0.1	1	5
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000)								
Aquatic Ecosystems- Trigger Values (TV)								
Fresh Water	24[b] 13[c]	0.2	1 [d]	1.4	3.4	0.6	11	8
Irrigation Water (Trigger Values) STV	2000	50	1000	5000	5000	2	2000	5000
NHMRC [e] Guidelines for Managing **Risks in Recreational Water (2008)**								
Health Values	7	2	50 [d]	2000	10	1	20	
Aesthetic Values								3000

Notes
a: ANZ = Australia and New Zealand
b: as As (III)
c: as As (V)
d: as Cr (VI)
e: Australian Government National Health and Medical Research Council
ID: Insufficient Data to set a guideline value based on health consideration.

TABLE C
TOTAL RECOVERABLE HYDROCARBONS(TRH), TOTAL PETROLEUM HYDROCARBONS (TPH), BTEX, TEST RESULTS
DAM WATER SAMPLES
Ref No: 13494/1-AA

Analyte / Sample Location	TPH (µg/L)	TRH (µg/L)				BTEX (µg/L)			
	C6-C9	C10-C14	C15-C28	C29-C40	C10-C36	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
Damwater DW1	<40	<50	<200	<400	<650	<0.5	<0.5	<0.5	<1.5
Damwater DW2	<40	<50	<200	<400	<650	<0.5	<0.5	<0.5	<1.5
Limit of Reporting (LOR)	40	100	200	400	-	0.5	0.5	0.5	1.5
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000)									
Aquatic Ecosystems (Trigger Values)									
Fresh water						950	ID	ID	350[b] 200[c]
Airports (Environment Protection) Regulations									
(compiled and prepared on 28 May 2004)	150		600[d]						
NHMRC [e] Guidelines for Managing Risks in Recreational Water (2008)									
Health Values						1	800	300	600
Aesthetic Values							25	3	20

Notes
- a: ANZ = Australia and New Zealand
- b: o-Xylene
- c: p-Xylene
- d: >C9
- e: Australian Government National Health and Medical Research Council
- ID: Insufficient data to derive a reliable trigger value

TABLE D
POLYCYCLIC AROMATIC HYDROCARBONS (PAH) TEST RESULTS
DAM WATER SAMPLES
Ref No: 13494/1-AA

Analyte / Sample Location	PAH (µg/L)				
	NAPHTHALENE	ANTHRACENE	PHENANTHRENE	FLUORANTHENE	BENZO(a)PYRENE
Damw ater DW1	<0.1	<0.1	<0.1	<0.1	<0.1
Damw ater DW2	<0.1	<0.1	<0.1	<0.1	<0.1
Limit of Reporting (LOR)	0.1	0.1	0.1	0.1	0.01
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values)					
Fresh	16	ID	ID	ID	ID
NHMRC [b] Guidelines for Managing Risks in Recreational Water (2008) Health Values					0.01

Notes
a: ANZ = Australia and New Zealand
b: Australian Government National Health and Medical Research Council
ID: Insufficient Data (ID) to derive a reliable trigger value

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TABLE E
ORGANOCHLORINE PESTICIDES (OCP) TEST RESULTS
DAM WATER SAMPLES
Ref No: 13494/1-AA

Analyte / Sampling Location	OCP (µg/L)												
	LINDANE(gama-BHC)	HEPTACHLOR	HEPTACHLOR EPOXIDE	METHOXYCHLOR	ALDRIN	DIELDRIN	ENDRIN	ENDOSULFAN alpha	ENDOSULFAN beta	ENDOSULFAN SULFATE	DDE	DDT	CHLORDANE (trans & cis)
Damwater DW1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2
Damwater DW2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2
Limit of Reporting (LOR)	0.1	0.02	0.02	0.1	0.1	0.1	0.02	0.1	0.1	0.1	0.1	0.01	0.02
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values) Fresh	0.2	0.09		ID	ID	ID	0.02	ID	ID		ID	0.01	0.08 [b]
NHMRC [f] Guidelines for Managing Risks in Recreational Water (2008) Health Values	10	0.3 [c]	0.3 [c]	300	0.3 [d]	0.3 [d]		30 [e]	30 [e]	30 [e]		20	1 [b]

Notes:

a: ANZ = Australia and New Zealand
b: Chlordane
c: Heptachlor and Heptachlor Epoxide
d: Aldrin / Dieldrin
e: Endosulfan
f: Australian Government National Health and Medical Research Council
ID: Insufficient Data (ID) to derive a reliable trigger value

TABLE F
pH, ELECTRICAL CONDUCTIVITY, PHOSPHOROUS, NITROGEN AND FAECAL COLIFORMS TEST RESULTS
DAM WATER SAMPLES
Ref No: 13494/1-AA

Sample Location \ Analyte	pH	ELCTRICAL CONDUCTIVITY, µS/ cm	FILTERABLE REACTIVE PHOSPHORUS	TOTAL PHOSPHORUS (mg/L)	NITROGEN (mg/L)					FAECAL COLIFORMS (cfu/100mL)
					NITRATE (NO_3 - N)	NITRITE (NO_2 - N)	AMMONIA (NH_3-N)	TOTAL KJELDAHL NITROGEN (TKN)	TOTAL NITROGEN	
Damwater DW1	7.4	**600**	**0.36**	**0.57**	**0.88**	**0.06**	**0.62**	2.3	**3.3**	<1
Damwater DW2	7.4	**610**	**0.34**	**0.57**	**0.92**	**0.059**	**0.63**	2.4	**3.4**	<1
Limit of Reporting (LOR)		2	0.005	0.01	0.005	0.005	0.005	0.05	0.05	
ANZ [a] Guidelines for Fresh and Marine Water Quality (2000) Aquatic Ecosystems (Trigger Values) (95% Protection of freshwater species) Lowland River	6.5-8	200-300	0.02	0.025	0.7 0.04 [b]	0.04 [b]	0.9 0.02		0.35	
Irrigation Water (Trigger Values) STV	6.9			0.8-12					25-125	<10000[d]
NHMRC [c] Guidelines for Managing Risks in Recreational Water (2008) Health Values					50	3				<1000[e]

Notes :

a : ANZ = Australia and New Zealand
b : Oxides of Nitrogen
c : Australian Government National Health and Medical Research Council
d : Median content in fresh water for secondary contact
e : Median content in fresh water for secondary contact
STV : Short Term Trigger Value (up to 20 years)

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ABN 64 002 841 063

Job No: 13494/2
Our Ref: 13494/2-AA
2 July 2015

EJC Corporate Services Pty Ltd
c/- J Wyndham Prince Pty Ltd
P O Box 4366
PENRITH WESTFIELD NSW 2750
Email: bstokes@jwprince.com.au

Attention : Mr B Stokes

Dear Sir

re: **Lot 10 in DP593517**
Off Red Gables Road, Box Hill North
Dam Decommissioning – Dewatering

This report provides dewatering method for decommissioning of the existing dam at the above site. The work was commissioned by Mr B Stokes of J Wyndham Prince on behalf of EJC Corporate Services in an email dated 1 June 2015 and was carried out as per our proposal JN.ZA.sn/Q7163 dated 29 May 2015.

Proposed Development
As part of the residential subdivision, the existing dam at the above lot will be decommissioned.

In this regard, dewatering work method was required to meet The Hills Shire Council's requirements.

Site and Subsurface Conditions
Geotechnique conduct a detailed geotechnical and salinity assessment for the proposed Box Hill North Residential Subdivision in June/August 2014. Results of the assessment are provided in our report 13174/1-AA dated 26 August 2014. As part of this investigation, a number of test pits were excavated at the present site (Lot 10 in DP593517) to depth. The test pits revealed about 0.2m to 0.3m thick topsoil, overlying natural silty clays to depths ranging from 1.5m to 3m, overlying shale bedrock.

Salinity assessment indicated that the soils up to 1m are generally non-saline and saline below this depth.

For details the reader could refer to the above report.

Contamination Assessment of Dam Water
Contamination assessment of the dam water is provided in our report 13494/1-AA dated 2 July 2015. Results of the assessment indicate that the dam water might not be suitable to be discharged in nearby creek or dams. Therefore, water will need to be discharged in the grass area at the site. For details of the contamination assessment, please refer to the above report.

Laboratory Testing
Two samples collected from the dam were tested to determine pH and electrical conductivity. Results are detailed in our contamination assessment report (13494/1-AA) and summarised below.

Sample	pH	Electrical Conductivity (µS/cm)	Classification	National Water Resource Council Classification
DW1	7.4	600	Marginal	EC < 500 µS/cm (Fresh) 500 – 1000 (Marginal) 1000 – 3000 (Brackish) > 3000 (Saline)
DW2	7.4	610	Marginal	

Based on the above results the dam water is marginally saline.

Dewatering Method
As mentioned earlier (Ref: 13494/1-AA) the dam water might not be suitable for discharging in the nearby creek or dams. Therefore, the dam water should be carefully discharged on the grass area of the site.

Review of the drawing indicates that the dam measures approximately 6,000m^2 in plan. The water depth in the dams is expected to be range of 1m to 1.5m. Therefore, the volume of water to be discharged from dam is expected to be in the range of 6,000m^3 to 7,500m^3.

The following is recommended for dewatering:

- Prior to dewatering, construct silt fence and bund as shown on the drawing 13494/1-AB1. Also existing channel from the west side will need to be closed so that water does note flow into the dam. The location of the silt fence and bund/trench could be changed (from those shown on the attached Drawing No 13494/1-AB1) as deemed necessary by the civil designer, provided the discharged water on the grass area does not flow into neighbouring properties, roads and the existing dam.
- Using a sump pump, dewater the dam and spread the water in the grass area (≈32,000m^2) bounded by the silt fences and bunds. Spreading of water should start from the western side of the site and progressively moves towards the east.
- Based on average permeability of existing soils (1x10^{-8} m/s) and evapotranspiration data of the nearby area, we recommend that the flow rate over the area should be in the range of 75m^3/day (75,000 L/day).
- When pumping the water close to the bottom of the dams, the sediments might be disturbed. In such case, pumping should be stopped and the following measures should be taken before dewatering can continue.
    - Allow the sediment to naturally settle in a day or so; and/or
    - Flocculate the dam water by adding some lime / gypsum.

Considering that the dam water is marginally saline and existing soils at the site are non-saline up to 1m, it is our assessment that discharging dam water on the existing ground (13494/1-AB1) will not increase the salinity of the soils.

If you have any questions, please do not hesitate to contact the undersigned.

Yours faithfully
GEOTECHNIQUE PTY LTD

ZIAUDDIN AHMED
Senior Geotechnical Engineer

Attached Drawing No 13494/1-AB1 – Silt Fence & Bund Locations

N

Imagery ©2015 NearMap.com

LEGEND

- - - Silt Fence

- - - Bund

0 30 60 90 120 150m

Scale 1:3000

PREPARED BY: GEOTECHNIQUE® PTY LTD PO Box 880 Penrith NSW 2750 Tel: 02 4722 2700 Fax: 02 4722 2777 e-mail:info@geotech.com.au www.geotech.com.au	J Wyndham Prince Pty Ltd Lot 10 in DP593517 Red Gables Road Box Hill North	Drawing No: 13494/1-AB1 Job No: 13494/1 Drawn By: MH Date: 2 July 2015 Checked By: ZA
	Silt Fence and Bund Locations	File No: 13494-1 Layers: 0, AB1

APPENDIX C – ENGINEERING PLANS FOR FLOW SYSTEMS DEVELOPMENT

CELESTINO

THE GABLES
BOX HILL

FLOW SYSTEMS DEVELOPMENT APPLICATION

153 BOUNDARY ROAD, BOX HILL
LOT 10 DP593517 & LOT 22 DP255616

LOCALITY SKETCH

CIVIL PLAN INDEX		
PLAN NO.	PLAN NAME	REV
997603/DA70	COVER SHEET & INDEX	E
997603/DA71	SUBDIVISION PLAN	E
997603/DA72	ENGINEERING PLAN	D
997603/DA73	CUT/FILL PLAN	D
997603/DA74	SITE SECTIONS	D
997603/DA75	SOIL & WATER MANAGEMENT PLAN	D

Prepared By:

J. WYNDHAM PRINCE
CONSULTING CIVIL INFRASTRUCTURE ENGINEERS
& PROJECT MANAGERS
PO Box 4366 PENRITH WESTFIELD NSW 2750
P 02 4720 3300 F 02 4720 3399
W www.jwprince.com.au
E jwp@jwprince.com.au

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PLAN No. 997603/DA70 E
FILE No. 997603DA70

Plotted: October 28, 2015 File Name: J:\9976D\DA - Development Application Approval Plans\FLOW SYSTEMS\997603DA70.dwg

ALL BATTERS ARE 1:4 UNLESS NOTED OTHERWISE

Survey By:

PROUST AND GARDNER PTY. LTD.
LAND SURVEYORS
406 PACIFIC HWY, LINDFIELD. 2070
Ph. (02) 9416 1335
Surveyed On: 23/12/2014 File: 2014-12-23 14.59.29.dwg

NOTE: PROPOSED LOT 1 IS SUBJECT TO FINAL SURVEY & AUTHORITY APPROVAL FOR LOCATION

LEGEND
(E) POWERLINE EASEMENT
(D) DRAINAGE EASEMENT

1:2000 (AT A1) 50 0 50 100 150 200
METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
E	REISSUE FOR DA APPROVAL	DJH	NW	AM	RO	28/10/15
D	ISSUE FOR DA APPROVAL	JC	NW	AM	MS	04/08/15
C	REISSUED FOR DA APPROVAL	DJH	DJH	AM	MS	11/06/15
B	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	29/05/15
A	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	21/05/15

J. WYNDHAM PRINCE
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P 02 4720 3300 F 02 4720 3399 W www.jwprince.com.au E jwp@jwprince.com.au

AZIMUTH:
DATUM:
ORIGIN:

CLIENT:
THE GABLES
BOX HILL
CELESTINO

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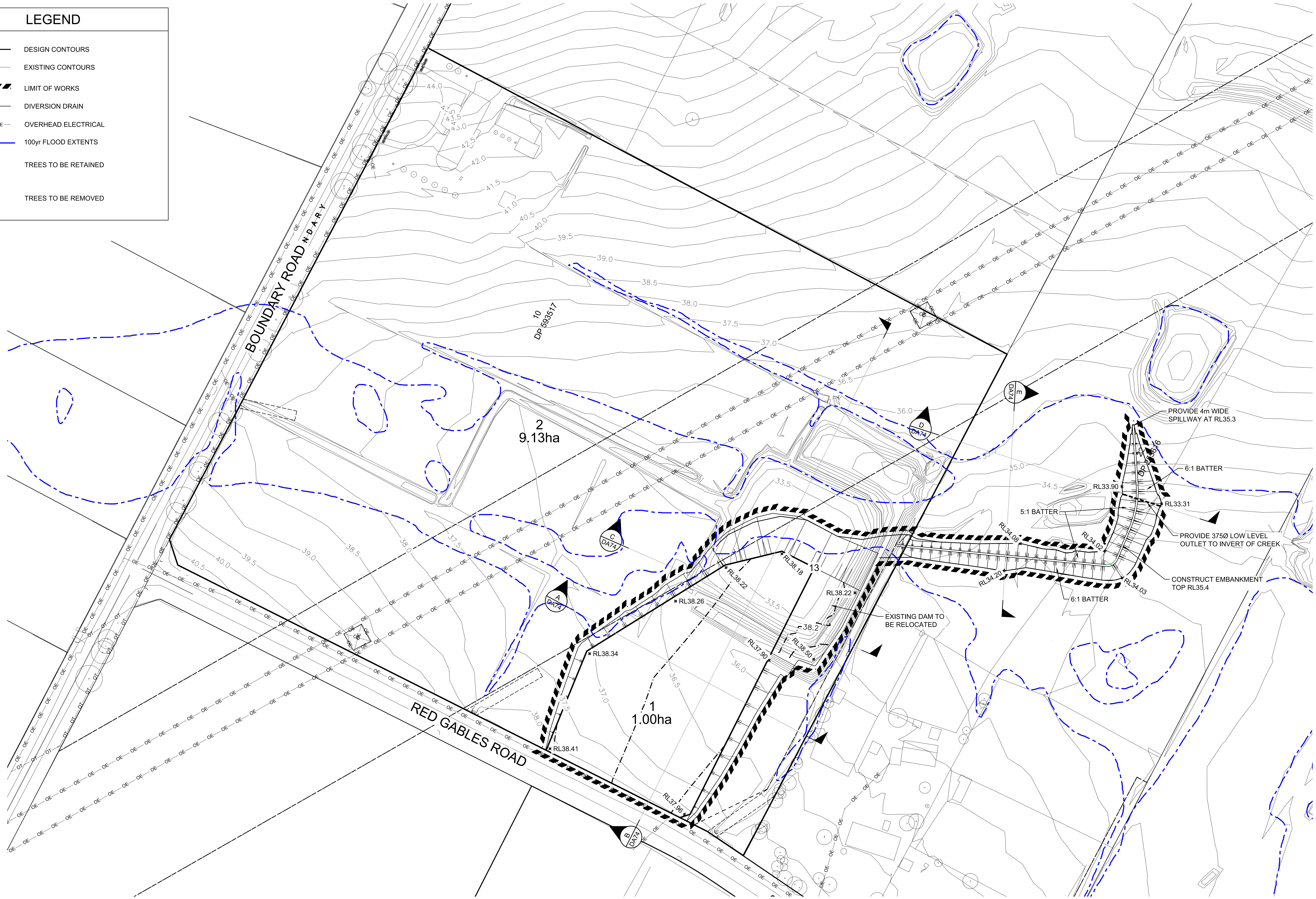
BOX HILL NORTH
FLOW SYSTEMS
SUBDIVISION PLAN

PLAN No: 997603/DA71 E
FILE No: 997603DA71
SHEET SIZE: A1 ORIGINAL

Plotted: 28 October , 2015 4:15:26 PM File Name: J:\9976D\DA - Development Application Approval Plans\FLOW SYSTEMS\997603DA71.dwg

LEGEND

- DESIGN CONTOURS
- EXISTING CONTOURS
- LIMIT OF WORKS
- DIVERSION DRAIN
- OVERHEAD ELECTRICAL
- 100yr FLOOD EXTENTS
- TREES TO BE RETAINED
- TREES TO BE REMOVED



ALL BATTERS ARE 1:4 UNLESS NOTED OTHERWISE

1:1000 (AT A1)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

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C	ISSUE FOR DA APPROVAL	JC	NW	AM	MS	04/08/15
B	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	29/05/15
A	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	21/05/15

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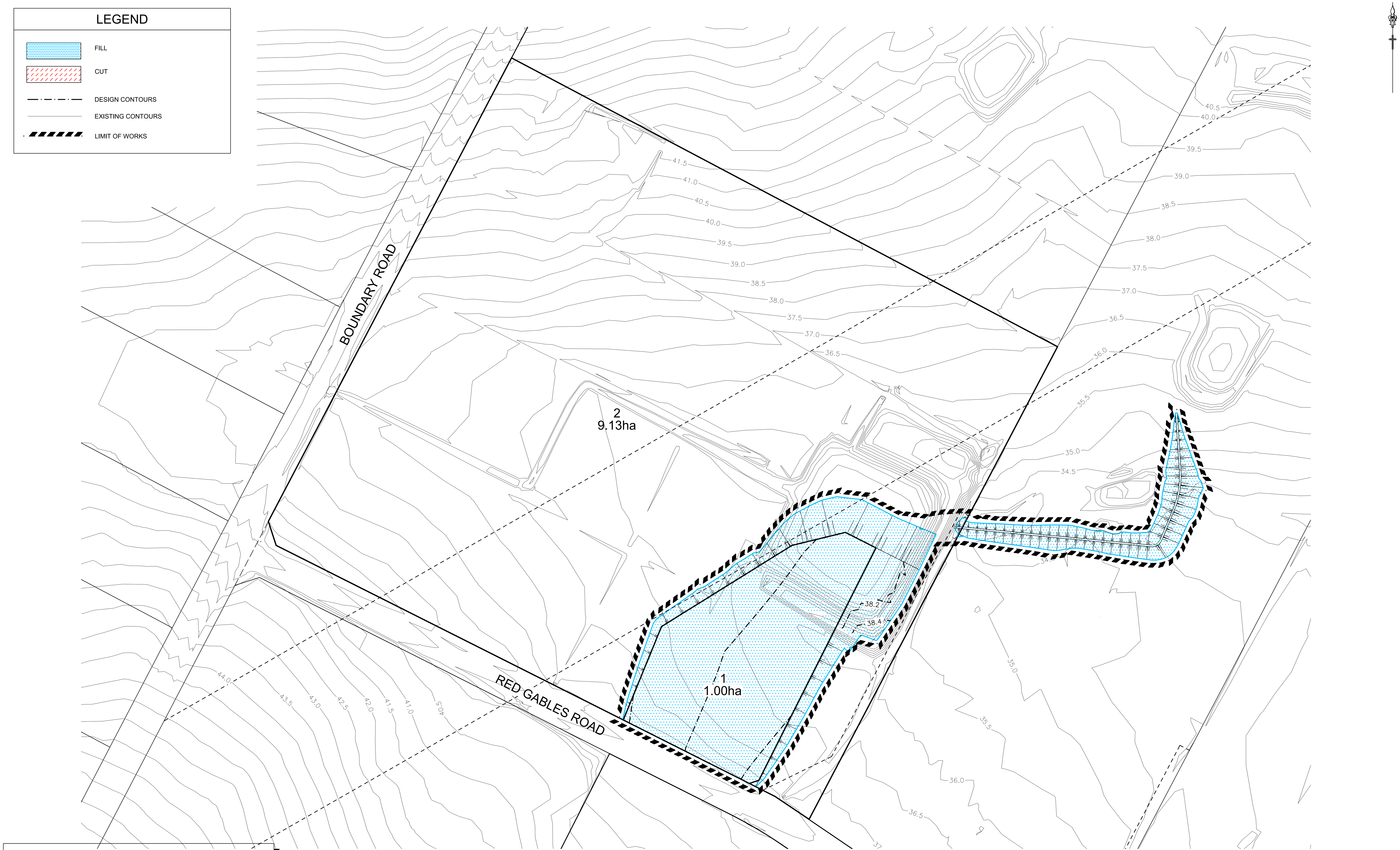
BOX HILL NORTH
FLOW SYSTEMS
ENGINEERING PLAN

PLAN No: 997603/DA72 D

FILE No: 997603DA72

SHEET SIZE: A1 ORIGINAL



NOTE: PROPOSED LOT 1 IS SUBJECT TO FINAL SURVEY & AUTHORITY APPROVAL FOR LOCATION

1:1000 (AT A1) — 20 10 0 10 20 30 40 50 60 70 80 90 100 METRES

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B	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	29/05/15
A	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	21/05/15

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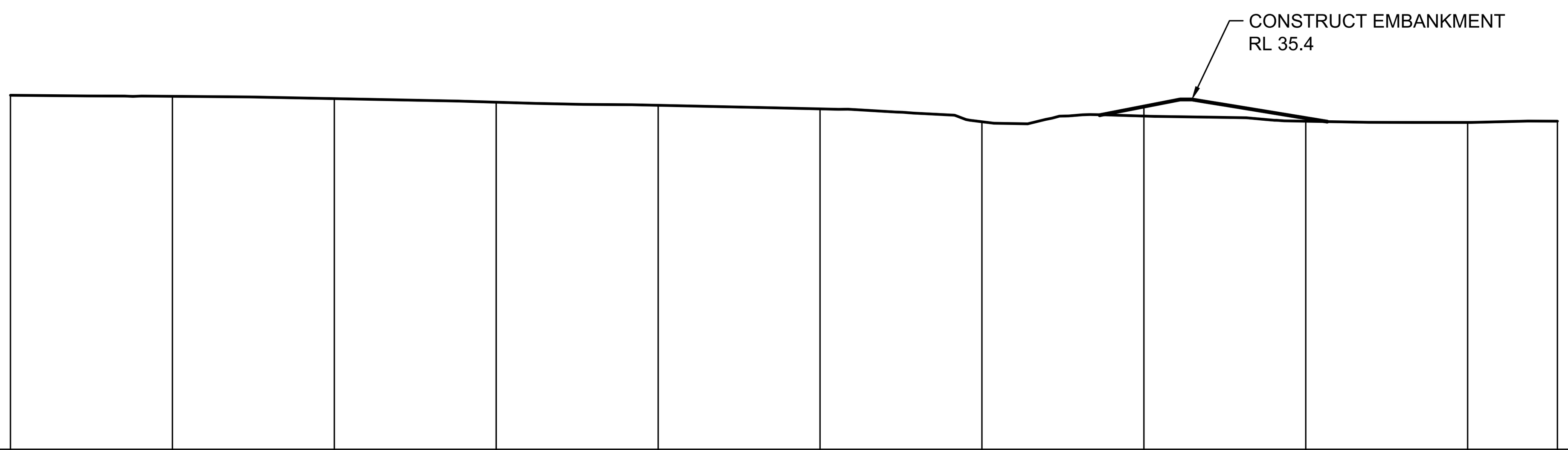
BOX HILL NORTH
FLOW SYSTEMS
CUT/FILL PLAN

PLAN No: 997603/DA73 D
FILE No: 997603DA73
SHEET SIZE: A1 ORIGINAL

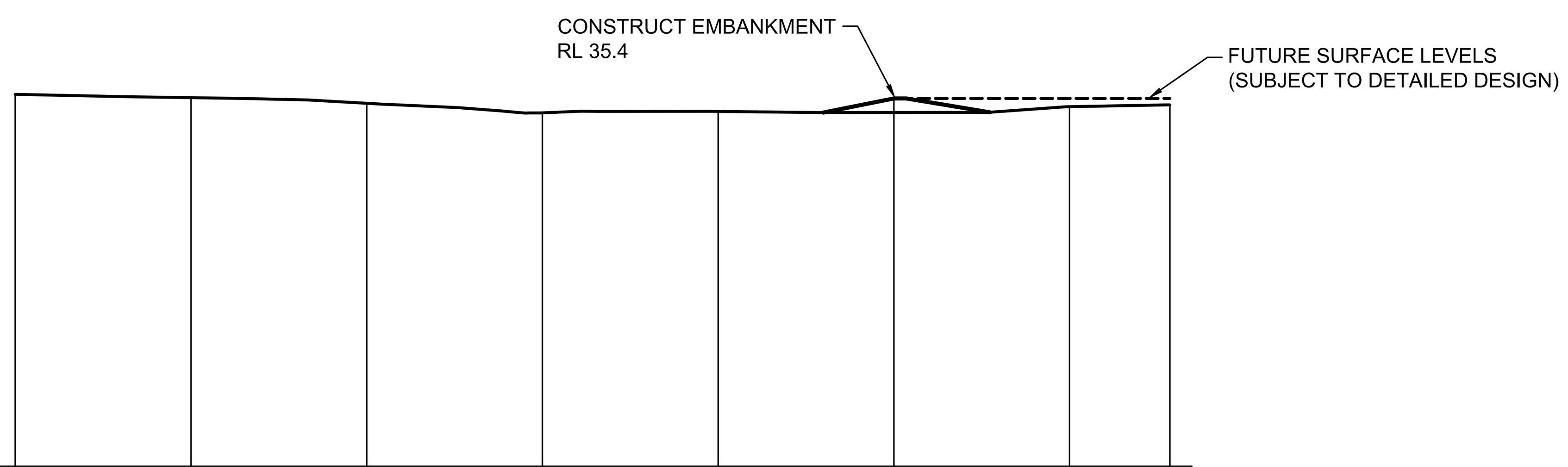


DATUM 3.0

CHAINAGE	DESIGN SURFACE	EXISTING SURFACE
0.000		35.797
15.000		35.698
30.000		35.483
45.000		35.150
60.000		34.861
75.000		34.529
90.000		33.340
105.000	34.743	33.864
120.000	33.673	33.388
135.000		33.270
143.314		33.390

LONGITUDINAL SECTION D

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500

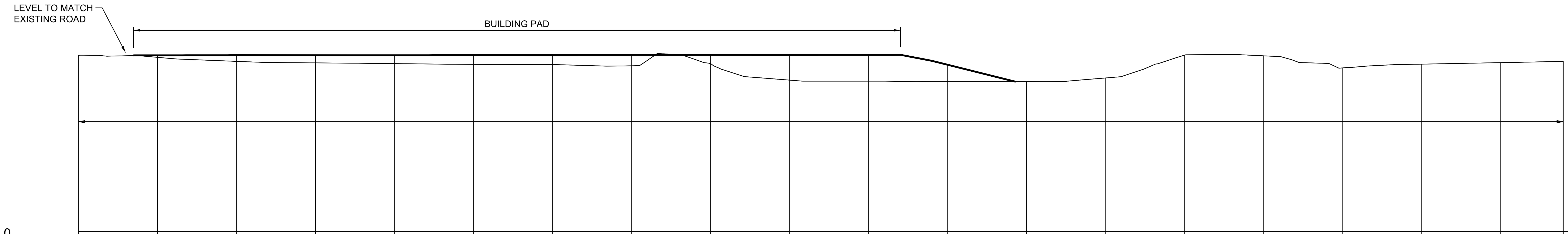


DATUM 4.0

CHAINAGE	DESIGN SURFACE	EXISTING SURFACE
0.000		35.745
15.000		35.463
30.000		34.986
45.000		34.161
60.000		34.293
75.000	35.392	34.196
90.000		34.695
98.558		34.850

LONGITUDINAL SECTION E

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500

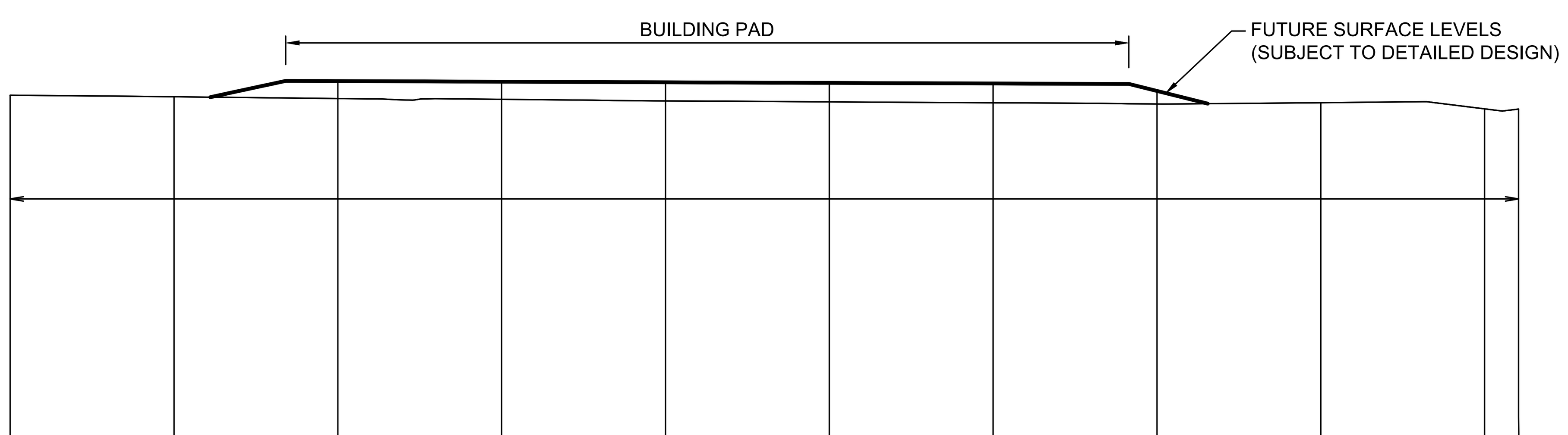


DATUM 3.0

CHAINAGE	DESIGN SURFACE	EXISTING SURFACE
0.000		38.091
15.000	38.080	37.704
30.000	38.099	36.945
45.000	38.096	36.652
60.000	38.093	36.510
75.000	38.107	36.375
90.000	38.124	36.314
105.000	38.140	36.095
120.000	38.154	36.480
135.000	38.165	33.380
150.000	38.179	33.185
165.000	36.296	33.089
180.000		33.103
195.000		33.795
210.000		38.129
225.000		37.987
240.000		35.706
255.000		36.418
270.000		36.699
281.861		36.940

LONGITUDINAL SECTION B

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500

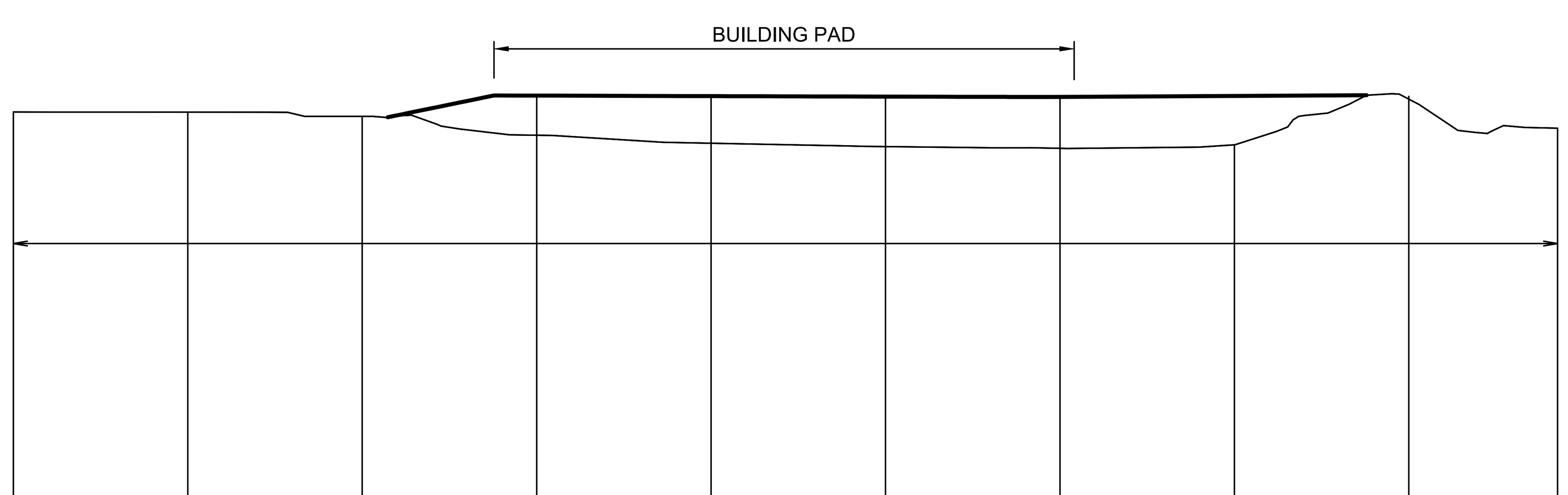


DATUM 5.0

CHAINAGE	DESIGN SURFACE	EXISTING SURFACE
0.000		37.004
15.000		36.861
30.000	38.298	36.697
45.000	38.241	36.624
60.000	38.186	36.478
75.000	38.131	36.388
90.000	38.078	36.311
105.000	37.391	36.204
120.000		36.316
135.000		35.750
138.110		35.733

LONGITUDINAL SECTION A

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500



DATUM 3.0

CHAINAGE	DESIGN SURFACE	EXISTING SURFACE
0.000		36.824
15.000		36.809
30.000		36.446
45.000	38.230	34.823
60.000	38.185	34.131
75.000	38.145	33.845
90.000	38.109	33.692
105.000		33.996
120.000	38.163	37.926
132.795		35.426

LONGITUDINAL SECTION C

HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:500

1:500 (AT A1) 10 0 10 20 30 40 50 METRES

	AMENDMENT	DES	DRN	CKD	APR	DATE
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C	ISSUE FOR DA APPROVAL	JC	NW	AM	MS	04/08/15
B	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	29/05/15
A	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	21/05/15

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BOX HILL
CELESTINO

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BOX HILL NORTH
FLOW SYSTEMS
SITE SECTIONS

PLAN No: 997603/DA74 D
FILE No: 997603DA74
SHEET SIZE: A1 ORIGINAL

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1:1000 (AT A1)

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METRES

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C	ISSUE FOR DA APPROVAL	JC	NW	AM	MS	04/08/15
B	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	29/05/15
A	ISSUE FOR DA APPROVAL	DJH	NW	AM	MS	21/05/15
	AMENDMENT	DES	DRN	CKD	APR	DATE

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DATUM:

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BOX HILL NORTH

FLOW SYSTEMS

SOIL & WATER MANAGEMENT PLAN

PLAN No: 997603/DA75 D

FILE No: 997603DA75

SHEET SIZE: A1 ORIGINAL

Appendix 10

Heritage Due Diligence

(Appendix available on request)

Appendix 11

Cultural Heritage Assessment Report

(Appendix available on request)

Appendix 12

Aboriginal Archaeology – Test Excavation Report

(Appendix available on request)

Appendix 13

Concept Stormwater Management Strategy

NORTHROP
Level 1, 215 Pacific Highway Charlestown NSW 2290
PO Box 180 Charlestown NSW 2290
T (02) 4943 1777 F (02) 4943 1577
E newcastle@northrop.com.au

NL140529_B01 [Revision C]

11th August 2015

RPS Australia Asia Pacific Pty Ltd
Mr Robert Dwyer
241 Denison Street
Broadmeadow NSW 2292

Dear Robert,

Re: Box Hill North Local Water Centre – Concept Stormwater Management Strategy

Northrop Consulting Engineers have been engaged by RPS Australia Asia Pacific Pty Ltd to provide the concept stormwater management strategy for the proposed Box Hill North Local Water Centre (LWC), to be utilised for the Box Hill North Residential Precinct.

This letter should be read in conjunction with the attached Concept Plans NL140529/CSK1-CSK2.

Site Appreciation

The Box Hill North LWC is to be located on a portion Lot 10 DP 593517, herein known as "the site". It is anticipated the lot will be subdivided in the future to accommodate the LWC in a separate allotment. Furthermore, it is understood that general filling of the lot will be undertaken as part of the subdivision works, including filling in of the existing farm dam to the north of the site. Refer to J. Wyndham Prince subdivision plans for lot regrading details. We also understand Red Gables Road will be upgraded with kerb and gutter capable of conveying the 1% AEP peak flow from the upstream catchment.

The proposed allotments will be 1ha and, at full capacity, will have the following features;

- The LWC buildings occupies an area of approximately 1400m^2;
- The external hardstand occupies an area of approximately 2000m^2;
- The external plant and equipment (e.g., tanks) occupies an area of approximately 1800m^2;
- Significant areas for soft landscaping have been provided in and around the facility; and
- The site is proposed to have permanent vehicle access from the existing Red Gables Road.

A schematic of the site is shown overleaf in Figure 1.

Prepared	AK	11/08/2015
Reviewed	AB	11/08/2015

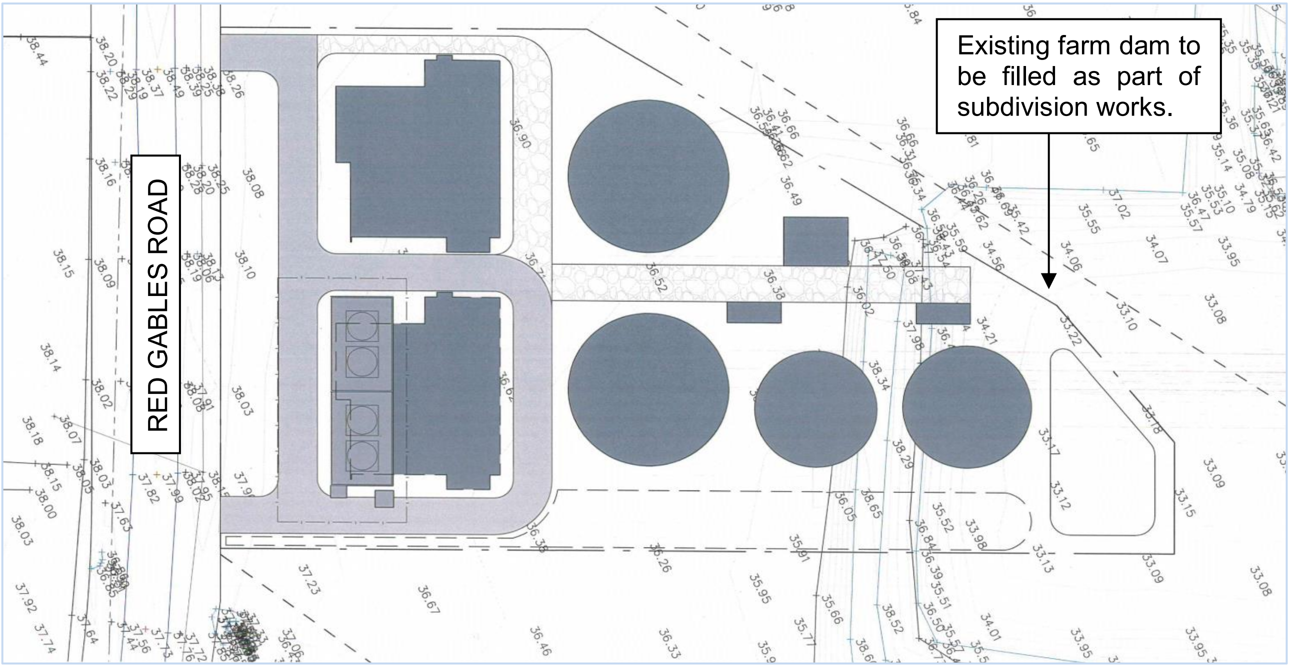


Figure 1 – Site Schematic

In line with the *"Box Hill North Precinct Water Cycle & Flood Management Strategy Report"*, compiled by J. Wyndham Prince (Ref# 9720Rpt1D, July 2013); the site is located within the Cataract Creek Catchment. The stormwater analysis undertaken by J. Wyndham Prince considered the allotment as residential zoning, which was delegated a percentage impervious of 80% in accordance with The Hills Shire Council Design Guidelines Subdivision and Development.

It is noted that whilst the site does not conform to the land use associated with the residential zoning, the runoff regime from the proposed site is considered to be less than that produced from an equivalent residential development. Table 1 below depicts a comparison of the pervious and impervious development percentages.

	Impervious Area	Pervious Area
Residential Zoning	80%	20%
Water Recycling Plant	55%	45%

Table 1 – Residential Zoning Site Comparison

As seen above in Table 1, the proposed development is compliant with, albeit much lower than, the anticipated runoff regime of the residential zoning which is the basis of the regional stormwater management modelling/design.

Construction Phase Soil and Water Management

As part of the Stormwater Management investigation, a Concept Sediment and Erosion Control Plan, attached drawing NL140529/CSK1, has been compiled in accordance with Landcom Managing Urban Stormwater – Soils and Construction (the Blue Book). A range of control measures to eliminate, limit or mitigate impacts from construction activities have been proposed. Some of these control measures include:

- Implementation of a mulch bund up slope of the proposed disturbance areas;
- Coir logs within the proposed drainage channel;
- Sediment fences downslope of all disturbed areas and material stockpile areas;
- Re-vegetation of disturbed areas post construction.

Stormwater Management – Water Quantity and Quality

The proposed stormwater management strategy for the Box Hill North land release area, outlined in the *"Box Hill North Precinct Water Cycle & Flood Management Strategy Report"* (compiled by J. Wyndham Prince), incorporates a regional stormwater management system comprising water quantity (detention) as well as water quality treatment. The proposed regional system provides quantity and quality treatment for all proposed upstream developed land areas, including the North Box Hill LWC site, through a range of measures including;

- Proprietary Gross Pollutant Traps at trunk stormwater discharge points;
- Twenty proposed Bio-retention raingardens; and
- Six proposed detention basins.

These regional stormwater management measures are proposed to be adequately sized to treat the stormwater runoff for water quantity and quality. As such, no formal quantitative treatment should be required from the Box Hill North LWC site. We reiterate that the runoff expected from the Box Hill North LWC is considerably less than that assumed in the regional modelling for residential lands.

Notwithstanding this, a Concept Stormwater Management Plan has been prepared to further manage stormwater runoff from the LWC. This concept plan incorporates a range of water sensitive and industry best practice management measures with the endeavour of further improving water quality onsite whilst harnessing the synergy of providing water quality treatment, flow retention and passive irrigation. No onsite detention is required or proposed for the LWC, although the proposed site management strategy will provide additional flow retention over and above that required. The proposed Concept Stormwater Management Plan can be seen in the attached drawing NL140529/CSK2.

Furthermore, vehicle loading areas or areas where potential spillage could occur will be isolated and additional treatment measures will be employed. For example: the inclusion of physical bunds in hazard areas; the inclusion of spill containment and storage systems; as well as developing operational procedures to control handling and minimise the likelihood for spillage whilst also managing spill response. Such systems will be incorporated in to the detailed design to reflect the sites handling and operational procedures.

Conclusions

The proposed Concept Stormwater Management Strategy for the site has been prepared in line with the overarching stormwater management strategy for the Box Hill North Residential Precinct and industry best practice.

The Sediment and Erosion Control Plan and Concept Stormwater Management Plan provide adequate treatment of runoff from both construction and ongoing operations for the proposed Box Hill North Local Water Centre.

I trust the above meets your requirements, however, if you would like to discuss further then please do not hesitate to contact the undersigned on 4943 1777.

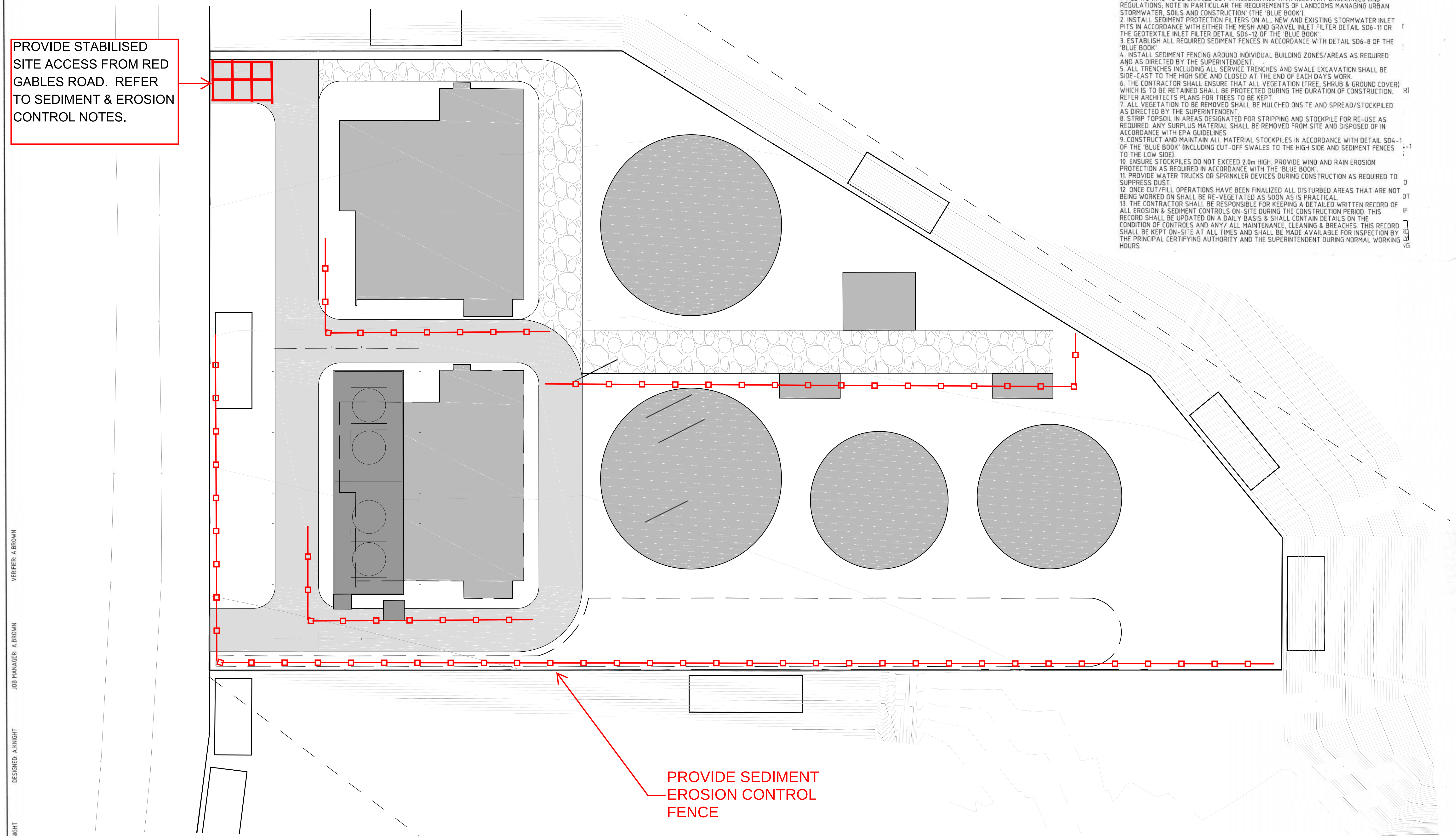
Yours sincerely,

Aaron Knight
Civil Engineer
BE (Civil Hons 1)

Reviewed by,

Andrew Brown
Principal
BE(Environmental Hons) MIEAust CPEng NPER(Environmental and Civil)

ATTACHMENT A – ENGINEERING DRAWINGS



SEDIMENT & EROSION CONTROL NOTES

1. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH RELEVANT ORDINANCES AND REGULATIONS; NOTE IN PARTICULAR THE REQUIREMENTS OF LANDCOMS MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION' (THE 'BLUE BOOK').
2. INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.
3. ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
4. INSTALL SEDIMENT FENCING AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.
5. ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.
6. THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.
7. ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
8. STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
9. CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
10. ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
11. PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
12. ONCE CUT/FILL OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ ALL MAINTENANCE, CLEANING & BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.

NOT FOR CONSTRUCTION

DRAWN: A.KNIGHT
DESIGNED: A.KNIGHT
JOB MANAGER: A.BROWN
VERIFIER: A.BROWN

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
A	ISSUED FOR APPROVAL	AK	AB	AK	21.01
B	RE-ISSUED SITE LAYOUT AMENDED	AK	AB	AK	10.04
C	RE-ISSUED SITE LAYOUT AMENDED	AK	AB	AK	11.08

CLIENT: RPS

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ARCHITECT: PERMEATE PARTNERS

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SCALE 1:500 @ A3

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Email newcastle@northrop.com.au ABN 81 094 433 100

PROJECT: BOX HILL NORTH LOCAL WATER CENTRE BOX HILL NSW 2765

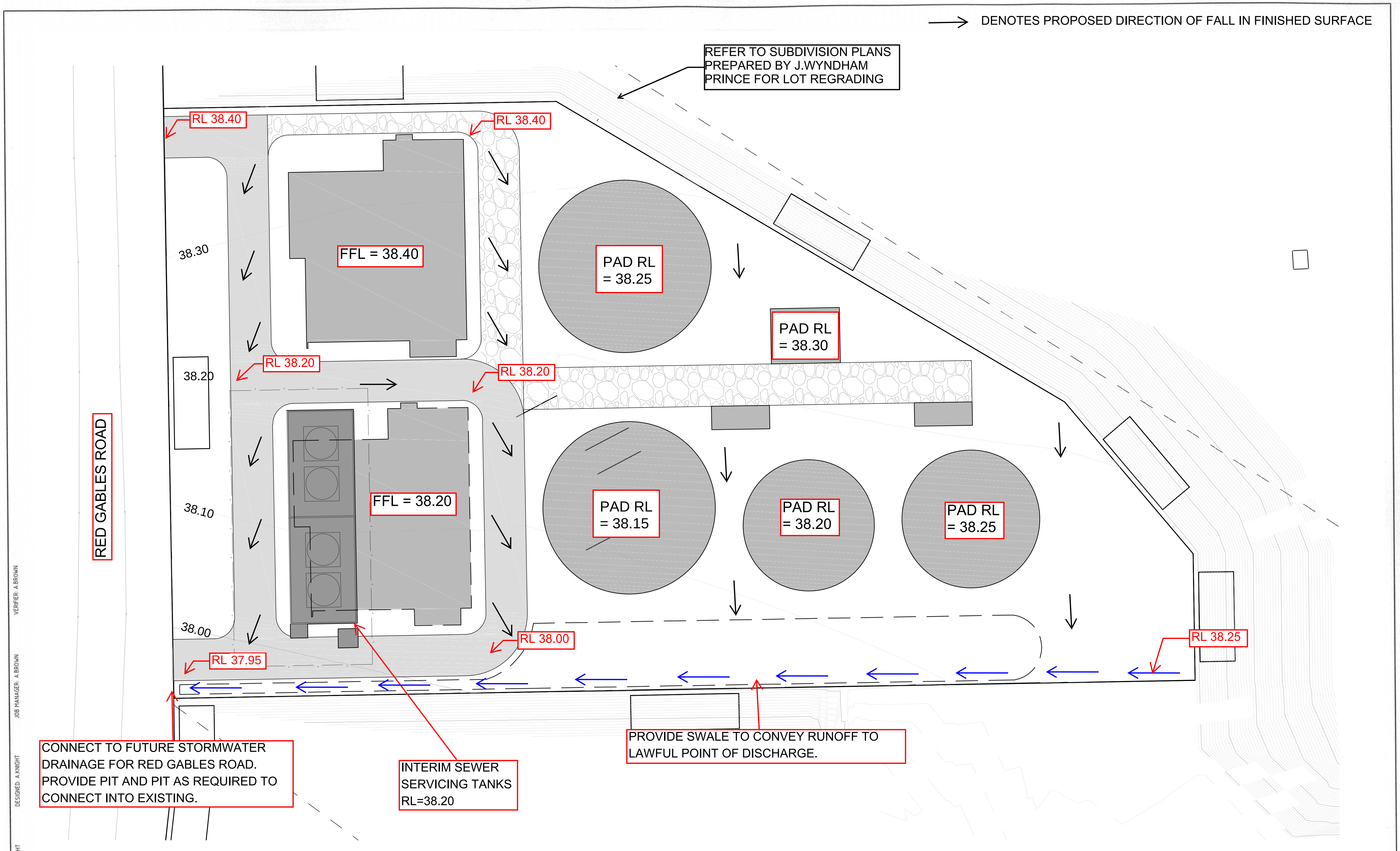
DRAWING TITLE: CONCEPT SEDIMENT & EROSION CONTROL PLAN

JOB NUMBER: NL140529

DRAWING NUMBER: CSK1

REVISION: C

DRAWING SHEET SIZE = A1



VERIFIER: A.BROWN
JOB MANAGER: A.BROWN
DESIGNED: A.KNIGHT
DRAWN: A.KNIGHT

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
A	ISSUED FOR APPROVAL	AK	AB	AK	21.01
B	RE-ISSUED_SITE LAYOUT AMENDED	AK	AB	AK	10.04
C	RE-ISSUED_SITE LAYOUT AMENDED	AK	AB	AK	11.08

CLIENT
RPS

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT
PERMEATE PARTNERS

ALL SETOUT TO ARCHITECT'S DRAWINGS, DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK.
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NORTHROP
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PROJECT
BOX HILL NORTH LOCAL WATER CENTRE BOX HILL NSW 2765

DRAWING TITLE
CONCEPT STORMWATER MANAGEMENT PLAN

JOB NUMBER
NL140529

DRAWING NUMBER
CSK2

REVISION
C

DRAWING SHEET SIZE = A1

Appendix 14

Geotechnical and Salinity Assessment

GEOTECHNIQUE®
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E J COOPER & SON PTY LTD

PROPOSED BOX HILL NORTH RESIDENTIAL SUBDIVISION
BOUNDARY ROAD, BOX HILL NORTH

GEOTECHNICAL & SALINITY ASSESSMENT

REPORT NO 13174/1-AA 26 AUGUST 2014

Lemko Place, Penrith NSW 2750 PO Box 880, Penrith NSW 2751
Telephone (02) 4722 2700 Facsimile (02) 4722 2777
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ABN 64 002 841 063

Job No: 13174/1
Our Ref: 13174/1-AA
26 August 2014

E J Cooper & Son Pty Ltd
642 Great Western Highway (P O Box 438)
PENDLE HILL NSW 2145

Attention: Mr C Gantt

Dear Sir

re: **Proposed Box Hill North Residential Subdivision**
Boundary Road, Box Hill North
Report on Geotechnical and Salinity Assessment

Please find herewith a *Geotechnical & Salinity Assessments Report* for the proposed residential subdivision development at the above site.

The objectives of the assessment were;

- To determine the sub-surface conditions across the site.
- To develop preliminary geotechnical parameters for the design of the proposed development.
- To ascertain if soils across the site are affected by salinity or are aggressive to building materials.
- To prepare a "Saline Soil Management" Plan.

The scope of work included site inspections and testing, review of available geological and hydrogeology information, provision of geotechnical and soil salinity assessments.

If you have any questions, please do not hesitate to contact the undersigned.

Yours faithfully
GEOTECHNIQUE PTY LTD

ZIAUDDIN AHMED
Senior Geotechnical Engineer

INDRA JWORCHAN
Principal

Lemko Place, Penrith NSW 2750 PO Box 880, Penrith NSW 2751
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EXECUTIVE SUMMARY

This executive summary presents a synopsis of a geotechnical and salinity assessment for the proposed Box Hill North Subdivision.

The objectives of this assessment were;

- To determine the sub-surface conditions across the site.
- To develop preliminary geotechnical parameters for the design of the proposed development.
- To ascertain if soils across the site are affected by salinity or are aggressive to building materials.
- To prepare a "Saline Soil Management" Plan.

The work was carried out in accordance with the Geotechnique brief. In order to achieve the objectives of the assessment the scope of work included a desktop study of available information including geological & salinity maps, excavation of test pits at one hundred and three (103) locations, drilling of boreholes at sixteen (16) locations to determine sub-surface conditions and recover soil samples. Based on the test pits and boreholes the geotechnical model for the site is shown below.

Top Depth Range	Material Description
0.0	Topsoil (thickness from 100mm to 300mm)
0.1m to 0.3m	Silty/Sandy Clays; Silty/Clayey Sands
0.5m to 4.5m	Shale/Sandstone Bedrock

Inspection of the site showed no slope instability issues. Therefore, no slope instability issues are expected for the proposed development.

With regards to excavation conditions it is expected that overburden soils and extremely low to low strength shale/sandstone bedrock could be easily removed using conventional earth moving equipment such as excavator and dozers. However, excavation in medium to high strength bedrock (expected depths range from 1.1m to 5m) will be more difficult and will require larger equipment such as rock hammer, ripper attached to Caterpillar D9 or D10 dozer or rock saw.

Based on subsurface conditions, anticipated depths to cut and fill and estimated shrink-swell movements, site classifications for future residential lots across the site are expected to range from Class "A" (Non-reactive) to "H1" (Highly reactive), in accordance with AS2870-2011 "Residential slabs and footing". In areas where shale/sandstone bedrock will be exposed (due to cut) the lots would generally be classified as Class "A" (Non-reactive) or "S" (Slightly reactive). In areas where natural clays are exposed the site classification is expected to be Class "M" (Moderately Reactive). In fill areas (clayey soils) it is expected that the residential lots will be classified as Class "M" and Class "H1". However, most of the lots are expected to be classified as Class "M".

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CBR tests on the recovered bulk samples showed CBR values ranging from 3.5% to 8% with an average of 5.3%. A design CBR value of 4% is used in the preliminary road pavement design.

Considering existing subsurface conditions footings for the proposed structures can be supported on controlled fill or stiff clays or shale/sandstone bedrock.

Laboratory testing for soil erodibility, salinity and aggressivity indicated the following:

- Soils across the site are dispersive and susceptible to excessive erosion.
- Soils likely to be disturbed or excavated during proposed development works are non-saline up to depth of about 1.0m and saline at depths exceeding 1.0m. Therefore, earthworks for the proposed development should be carried out in accordance with a saline soil management plan only if earthworks involve excavation and/or disturbance of soils at depths exceeding 1.0m.
- Soils across the site are non-aggressive towards steel and mildly aggressive towards concrete. Therefore, use of construction materials, such as concrete and steel, appropriate to mildly aggressive is recommended.

Reference should be made to Sections 6.0 to 12.0 of the report for detailed recommendations and limitations of the assessment.

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TABLE OF CONTENTS

1.0 INTRODUCTION ---- 1
2.0 PROPOSED DEVELOPMENT ---- 1
3.0 FIELD WORK ---- 1
4.0 REGIONAL GEOLOGY ---- 1
5.0 SITE LOCALITY, DESCRIPTION & SUB-SURFACE CONDITIONS ---- 2
5.1 Site Locality & Description ---- 2
5.2 Sub-surface Conditions ---- 4
6.0 LABORATORY TESTING ---- 7
6.1 Geotechnical Tests Results ---- 7
6.2 Salinity and Aggressivity Tests Results ---- 9
7.0 DISCUSSION AND RECOMMENDATIONS ---- 14
7.1 Geotechnical Model ---- 14
7.2 Slope Stability ---- 15
7.3 Excavation Conditions ---- 15
7.4 Site Preparation ---- 17
7.5 Reuse of Existing Materials ---- 17
7.6 Safe Batters & Retaining Structures ---- 18
7.7 Site Classification ---- 19
7.8 Floor Slabs & Footings ---- 20
8.0 PAVEMENTS ---- 21
8.1 Subgrade CBR Design ---- 21
8.2 Traffic Design Loading ---- 21
8.3 Pavement Composition ---- 21
9.0 ERODIBILITY ASSESSMENT ---- 22
10.0 SALINITY ASSESSMENT ---- 22
11.0 AGGRESSIVITY ASSESSMENT ---- 23
12.0 SOIL MANAGEMENT PLAN ---- 25
13.0 LIMITATIONS ---- 26

DRAWINGS

Drawing No 13174/1-AA1 Locations of Test Pits & Boreholes
Drawing No 13174/1-AA2 Possible Saline Areas

APPENDICES

APPENDIX A Engineering Logs
APPENDIX B Laboratory Test Results

1.0 INTRODUCTION

Geotechnique was commissioned by E J Cooper & Son Pty Ltd through a subcontract agreement to undertake a geotechnical and salinity assessment for the proposed residential subdivision at Boundary Road, Box Hill North. This report documents the results of the geotechnical and salinity assessment, which was carried out in accordance with Geotechnique fee proposal Q6552AB dated 28 March 2014.

2.0 PROPOSED DEVELOPMENT

We understand that the development at Box Hill North will include 4100 residential lots, school(s), retail or commercial areas to service the local community and other amenities. The development will also include construction of riparian corridors.

The development is divided into nine Precincts (A to I) as shown on the attached Drawing 13174/1-AA1.

3.0 FIELD WORK

Field work for the geotechnical and salinity assessment was carried out between 16 June and 24 July 2014 and the following work was completed.

- OH&S and walkover survey to assess existing site conditions. Prior to going to the site property owners were informed regarding the field work. Proposed test pit and borehole locations were transferred to near map images to help in establishing the locations at the site.
- Scanning test pit and borehole locations for underground services so that excavation and drilling would not damage services. Underground services drawings for the site were obtained from DBYD prior to going to the site.
- Excavating a total of one hundred and three (103) test pits (TP1 to TP103) to depths ranging from 0.4m to 3.1m, using an excavator and a backhoe.
- Drilling sixteen (16) boreholes (BH104 to BH119) to depths ranging from 1.6m to 6.2m, using a utility mounted drilling rig fully equipped for geotechnical works. Selected boreholes were cored using diamond coring technique to recover rock cores.
- Installing two (2) piezometers in BH106 & BH110 to monitor groundwater levels.
- Recovery of soil samples for visual assessment and laboratory testing (Atterberg Limits, CBR, EC, pH, ESP, Sulphate and Chloride).

Field work was carried out by geotechnical engineers from this company who were responsible for locating test pits and boreholes, supervision, in-situ testing, sampling and preparation of logs.

4.0 REGIONAL GEOLOGY

Reference to the Geological Map (1:100,000) of Penrith indicates that most of the site is underlain by Ashfield Shale, belonging to the Wianamatta Group of rocks and comprising dark grey to black shale and laminite. The map also indicates that parts of the northern portion (i.e. on either side of Cataract Creek up to the existing dam and area near north-eastern boundary) of the site is underlain by Hawkesbury Sandstone, comprising medium to coarse grained quartz sandstone, very minor shale and laminite lenses.

The south-western portion of the site could be underlain by Bringelly Shale, belonging to the Wianamatta Group of rocks and comprising shale, carbonaceous claystone, laminite, fine to medium grained lithic sandstone, rare coal.

The Soil Landscape Map (1:100,000) of Penrith indicates that the landscape of most of the site belongs to the Blacktown Group, which is characterised with gently undulating rises on Wianamatta Group shales, with local relief to 30m, ground slope of less than 5%, broad rounded crests and gently inclined slopes. The sub-surface soil within this landscape is likely to be up to 3m thick, moderately reactive, high plasticity and with poor drainage.

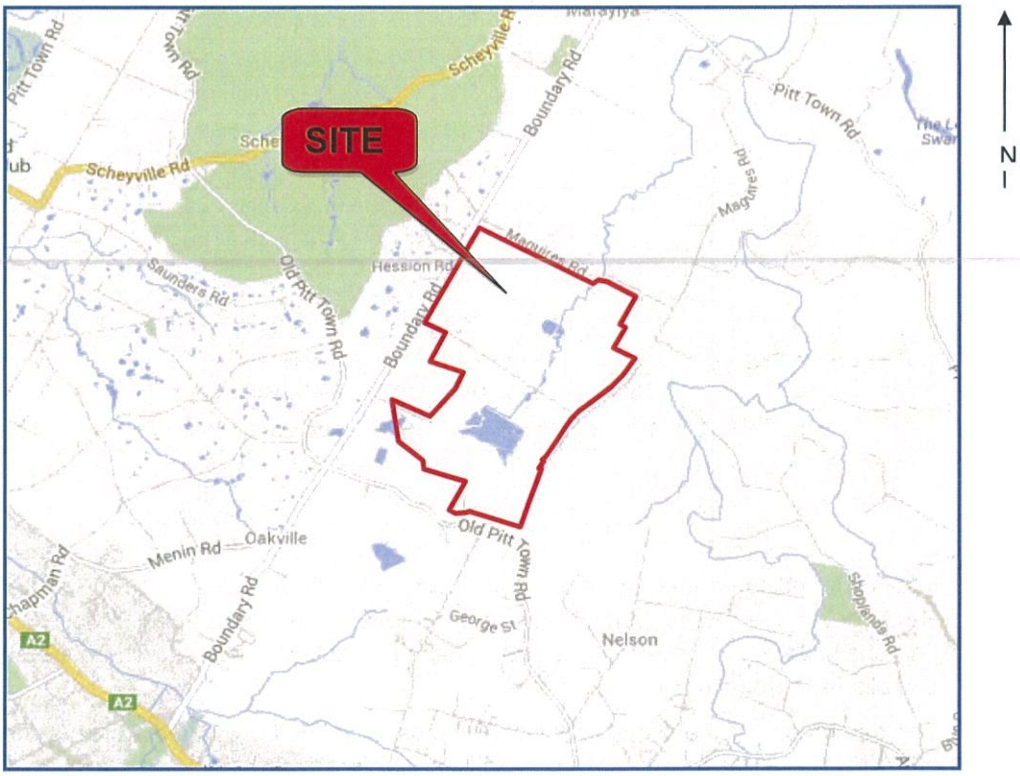
The landscape map also indicates that parts of the south-eastern portion of the site could belong to the Hawkesbury Group, which is characterised by rugged, rolling to very steep hills on Hawkesbury Sandstone, with local relief of 40m to 200m, ground surface slopes of more than 25%, rock outcrop of more than 50%, narrow crests and ridges, narrow incised valleys, steep side slopes with rocky benches and broken scarp and boulders. The subsurface soil in this group is likely to be shallow, less than 0.5m, stony, highly permeable and susceptible to extreme erosion and mass movement hazards.

Reference to the Salinity Potential in Western Sydney (2002) map indicates that most portion of the site has Moderate Salinity Potential. Parts of the northern portion could have Very Low Salinity Potential.

5.0 SITE LOCALITY, DESCRIPTION & SUB-SURFACE CONDITIONS

5.1 Site Locality & Description

The site is located along Boundary Road, Box Hill North as shown below.



Map Data ©2014 Google

E J Cooper & Son Pty Ltd
ZA.IJ.sf/26.08.2014

General features of the site observed during field work are as follows.

- The site comprises a total of 31 rural residential properties. Details of the properties are shown below:

Number	Lot Details
1	Lot 1 DP 11126, 207-217 Boundary Road
2	Lot 2 DP 11126, 195 Boundary Road
3	Lot 1 DP 207750, 181-191 Boundary Road
4	Lot 9 DP 593517, 155 Boundary Road
5	Lot 10 DP 593517, 153 Boundary Road
6	Lot 47 DP 255616, 3 Red Gables Road
7	Lot 15 DP 255616, 3 Cataract Road
8	Lot 16 DP 255616, 5 Cataract Road
9	Lot 21 DP 255616, 7 Cataract Road
10	Lot 2 DP 253552, 117 Old Pitt Town Road
11	Lot 4 DP 253552, 121 Old Pitt Town Road
12	Lot 40 DP 255616, 13 Janpieter Road
13	Lot 41 DP 255616, 11 Janpieter Road
14	Lot 43 DP 255616, 9 Red Gables Road
15	Lot 29 DP 255616, 18 Red Gables Road
16	Lot 30 DP 255616, 5 Janpieter Road
17	Lot 31 DP 255616, 3 Janpieter Road
18	Lot 1 DP 564211, 169 Maguires Road
19	Lot 5 DP 658286, 151 Maguires Road
20	Lot 4 A & B DP 135304, 97 Maguires Road
21	Lot 3 DP 11126, 89 Maguires Road
22	Lot 22 DP 255616, 4 Red Gables Road
23	Lot 23 DP 255616, 6 Red Gables Road
24	Lot 25 DP 255616, 10 Red Gables Road
25	Lot 26 DP 255616, 12 Red Gables Road
26	Lot 27 DP 255616, 14 Red Gables Road
27	Lot 46 DP 255616, 5 Red Gables Road
28	Lot 45 DP 255616, 5 Red Gables Road
29	Lot 44 DP 255616, 7 Red Gables Road
30	Lot 18 DP 255616, 6 Cataract Road
31	Lot 17 DP 255616, 8 Cataract Road

- Inspection indicated that the market gardening was the prominent activity at the above properties. However, only a few properties now continue with market gardening. Most of the former market gardens have been converted into grazing land for cattle and horses. There are also a few long-term established horse studs within the site.
- The topography of the site is undulating and gently slopes towards the creeks running in the middle of site.

- There are a number of dams constructed across the creeks. Most of surface water generally drains into the creeks. Water from the creek flows towards the north into the Cataract Creek, which drains into the Cattai Creek.
- Salinity indicators (spiny rush) were noted along the low lying area associated with the dams and water courses (Drawing 13174/1-AA2).
- Signs of erosion were noted along the creek banks.
- No slope instability issues were noted during the investigation.

5.2 Sub-surface Conditions

Sub-surface conditions encountered in the test pits and boreholes are summarised in Table 1 below and detailed in the attached engineering logs.

TABLE 1

TP/BH	Easting (m)	Northing (m)	Top RL (AHD)	Termination Depth (m)	Topsoil / Fill (m)	Natural Soils (m)	Bedrock (m)
TP1	305323.654	6276791.034	38.620	2.5	0.0 – 0.15	0.15 –> 2.5	NE
TP2	305517.009	6276784.608	37.510	3.0	0.0 – 0.15	0.15 –> 3.0	NE
TP3	305513.797	6276646.407	40.116	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP4	305569.639	6276541.734	43.270	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP5	305442.977	6276960.709	38.333	2.5	0.0 – 0.2	0.2 –> 2.5	NE
TP6	305326.495	6277160.438	50.162	1.1	0.0 – 0.2	0.2 – 0.9	0.9 –> 1.1
TP7	305521.691	6277082.962	40.917	1.8	0.0 – 0.3	0.3 – 1.6	1.6 –> 1.8
TP8	305203.048	6276836.067	39.818	2.5	0.0 – 0.2	0.2 –> 2.5	NE
TP9	305301.814	6276649.642	41.016	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP10	305486.953	6276382.991	51.035	1.7	0.0 – 0.2	0.2 – 1.5	1.5 –> 1.7
TP11	305216.619	6276425.643	46.805	2.9	0.0 – 0.2	0.2 – 2.7	2.7 – 2.9
TP12	305076.291	6276451.752	52.593	1.2	0.0 – 0.2	0.2 – 1.0	1.0 –> 1.2
TP13	305083.208	6276795.033	41.248	3.0	0.0 – 0.2	0.2 –> 3.0	NE
TP14	305027.784	6276959.704	43.420	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP15	304968.990	6276851.937	42.079	2.5	0.0 – 0.2	0.2 –> 2.5	NE
TP16	305002.241	6276588.578	47.967	1.6	0.0 – 0.3	0.3 – 1.4	1.4 –> 1.6
TP17	304832.824	6276697.562	47.291	1.9	0.0 – 0.3	0.3 – 1.7	1.7 –> 1.9
TP18	304790.976	6277079.119	49.389	1.2	0.0 – 0.3	0.3 – 1.1	1.1 –> 1.2
TP19	305955.850	6277116.101	32.376	3.0	0.0 – 2.0	2.0 –> 3.0	NE
TP20	305764.068	6277077.508	35.430	2.0	0.0 – 0.3	0.3 – 2.0	=> 2.0
TP21	305894.550	6277362.916	38.336	1.4	0.0 – 0.3	0.3 – 1.3	1.3 –> 1.4
TP22	305653.671	6277148.577	39.578	1.0	0.0 – 0.3	0.3 – 0.9	0.9 –> 1.0
TP23	305684.151	6277280.389	40.236	1.7	0.0 – 0.2	0.2 – 1.5	1.5 –> 1.7
TP24	305572.664	6277474.603	37.657	2.2	0.0 – 0.2	0.2 – 2.0	2.0 –> 2.2
TP25	305445.679	6277409.002	40.721	3.0	0.0 – 0.7	0.7 –> 3.0	NE
TP26	305489.911	6277249.231	46.560	1.7	0.0 – 0.2	0.2 – 1.5	1.5 –> 1.7
TP27	305774.131	6277475.739	39.637	0.7	0.0 – 0.2	0.2 – 0.6	0.6 –> 0.7
TP28	305880.483	6277531.157	39.416	0.7	0.0 – 0.2	0.2 – 0.5	0.5 – 0.7

TABLE 1

TP/BH	Easting (m)	Northing (m)	Top RL (AHD)	Termination Depth (m)	Topsoil / Fill (m)	Natural Soils (m)	Bedrock (m)
TP29	305960.921	6277743.773	32.831	3.0	0.0 – 1.6	1.6 – 3.0	=> 3.0
TP30	306066.829	6277632.691	35.906	1.1	0.0 – 0.3	0.3 – 0.8	0.8 –> 1.1
TP31	306005.293	6277466.384	39.001	0.4	0.0 – 0.2	NE	0.2 –> 0.4
TP32	305206.717	6277670.365	42.494	3.5	0.0 – 0.3	0.3 –> 3.5	NE
TP33	305266.087	6277510.633	45.371	1.6	0.0 – 0.2	0.2 – 1.3	1.3 –> 1.6
TP34	305377.932	6277563.391	39.568	1.3	0.0 – 0.35	0.35 – 1.1	1.1 –> 1.3
TP35	305374.115	6277711.307	39.199	2.5	0.0 – 1.2	1.2 –> 2.5	NE
TP36	306099.181	6277346.970	34.242	0.5	0.0 – 0.2	0.2 – 0.5	=> 0.5
TP37	306372.089	6277660.068	30.656	1.6	0.0 – 0.2	0.2 – 1.4	1.4 –> 1.5
TP38	306034.953	6277897.452	32.294	1.5	0.0 – 0.3	0.3 – 1.5	=> 1.5
TP39	306197.383	6277991.217	32.751	1.5	0.0 – 0.3	0.3 – 1.3	1.3 –> 1.5
TP40	305376.409	6278025.807	37.049	3.0	0.0 – 0.2	0.2 – 3.0	=> 3.0
TP41	305102.997	6277949.736	39.165	2.0	0.0 – 0.3	0.3 – 1.7	1.7 –> 2.0
TP42	305324.626	6277859.189	36.742	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP43	305473.335	6277808.769	35.677	2.5	0.0 – 0.2	0.2 –> 2.5	NE
TP44	305581.049	6277755.305	34.508	2.5	0.0 – 0.3	0.3 – 2.3	2.3 –> 2.5
TP45	305731.442	6277855.813	33.252	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP46	305899.842	6278140.867	39.852	1.9	0.0 – 0.2	0.2 – 1.7	1.7 –> 1.9
TP47	305278.245	6278223.341	45.309	1.5	0.0 – 0.3	0.3 – 1.3	1.3 –> 1.5
TP48	305508.638	6278054.516	36.620	1.9	0.0 – 0.3	0.3 – 1.7	1.7 –> 1.9
TP49	305728.781	6278115.580	37.905	1.1	0.0 – 0.3	0.3 – 0.9	0.9 –> 1.1
TP50	305617.907	6278263.962	42.218	1.3	0.0 – 0.2	0.2 – 1.1	1.1 –> 1.3
TP51	305446.767	6278339.978	43.650	1.2	0.0 – 0.2	0.2 – 1.0	1.0 –> 1.2
TP52	305367.908	6278439.047	40.735	2.1	0.0 – 0.3	0.3 – 1.9	1.9 –> 2.1
TP53	305412.587	6278550.211	36.252	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP54	305604.910	6278386.145	39.758	1.7	0.0 – 0.3	0.3 – 1.5	1.5 –> 1.7
TP55	305799.440	6278368.949	43.076	1.2	0.0 – 0.3	0.3 – 1.0	1.0 –> 1.2
TP56	305986.680	6278410.320	36.750	2.9	0.0 – 0.2	0.2 – 2.5	2.5 –> 2.9
TP57	306079.990	6278476.380	35.500	1.7	0.0 – 0.3	0.3 – 0.5	1.5 –> 1.7
TP58	306112.590	6278594.050	32.750	2.0	0.0 – 0.2	0.2 – 1.8	1.8 –> 2.0
TP59	305938.420	6278684.030	34.000	1.3	0.0 – 0.2	0.2 – 1.1	1.1 –> 1.3
TP60	305905.550	6278535.630	38.000	1.3	0.0 – 0.2	0.2 – 1.1	1.1 –> 1.3
TP61	305639.250	6278844.210	31.250	2.5	0.0 – 0.15	0.15 –> 2.5	NE
TP62	306557.590	6278352.600	31.750	1.2	0.0 – 0.3	0.3 – 1.0	1.0 –> 1.2
TP63	306310.180	6278466.510	36.500	0.7	0.0 – 0.2	0.2 – 0.6	0.6 –> 0.7
TP64	306273.010	6278346.690	39.000	1.3	0.0 – 0.2	0.2 – 1.3	=> 1.3
TP65	306119.200	6278149.150	38.250	1.3	0.0 – 0.2	0.2 – 1.3	=> 1.3
TP66	306326.940	6278184.330	34.500	0.8	0.0 – 0.2	0.2 – 0.8	=> 0.8
TP67	306633.210	6277337.057	45.633	0.9	0.0 – 0.2	0.2 – 0.9	=> 0.9
TP68	306628.148	6277559.750	43.507	1.5	0.0 – 0.2	0.2 – 1.5	=> 1.5
TP69	306840.649	6277427.110	41.429	0.9	0.0 – 0.2	0.2 – 0.9	=> 0.9

13174/1-AA
Boundary Road, Box Hill North

TABLE 1

TP/BH	Easting (m)	Northing (m)	Top RL (AHD)	Termination Depth (m)	Topsoil / Fill (m)	Natural Soils (m)	Bedrock (m)
TP70	306685.229	6277230.597	42.400	0.8	0.0 – 0.2	0.2 – 0.7	0.7 –> 0.8
TP71	306493.032	6277060.006	42.402	1.8	0.0 – 0.2	0.2 – 1.5	1.5 –> 1.8
TP72	306487.809	6277412.521	42.267	0.9	0.0 – 0.2	0.2 – 0.9	=> 0.9
TP73	306397.279	6277273.714	41.940	0.8	0.0 – 0.2	0.2 – 0.6	0.6 –> 0.8
TP74	306260.916	6276659.538	45.498	1.6	0.0 – 0.3	0.3 – 1.4	1.4 –> 1.6
TP75	306131.519	6276656.659	40.842	1.6	0.0 – 0.3	0.3 – 1.3	1.3 –> 1.6
TP76	306092.565	6276761.766	40.032	1.5	0.0 – 0.3	0.3 – 1.3	1.3 –> 1.5
TP77	305974.907	6276658.974	37.446	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP78	306191.475	6277174.089	35.040	1.4	0.0 – 0.3	0.3 – 1.4	=> 1.4
TP79	306101.148	6276926.623	37.950	1.9	0.0 – 0.3	0.3 – 1.7	1.7 –> 1.9
TP80	305977.230	6276956.744	35.000	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP81	306815.530	6278287.990	28.750	0.55	0.0 – 0.2	0.2 – 0.55	=> 0.55
TP82	306633.000	6278109.100	28.250	1.3	0.0 – 0.2	0.2 – 1.1	1.1 –> 1.3
TP83	306759.680	6277998.540	37.000	1.2	0.0 – 0.2	0.2 – 1.0	1.0 –> 1.2
TP84	306656.720	6277810.660	37.750	0.8	0.0 – 0.2	0.2 – 0.8	=> 0.8
TP85	306839.500	6278115.210	30.000	0.8	0.0 – 0.2	0.2 – 0.8	=> 0.8
TP86	306888.190	6277850.420	43.250	0.6	0.0 – 0.2	0.2 – 0.6	=> 0.6
TP87	306853.910	6277718.780	47.000	0.7	0.0 – 0.2	0.2 – 0.7	=> 0.7
TP88	307007.450	6278164.600	34.500	0.9	0.0 – 0.2	0.2 – 0.8	0.8 –> 0.9
TP89	305473.082	6276531.592	43.637	2.5	0.0 – 0.2	0.2 –> 2.5	NE
TP90	305960.785	6276014.368	51.147	2.2	0.0 – 0.3	0.3 – 2.0	2.0 –> 2.2
TP91	306039.910	6276127.680	45.750	2.2	0.0 – 0.2	0.2 – 2.0	2.0 –> 2.2
TP92	305942.860	6275845.190	63.000	1.4	0.0 – 0.2	0.2 – 1.2	1.2 –> 1.4
TP93	305682.897	6276335.767	49.327	1.8	0.0 – 0.2	0.2 – 1.5	1.5 –> 1.8
TP94	305755.583	6276512.872	40.855	2.1	0.0 – 0.2	0.2 – 1.9	1.9 –> 2.1
TP95	305760.833	6276240.125	45.911	2.3	0.0 – 0.2	0.2 – 2.1	2.1 –> 2.3
TP96	305610.785	6276072.962	55.813	2.5	0.0 – 0.2	0.2 –> 2.5	NE
TP97	306693.691	6277686.846	45.748	1.1	0.0 – 0.2	0.2 – 1.0	1.0 –> 1.1
TP98	306922.445	6277603.821	47.580	1.0	0.0 – 0.2	0.2 – 0.9	0.9 –> 1.0
TP99	306987.306	6277494.752	44.235	0.9	0.0 – 0.2	0.2 – 0.7	0.7 –> 0.9
TP100	306169.407	6276518.120	45.380	1.2	0.0 – 0.2	0.2 – 1.0	1.0 –> 1.2
TP101	306027.771	6276460.193	41.388	1.8	0.0 – 0.2	0.2 – 1.5	1.5 –> 1.8
TP102	305932.487	6276571.296	38.155	2.5	0.0 – 0.3	0.3 –> 2.5	NE
TP103	305704.300	6276641.080	39.000	3.1	0.0 – 0.3	0.3 – 3.1	=> 3.1
BH104	305891.601	6275860.697	65.300	6.2	0.0 – 0.2	0.2 – 1.5	1.5 –> 6.2
BH105	305643.767	6276218.110	52.905	4.3	0.0 – 0.2	0.2 – 1.5	1.5 –> 4.3
BH106	304935.670	6276734.869	45.076	4.0	0.0 – 0.2	0.2 – 2.0	2.0 –> 4.0
BH107	305307.990	6277064.130	45.500	2.7	0.0 – 0.2	0.2 – 1.8	1.8 –> 2.7
BH108	305347.400	6276504.070	42.500	6.0	0.0 – 0.1	0.1 – 4.5	4.5 –> 6.0
BH109	305265.676	6277684.139	40.112	6.0	0.0 – 0.1	0.1 – 2.0	2.0 –> 6.0
BH110	306061.531	6277705.030	33.192	6.0	0.0 – 0.2	0.2 – 3.0	3.0 –> 6.0

TABLE 1

TP/BH	Easting (m)	Northing (m)	Top RL (AHD)	Termination Depth (m)	Topsoil / Fill (m)	Natural Soils (m)	Bedrock (m)
BH111	306063.221	6277036.946	35.162	5.6	0.0 – 0.2	0.2 – 2.0	2.0 –> 5.6
BH112	306213.230	6278237.740	39.000	5.9	0.0 – 0.1	0.1 – 0.5	0.5 –> 5.9
BH113	305337.499	6278226.769	45.352	5.6	0.0 – 0.1	0.1 – 1.5	1.5 –> 5.6
BH114	305764.878	6278299.187	43.835	5.65	0.0 – 0.1	0.1 – 2.0	2.0 –> 5.65
BH115	306804.470	6277923.360	41.500	5.8	0.0 – 0.1	0.1 – 0.5	0.5 –> 5.8
BH116	305890.717	6278618.179	36.902	5.3	0.0 – 0.1	0.1 – 1.5	1.5 –> 5.3
BH117	306737.198	6277420.643	45.149	5.4	0.0 – 0.1	0.1 – 1.5	1.5 –> 5.4
BH118	306042.660	6276527.626	41.044	2.0	0.0 – 0.2	0.2 – 1.3	1.3 –> 2.0
BH119	306555.016	6277147.872	45.085	1.6	0.0 – 0.2	0.2 – 1.2	1.2 –> 1.6

Topsoil / Fill	Silty Clay, low plasticity, trace of roots Clayey Silt, low plasticity, trace of roots Silty Sand, fine grained, trace of roots Fill: Silty Clay, medium to high plasticity, trace of ironstone
Natural (Alluvial and Residual)	Silty Clay, low to medium plasticity, with ironstone and shale gravel Sandy Silty Clay, medium plasticity Sandy Clay, low to medium plasticity, with ironstone Shaley Clay, medium plasticity, with ironstone Clayey Silt, low plasticity Silty Clayey Sand, fine to medium grained, with sandstone gravel Clayey Sand, fine grained, with sandstone fragments
Bedrock	Shale, extremely weathered grading to fresh and low strength grading to high strength with depth Sandstone, fine to medium grained, extremely weathered grading to fresh and low strength grading to high strength with depth

With the exception of seepage at various depths in test pits TP1, 5, 19 and 45, groundwater was not encountered to the termination depths of the test pits and to the auger refusal depths in the boreholes. Use of water for coring in the boreholes precluded further groundwater measurement. It should be noted that levels of groundwater/seepage might change due to changes in temperature, rainfall and other factors not evident during the field work.

Two piezometers were installed in BH106 and BH110 for further groundwater monitoring.

6.0 LABORATORY TESTING

6.1 Geotechnical Tests Results

Selected soil samples recovered from the test pits were analysed in the NATA accredited laboratory of Geotech Testing Pty Ltd for plasticity (Atterberg Limits) properties and California Bearing Ratio (CBR) values. The laboratory test results certificates are attached (Appendix A) and summarised below.

Recovered rock cores from the boreholes were tested to determine point load strength index. These results are shown below.

TABLE 2A (Atterberg Limits)

TP	Depth (m)	Sample Description	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
13	0.5 – 0.6	(CI) Silty Clay, medium plasticity	41	17	24
20	0.3 – 0.4	(CH) Silty Clay, high plasticity	64	22	42
29	0.5 – 0.6	Fill : Silty Clay, low plasticity	31	14	17
48	0.3 – 0.4	(CH) Silty Clay, high plasticity	58	24	34
61	0.4 – 0.5	(CI) Sandy Silty Clay, medium plasticity	44	19	25
75	0.3 – 0.4	(CI-CH) Silty Clay, medium to high plasticity	55	24	31
82	0.5 – 0.6	(CI) Sandy Clay, medium plasticity	46	19	27

TABLE 2B (California Bearing Ratio)

TP	Depth (m)	Sample Description	MDD (t/m^3)	OMC (%)	FMC (%)	CBR (%)
5	0.5 – 0.8	(CI) Silty Clay, medium plasticity	1.79	16.1	18.2	4.5
37	0.5 – 0.8	(CL) Sandy Silty Clay, low plasticity	1.92	11.9	6.9	8.0
53	0.5 – 0.8	(CI) Sandy Silty Clay, medium plasticity	1.79	15.6	17.5	5.0
90	0.5 – 0.8	(CH) Silty Clay, high plasticity	1.60	22.3	24.4	3.5

MDD : Maximum Dry Density; OMC : Optimum Moisture Content; FMC : Field Moisture Content

TABLE 2C (Point Load Strength Index on Rock Cores)

Borehole No	Depth (m)	Diametral, $I_{s(50)}$ (MPa)	Axial, $I_{s(50)}$ (MPa)	Assessed Axial Strength (Reference 1)
BH104	5.3	0.31	0.59	Medium
	5.8	0.14	1.27	High
	6.0	0.16	0.59	Medium
BH109	4.2	0.62	0.69	Medium
	5.2	0.20	0.94	Medium
	5.8	0.48	3.14	Very High
BH110	3.4	0.84	2.84	High
	4.6	0.41	1.43	High
	5.4	1.11	1.50	High
BH111	2.5	0.72	1.34	High
	3.4	1.08	1.36	High
	4.6	1.10	1.76	High
	5.5	0.76	1.04	High
BH112	1.2	1.14	1.87	High
	2.1	0.77	0.70	Medium
	3.3	1.52	2.04	High
	4.1	0.87	1.64	High
	5.7	1.24	2.58	High
BH113	3.6	0.07	0.59	Medium
	4.3	0.04	0.56	Medium
	5.4	0.30	0.48	Medium

TABLE 2C (Point Load Strength Index on Rock Cores)

Borehole No	Depth (m)	Diametral, $I_{s(50)}$ (MPa)	Axial, $I_{s(50)}$ (MPa)	Assessed Axial Strength (Reference 1)
BH114	3.5	0.16	0.99	Medium
	4.5	0.74	3.14	Very High
	5.2	0.34	2.97	High
BH115	2.2	1.41	2.72	High
	4.6	0.54	1.08	High
	5	1.24	1.08	High
BH116	3.2	0.38	1.38	High
	4.5	0.15	1.47	High
	5.3	0.16	1.99	High
BH117	2.7	0.26	1.43	High
	3.4	0.29	2.56	High
	4.2	1.29	2.80	High

The above results show the following;

- The soils across the site are generally medium to high plasticity and susceptible to shrink/swell movements.
- CBR values range from 3.5% to 8% with an average of 5.3%. Field moisture content is likely to vary within wide range i.e. from 2.1% Wet to 5% Dry of OMC.
- Axial strength of rock cores range from medium to very high strength. It should be noted that these tests were conducted on intact samples. Therefore, these results indicate upper bound strength of the rock cores.

6.2 Salinity and Aggressivity Tests Results

The laboratory test results certificates from SGS are included in Appendix B and summarised below in Table 3

TABLE 3

Test Pit	Depth (m)	EC µS/cm	pH	ESP			Sulphate mg/kg	Chloride mg/kg
				mg/kg	meq/100g	%		
TP1	0.5-0.6	480	7.6	-	-	-	-	-
TP1	1.5-1.6	1200	7.9	540	2.3	32.3	-	-
TP2	1.0-1.1	770	4.9	-	-	-	-	-
TP2	2.5-2.6	800	7.3	-	-	-	-	-
TP3	0.5-0.6	920	4.9	-	-	-	360	1200
TP3	2.0-2.1	860	4.9	-	-	-	-	-
TP4	1.0-1.1	610	5	-	-	-	-	-
TP4	2.0-2.1	660	5.5	-	-	-	-	-
TP5	1.0-1.1	340	6.6	550	2.4	26.7	-	-
TP5	2.0-2.1	830	7.2	-	-	-	-	-
TP6	0.5-0.6	49	5.8	-	-	-	-	-

13174/1-AA
Boundary Road, Box Hill North

TABLE 3

Test Pit	Depth (m)	EC µS/cm	pH	ESP			Sulphate mg/kg	Chloride mg/kg
				mg/kg	meq/100g	%		
TP6	1.0-1.1	200	6	-	-	-	-	-
TP7	0.5-0.6	170	5.8	-	-	-	380	1200
TP7	1.5-1.6	760	5.3	-	-	-	-	-
TP8	1.0-1.1	61	5.9	-	-	-	-	-
TP8	2.0-2.1	500	8.2	-	-	-	-	-
TP9	0.5-0.6	130	7.2	440	1.9	20.5	-	-
TP9	1.5-1.6	720	6.8	-	-	-	-	-
TP10	0.5-0.6	350	5.4	-	-	-	-	-
TP10	1.5-1.6	670	5.6	-	-	-	-	-
TP11	1.5-1.6	890	4.4	-	-	-	-	-
TP11	2.5-2.6	780	6.3	-	-	-	-	-
TP12	0.5-0.6	43	5.1	-	-	-	-	-
TP12	1.0-1.1	67	5	-	-	-	-	-
TP13	1.0-1.1	1200	5.4	-	-	-	-	-
TP13	2.5-2.6	960	6.2	1100	4.8	38.4	-	-
TP14	0.5-0.6	1400	4.9	-	-	-	-	-
TP14	1.5-1.6	1100	4.4	-	-	-	-	-
TP15	0.5-0.6	170	7.9	-	-	-	-	-
TP15	1.5-1.6	910	7.5	-	-	-	310	1000
TP16	0.5-0.6	150	5.4	-	-	-	-	-
TP16	1.5-1.6	460	5	-	-	-	-	-
TP17	1.0-1.1	1600	4.9	-	-	-	-	-
TP17	1.5-1.6	950	5.1	-	-	-	-	-
TP18	0.5-0.6	160	4.9	-	-	-	-	-
TP18	1.0-1.1	210	4.9	-	-	-	-	-
TP19	1.0-1.1	920	5	-	-	-	340	1100
TP19	2.5-2.6	1100	5.5	-	-	-	-	-
TP20	0.5-0.6	1000	4.8	530	2.3	18.1	-	-
TP20	1.5-1.6	640	5.3	-	-	-	-	-
TP21	0.5-0.6	100	5.9	-	-	-	-	-
TP21	1.0-1.1	130	5.3	-	-	-	-	-
TP22	0.3-0.4	190	7.4	-	-	-	-	-
TP22	0.9-1.0	230	5.9	-	-	-	-	-
TP23	0.5-0.6	300	7	-	-	-	-	-
TP23	1.5-1.6	370	7.1	-	-	-	-	-
TP24	1.0-1.1	810	6.8	-	-	-	-	-
TP24	2.0-2.1	430	6.1	510	2.2	24	-	-
TP25	1.0-1.1	560	5.7	-	-	-	-	-
TP25	2.5-2.6	340	7.5	-	-	-	-	-
TP26	0.5-0.6	230	5.4	350	1.5	16.2	-	-
TP26	1.5-1.6	270	5.3	-	-	-	-	-
TP27	0.1-0.2	41	5.9	-	-	-	-	-
TP27	0.5-0.6	53	5.3	-	-	-	-	-

13174/1-AA
Boundary Road, Box Hill North

TABLE 3

Test Pit	Depth (m)	EC µS/cm	pH	ESP			Sulphate mg/kg	Chloride mg/kg
				mg/kg	meq/100g	%		
TP28	0.1-0.2	44	5.2	-	-	-	-	-
TP28	0.5-0.6	52	6.7	-	-	-	<5	9.9
TP29	1.0-1.1	380	4.9	-	-	-	-	-
TP29	2.5-2.6	160	4.8	-	-	-	-	-
TP30	0.5-0.6	90	7.5	-	-	-	-	-
TP30	1.0-1.1	210	4.8	-	-	-	-	-
TP31	0.0-0.1	130	7.8	-	-	-	<5	1.7
TP31	0.3-0.4	93	6.7	-	-	-	-	-
TP32	1.0-1.1	380	5	-	-	-	-	-
TP32	2.0-2.1	170	5.9	1200	5.1	41.6	-	-
TP33	0.5-0.6	240	5.7	-	-	-	-	-
TP33	1.5-1.6	620	6.7	-	-	-	-	-
TP34	0.5-0.6	180	7.6	-	-	-	-	-
TP34	1.0-1.1	710	7.4	-	-	-	-	-
TP35	1.0-1.1	530	7.8	-	-	-	-	-
TP35	2.0-2.1	400	5.8	-	-	-	-	-
TP36	0.0-0.1	31	6.1	21	0.09	2.7	-	-
TP36	0.4-0.5	79	5.7	-	-	-	-	-
TP37	0.5-0.6	40	5.4	-	-	-	-	-
TP37	1.4-1.5	42	5.7	96	0.42	13.5	-	-
TP38	0.5-0.6	120	7.6	-	-	-	-	-
TP38	1.4-1.5	120	5.7	-	-	-	-	-
TP39	0.5-0.6	55	7.6	-	-	-	-	-
TP39	1.0-1.1	150	5.2	-	-	-	-	-
TP40	1.0-1.1	890	6.4	-	-	-	-	-
TP40	2.5-2.6	520	6.5	-	-	-	-	-
TP41	0.5-0.6	400	4.7	-	-	-	330	320
TP41	1.5-1.6	790	4.4	-	-	-	-	-
TP42	1.0-1.1	200	7.9	-	-	-	-	-
TP42	2.0-2.1	590	5.3	600	2.6	34.8	-	-
TP43	1.0-1.1	1300	4.8	-	-	-	-	-
TP43	1.5-1.6	1300	5	-	-	-	-	-
TP44	0.5-0.6	160	5	-	-	-	-	-
TP44	1.5-1.6	820	4.8	-	-	-	-	-
TP45	1.0-1.1	770	5.1	450	1.9	27	-	-
TP45	2.0-2.1	1000	5.4	-	-	-	-	-
TP46	0.5-0.6	120	5.3	-	-	-	130	64
TP46	1.5-1.6	46	4.9	-	-	-	-	-
TP47	0.0-0.1	49	5.8	-	-	-	-	-
TP47	1.0-1.1	250	6.5	-	-	-	-	-
TP48	0.5-0.6	670	5.7	-	-	-	-	-
TP48	1.5-1.6	880	5.9	-	-	-	-	-
TP49	0.5-0.6	85	5.3	-	-	-	-	-

TABLE 3

Test Pit	Depth (m)	EC µS/cm	pH	ESP			Sulphate mg/kg	Chloride mg/kg
				mg/kg	meq/100g	%		
TP49	1.0-1.1	280	6.9	-	-	-	-	-
TP50	0.5-0.6	96	4.9	-	-	-	-	-
TP50	1.0-1.1	120	5	-	-	-	82	84
TP51	0.0-0.1	57	6	-	-	-	-	-
TP51	1.0-1.1	400	5.2	-	-	-	-	-
TP52	0.5-0.6	720	6	540	2.4	12.4	-	-
TP52	1.5-1.6	1000	5.7	-	-	-	-	-
TP53	1.0-1.1	790	6.8	-	-	-	-	-
TP53	2.0-2.1	740	6.8	-	-	-	-	-
TP54	0.5-0.6	140	5.8	-	-	-	-	-
TP54	1.5-1.6	150	5.8	-	-	-	-	-
TP55	0.5-0.6	140	5.3	-	-	-	-	-
TP55	1.0-1.1	350	5	-	-	-	-	-
TP56	1.0-1.1	1000	5.2	-	-	-	-	-
TP56	2.5-2.6	480	8.1	330	1.4	19.7	-	-
TP57	0.0-0.1	31	6.2	-	-	-	-	-
TP57	1.0-1.1	400	4.9	-	-	-	-	-
TP58	0.5-0.6	66	5.2	-	-	-	-	-
TP58	1.5-1.6	110	5.1	-	-	-	39	110
TP59	0.5-0.6	38	5.5	-	-	-	-	-
TP59	1.0-1.1	45	5.1	-	-	-	-	-
TP60	0.0-0.1	72	5.7	-	-	-	-	-
TP60	1.0-1.1	57	5.1	-	-	-	-	-
TP61	1.0-1.1	170	4.8	-	-	-	-	-
TP61	2.0-2.1	510	5.6	-	-	-	-	-
TP62	0.0-0.1	19	6.7	11	0.05	1.4	6.3	2.3
TP62	1.0-1.1	100	5	-	-	-	-	-
TP63	0.0-0.1	9	6.5	-	-	-	-	-
TP63	0.5-0.6	39	5.8	-	-	-	-	-
TP64	0.5-0.6	200	5.5	-	-	-	-	-
TP64	1.0-1.1	370	4.9	-	-	-	-	-
TP65	0.0-0.1	46	5.6	-	-	-	-	-
TP65	1.0-1.1	56	5.4	-	-	-	-	-
TP66	0.0-0.1	13	6.1	-	-	-	-	-
TP66	0.5-0.6	54	6	-	-	-	-	-
TP67	0.0-0.1	76	5.2	-	-	-	-	-
TP67	0.7-0.8	61	5.3	-	-	-	66	29
TP68	0.5-0.6	46	5.7	-	-	-	-	-
TP68	1.4-1.5	26	6.1	310	1.4	17.2	-	-
TP69	0.0-0.1	99	5.3	-	-	-	-	-
TP69	0.7-0.8	42	5.6	-	-	-	-	-
TP70	0.0-0.1	12	5.7	-	-	-	-	-
TP70	0.5-0.6	13	5.8	-	-	-	-	-

13174/1-AA
Boundary Road, Box Hill North

TABLE 3

Test Pit	Depth (m)	EC µS/cm	pH	ESP			Sulphate mg/kg	Chloride mg/kg
				mg/kg	meq/100g	%		
TP71	0.5-0.6	100	5.5	-	-	-	-	-
TP71	1.5-1.6	170	5.2	-	-	-	-	-
TP72	0.0-0.1	17	5.9	-	-	-	-	-
TP72	0.8-0.9	110	5.5	-	-	-	-	-
TP73	0.0-0.1	17	5.8	-	-	-	-	-
TP73	0.5-0.6	42	5.9	-	-	-	-	-
TP74	0.5-0.6	70	5.5	160	0.68	12.8	-	-
TP74	1.5-1.6	160	5.1	-	-	-	-	-
TP75	0.5-0.6	270	5.2	-	-	-	-	-
TP75	1.5-1.6	260	6.5	-	-	-	-	-
TP76	0.0-0.1	32	6.4	-	-	-	<5	1.8
TP76	1.0-1.1	120	5.1	-	-	-	-	-
TP77	1.0-1.1	570	5.4	-	-	-	-	-
TP77	2.0-2.1	510	5.7	-	-	-	-	-
TP78	0.5-0.6	110	5.9	-	-	-	-	-
TP78	1.0-1.1	120	5.1	-	-	-	-	-
TP79	0.5-0.6	760	4.8	-	-	-	-	-
TP79	1.5-1.6	330	5.5	-	-	-	-	-
TP80	1.0-1.1	470	5.2	-	-	-	-	-
TP80	2.0-2.1	400	7.4	860	3.8	35.1	-	-
TP81	0.0-0.1	11	5.9	-	-	-	-	-
TP81	0.4-0.5	35	5.8	-	-	-	-	-
TP82	0.0-0.1	15	5.6	-	-	-	-	-
TP82	1.0-1.1	49	5.3	-	-	-	-	-
TP83	0.5-0.6	52	6.1	-	-	-	64	10
TP83	1.0-1.1	83	5.4	-	-	-	-	-
TP84	0.0-0.1	11	6	-	-	-	-	-
TP84	0.5-0.6	38	6	-	-	-	-	-
TP85	0.0-0.1	19	6.5	-	-	-	-	-
TP85	0.7-0.8	50	5.3	-	-	-	-	-
TP86	0.0-0.1	55	5.9	-	-	-	-	-
TP86	0.5-0.6	61	5.9	-	-	-	-	-
TP87	0.0-0.1	51	5.6	-	-	-	-	-
TP87	0.5-0.6	46	5.6	-	-	-	-	-
TP88	0.0-0.1	16	5.5	10	0.04	3.7	-	-
TP88	1.0-1.1	36	6.2	-	-	-	-	-
TP90	1.0-1.1	410	5	-	-	-	-	-
TP90	2.0-2.1	190	6.7	-	-	-	-	-
TP91	1.0-1.1	19	6.2	-	-	-	-	-
TP91	2.0-2.1	100	5.4	-	-	-	-	-
TP92	0.5-0.6	590	5	-	-	-	-	-
TP92	1.0-1.1	480	5.9	-	-	-	110	610
TP93	0.5-0.6	76	5.3	-	-	-	-	-

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ZA.IJ.sf/26.08.2014

TABLE 3

Test Pit	Depth (m)	EC µS/cm	pH	ESP			Sulphate mg/kg	Chloride mg/kg
				mg/kg	meq/100g	%		
TP93	1.5-1.6	200	5.1	610	2.6	38.2	-	-
TP94	1.0-1.1	630	5	-	-	-	-	-
TP94	2.0-2.1	590	4.9	-	-	-	-	-
TP95	0.5-0.6	82	5.8	-	-	-	-	-
TP95	1.5-1.6	490	5.1	-	-	-	-	-
TP96	1.0-1.1	210	5	-	-	-	-	-
TP96	2.0-2.1	460	4.8	-	-	-	-	-
TP97	0.5-0.6	75	6.1	-	-	-	-	-
TP97	1.0-1.1	38	5.4	-	-	-	36	12
TP98	0.0-0.1	37	6	-	-	-	-	-
TP98	0.5-0.6	44	5.6	-	-	-	-	-
TP99	0.0-0.1	20	6.1	-	-	-	-	-
TP99	0.5-0.6	49	5.8	-	-	-	-	-
TP100	0.5-0.6	46	5.3	-	-	-	-	-
TP100	1.0-1.1	52	5.4	220	0.94	19.3	-	-
TP101	0.5-0.6	170	5.3	-	-	-	-	-
TP101	1.5-1.6	610	4.5	-	-	-	-	-
TP102	1.0-1.1	680	5.7	-	-	-	-	-
TP102	2.0-2.1	760	5.3	-	-	-	-	-
TP103	1.0-1.1	920	4.3	-	-	-	-	-
TP103	2.0-2.1	780	4.6	-	-	-	220	730

7.0 DISCUSSION AND RECOMMENDATIONS

7.1 Geotechnical Model

Test pits and boreholes conducted at the site generally revealed about 100mm to 300mm thick topsoil overlying, natural soils comprising silty/sandy clays and silty/clayey sands overlying, shale and sandstone bedrock. Depths to bedrock ranged from 0.5m to 4.5m.

Based on the test pits and boreholes the following geotechnical model was developed:

TABLE 4

Top Depth Range	Material Description
0.0	Topsoil
0.1m to 0.3m	Silty/Sandy Clays; Silty/Clayey Sands
0.5m to 4.5m	Shale/Sandstone Bedrock

It should be noted that fill was encountered in only four (4) test pits TP19, 25, 29 and 35. The fill was encountered below topsoil and extended to depths ranging from 0.7m to 2m.

With the exception of seepage at various depths in test pits TP1, 5, 19 and 45 actual groundwater was not encountered in the test pits and boreholes conducted across the site.

7.2 Slope Stability

Site factors such as slope angles, depth of insitu soils, strength of sub-surface material and concentrations of water, generally govern the slope stability of a site. The Australian Geomechanics Society (AGS) recommends that the landslide risk of a site is assessed on the basis of the likelihood of a landslide event and the consequences of that event. The guidelines on qualitative measures for the likelihood and consequence of landslides and assumed level of risk are provided by AGS. Applying the AGS guidelines, the site for the proposed development may be assessed as follows.

As mentioned earlier topography of the site is generally undulating and gently slopes towards the creeks. Inspection did not indicate any signs of slope failure.

Qualitative Measures of Likelihood: It is our assessment that the event of a landslide within the sites might occur under very adverse circumstances over the design life (Annual Probability $\approx 10^{-4}$), i.e: it is "Unlikely".

Qualitative Measures of Consequences to Property: It is our assessment that the consequences of landslides within the site to properties would be "Minor", causing limited damage to part of structures or part of the site requiring some reinstatement/stabilisation work.

Qualitative Risk Analysis: Based on the above Qualitative Measures, the sites for the proposed development are assessed to have a "Low" Risk of slope instability. The abstract of definitions of risk levels provided by AGS (Reference 2) is as follows:

TABLE 5

Risk Level		**Implication**
VH	Very High Risk	Extensive detailed investigation and research, planning and implementation of treatment options, essential to reduce risk to acceptable levels; may be too expensive and not practical.
H	High Risk	Detailed investigation, planning and implementation of treatment options required to reduce risk to acceptable levels.
M	Moderate Risk	Tolerable, provided a treatment plan is implemented to maintain or reduce risks. May be accepted. May require investigation and planning of treatment options.
L	Low Risk	Usually accepted. Treatment requirements and responsibility to be defined to maintain or reduce risk.
VL	Very Low Risk	Acceptable. Manage by normal slope maintenance procedures.

It is our assessment that the site is suitable for the proposed development, from a slope stability point of view. It is important that excavation, formation of batters and retaining structures should be carried out in accordance with good engineering and construction practices.

7.3 Excavation Conditions

No information regarding the cut and fill at the site is available.

Based on the test pits and boreholes, sub-surface materials at the site generally consist of 100mm to 300mm thick topsoil overlying, natural soils comprising silty/sandy clays and silty/clayey sands overlying, shale and sandstone bedrock at depths ranging from 0.5m to 4.5m.

We consider that overburden soils and extremely low to low strength shale/sandstone bedrock could be excavated using conventional earthmoving equipment such as excavators and dozers. Occasional rock hammering in ironstone might be required. Excavation in medium to high strength shale/sandstone bedrock will require larger equipment such as Caterpillar D9 or D10 attached with rippers, rock hammer or saw cutter. Depths to extremely low to low strength and medium to high strength bedrock encountered in the boreholes are shown below.

BH	Top RL	Terminated Depth (m)	Depth to Extremely low to low Strength Bedrock (m)	Depth to Medium to High Strength Bedrock (m)
104	65.300	6.2	1.5	3.0
105	52.905	4.3	1.5	3.0
106	45.076	4.0	2.0	3.0
107	45.500	2.7	1.8	2.7
108	42.500	6.0	4.5	5.0
109	40.112	6.0	2.0	3.1
110	33.192	6.0	3.0	3.0
111	35.162	5.6	2.0	2.5
112	39.000	5.9	0.5	1.1
113	45.352	5.6	1.5	2.5
114	43.835	5.65	2.0	3.0
115	41.500	5.8	0.5	2.5
116	36.902	5.3	1.5	2.5
117	45.149	5.4	1.5	2.5
118	41.044	2.0	1.3	2.0
119	45.085	1.6	1.2	1.6

Selection of excavation equipment should be based on site access, strength of sub-surface materials and the likely impact of vibration to structures in the vicinity of the excavation (partially retained original residence on the north of the site, neighbouring buildings, houses, roads, etc.). Contractors should make their own judgement when tendering for excavation works, using the engineering logs and core photographs attached to this report and experience in such circumstances.

Acceptable vibration is based on the nature and state of neighbouring structures, which will have to be established by a dilapidation survey. As a general guide, the acceptable maximum peak particle velocity (PPV) in a residential area would range from about 5mm/s to 10mm/s.

Groundwater was not encountered to the termination depths of the test pits and to auger refusal depths in the boreholes. However, some seepage was encountered at various depths in the test pits TP1, 5, 19 and 45. We do not anticipate significant groundwater inflow during excavation. Groundwater inflow during excavation, if any, could be adequately managed using a conventional pump and sump system. However, trafficability problems might arise locally during wet weather or if water is allowed to pond at the site. A layer of recycled gravel can be used to provide good working platform.

7.4 Site Preparation

The proposed development works might require fill placement to achieve designed grades. The following procedures are recommended for placement of controlled fill, where required.

- Strip existing topsoil and stockpile separately for possible future use (see Section 7.5 for further recommendations).
- Undertake proof rolling (using an 8 to 10 tonnes roller) of the exposed natural soils to detect potentially weak spots (ground heave). Excavate areas of localised heaving to a depth of about 300mm and replace with granular fill, compacted as described below.
- Undertake proof rolling of soft spots backfilled with granular fill, as described above. If the backfilled area shows movement during proof rolling, this office should be contacted for further recommendations.
- Place suitable fill materials on proof rolled residual soils. The fill should be placed in horizontal layers of 200mm to 250mm maximum loose thickness (depending on the size of equipment) and compacted to a Minimum Dry Density Ratio (MDDR) of 98% Standard, at moisture content within 2% of Optimum Moisture Content (OMC). The top 300mm of fill forming pavement subgrade should be compacted to at least 100% Standard.
- Controlled fill should preferably comprise non-reactive fill (e.g. crushed sandstone) with a maximum particle size not exceeding 75mm, or low plasticity clay. Natural soils and bedrock obtained from excavations within the site may be used in controlled fill after removal of unsuitable materials, if any, crushing to sizes finer than 75mm, proper mixing and moisture conditioning.
- Fill placement should be supervised to ensure that material quality, layer thickness, testing frequency and compaction criteria conform to the specifications. We recommend "Level 2" or better supervision, in accordance with AS3798-2007 – "Guidelines on Earthworks for Commercial and Residential Developments" (Reference 3). It should be noted that a Geotechnical Inspection and Testing Authority will generally provide certification on the quality of entire compacted fill only if Level 1 supervision and testing is carried out.

7.5 Reuse of Existing Materials

It is our assessment that natural clayey soils and bedrock obtained from excavation in cut areas can be reused in fill areas as controlled and/or general fill. However, moisture conditioning and removal of deleterious material, if any, might be required prior to fill.

Boreholes and test pits showed that the thickness of topsoil across the site varied from 100mm to 300mm with an average thickness of 225mm.

Topsoil can be blended with natural clays and can be reused as recommended below:

- Separate the top 50mm of the topsoil consisting of highly organic matter and mix with natural clays in the ratio of 1:10. This material can be used at deeper depths (>1.5m) in controlled fill areas. Or can be used at any depths in general fill areas (not receiving any structural loads).
- The bottom layer of the topsoil (i.e. below the top 50mm) which generally has less organic matter can be mixed with natural clays in the ratio of 1:4 and can be used in controlled fill area at depths below 1.5m.

- If it is time consuming or uneconomical to separate the top 50mm of the highly organic material from the rest of the topsoil then the topsoil can be mixed with natural clays in the ratio of 1:5 and can be used at depths below 1.5m.

7.6 Safe Batters & Retaining Structures

Cut and fill during and after site excavation should be battered for stability or retained by engineered retaining structures. Where battered slopes in overburden soils and shale/sandstone bedrock are possible we recommend the following safe batters.

TABLE 6

Material Description	Temporary	Permanent
Fill and Natural Clays	1V:1H	1V:2.5H
Extremely weathered and extremely low to low strength shale/sandstone bedrock	1V:1H	1V:2.0H
Slightly weathered and medium to high strength shale/sandstone bedrock	Sub-vertical	Sub-vertical

The above batter slopes are recommended, providing;

- Cut and fill slopes are at sufficient distance (at least 2m) from structures in the vicinity of the site.
- The excavation faces are protected appropriately from erosion.
- Adequate surface and sub-surface drainage is provided.
- Excavation faces are monitored regularly to observe any signs of movements so that appropriate remedial actions can be taken immediately.
- Collapse of excavation faces if it occurs is unlikely to pose a threat to the safety of people and structures in the vicinity.

Sub-vertical excavations in medium to high strength shale bedrock will have a very low risk of instability. However, some local rock bolting and shotcreting might be required depending on the relative orientation of rock discontinuities (bedding partings, fractures and joint systems) and excavation faces. We recommend that excavation faces are inspected by an experienced geotechnical engineer or engineering geologist at 1.5m depth intervals to ensure they are stable. If any instability is noted then remedial measures should be carried out as deemed necessary by the engineer.

Earth pressure for design for retaining wall could be calculated as recommended below.

Earth pressure distribution for non-anchored (cantilever) retaining walls is assumed triangular and estimated as follows;

$$p_h = \gamma k H$$

Where,

p_h = Horizontal active pressure (kN/m^2)
γ = Total density of materials to be retained (kN/m^3)
k = Coefficient of earth pressure (k_a or k_o)
H = Retained height (m)

For anchored retaining walls earth pressure can be assumed trapezoidal and estimated as 5H kPa, where H is the retained height in metres. The pressure distribution should be nil at the surface, increasing to 5H at a depth of 0.25H and remaining constant to 0.75H, then decreasing to nil at the base of the excavation.

For design of flexible retaining structures where some lateral movement is acceptable, an active earth pressure coefficient is recommended. If it is critical to limit the horizontal deformation of a retaining structure, use of an earth pressure coefficient at rest should be considered. Recommended parameters for the design of retaining structures are provided in the following Table 7.

TABLE 7

Founding Material	Unit Weight (kN/m^3)	Active Earth Pressure Coefficient	Passive Earth Pressure Coefficient*	At-Rest Earth Pressure Coefficient
Fill and Natural Clays	18	0.35	2.8	0.52
Extremely weathered and extremely low to low strength shale/sandstone bedrock	20	0.3	350kPa	0.45
Slightly weathered and medium to high strength shale/sandstone bedrock	21	-	1000kPa	-

** Appropriate safety factors should be applied for the recommended passive pressure values*

These coefficients are based on the assumption that ground level behind the retaining structure is horizontal and the retained material is effectively drained. If retained materials are subjected to groundwater pressure and other surcharge loads (structures and traffic in the vicinity of the site), additional earth pressures resulting from groundwater and surcharge loads should also be allowed for in design of retaining structures.

The design of any retaining structure should also be checked for bearing capacity, overturning, sliding and overall stability of the slope.

7.7 Site Classification

It is our assessment that the site is suitable for construction of residential buildings after completion of site preparation works.

At completion of site preparation (cut and fill) for proposed development works, when building platforms and footing subgrade are ready for construction of residences, sub-surface profiles within the residential lots are anticipated to comprise either of the following:

- Controlled fill overlying, natural clays overlying shale/sandstone bedrock; or
- Natural clays overlying shale/sandstone bedrock; or
- Shale/sandstone bedrock

The magnitude of ground surface movement due to moisture variation, which is required for site classification, depends on shrink-swell index values and thickness of soils underlying a building slab. Based on the results of the investigation, natural clayey soils are generally medium to high plasticity with pockets of low plasticity clays. Hence, the natural soils and controlled fill are likely to be moderately to highly reactive. Shale/sandstone bedrock would generally be non-reactive to slightly reactive.

Based on anticipated thickness of soils (including controlled fill and natural clays) and estimated shrink-swell movements, site classifications for future residential lots across the site are expected to be Class "M" (Moderately reactive) or "H1" (Highly reactive), in accordance with AS2870-2011 "Residential slabs and footings". In areas where shale/sandstone bedrock will be exposed the residential lots would generally be classified as Class "A" (Non-reactive) or "S" (Slightly reactive). In areas where natural clays are exposed the site classification is expected to be Class "M" (Moderately Reactive). In fill areas (clayey soils) it is expected that the residential lots will be classified as Class "M" and Class "H1". However, most of the lots are expected to be classified as Class "M".

Definitions of site classes provided in AS2870-2011 (Reference 4) are reproduced below.

TABLE 8

Site Classification	Foundation Condition	Ground Surface Movement (mm)
Class A	Most sand and rock sites with little or no ground movement from moisture changes	Not Applicable
Class S	Slightly reactive clay sites, which may experience with only slight ground movement from moisture changes	Less than 20
Class M	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes	20 to 40
Class H1	Highly reactive clay sites, which may experience high ground movement from moisture changes	40 to 60
Class H2	Highly reactive clay sites, which may experience very high ground movement from moisture changes	60 to 75

Based on the existing sub-surface conditions and laboratory tests results it is expected that the residential lots will mostly be classified as Class "M".

7.8 Floor Slabs & Footings

Floor slabs for future residential buildings may be designed as ground bearing or suspended slabs supported by footings. If ground bearing floor slabs are preferred, slabs appropriate for site classes may be designed in accordance with AS2870-2011.

Site classification in accordance with AS2870-2011 is only applicable for the design of footing systems for a single dwelling, house, townhouse or similar structure that would be detached or separated by a party wall or common wall. AS2870 is not suitable for dwellings that are situated vertically above or below another dwelling, including buildings classified as Class 1 and Class 10a in the Building Code of Australia (BCA). Therefore, a geotechnical investigation will be required for other dwellings that would be classified in accordance with the BCA.

Foundation materials across the site might vary from controlled fill to natural clayey soils to bedrock, depending on the location of a building with regard to cut and fill profile. Therefore, assessment of foundation materials and allowable bearing pressure for a specific building should be reassessed after completion of site preparation works and during footing construction. For preliminary design, the following is recommended:

TABLE 9

Founding Material	Allowable End Bearing Capacity (kPa)	Shaft Adhesion (kPa)
Controlled Fill	100	-
Stiff Natural Clays	125	-
Very Stiff to Hard Clays	150	-
Low Strength Shale/Sandstone	700	50*
Medium to High Strength Shale/Sandstone	3000	300*

** Bored Piers only*

8.0 PAVEMENTS

8.1 Subgrade CBR Design

The laboratory results indicated 4-day Soaked CBR values ranging from 3.5% and 8% with an average of 5.3%. Depending on the time of construction field moisture content may vary within wide range i.e. from 2.1% Wet to 5% Dry of OMC. Based on the CBR tests results and considering that variation in subgrade conditions could be encountered across the site, a design CBR of 4% can be used for preliminary pavement thickness design..

8.2 Traffic Design Loading

Based on The Hills Shire Council's "Design Guidelines Subdivision/Development (2011)" traffic loading values for the proposed development are expected as below:

Road Type	Design Traffic Loading (ESA)
Cul-de-sacs/Private Community Title	2×10^5
Access/Local	5×10^5
Collector	1×10^6

ESA : Equivalent Standard Axles

8.3 Pavement Composition

Based on the above traffic loadings and a design CBR of 4% and as per Reference 5, we recommend the following preliminary pavement compositions.

TABLE 10

Traffic Loading (ESA)	Design CBR (%)	Asphaltic Concrete (AC10)* (mm)	Basecourse (mm)	Sub-basecourse (mm)	Total Thickness (mm)
2×10^5	4.0	50	150	210	410
5×10^5	4.0	50	150	260	460
1×10^6	4.0	50	150	300	500

** Over two coat hot bitumen seal*

The pavement depths are only valid if the subgrade and pavement materials are compacted to The Hills Shire Council specifications or the following Minimum Dry Density Ratios.

Basecourse	98% Modified
Sub-basecourse	95% Modified
Subgrade	100% Standard

9.0 ERODIBILITY ASSESSMENT

Erosion is the detachment and movement of soil materials. Depending on the local landscape and weather conditions, erosion could be very slow or very rapid. Susceptibility of soils to erosion depends on dispersivity (and sodicity) of soils. Soil dispersivity is generally assessed by conducting chemical tests such as Exchangeable Sodium Percentage (ESP), Sodium Absorption Ratio (SAR) and physical tests such as Emerson Class, Dispersion Percentage. It should however be noted that assessment of soil dispersibility based on these methods might differ from each other.

For the proposed work only ESP for representative soil samples were determined. Soils with ESP values of 5% or more are considered sodic and those with ESP more than 15% are considered highly sodic (Reference 6). Sodic soils are susceptible to excessive erosion.

ESP values for thirty one representative soil samples are presented in Table 3 and indicate ESP values of 1.4% to 41.6%. Four of these tested samples have ESP less than 5% and twenty seven samples have ESP values of more than 5%, in fact twenty three samples have ESP values of more than 15%. Therefore, it is our assessment that the soils across the site are dispersive and susceptible to excessive erosion.

10.0 SALINITY ASSESSMENT

Salinity refers to the presence of excess salt in the environment, either in soil or water. Salinity is a serious problem for any development due to the many environmental, economic and social impacts. Soil salinity is generally assessed by measuring Electrical Conductivity (EC) of a soil sample made up of 1:5 soil water suspension. Thus, determined Electrical Conductivity (EC) is multiplied by a factor varying from 6 to 23, based on the texture of the soil sample, to obtain Corrected Electrical Conductivity designated as ECe (Reference 7). Alternatively, ECe may be directly measured in soil saturation extracts. Soils are classified as saline if ECe of the saturated extracts exceed 4.0dS/m. The criteria for assessment of soil salinity classes are shown in the following Table 10 (Reference 7).

TABLE 10

Classification	EC_e (dS/m)	Comments
Non-saline	<2	Salinity effects mostly negligible
Slightly saline	2 – 4	Yields of very sensitive crops may be affected
Moderately saline	4 – 8	Yields of many crops affected
Very saline	8 – 16	Only tolerant crops yield satisfactorily
Highly saline	>16	Only a few tolerant crops yield satisfactorily

Electrical Conductivity (EC) values for two hundred and eighty six (286) representative soil samples recovered from across the site are summarised in Table 3. For the nature of soils encountered across the site, a multiplying factor of 8 is considered to be appropriate. Therefore, Corrected Electrical Conductivity (ECe) for the soils across the site is anticipated to vary from 0.07 to 12.8dS/m. Furthermore, the test results also indicate the following.

- Out of 286 samples tested, a total of 197 samples show ECe values of less than 4.0dS/m and only 8 samples show ECe values of more than 8.0dS/m.
- All 170 samples, except 6 samples, collected from depths less than 1.0m show ECe values of less than 4.0dS/m. Six samples show ECe values between 4.0 and 8.0dS/m.
- Although some samples from depths exceeding 1.0m show ECe values of less than 4.0dS/m. Most of the samples from depths exceeding 1.0m show ECe values of more than 4.0dS/m.

Therefore, it is our assessment that the soils likely to be disturbed or excavated during the proposed development works are non-saline up to depth of about 1.0m and saline at depths exceeding 1.0m. Therefore, earthworks for the proposed development should be carried out in accordance with a saline soil management plan, only if earthworks involve excavation and/or disturbance of soils at depths exceeding 1.0m.

This salinity assessment was carried out in accordance with the Environment Protection Authority (EPA) guidelines on investigation and management of salinity. These guidelines are detailed in "Site Investigations for Urban Salinity" and were prepared by the then Department of Land & Water Conservation in 2002. The publication refers to the following:

- AS3600: Concrete Structures.
- AS2159: Piling – Design and Installation.
- AS2870: Residential slabs and footings.

Concrete structures constructed in saline soils will require increased concrete strength, which is proportioned to the increase in soil salinity (Reference 4). In addition, the concrete cover and curing period should be increased depending on the degree of salinity of the soil.

11.0 AGGRESSIVITY ASSESSMENT

Aqueous solution of chlorides causes corrosion of iron and steel, including steel reinforcement in concrete. Corrosion damage by chlorides is only relevant to iron and steel. High acidity and soils with high sulphates and magnesium affect the integrity of concrete structures buried in the soil. Concrete structures constructed in aggressive soils will require increased concrete strength proportional to the increased in soil aggressivity (Reference 4). In addition, the concrete cover and curing period should be increased depending on the degree of aggressivity of the soil.

The aggressivity classifications of soil and groundwater applicable to iron and steel, in accordance with Australian Standard AS2159 (Reference 8), are given below in Table 11.

TABLE 11

Chloride		pH	Resistivity (ohm cm)	Soil Condition A*	Soil Condition B#
In Soil (%)	In Water (ppm)				
<0.5	<1000	>5.0	>5000	Non-aggressive	Non-aggressive
0.5-2.0	1000-10000	4.0-5.0	2000-5000	Mild	Non-aggressive
2.0-5.0	10000-20000	3.0-4.0	1000-2000	Moderate	Mild
>5.0	>20000	<3.0	<1000	Severe	Moderate

*Soil Condition A = high permeability soils (e.g. sands and gravels) which are below groundwater
#Soil Condition B = low permeability soils (e.g. silts and clays) and all soils above groundwater

The aggressivity classifications of soil and groundwater applicable to concrete, in accordance with Reference 8 are given below in Table 12.

TABLE 12

Sulphate expressed as SO_3		pH	Chloride in Water (ppm)	Soil Condition A	Soil Condition B
In Soil (%)	In Groundwater (ppm)				
<0.2	<300	>6.5	<2000	Non-aggressive	Non-aggressive
0.2-0.5	300-1000	5.0-6.0	2000-6000	Mild	Non-aggressive
0.5-1.0	1000-2500	4.5-5.0	6000-12000	Moderate	Mild
1.0-2.0	2500-500	4.0-4.5	12000-30000	Severe	Moderate
>2.0	>5000	<4.0	>30000	Very Severe	Severe

Approximately 100ppm of SO_4 = 80ppm of SO_3

Results of aggressivity tests, which include determination of pH for 286 samples and chloride and sulphate contents for 24 samples, are presented in Table 3. The soils likely to be encountered during the proposed development works are assessed to be clayey in nature with low permeability. Therefore, results of aggressivity tests summarised in Table 3 indicate the following:

- The pH value of soil varies from 4.3 to 8.2, indicating that the site is non-aggressive to steel but mildly aggressive to concrete.
- Chloride content in soil varies from 1.7ppm to 1200.0ppm, indicating the site is non-aggressive to both steel and concrete.
- Sulphate content in soil varies from 5.0ppm to 380.0 ppm, indicating the site is non-aggressive to concrete.

Based on the laboratory test results and the assumption that soils are predominantly clayey, the soils across the site are assessed to be non-aggressive towards steel and mildly aggressive towards concrete. Therefore, we recommend use of construction materials, such as concrete and steel that are appropriate to assessed aggressivity.

12.0 SOIL MANAGEMENT PLAN

Soils encountered across the site are susceptible to erosion. Although, soils to depth of 1.0m are assessed to be non-saline to slightly saline, soils at depths exceeding 1.0m are assessed to be moderately saline to very saline. This means that soil erodibility is a major concern for the proposed development and soil salinity will be of concern if proposed development involves disturbance or excavation of soils at depths exceeding 1.0m.

Therefore, we recommend that the soil management plan should minimise impacts of erosion and soil salinity. The following should be considered in developing a Soil Management Plan;

- Minimise erosion and sediment loss before, during and after construction.
- Minimise water pollution due to erosion, siltation and sedimentation.
- Reduce and manage salinity within the site so that impacts on future structures (including buildings, roads etc.) are minimised and acceptable.

We recommended the following as part of the Soil Management Plan during earthworks to manage impacts from erosive and saline soils.

- We anticipate earthworks for the proposed development to involve cut and fill operations for construction of building platform, preparation of road subgrades and installation of services. However, best use of the existing topography should be developed in order to minimise cut and fill operations.
- Construct a V-drain behind the crest of all slopes to divert water away from the slope face.
- Ensure that earthworks and construction activities do not affect the natural flow of groundwater. Where groundwater is intercepted during development works/excavation, the flow should be diverted to stormwater drains or creeks by providing appropriate surface and sub-surface drainage. We do not consider that proposed earthworks will affect the natural flow of groundwater. However, NSW Office of Water should be contacted if groundwater is intercepted before any water is drained into the stormwater. The EPA might need to be contacted regarding any diversion to stormwater drains.
- Finished ground surface in each lot should be provided with adequate fall to the street to allow water run-off and prevent water ponding, waterlogging and infiltration of rainwater.
- Erosion and Sediment Control Plans must be developed and implemented by the earthworks contractors, in accordance with recommendations provided by the NSW Department of Housing (Reference 9). All sediment and erosion controls proposed by the Erosion and Sediment Control Plan are to be installed prior to commencement of any construction works.
- On cut and fill batters provide a secured turf overlay or shotcreting to guard against erosion.
- Retaining walls for cut and fill slopes, where required, should be provided with adequate and appropriate drainage.
- Utilise native and deep-rooted plants to minimise soil erosion. Where vegetation cover is not adequate to control erosion, improve soil resistance to erosion by stabilising dispersive soils with hydrated lime and gypsum. Exact proportions of lime and gypsum to be used can be determined on the basis of laboratory testing, but for preliminary planning purposes we suggest about 3% to 5% of lime and gypsum.

- Select construction materials and techniques suitable for a mildly aggressive site.
- Reduce groundwater recharge through appropriate land use and land management practices. This can be achieved by minimising deep infiltration by providing well compacted impermeable liners along surfaces of waterways (drains, channels, creeks etc) and maximising vegetation cover, planting of deep rooted trees and use of salt tolerant plants.
- For low lying portions of the site, stormwater drains along roads can be used to control groundwater level. However, to reduce the distance between drains, subsoil drains could also be installed along the property boundaries.
- Soil importation is not allowed unless the imported soil is thoroughly tested for salinity and is assessed as VENM (Virgin Excavated Natural Material) by an Environmental Consultant in accordance with EPA Guidelines. Any imported soil should have a maximum salinity (EC_e) of 4dS/m (non to slightly saline soils) and used in the top 1.5m to minimise the effect of saline soils on buried utilities and footings.
- If required, a post site works salinity assessment to confirm salinity and aggressivity of the completed residential lots can be carried out on completion of all site works.

13.0 LIMITATIONS

The conclusions and recommendations of this report are based on results obtained from a total of one hundred and nineteen test pits and boreholes carried out across the site and laboratory tests on recovered representative soil samples. Although we believe that the sub-surface profile presented in this report is indicative of the general profile across the site, it is possible that the sub-surface profile across the site could differ from that encountered in the test pits. We recommend that this company is contacted for further advice if actual site conditions encountered during construction differ from those presented in this report.

The services performed by Geotechnique in preparing this report were conducted in a manner consistent with the level of quality and skill generally exercised by members of the profession and consulting practice.

To the best of our knowledge, all information obtained and contained in this report is true and accurate. No further investigation has been carried out to authenticate the information.

This report has been prepared for E J Cooper & Son Pty Ltd for the purposes stated within. The Hills Shire Council may rely on the report in making development application determinations. Any reliance on this report by other parties shall be at such parties' sole risk as the report might not contain sufficient information for other purposes.

This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval is provided by Geotechnique.

The information in this report is considered accurate at the time of conducting the field work, in accordance with the current conditions of the site. Any variations to the site form or use beyond this date could nullify the conclusions stated.

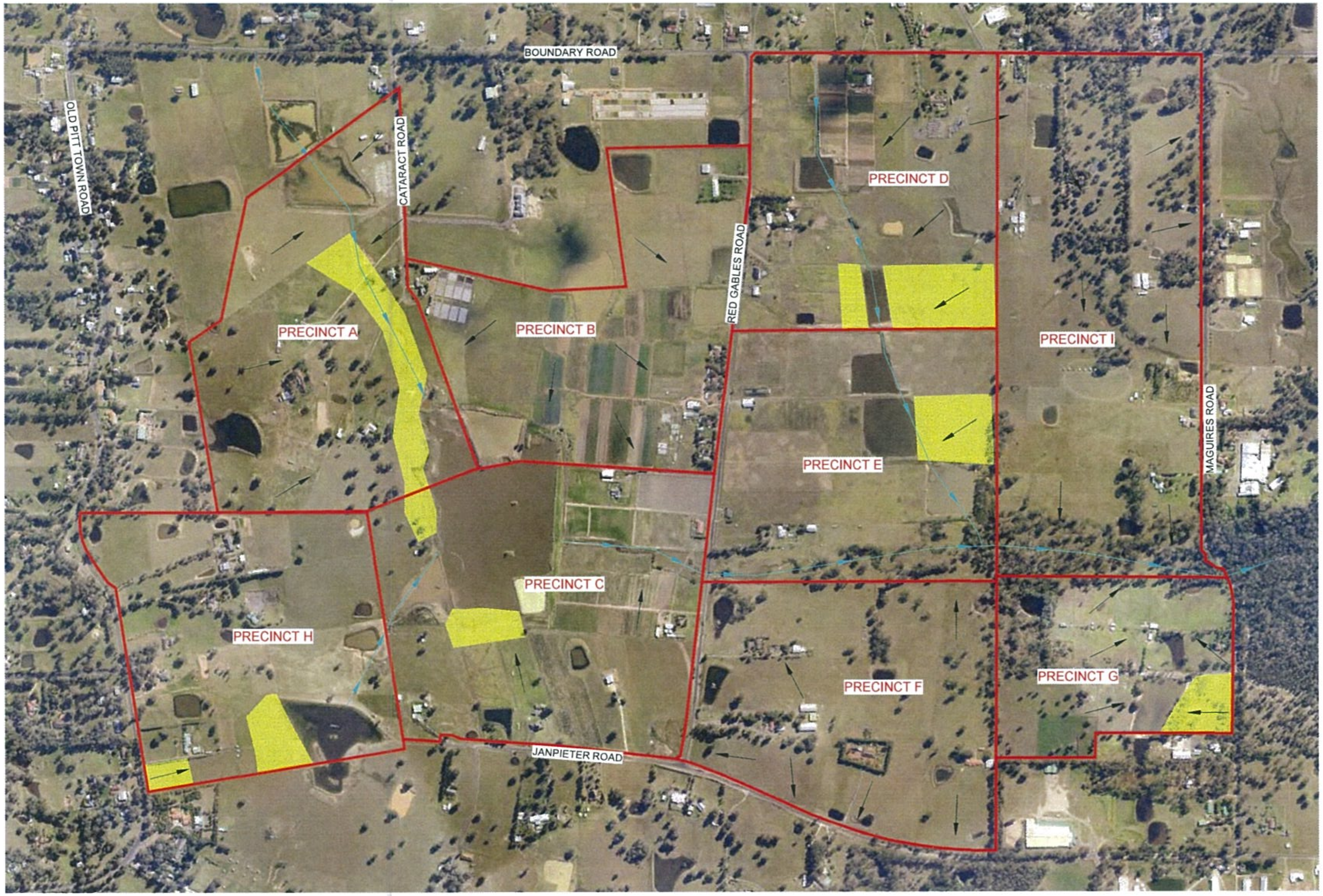
GEOTECHNIQUE PTY LTD

References

1. *Australian Standard, Geotechnical Site Investigation, AS1726-1993.*
2. *Australian Geomechanics - "Practice Note Guidelines for Landslide Risk Management (2007)"*
3. *Australian Standard AS3798-2007 - Guidelines on Earthworks for Commercial and Residential Developments, 2007.*
4. *Australian Standard AS2870-2011 "Residential Slabs and Footings".*
5. *Austroads Guide to Pavement Technology, Part 2: Pavement Structural Design (2008)*
6. *Fell, R., MacGregor, P and Stapledon, D., Geotechnical Engineering of Embankment Dams, 1992.*
7. *Lillicrap, A and McGhie, S., Site Investigation for Urban Salinity, Department of Land and Water Conservation, 2002.*
8. *Standard Australia- AS2159-1995, Piling – Design and Installation, 1995.*
9. *NSW Department of Housing, Managing Urban Stormwater, Soils and Construction, 1998.*

DRAWINGS

Drawing No	*13174/1-AA1*	*Locations of Test Pits & Boreholes*
Drawing No	*13174/1-AA2*	*Possible Saline Areas*



LEGEND

Slope

Flow of Water

Area with Salinity Indicators

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NOTES

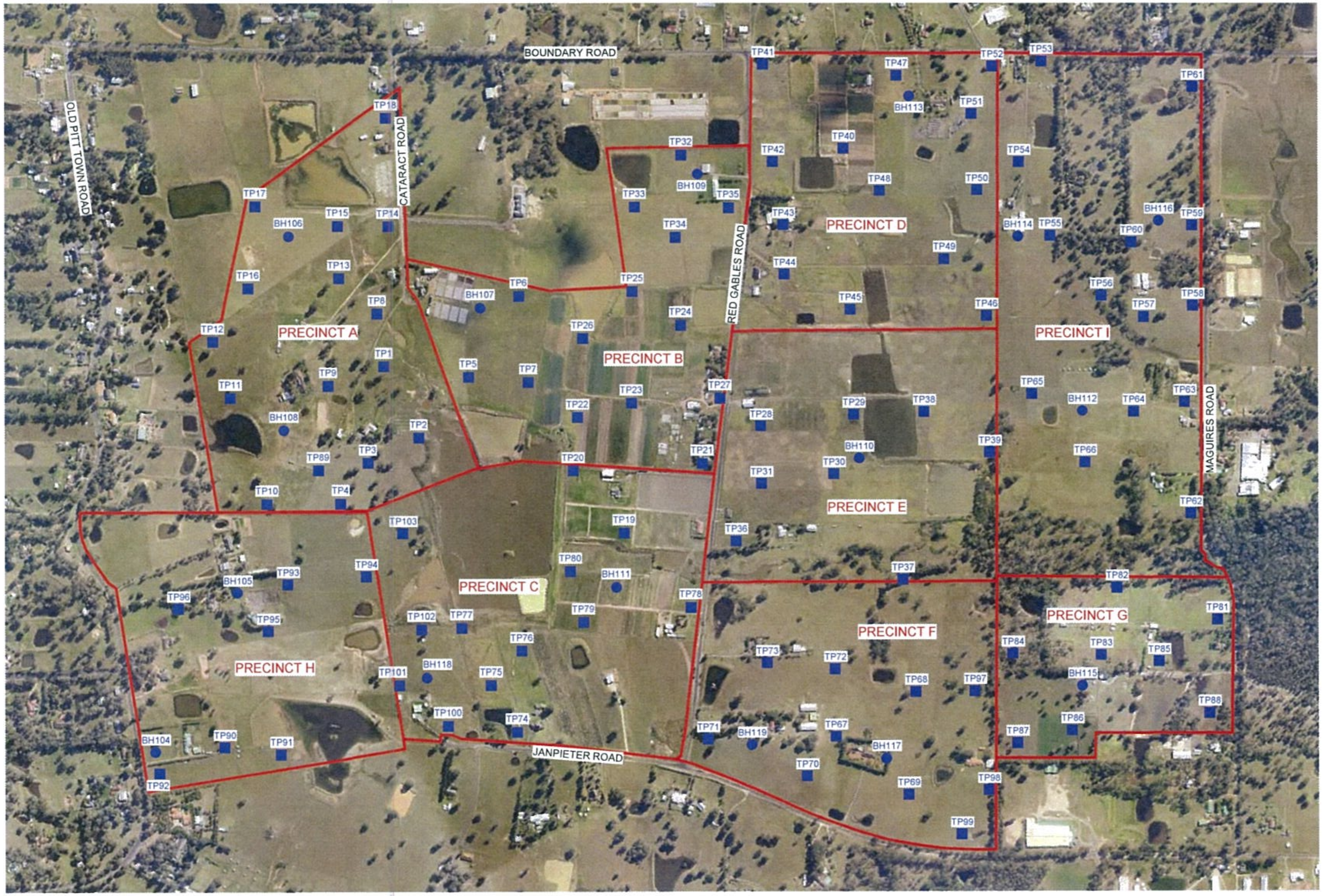
1. This drawing has been produced using a base plan provided by others, to which additional information e.g., test pits, borehole locations or notes have been added. Some or all of the information on this plan may not be relevant at the time of producing this drawing.
2. Site features are shown at approximate locations and are not to scale.

APP Corporation Pty Ltd
Proposed Box Hill North Residential Subdivision
Boundary Road
Box Hill

Possible Saline Areas

Drawing No: 13174/1-AA2
Job No: 13174/1
Drawn By: MH
Date: 25 August 2014
Checked By: AN

File No: 13174-1-A3
Layers: 0, AA2



LEGEND

Test Pit

Borehole

0 100 200 300 400 500m

Scale 1:10000

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2. Site features are shown at approximate locations and are not to scale.

APP Corporation Pty Ltd
Proposed Box Hill North Residential Subdivision
Boundary Road
Box Hill

Test Pit & Borehole Locations

Drawing No: 13174/1-AA1
Job No: 13174/1
Drawn By: MH
Date: 25 August 2014
Checked By: AN

File No: 13174-1-A3
Layers: 0, AA1

Appendix 15

Noise Impact Assessment

BOX HILL NORTH LOCAL WATER CENTRE

REVIEW OF ENVIRONMENTAL FACTORS (ACOUSTICS)

A C O U S T I C S   A N D   A I R

REPORT NO. 14391
VERSION C

MAY 2015

PREPARED FOR

RPS AUSTRALIA ASIA PACIFIC
241 DENISON STREET
BROADMEADOW NSW 2292

WILKINSON MURRAY

DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Final	19 January 2015	George Jenner	John Wassermann
B	Final	22 January 2015	George Jenner /Luke Warren	-
C	Final	26 May 2015	George Jenner	-

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TABLE OF CONTENTS

Page

GLOSSARY OF ACOUSTIC TERMS

1 INTRODUCTION 1

2 SITE & PROJECT DESCRIPTION 1

2.1 Surrounding Land Uses 1

2.2 Description of the Proposed Operation Works 3

2.3 Outline of Construction Works 5

2.3.1 Construction Hours 5

2.3.2 Construction Plant & Equipment 6

2.3.3 Construction Traffic 6

3 EXISTING NOISE ENVIRONMENT 7

4 CONSTRUCTION ROAD TRAFFIC NOISE ASSESSMENT 8

4.1 Relevant Road Traffic Noise Criteria 8

4.2 Road Traffic Noise Assessment 8

5 CONSTRUCTION NOISE & VIBRATION ASSESSMENT 9

5.1 Construction Noise & Vibration Criteria 9

5.1.1 Construction Noise Management Levels (NML's) 9

5.1.2 Site Vibration Criteria 10

5.2 Construction Equipment and Noise Source Levels 11

5.3 Predicted Construction Noise Levels 12

5.4 Construction Noise Mitigation Measures 14

5.5 Community Liaison & General Approaches to Mitigation 15

5.6 Noise & Vibration Management Plan 15

6 OPERATIONAL NOISE ASSESSMENT 16

6.1 Relevant Operational Noise Criteria 16

6.1.1 *Industrial Noise Policy* 16

6.1.2 Project Specific Criteria 17

6.2 Calculation Method 17

6.3 Noise from ISST 18

6.4 Operational Noise Emission Levels – All Equipment (Excluding Back-Up Generator) 19

6.5 Noise Emission Levels – With Back-Up Generator 20

6.6 Tonality of Noise 21

7 CONCLUSION 22

APPENDIX A – Noise Measurement Results

APPENDIX B – Operational Noise Contour

APPENDIX C – Operational Noise Contour with Back-up Generator

GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

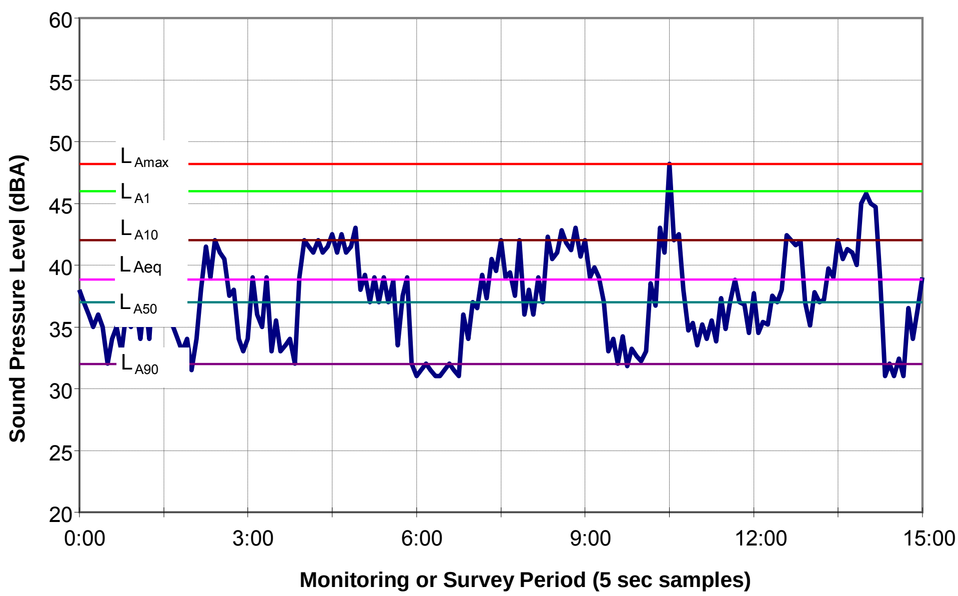
L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



1 INTRODUCTION

Wilkinson Murray Pty Limited has been engaged by RPS Australia Asia Pacific on behalf of Flow Systems Pty Ltd to provide an operational noise assessment of the proposed Local Water Centre (LWC) located at Box Hill North. The LWC is to be located on part of Lot 10 DP 593517 (existing) within the Box Hill North Residential Precinct as shown in Figure 2-1.

The noise assessment evaluates potential noise and vibration impacts associated with the construction and operation of the facility in accordance with the Environmental Protection Authority (EPA) *Interim Construction Noise Guideline (ICNG), Road noise Policy (RNP)* and NSW *Industrial Noise Policy (INP)*.

New residential development requires the co-ordinated provision of reticulated water and sewerage services. The provision of a LWC is the best alternative type of water treatment facility because the off-site impacts are limited; and because it is scalable and allows supply to increase in line with the anticipated residential development and the volume of waste to be treated. The Box Hill North North LWC also makes a significant contribution to sustainability through the provision of recycled water back to the residential area.

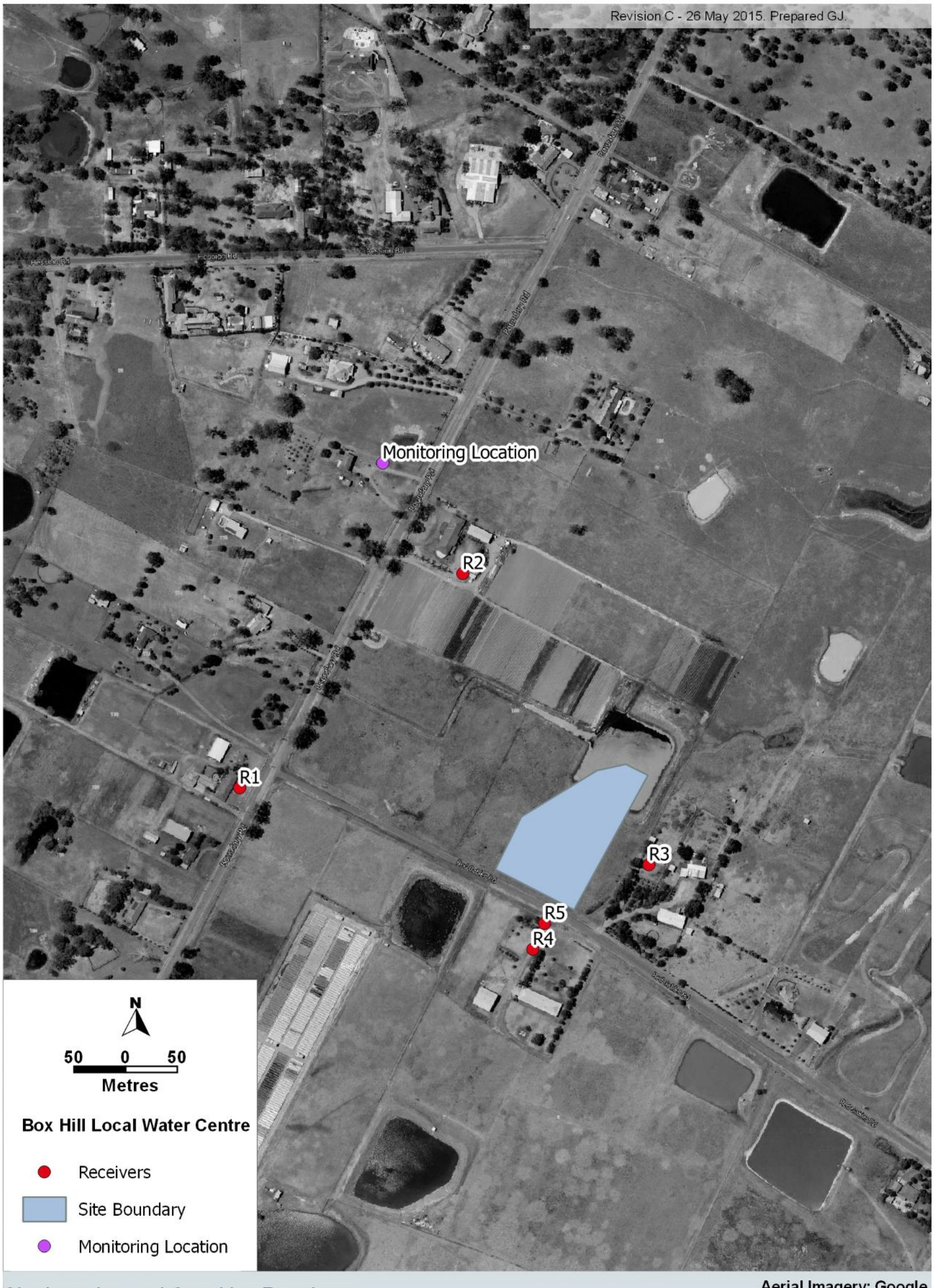
The alternative(s) to the proposed Box Hill North North LWC is to build a traditional local sewage treatment plant with potential discharge to the local waterway, or more expensively to pipe the sewage to an existing sewage treatment plant for treatment and disposal, which would also require an amplification/upgrade of the existing receiving treatment plant. Either alternative would be more expensive, take longer to implement, have greater potential environmental impacts, and fail to achieve sustainability initiatives for water re-use.

2 SITE & PROJECT DESCRIPTION

2.1 Surrounding Land Uses

The proposed location of the site is located at Red Gables Road, Box Hill North. The land surrounding the site will facilitate a new residential community. The existing area is predominantly rural in nature. Existing residential areas or noise catchment areas (NCAs) are currently located approximately 150m to the west, 100m to the east and 285m to the west of the site, and more than 500m to the east of the site. Figure 2-1 shows the subject area, noise monitoring location and the nearest existing and future residential receivers. Locations R1, R2, R3 and R4 represent the nearest existing residential receivers surrounding the site. R3 also represents the closest future residential receiver to the east, and R5 the nearest future residential receiver to the south.

Figure 2-1 Locality Map



Site Location and Sensitive Receivers

2.2 Description of the Proposed Operation Works

The intended LWC will utilise sewage from the future residential area to produce high quality water. The sewage is treated at the LWC to provide recycled water plumbed into houses for non-drinking uses, such as toilet flushing, washing machines, irrigation and car washing, thus reducing drinking water demand. The facility is intended to operate 24 hours, 7 days per week, housed in a low-scale, single level building within an open space setting.

The operation will be on the following basis:

- the facility will operate 24 hours a day, 7 days per week;
- the recycled water, which is transported by pipe system back to customers; and
- any waste water screenings will be collected and disposed of, by way of an authorised waste disposal contractor.

A concept layout for the LWC is shown in Figure 2-2. The proposal will be developed in stages:

1. Interim sewer servicing tanks (ISST) will be constructed and operated first at the east of the site;
2. Western local water centre built and commissioned (Number 1 on Figure)
3. ISST removed
4. Eastern local water centre built and commissioned (Number 2 on Figure).

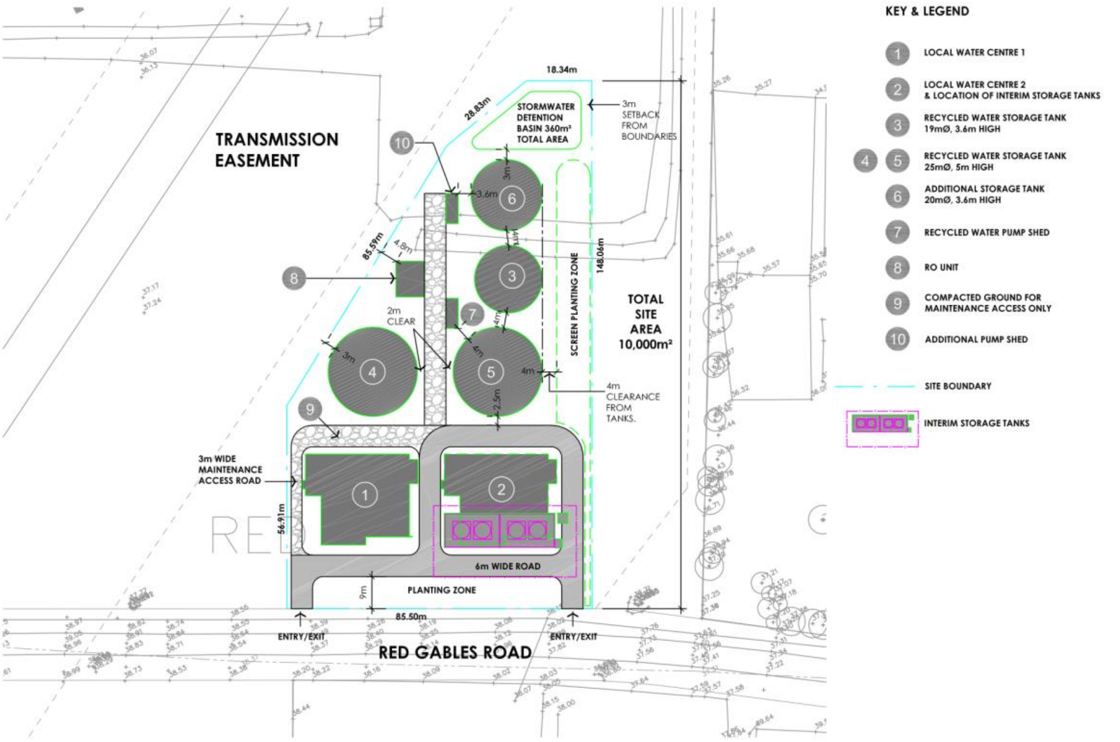
The following describes the LWC and its associated noise sources (equipment):

- Two operations building will house plant and equipment involved in water treatment processes. The buildings are approximately 24m x 10m each and have a skillion roofs ranging from 3.6m to 6.1m height across its width. The building will have a mix of Colorbond and off-form concrete materials in natural and muted grey colours in its facades, and dressed with narrow bands of glass windows to soften the elevations. The eastern elevations will carry a roller door for access to the facility as well as a single door access from operations to delivery area. The western elevation will carry the entry doors to operations and acoustic aluminium louvered doors to blowers and compressors rooms. The roofs will also be of Colorbond material. Air-conditioning units will be used for conditioning the Control room.
- Aligned with the operations buildings, will be the treatment tanks approximately 5m in height. They will be constructed of off-form concrete panels in natural colours. Staircases located at the east and west of the buildings will provide access to the roof of the structure for servicing purposes. Located near the western face of the buildings is a back-up generator, sitting externally to the buildings beneath the access staircases, which will provided power to the facility in the event that primary power supply becomes insufficient. The generators will be surrounded by block walls up to 1m above the height of the generators. The facility buildings will contain plant items including membrane drain pumps, WAS pump, permeate pumps, membrane blowers, process blowers, compressors and WAS dewatering.

- Two drinking water storage tanks are located in the eastern part of the site. A further two tanks to store recycled water are located to the eastern part of the site. Capacity ranges from 1.2 million litres to 2.5million litres each, and will stand approximately 5m high above ground level, and be up to 25m in diameter. The tanks will be constructed of steel and sit in a compacted earth and gravel area.

The tanks will be interconnected with pipes and pumps and the like to each other, and to the treatment plant building. Pumps for drinking water and recycled water tanks are to be housed in sheds of Colorbond material for weather and acoustic screening (Number 7 on Figure 2-2).

Figure 2-2 Site Layout Plan



Once the facility is fully operational, truck movements will be limited to chemical deliveries and is estimated at two to six trucks per month. Operator(s) will visit the site 2-3 times per week in standard utilities or passenger vehicles. An additional six trucks per week will be required to collect the solid waste bins.

2.3 Outline of Construction Works

To enable the operation of the proposal, the construction work on the interim facility (interim flow balance tanks) will commence once the network operators licence is granted which is anticipated for late 2015. The interim facility will be constructed by first clearing and grubbing the site for the facility. The land will be generally contoured to the required bulk earthworks design. A temporary hardstand area will be built for the interim flow balance tanks and temporary access road.

The first Box Hill North LWC will then be constructed once detailed designs are complete and commissioned once a suitable quantity of sewage is available for commissioning of the facility. It is anticipated that construction, equipping and commissioning will take approximately 12 months to complete.

The construction of the first Box Hill North LWC will commence with detailed excavation and installation of under-slab pipework and conduits followed by traditional form, reinforcement and pouring of concrete floors and walls. The concrete tanks will be hydraulically tested and the building finished with architectural finishes. The steel storage tanks will be constructed on concrete ring beam foundations. Spoil from the construction of the Box Hill North LWC is expected to be minimal and will be managed in accordance with a Construction Environmental Management Plan (CEMP) for the proposal. It is likely that all spoil will be used for re-contouring of the land surrounding the building and facilities.

Once the building and tanks are substantially complete, it will be equipped with mechanical, electrical and control equipment including pumps, mixers, inlet screens, odour control unit, membranes, UV disinfection and chemical dosing tanks.

The second Box Hill North LWC will be constructed when demand requires it. This is currently estimated to be 2024.

2.3.1 Construction Hours

The Box Hill North LWC will be constructed during the following hours:

- Monday to Friday 7.00am to 6.00pm; and
- Saturday 8.00am to 1.00pm.

2.3.2 Construction Plant & Equipment

The following plant and equipment would be required to undertake the proposed works:

- Front end loader / Chainsaws / Mulcher;
- Small tipper trucks;
- Rigid and articulated delivery trucks;
- Excavator;
- Concrete trucks;
- Cranes;
- Grader;
- Portable generators;
- Scaffold;
- Elevated work platforms; and
- General construction / building tools.

2.3.3 Construction Traffic

Vehicle movements during construction will mostly consist of the floating of earthmoving equipment and concrete agitator trucks delivering concrete during scheduled pours. Concrete truck movements will occur at various stages throughout the construction period and will peak at around eight concrete trucks per day at the peak of the construction. In addition, there will be an average of two truck movements per day for the delivery of other plant, materials and equipment.

3 EXISTING NOISE ENVIRONMENT

Unattended noise monitoring was conducted at 180 Boundary Road, Box Hill North from 26 November to 4 December 2014. The location and its relation to the site is shown in Figure 2-1.

The noise monitoring equipment used for the unattended measurements consisted of an ARL-NGARA Environmental Noise Logger set to A-Weighted, Fast response continuously monitoring over 100ms sampling periods. This equipment is capable of remotely monitoring and storing noise level descriptors for later detailed analysis. The equipment calibration was checked before and after the survey and no significant drift occurred.

The logger determines L_{A1}, L_{A10}, L_{A90} and L_{Aeq} levels of the ambient noise. The L_{A1}, L_{A10} and L_{A90} levels are the levels exceeded for 1%, 10% and 90% of the sample time respectively (See Glossary of Acoustic Terms for further explanations). The L_{A1} is indicative of maximum noise levels due to individual noise events such as the occasional passby of a heavy vehicle. This is used for the assessment of sleep disturbance. The L_{A90} level is normally taken as the background noise level during the relevant period. The L_{Aeq} level is the Equivalent Continuous Sound Level and has the same sound energy over the sampling period as the actual noise environment with its fluctuating sound levels. The L_{Aeq} is used for the assessment of operational noise and traffic noise. The L_{A10} is used for the assessment of construction noise.

The detailed measurement results are shown in graphical format in Appendix A.

The measured RBLs are shown in Table 3-1. The RBLs for the standard periods of daytime, evening and night time are presented. The RBL for evening is higher than that for daytime. In such cases the *INP* recommends that the daytime level be used for evening. Therefore, the RBL for all periods is 36dBA.

Table 3-1 Measured Rating Background Noise Levels (dBA)

Location	Day (7am-6pm)	Evening (6pm-10pm)	Night (10pm-7am)
180 Boundary Road	36	38	36

4 CONSTRUCTION ROAD TRAFFIC NOISE ASSESSMENT

4.1 Relevant Road Traffic Noise Criteria

Whilst there are no criteria which relate to temporary changes in traffic noise during construction periods, it is desirable that noise associated with truck deliveries to the site comply with the criteria shown in the NSW *Road Noise Policy (RNP)* published by EPA in March 2011. The main roads affected by heavy vehicle movements will be Boundary Road, considered a sub-arterial road, and Red Gables Road which is a local road. On this basis, the traffic noise criteria have been taken from the *RNP* and are shown in Table 4-1.

Table 4-1 Road Noise Criteria

Road Category	Type of Project / Land Use	Assessment Criteria – dBA	
		Day (7am-10pm)	Night (10pm-7am)
Local Roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	$L_{Aeq,1hr}$ 55 (external)	$L_{Aeq,1hr}$ 50 (external)
Sub-Arterial Roads	Existing residences affected by additional traffic on existing freeways / arterial / sub-arterial roads generated by land use developments	$L_{Aeq,15hr}$ 60 (external)	$L_{Aeq,9hr}$ 55 (external)

A review of the road noise criteria in Table 4-1 indicates that the applicable criteria are $L_{Aeq,1hr}$ of 55dBA for local roads and $L_{Aeq,15hr}$ of 60dBA for sub-arterial roads.

4.2 Road Traffic Noise Assessment

Road traffic noise has been calculated for heavy vehicle movements to the site and existing traffic movements have been ignored. The anticipated peak movements per day is five concrete trucks per day at the peak of the construction. Typically, there will be an average of two truck movements per day for the delivery of other plant, materials and equipment. Based on this information the following noise levels have been calculated:

- Red Gables Road – $L_{Aeq,1hr}$ of 40dBA at the façade of the nearest noise sensitive receiver (approximately 75m from the road). This is based on 1 movement per hour; and
- Boundary Road – $L_{Aeq,15hr}$ of 49dBA at the façade of the nearest noise sensitive receiver (approximately 20m from the road). This is based on 5 movements per day.

The predicted road traffic noise levels above are well within the *RNP* criteria. Therefore, noise impacts would be minimal.

5 CONSTRUCTION NOISE & VIBRATION ASSESSMENT

5.1 Construction Noise & Vibration Criteria

The following sections detail the applicable site-specific noise and vibration criteria based on the guidelines from EPA, being the *Interim Construction Noise Guideline* and *Assessing Vibration: A Technical Guideline*.

5.1.1 Construction Noise Management Levels (NML's)

The EPA released the "*Interim Construction Noise Guideline*" *(CNG)* in July 2009. The guideline provides noise goals that assist in assessing the impact of construction noise.

For residences, the basic daytime construction noise goal is that the $L_{Aeq,\ 15min}$ noise management level should not exceed the background noise by more than 10dBA. This is for standard hours: Monday to Friday 7.00am-6.00pm, and Saturday 8.00am-1.00pm. Outside the standard hours, where construction is justified, the noise management level would be background + 5dBA. Table 5-1 details the *ICNG* noise management levels and its application.

Table 5-1 Construction Noise Management Levels at Residences

Time of Day	Management Level $L_{Aeq,15min}$ (dBA)	How to Apply
Recommended Standard Hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL + 10dBA	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq,(15min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to minimise noise. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the proponent should consider very carefully if there is any other feasible and reasonable way to reduce noise to below this level. If no quieter work method is feasible and reasonable, and the works proceed, the proponent should communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided.

Time of Day	Management Level $L_{Aeq,15min}$ (dBA)	How to Apply
Outside recommended standard hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see section 7.2.2.

Typically, no works should be undertaken on Sundays.

Based on the measured RBLs levels, the following applicable noise management levels (NML's) for construction activities at surrounding residential receivers have been adopted:

- Monday-Friday 7.00am-6.00pm $L_{Aeq,15min}$ 46 (36+10) dBA
- Saturday 7.00am to 1.00pm $L_{Aeq,15min}$ 46 (36+10) dBA
- Highly noise affected $L_{Aeq,15min}$ 75 dBA

5.1.2 Site Vibration Criteria

Typically, vibration impacts are determined using following documents:

- Building damage – German Standard DIN 4150: Part 3 – 1999 *Structural vibration in buildings: Effects on structures*. Since vibration in the frequency band below 10Hz is not expected, the limit at the residential foundation would be 5mm/s peak component particle velocity (pcpv); and
- Human comfort – *Environmental noise management assessing vibration: A technical guide* (DEC, 2006). Since vibration from the construction site below 8Hz is not expected, the comfort limit becomes 0.4mm/s rms vertical vibration.

However, as the distance from vibration intensive plant to the nearest residential receiver is considered to be large (approximately 70m), ground vibration at surrounding residential receivers would be low. On this basis, the recommended safe working distances for vibration intensive plant suggested in the Transport Construction Authority's *Construction Noise Strategy* (2012) have been adopted in this assessment to evaluate the vibration impacts. Table 5-2 sets out the recommended safe working distances for various vibration intensive plant.

Table 5-2 Recommended Safe Working Distances for Vibration Intensive Plant

Item	Description	Safe Working Distance	
		Cosmetic Damage	Human Response
Small Hydraulic Hammer	(300 kg – 5 to 12t excavator)	2m	7m
Medium Hydraulic Hammer	(900 kg – 12 to 18t excavator)	7m	23m
Pile Boring	≤ 800 mm	2m (nominal)	N/A
Jackhammer	Hand held	1m (nominal)	Avoid contact with structure

- Construction Noise Strategy, 2012, Transportation Construction Authority

A review of the information in Table 5-2 indicates that the human comfort vibration impacts at surrounding residences would be minimal when using rock breakers. Furthermore, structural damage vibration criteria in residential buildings are much higher than human comfort criteria, and the nearest residential receiver is situated far enough for impacts to be minimal in all circumstances. Therefore, no further vibration consideration is required.

5.2 Construction Equipment and Noise Source Levels

Sound Power Levels (SWLs) for typical construction plant are detailed in Table 5-3. These SWLs have been measured at other similar construction sites. The table provides both Sound Power Level and Sound Pressure Levels (SPL) at 7m for the equipment. Sound Power Level is independent of measurement position.

Table 5-3 Typical Construction Plant Sound Levels (dBA)

Plant	Sound Power Level	Sound Pressure Level at 7m
Concrete Truck	105	80
Concrete Pump – 120 mm diameter / 50 bar	103	78
Concrete Saw	116	91
50t Crane	105	80
Dump Truck	108	83
Compressor	100	75
Bobcat	103	78
Generator and Power Hand Tools	105	80
D10 Bulldozer	114	89
15t Excavator	103	83
40t Excavator	110	90
Crawler Cranes	98	73
16H Grader	108	83
Front End Loader	112	87
Hammer Hydraulic	122	97
Wood Chipper	117	102

5.3 Predicted Construction Noise Levels

Calculation of likely construction noise at surrounding receivers has been undertaken for the proposed construction works.

Site-related noise emissions were modeled with the "CadnaA" noise prediction software using the ISO 9613 noise prediction algorithms. Factors that are addressed in the noise model are:

- equipment sound level emissions and location;
- screening effects from barriers;
- receiver locations;
- ground topography;
- noise attenuation due to geometric spreading;
- ground absorption; and
- atmospheric absorption.

Noise predictions have been made based on the possible worst-case impacts taking into consideration the most likely construction scenarios. This has been made based on Wilkinson Murray's previous experience with similar scale construction projects. As a worst-case scenario, this assumes that most of the relevant plant would be operating during most of the 15-minute assessment period. The following have been assumed for each of the noise significant scenarios:

- Site Clearing / Grubbing

  As the site has no large trees the noisiest activity in this scenario would be from the use of a front end loader to clear land. $L_{Aeq,15min}$ noise level for this activity would be 108dBA.

- Bulk Earthworks

  Noisiest activity in this scenario would be from excavation works carried out by a 15t excavator, tipper trucks and articulated trucks working at the same time. $L_{Aeq,15min}$ noise level for this activity would be 113dBA.

- Foundation Construction

  Noisiest activity in this scenario would be from the pouring of concrete floors and walls. This would be carried out by a concrete agitator truck idling on site and a concrete pump transferring liquid concrete to the designated areas. $L_{Aeq,15min}$ noise level for this activity would be 107dBA.

- Superstructure Construction

  Noisiest activity in this scenario would be from the steel cage installation that would involve lifting of heavy loads using a 50t crane, an 8 wheel crane truck with delivery truck idling on site. $L_{Aeq,15min}$ noise level for this activity would be 108dBA.

- General Construction / Scaffolding

  Noisiest activity in this scenario would be from the use of power hand tools. $L_{Aeq,15min}$ noise level for this activity would be 105dBA

Some specific control measures, which are referred to in Sections 5.5 and 5.6 below, have been considered necessary for the site and these have been included in the predicted noise levels.

There are a number of stages of the work proposed and some stages will be noisier than others. Table 5-4 shows the predicted noise levels at each of the NCAs for the noise significant stages of the work during normal construction hours.

Table 5-4 Predicted Construction Noise Levels at Residence – $L_{Aeq,15\ min}$ (dBA)

Receiver	Predicted Noise Level	Weekday NML	Exceedance
	Site Clearing and Grubbing		
1	51	46	5
2	54	46	8
3	64	46	18
4	66	46	20
	Bulk Earthworks		
1	56	46	10
2	59	46	13
3	69	46	23
4	71	46	25
	Foundation Construction		
1	50	46	4
2	53	46	7
3	63	46	17
4	65	46	19
	Superstructure Construction		
1	51	46	5
2	54	46	8
3	66	46	20
4	67	46	21

A review of results in Table 5-4 indicates the following:

- During the land clearing stage, exceedances of up to 20 dBA are predicted during standard hours at the nearby existing residences at Receivers 3 and 4. This magnitude of exceedance is consistent with similar sites where residences overlook development sites.
- During the structure stage exceedances of up to 25 dBA are predicted during standard hours at the nearby existing residences at Receivers 3 and 4. Fit-out works are less noise intensive and this would result in general compliance at residences during this stage (not shown in Table 5-4).

Based on these findings the adoption of reasonable and feasible noise management and mitigation will be required. These measures should be determined in detail when a contractor, with defined construction techniques, has been engaged on the project. However, "in-principle" mitigation measures are detailed in Section 6.4 and Section 6.5.

5.4 Construction Noise Mitigation Measures

Without mitigation, noise levels from construction activities have been predicted to exceed the noise management levels nominated in the guidelines at some surrounding receivers. Therefore, noise control measures are recommended to ensure that noise is reduced where feasible.

The following project specific mitigation measures are recommended;

- Selection of quietest feasible construction equipment;
- Localised treatment such as barriers, shrouds and the like around fixed plant such as pumps, generators and concrete pumps; and
- Provision of respite periods.

In addition, the following measures should be included in a Noise and Vibration Management Plan to be prepared prior to issue of a Construction Certificate (CC):

- *Plant Noise Audit* – Noise emission levels of all critical items of mobile plant and equipment should be checked for compliance with noise limits appropriate to those items prior to the equipment going into regular service. To this end, testing should be established with the contractor;
- *Environmental Inductions* – It is important that an induction is provided to all site personnel with an emphasis on understanding and managing noise impacts;
- *Equipment Selection* – All fixed plant at the work sites should be appropriately selected, and where necessary, fitted with silencers, acoustical enclosures and other noise attenuation measures in order to ensure that the total noise emission from each work site complies with EPA guidelines;
- *Site Noise Planning* – Where practical, the layout and positioning of noise-producing plant and activities on each work site should be optimised to minimise noise emission levels; and
- Install a 2.4 metre type-A hoarding on the boundary of the site. This should be a minimum 17mm thick structural plywood or equivalent panel.

The adoptions of the above measures are aimed at working towards achieving the noise management levels established at surrounding receivers.

5.5 Community Liaison & General Approaches to Mitigation

An effective community relations programme should be put in place to keep the community that has been identified as being potentially affected appraised of progress of the works, and to forewarn potentially affected groups (e.g. by letterbox drop, meetings with surrounding owners / tenants, etc.) of any anticipated changes in noise and vibration emissions prior to critical stages of the works, and to explain complaint procedures and response mechanisms. Close liaison should be maintained between the communities overlooking work sites and the parties associated with the construction works to provide effective feedback in regard to perceived emissions. In this manner, equipment selections and work activities can be coordinated where necessary to minimise disturbance to neighbouring communities, and to ensure prompt response to complaints, should they occur.

5.6 Noise & Vibration Management Plan

A Construction Noise and Vibration Management Plan for the site is recommended prior to construction. Areas that should be addressed in plan include:

- noise and vibration monitoring;
- response to complaints;
- responsibilities;
- monitoring of noise emissions from plant items;
- reporting and record keeping;
- non-compliance and corrective action; and
- Community consultation and complaint handling.

The plan should be developed by the successful contractor and be part of their Construction Environmental Management Plan.

6 OPERATIONAL NOISE ASSESSMENT

6.1 Relevant Operational Noise Criteria

This section of the report discusses noise guidelines and criteria for the assessment of operational noise. Appropriate criteria are contained within the NSW Environmental Protection Authority (EPA) *NSW Industrial Noise Policy (INP).*

6.1.1 *Industrial Noise Policy*

The *INP* is designed to assess noise using the more stringent of the following two approaches:

- Intrusive noise impacts in the short term for residences; and
- Amenity for particular land uses such as residences.

The *INP's* intrusive noise goal is the noise level 5dBA above the background noise level for each time period (daytime, evening or night time) of interest. The background noise level is derived from the measured L_{A90} noise levels.

The amenity goal sets an upper limit to the total industrial noise level ($L_{Aeq,period}$) in an area from all industrial noise sources (existing and future). The criterion depends on the time of day, area classifications and the relationship of the total measured $L_{Aeq,period}$ (and contribution from existing industrial noise) to determine the Acceptable Noise Level (ANL) for the development. Traffic noise would also be taken into account in areas where the noise environment is significantly affected by traffic noise.

The potentially affected area will be rural-residential. Given this, the acceptable amenity noise levels ($L_{Aeq,period}$ dBA) which apply over the whole day, evening or night period are as follows and are applicable only to noise from industrial sources:

- Daytime 55dBA
- Evening 45dBA
- Night Time 40dBA

In summary, the overall industrial noise from all industrial noise sources in the area (including the subject development) should not exceed the above amenity noise levels over the day evening and night periods.

Furthermore, the *INP* also suggests some sources may cause less annoyance where only a single event occurs for a limited duration, such as the back-up generator where it does not usually operate and will be tested in operation during daytime hours either once per month for 30 minutes, or once every 2 months for 1 hour. The adjustment for duration is presented below in Table 6-1. This applies where a single noise-event noise is continuous for a period of less than two and a half hours in any 24-hour period. The acceptable noise level may be increased by the adjustment as shown in Table 6-1 on the following page. This adjustment is designed to account for unusual and one-off events, and does not apply to regular high-noise levels that occur more frequently than once per day.

Table 6-1 Adjustments for Duration (dBA)

Duration of Noise (one event in any 24-hr period)	Increase in Acceptable Noise Level at Receptor	
	Daytime & Evening (0700-2200 h)	Night Time (2200-0700 h)
1.0 to 2.5 hours	2	Nil
15 minutes to 1 hour	5	Nil
6 minutes to 15 minutes	7	2
1.5 minutes to 6 minutes	15	5
Less than 1.5 minutes	20	10

6.1.2 Project Specific Criteria

Both amenity and intrusiveness criteria are adopted for this assessment. Table 6-2 presents a summary of the noise criteria for the existing residential receivers surrounding the proposed site using the measured RBL values presented in Table 3-1.

Table 6-2 Project Specific Criteria (dBA)

Time Period[1]	Intrusiveness Criterion $L_{Aeq,15min}$	Amenity Criterion $L_{Aeq,period}$
Daytime	**41**	55
Evening	**41**	45
Night Time	**41**	40

Notes: 1. Daytime 7.00am–6.00am; Evening 6.00pm–10.00pm; Night 10.00pm-7.00am
2. Noise criteria applicable to this assessment are highlighted in **bold**

Since the noise will be constant and not varying in level, the lower criterion for each period will apply, as highlighted in the table.

As the back-up generator does not usually operate and will be tested in operation during daytime hours either once per month for 30 minutes, or once every 2 months for 1 hour, a positive adjustment of 5dB will apply to the daytime project specific criteria of 41dBA. The adjusted daytime acceptable level is 46dBA L_{Aeq}.

6.2 Calculation Method

Noise levels were calculated using the Bruel & Kjaer Predictor computer modelling program based on ISO 9613 algorithms. Using Predictor it is possible to build a model of the facility noise sources and the surrounding area. The model is capable of taking account of the following parameters:

- noise source levels;
- topography between the facility and the residences;
- any shielding by buildings between noise sources and receivers; and
- meteorological effects which could change noise propagation.

Because the facility is well within 300m of the nearest proposed residences, meteorological enhancement of noise propagation are not significant and have not been considered in the assessment.

Noise source levels used in this assessment were provided by Permeate Partners Pty Ltd unless otherwise indicated. The noise source levels are summarised in Table 6-3.

Table 6-3 Noise Source Levels per Local Water Centre

Description	Qty	Sound Pressure Level at 1m
Back-up Generator	1x duty	81dBA each
Membrane Tank Drain Pump	1x duty	75dBA each
WAS Pump	1x duty	72dBA each
Permeate Pump	1x duty / 1x standby	75dBA each
Membrane Blower	1x duty / 1x standby	75dBA each
Process Blower	2x duty / 1x standby	75dBA each
Compressor	1x duty / 1x standby	65dBA each
WAS Dewatering	1x duty	72dBA each
Drinking Water Distribution Pumps	2x duty / 1x standby	75dBA each
Recycled Water Distribution Pumps	2x duty / 1x standby	75dBA each
6hp Air-Con Unit (Wilkinson Murray database)	1x duty	64dBA each

Based on the noise source levels in Table 6-3 the reverberant noise levels inside the equipment room was calculated to be 86dBA and 82dBA inside the sheds enclosing drinking/recycled water distribution pumps.

Sheds enclosing drinking water distribution pumps and recycled water distribution pumps are assumed to be constructed from Colorbond to be consistent with the equipment building and control room.

Noise emission from the site were calculated to the nearest residential properties and are presented in Section 6.3 and Section 6.4.

With respect to the ISST, noise emission would be from a tanker truck attached to the outlet of the tank. For assessment of this temporary facility it was assumed to have a sound power level of 100 dBA.

6.3 Noise from ISST

When the interim tanks are at full capacity (noting it will take time to build up to this as houses are built and connect), there will be up to six tankers visit the site per day for up to an hour each, and for 7 days per week and potentially sometimes at night.

It is recommended that if the existing residences at receiver 3 and 4 are occupied, they should be shielded from the tanker pump by movable temporary screens while the tanks are emptied. The temporary screens should be 2.1m high.

Wilkinson Murray understands that it is unlikely that any new residences will be built and occupied in the vicinity of this ISST while operational. By the time the development grows to near the LWC, the ISST will have been decommissioned and the LWC commissioned.

Scenario	Criteria Day / Evening / Night (dBA)	Receiver				
		1	2	3	4	5
Interim Storage Tanks	41/41/41	37	37	45	50	N/A
Interim Storage Tanks with Shielding	41/41/41	37	37	40	38	N/A

6.4 Operational Noise Emission Levels – All Equipment (Excluding Back-Up Generator)

The results of the modelling for all equipment operating (excluding back-up generator) are presented in Table 6-4.

The table shows the following:

- Noise from the ISST is predicted to comply at all receivers;
- Noise from the LWC 1 without Specific Noise Mitigation applied is predicted to exceed the criterion at the nearest future residence. For this reason the following predictions assume that Specific Noise Mitigation is applied to both Local Water Centres;
- Noise from the Local Water Centre 1 **with** Specific Noise Mitigation applied is predicted to comply with the criteria at all receivers.
- Noise from the Local Water Centre 1 and Local Water Centre 2 combined **with** Specific Noise Mitigation applied is predicted to comply with the criteria at all receivers.

The specific mitigation required is:

- Specific Noise Mitigation (1) – lining of Colorbond on the internal face of the plant room with appropriate air gap to accommodate minimum 50mm thick polyester or glasswool insulation of density 14kg/m3
- Specific Noise Mitigation (2) – The internal walls of the pump house should be lined with minimum 50mm thick polyester or glasswool insulation of density 30kg/m3

Table 6-4 Predicted $L_{Aeq,15min}$ Noise Levels At Residences – dBA

Scenario	Criteria Day / Evening / Night (dBA)	Receiver				
		1	2	3	4	5
Local Water Centre 1 without Specific Noise Mitigation	41 / 41 / 41	20	24	39	39	43
Local Water Centre 1 with Specific Noise Mitigation	41 / 41/ 41	17	19	27	25	29
Local Water Centre 1 & 2 with Specific Noise Mitigation	41 / 41 / 41	21	22	33	31	33

The first line of the table indicates that without the specified noise mitigation, compliance will not be achieved at receiver 5.

The second line of the table indicates that without any mitigation applied, noise from the plant is predicted to exceed the 41 dBA goal at location 5.

As indicated in the final two lines of the table, when all plant are operating, excluding back-up generator, the predicted noise levels comply with the limiting 41 dBA night time noise criterion at the nearest existing residential receivers and new residential receivers. Therefore, no further acoustic consideration is required.

Noise contours for the mitigated case are shown in Appendix A.

6.5 Noise Emission Levels – With Back-Up Generator

The generator will be surrounded by a block wall up to 1m above the height of the generator.

The predicted noise levels when the back-up generator is in operation are presented in Table 6-5.

Note that as the back-up generator does not usually operate and will be tested during daytime hours either once per month for 30 minutes, or once every 2 months for 1 hour, a positive adjustment of 5dB will apply to the daytime project specific criteria of 41 dBA.

Table 6-5 Predicted $L_{Aeq,15min}$ Noise Levels At Residences (Existing & Future) With Back-Up Generator – dBA

Scenario	Criteria Daytime	Receiver				
		1	2	3	4	5
Operation with Backup Generator	46	30	34	34	40	39

A review of the predicted noise levels from all noise sources with the back-up generator in Table 6-5 indicates compliance with the adjusted daytime acceptable noise level of 46 dBA at the nearest existing residential receivers and new residential receivers. Therefore, no further acoustic consideration is required.

Noise contours for the case of operation with the back-up generator are shown in Appendix B.

6.6 Tonality of Noise

There is some potential that the noise may be tonal in character. According to the *INP*, a modification factor of 5 dBA should be added to account for the higher intrusiveness of the noise in such circumstances. Should a 5 dBA modification factor be applicable, noise emission from site could exceed the night time criterion of 41 dBA at the nearest new residential receivers. It is therefore recommended that equipment with tonal characteristic are to be avoided at the procurement stage.

7 CONCLUSION

Operational noise associated with the proposed Box Hill North LWC has been assessed against noise criteria set out in the EPA's *Industrial Noise Policy*.

Preliminary calculations showed that the predicted noise level from the LWC would exceed the noise criteria at the nearest receivers. Therefore mitigation measures have been recommended.

With appropriate mitigation the predicted noise levels from the plant comply with all criteria on all occasions at the nearest existing and future residential receivers given that the following recommended treatment is implemented:

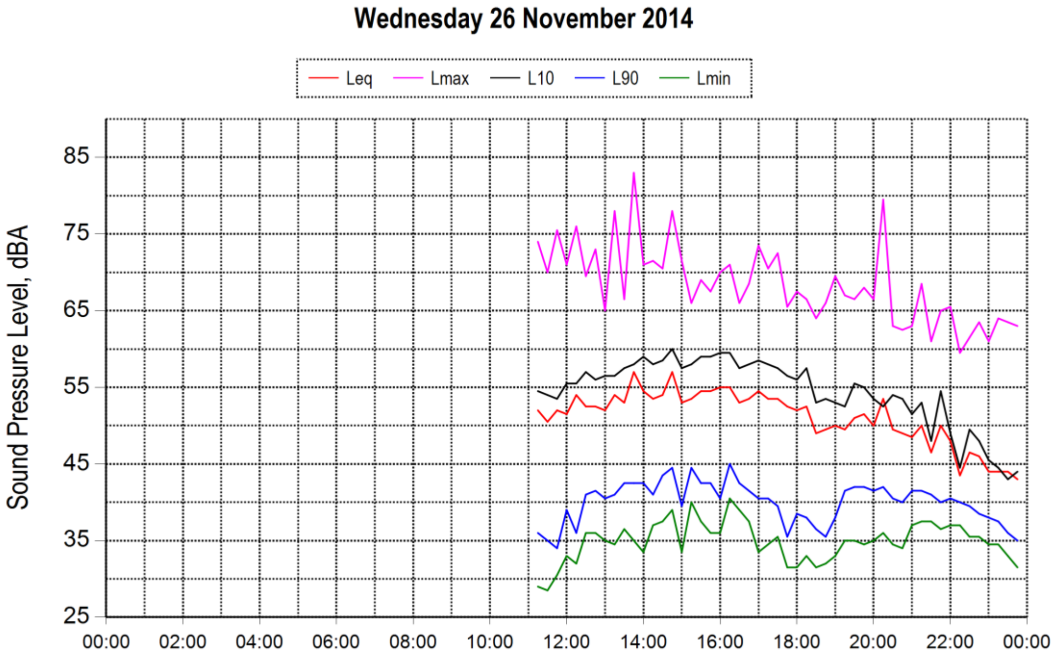
- Specific Noise Mitigation (1) – lining of Colorbond on the internal face of the plant room with appropriate air gap to accommodate minimum 50mm thick polyester or glasswool insulation of density 14kg/m^3.
- Specific Noise Mitigation (2) – The internal walls of the pump house should be lined with minimum 50mm thick polyester or glasswool insulation of density 30kg/m3.

Noise from the back-up generator is screened block wall 1m higher than the generator itself. Predicted noise levels from the back-up generator comply with the adjusted acceptable daytime noise level on all occasions at the nearest existing and future residential receivers.

Should the existing residential receivers 3 and 4 be occupied, when it comes time to empty the interim tanks, a 2.1m high temporary movable screen should be used to shield these receivers from the pump of the tankers.

APPENDIX A

NOISE MEASUREMENT RESULTS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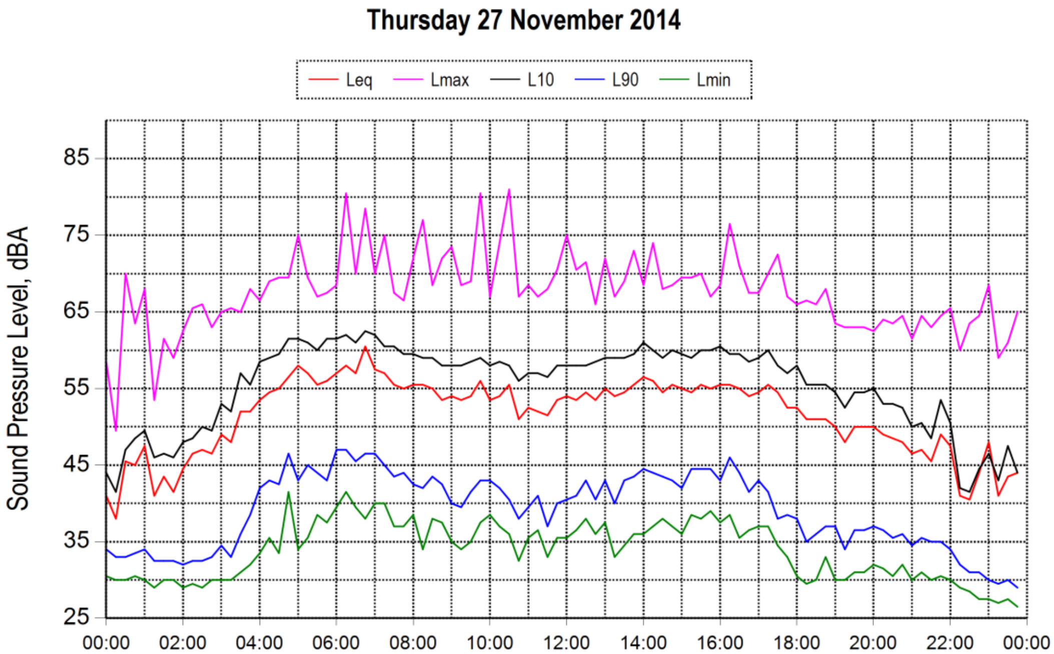
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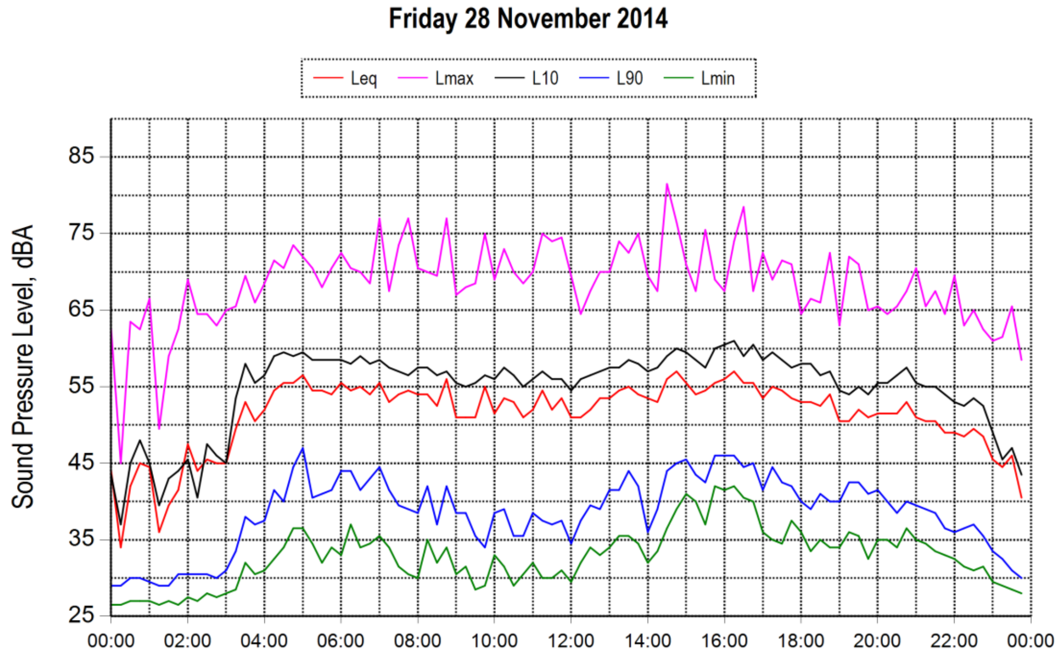
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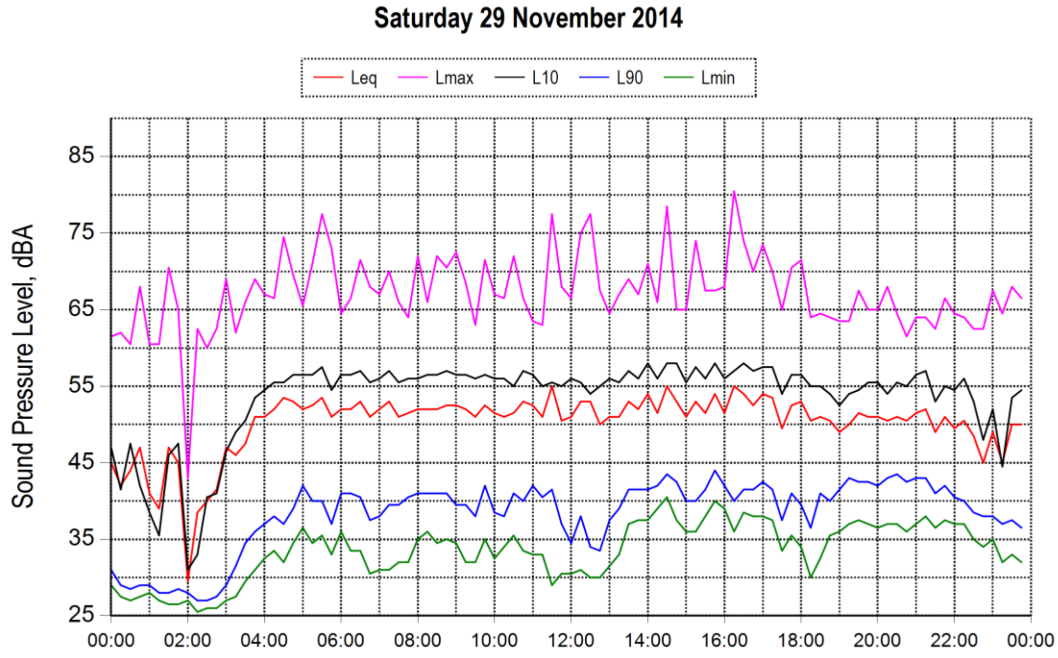
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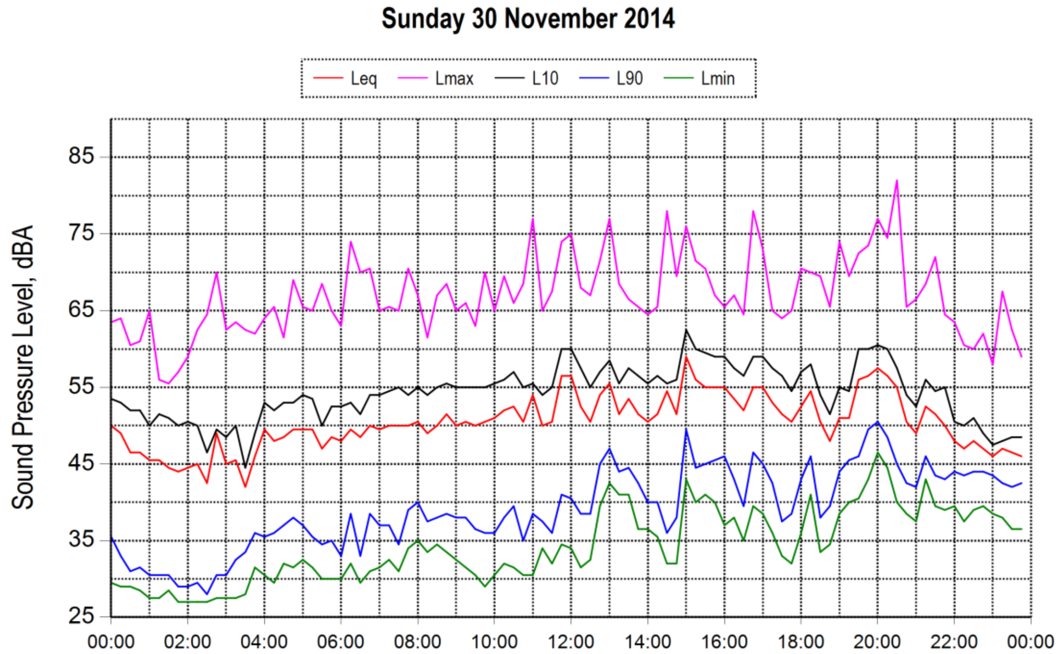
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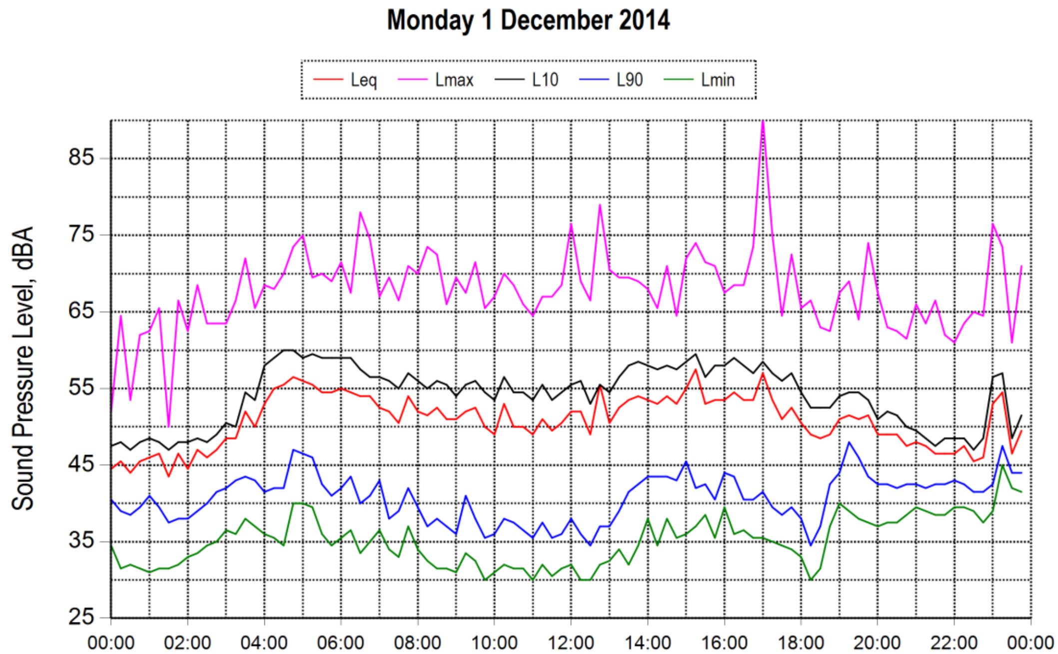
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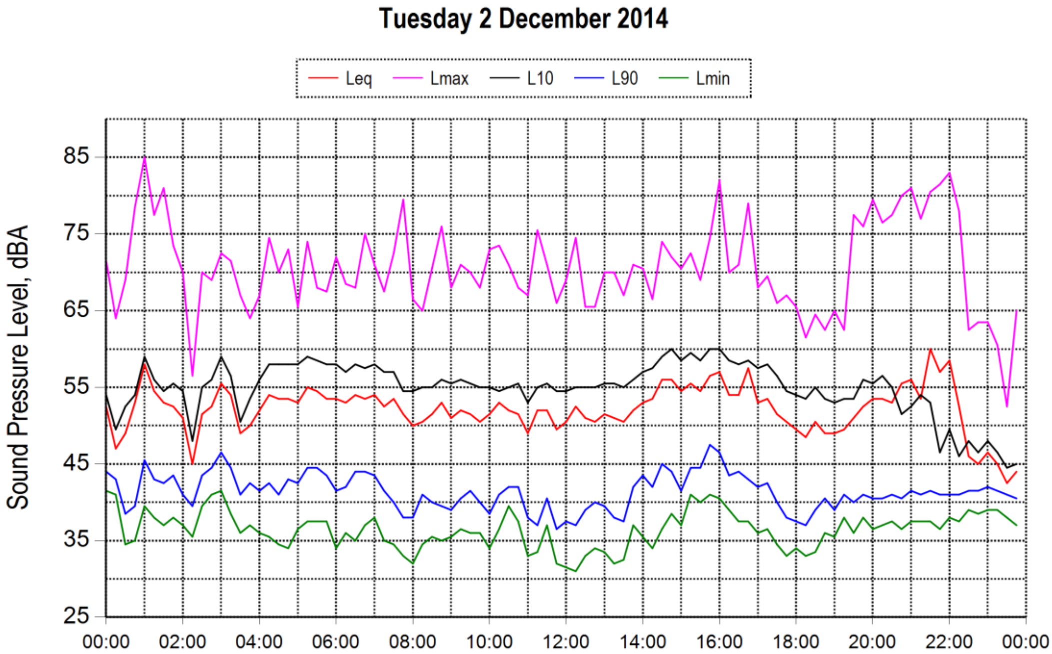
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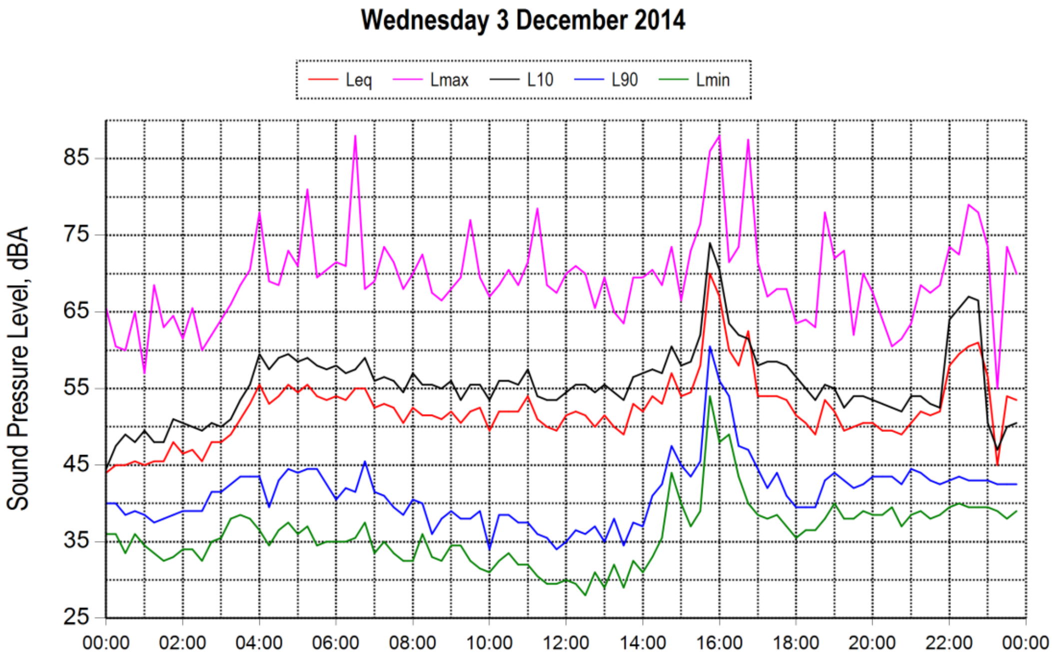
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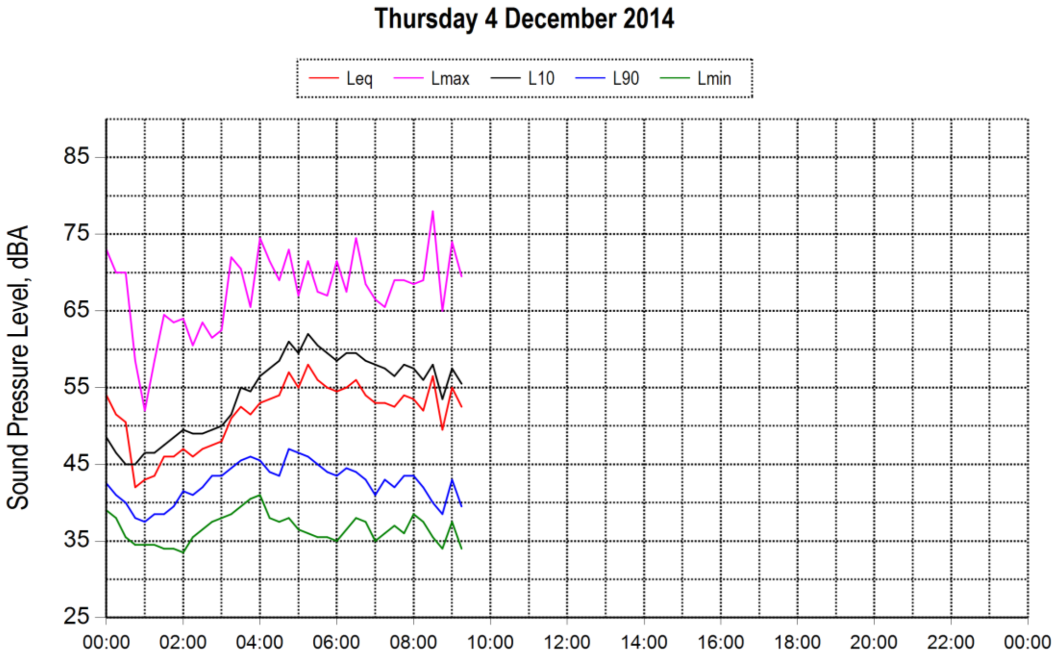
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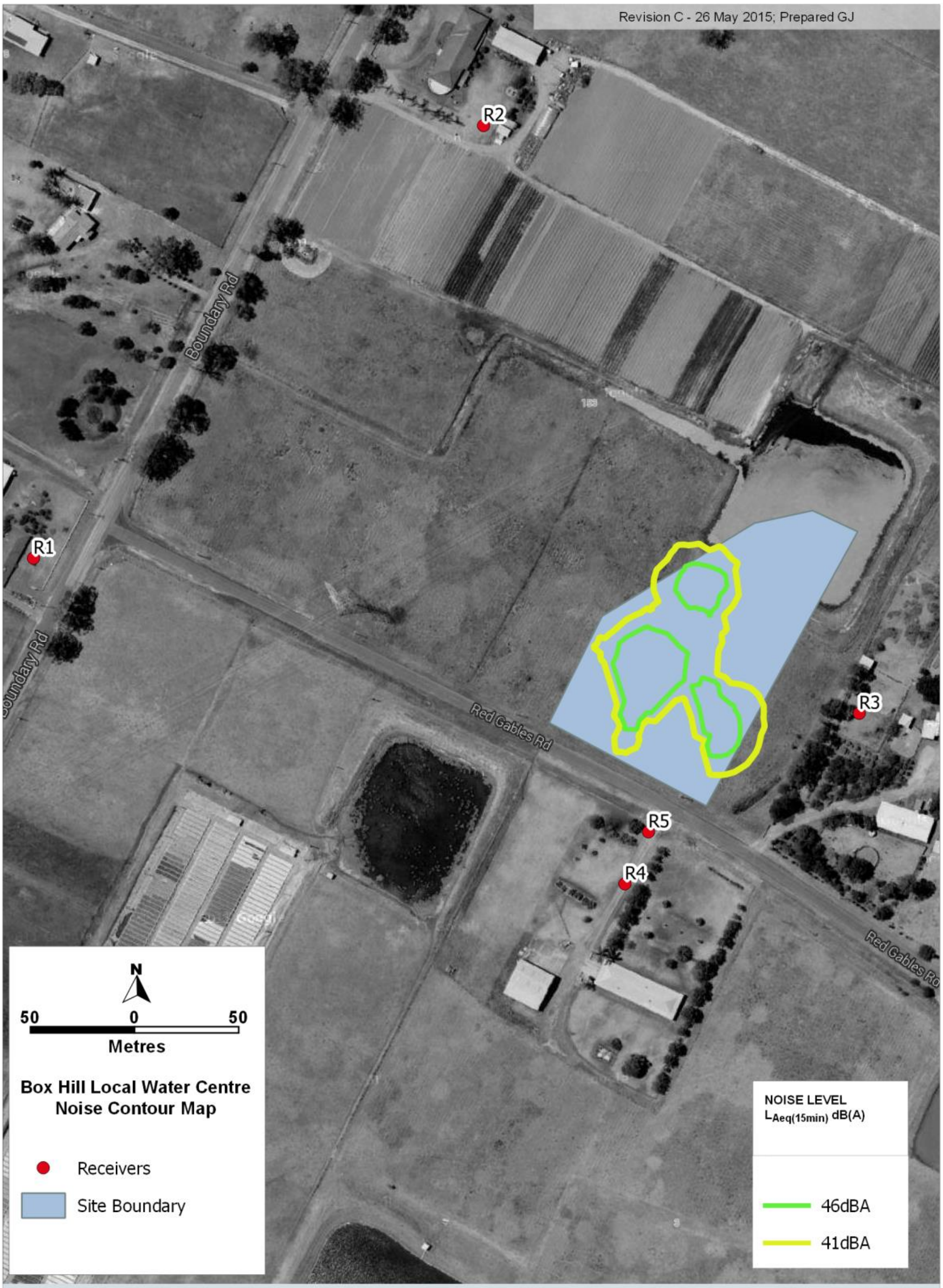
APPENDIX B

OPERATIONAL NOISE CONTOUR

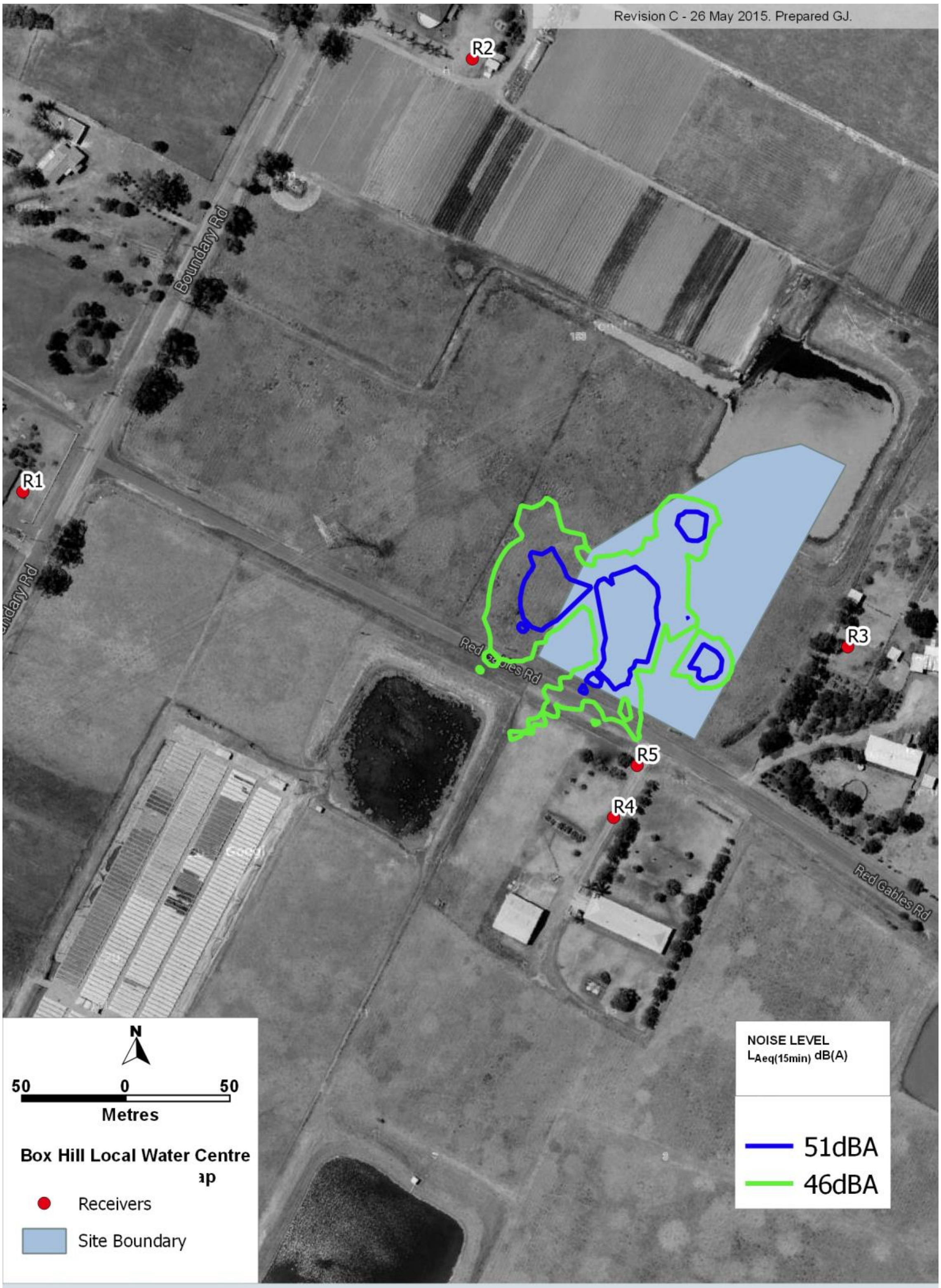


Typical Operation Without Back-up Generator

Aerial Imagery: Google

APPENDIX C

OPERATIONAL NOISE CONTOUR WITH BACK-UP GENERATOR



Typical Operation with Back-up Generator

Aerial Imagery: Google

Appendix 16

Odour Impact Assessment

Pacific Environment Limited

Consulting • Technologies • Monitoring • Toxicology

Report

Box Hill North Local Water Centre

RPS Australia & Asia Pacific

Job ID. 09464

26 May 2015

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JOB ID:	09464
DOCUMENT CONTROL NUMBER	AQU-NW-006-09464
PREPARED FOR:	RPS Australia & Asia Pacific
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Pacific Environment Limited

CONTENTS

1 INTRODUCTION 1

2 PROJECT DESCRIPTION 1

3 DISCUSSION OF AIR QUALITY ISSUES 4
- 3.1 Odour Performance Criteria 4
  - 3.1.1 Introduction 4
  - 3.1.2 Complex Mixture of Odorous Air Pollutants 4
- 3.2 Peak-to-mean ratios 5

4 LOCAL METEOROLOGY 5
- 4.1 Wind speed and direction 5
- 4.2 Local Climatic Conditions 7

5 ODOUR EMISSIONS 8
- 5.1 Monitoring Methodology 8
- 5.2 Odour Control Unit 9

6 APPROACH TO ASSESSMENT 10
- 6.1 Dispersion model 10
  - 6.1.1 Atmospheric Stability 10
- 6.2 Odour emission rates 13

7 ASSESSMENT OF IMPACTS 14

8 CONCLUSIONS 17

9 REFERENCES 18

APPENDIX A PEAK TO MEAN RATIOS A-1

APPENDIX B ODOUR MEASUREMENTS FROM PITT TOWN B-1

LIST OF FIGURES

Figure 2.1: Proposed project site location 2

Figure 2.2: Indicative Plant Layout 3

Figure 4.1: Annual and Seasonal wind roses for Richmond RAAF BoM Station 6

Figure 6.1: Annual statistics of 1/L by hour of the day 12

Figure 6.2: Annual distribution of stability type by hour of the day 12

Figure 7.1: Predicted 99th percentile odour concentration (OU) for Interim FBT operations 15

Figure 7.2: Predicted 99th percentile odour concentration (OU) for the fully operational plant 16

1 INTRODUCTION

This report has been prepared by Pacific Environment for RPS Australia Asia Pacific (RPS) for the Box Hill North Residential Precinct. Flow Systems Operations trading as Box Hill North Water, a wholly-owned subsidiary of Flow Systems, is being considered by the developer as the private water utility for the Box Hill North development. Box Hill North Water will construct, operate and maintain a water recycling facility known as the Local Water Centre (LWC) and will provide all properties within the development with drinking water, sewerage and recycled non-potable water.

The study seeks to determine the odour concentrations at nearby sensitive receptors using atmospheric dispersion modelling. Odour sampling data for the Membrane, Aerobic and Anoxic chambers was collected at an existing Flow Systems water recycling facility located at Pitt Town. These data are used as inputs into the Box Hill North plant model. The flow balance tank (FBT) odour control unit (OCU) proposed for Box Hill North is different to that operating at Pitt Town and as such, the measurements at the Pitt Town FBT OCU have not been used for Box Hill North.

Modelling has been completed using the US-EPA regulatory AERMOD model, approved for use in NSW.

The report comprises the following components:

- A description of the project,
- A discussion of air quality issues with respect to odour,
- A review of the dispersion meteorology in the area, and
- An assessment of potential odour impacts for four operational scenarios.

2 PROJECT DESCRIPTION

The project site (shown on **Figure 2.1**), is part of a proposed residential sub-division located on the urban fringe of The Hills Shire Council, approximately 48 km northwest of Sydney central business district (CBD).

Provision of infrastructure, namely the LWC, will allow subdivision of lands within an area being developed as Box Hill North. The land is undergoing rezoning for residential development.

The intended LWC will utilise sewage from the future residential area to produce high quality recycled water. The sewage will be treated at the LWC through a multi-stage process of screening, anaerobic and aerobic processing, chemical treatment, membrane filtration, ultraviolet disinfection and chlorination. The recycled water will be plumbed into houses for non-potable uses such as toilet flushing, washing machines, irrigation and car washing, thus reducing potable water demand. The LWC is intended to operate 24 hours, 7 days per week, housed in a low-scale, single level building within an open space setting.

The intended hydraulic capacity of the LWC is approximately 3,000 kilolitres (kL) per day, servicing approximately 5,000 dwellings or equivalent, although it has been designed to achieve this benchmark over time in line with uptake in the residential area surrounding the development.

For the first lots in the precinct, interim sewage servicing tanks (ISSTs) will receive raw sewage to be collected by tankers at regular intervals. An interim odour control unit associated with these tanks will operate during this initial period.

An indicative site layout plan is shown in **Figure 2.2**. The potential sources of odour are from the screens (enclosed) used to remove inorganic material prior to treatment of the liquid flow, as well as emissions from the individual odour scrubbers attached to both the FBTs and ISSTs vented via a stack. These sources and the measured data used for this assessment are discussed in **Section 5**.

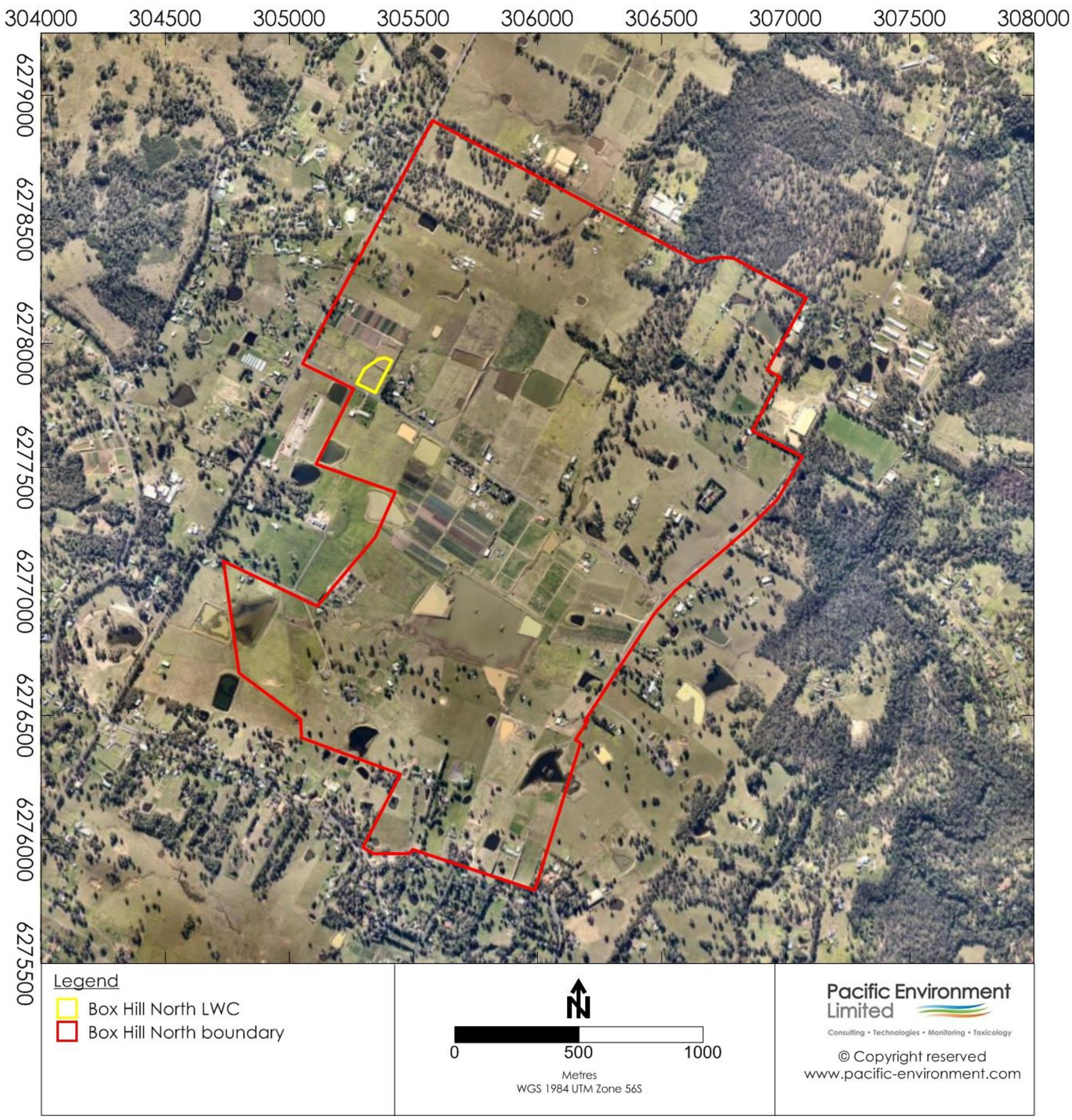


Figure 2.1: Proposed project site location

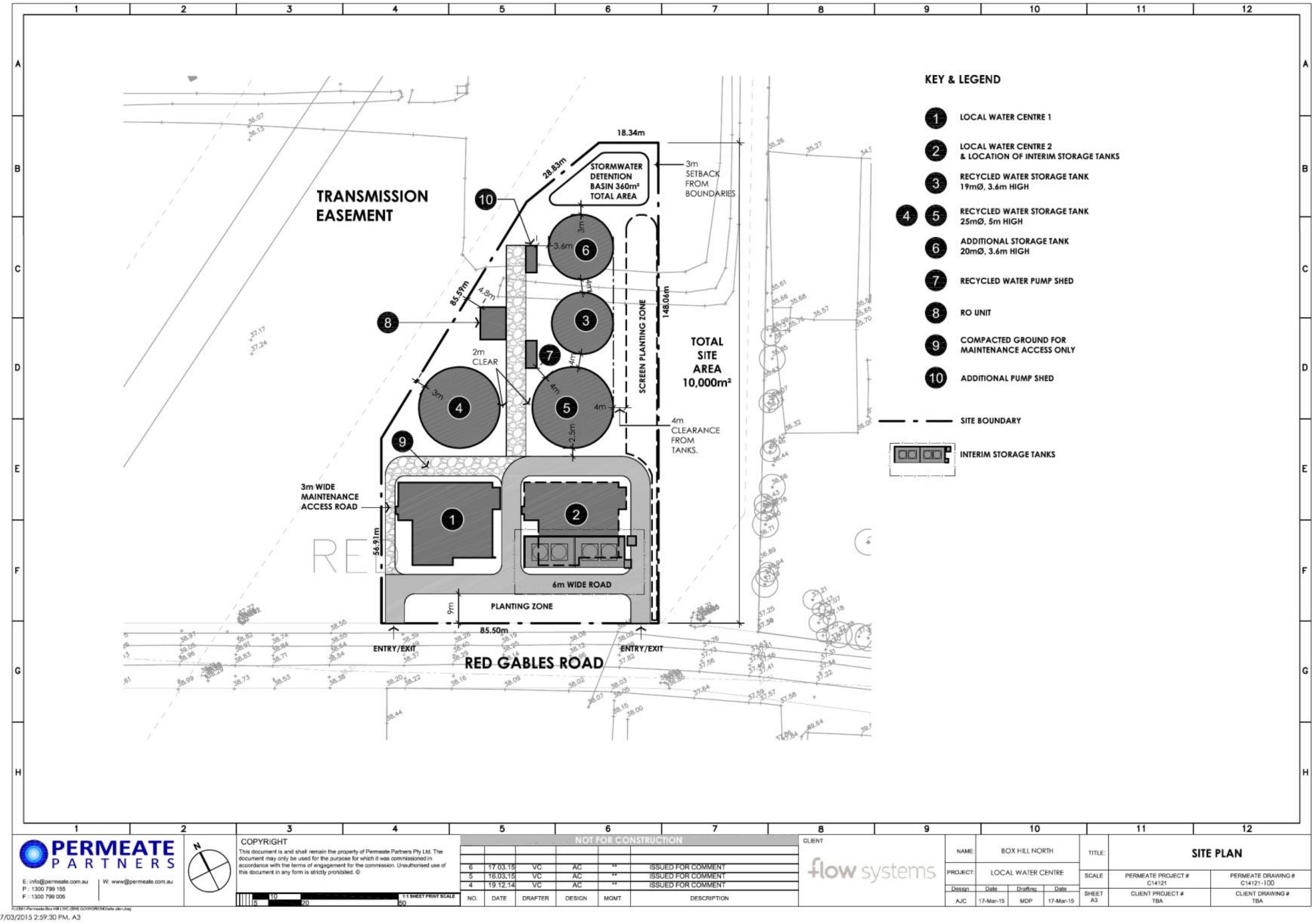


Figure 2.2: Indicative Plant Layout

3 DISCUSSION OF AIR QUALITY ISSUES

3.1 Odour Performance Criteria

3.1.1 Introduction

The determination of air quality goals for odour and their use in the assessment of odour impacts is recognised as a difficult topic in air pollution science. The topic has received considerable attention in recent years and the procedures for assessing odour impacts using dispersion models have been refined considerably. There is still considerable debate in the scientific community about appropriate odour goals as determined by dispersion modelling.

The NSW Environment Protection Authority (NSW EPA) has developed odour goals and the way in which they should be applied with dispersion models to assess the likelihood of nuisance impact arising from the emission of odour.

There are two factors that need to be considered:

1. What "level of exposure" to odour is considered acceptable to meet current community standards in NSW and
2. How can dispersion models be used to determine if a source of odour meets the goals which are based on this acceptable level of exposure

The term "level of exposure" has been used to reflect the fact that odour impacts are determined by several factors the most important of which are (the so-called **FIDOL** factors):

- the **F**requency of the exposure
- the **I**ntensity of the odour
- the **D**uration of the odour episodes
- the **O**ffensiveness of the odour
- the **L**ocation of the source

In determining the offensiveness of an odour it needs to be recognised that for most odours the context in which an odour is perceived is also relevant. Some odours, for example the smell of sewage, hydrogen sulfide, butyric acid, landfill gas etc., are likely to be judged offensive regardless of the context in which they occur. Other odours such as the smell of jet fuel may be acceptable at an airport, but not in a house, and diesel exhaust may be acceptable near a busy road, but not in a restaurant.

In summary, whether or not an individual considers an odour to be a nuisance will depend on the FIDOL factors outlined above and although it is possible to derive formulae for assessing odour annoyance in a community, the response of any individual to an odour is still unpredictable. Odour goals need to take account of these factors.

3.1.2 Complex Mixture of Odorous Air Pollutants

The Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW (**EPA, 2005**) include ground-level concentration (glc) criterion for complex mixtures of odorous air pollutants. They have been refined by the NSW EPA to take account of population density in the area. **Table 3.1** lists the odour glc criterion to be exceeded not more than 1% of the time, for different population densities.

The difference between odour goals is based on considerations of risk of odour impact rather than differences in odour acceptability between urban and rural areas. For a given odour level there will be a wide range of responses in the population exposed to the odour. In a densely populated area there will therefore be a greater risk that some individuals within the community will find the odour unacceptable than in a sparsely populated area.

The most stringent of the impact assessment criterion of 2 ou (at the 99th percentile; **EPA, 2005**) has been applied for this assessment.

Table 3.1: Odour Performance Criteria for the Assessment of Odour

Population of affected community	Criteria for complex mixtures of odour (OU)
≤ ~2	7
~10	6
~30	5
~125	4
~500	3
Urban (>2000) and/or schools and hospitals	2

3.2 Peak-to-mean ratios

It is common practice to use dispersion models to determine compliance with odour goals. This introduces a complication because Gaussian dispersion models directly predict concentrations over an averaging period of 3-minutes or greater. The human nose, however, responds to odours over periods of the order of a second or so. During a 3-minute period, odour levels can fluctuate significantly above and below the mean depending on the nature of the source.

To determine more rigorously the ratio between the one-second peak concentrations and 3-minute and longer period average concentrations (referred to as the peak-to-mean ratio) that might be predicted by a Gaussian dispersion model, the EPA commissioned a study by **Katestone Scientific Pty Ltd (1995, 1998)**. This study recommended peak-to-mean ratios for a range of variables, such as source type, receptor distance, stability class and stack height (for point sources).

It is important to note that those peak-to-mean factors determined are based on the Pasquill-Gifford stability classes. Since AERMOD replaces the Pasquill-Gifford stability based dispersion with a turbulence-based approach that uses the Monin-Obukhov length scale to account for the effects of atmospheric turbulence based dispersion, a conservative approach has been taken for area sources and a value of 2.5 has been applied. A value of 2.3 has been applied for wake-affected point and volume sources. A summary of the factors is provided in **Appendix A**.

The Approved Methods take account of this peaking factor and the goals shown in **Table 3.1** are based on nose-response time.

4 LOCAL METEOROLOGY

This section described the dispersion meteorology in the study area. Information on prevailing wind patterns, atmospheric stability and climatic conditions are presented.

4.1 Wind speed and direction

Meteorological data are collected by the Bureau of Meteorology from Richmond RAAF, NSW, approximately 11 km northwest of the site. Wind roses of the data collected from Richmond RAAF are shown in **Figure 4.1**. The wind roses show that on an annual basis winds are predominantly from the southwest and northeast quadrants. Winds from these quadrants are also dominant in autumn with very few winds from the other quadrants. The annual wind speed was 3.3 m/s and the annual percentage of calms, wind speed < 0.5 m/s, was 7.2%.

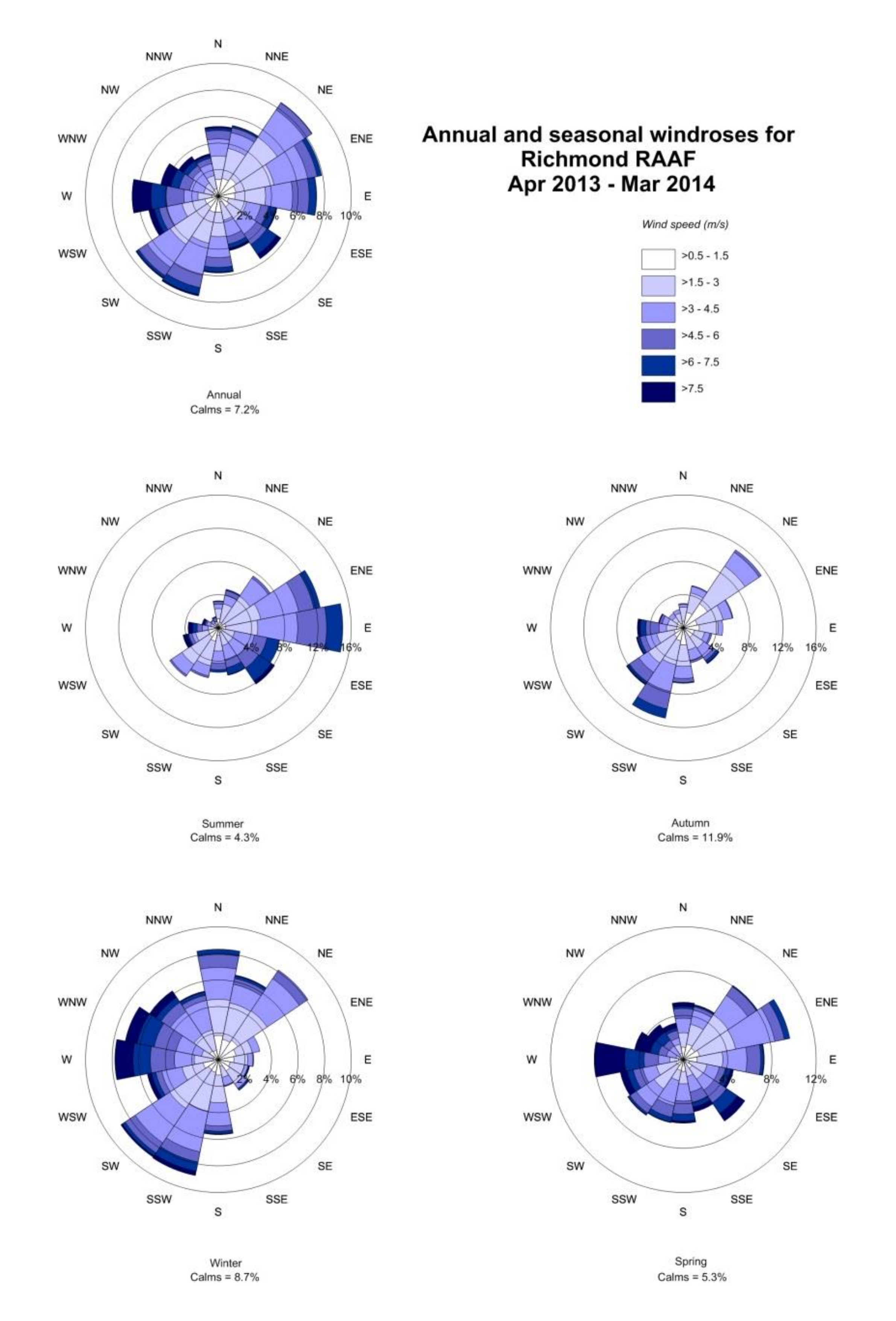


Figure 4.1: Annual and Seasonal wind roses for Richmond RAAF BoM Station

4.2 Local Climatic Conditions

Table 4.1 presents the temperature, humidity and rainfall data for the closest Bureau of Meteorology (BoM) site which is located at Richmond RAAF (Site number 067105), approximately 11 km northwest of the site. Humidity data consist of monthly averages of 9 am and 3 pm readings. Also presented are monthly averages of maximum and minimum temperatures. Rainfall data consist of mean monthly rainfall and the average number of rain days per month.

The annual average maximum and minimum temperatures recorded at the Richmond RAAF station are 24.1°C and 11.0 °C, respectively. On average, January is the hottest month, with an average maximum temperature of 30.0°C. July is the coldest month, with average minimum temperature of 3.6°C. The annual average relative humidity reading collected at 9am from the Peats Ridge station is 73% and at 3pm the annual average is 47%. The month with the highest relative humidity on average June with 9am averages of 83% and the months with the lowest relative humidity is September and October with 3pm averages of 39%.

Rainfall data collected at the Richmond RAAF station shows that February is the wettest month, with an average rainfall of 123 mm over an average of 12 rain days. The average annual rainfall is 716 mm with an average of 118 rain days per year.

Table 4.1: Climate Averages for the Richmond RAAF

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
9am Mean Dry-bulb and Wet-bulb Temperatures (°C) and Relative Humidity (%)													
Dry-bulb	22.1	21.3	19.1	17.0	13.1	10.0	8.9	11.4	15.4	18.3	19.2	20.9	16.4
Humidity	72	78	80	76	82	83	80	69	63	58	68	68	73
3pm Mean Dry-bulb and Wet-bulb Temperatures (°C) and Relative Humidity (%)													
Dry-bulb	28.5	27.4	25.8	23.0	19.7	17.0	16.5	18.7	21.5	23.5	25.2	27.5	22.9
Humidity	47	52	52	49	53	53	48	39	39	40	46	44	47
Daily Maximum Temperature (°C)													
Mean	30.0	29.0	26.8	23.9	20.7	17.9	17.6	19.8	22.9	25.1	26.7	28.5	24.1
Daily Minimum Temperature (° C)													
Mean	17.6	17.7	15.6	11.5	7.5	5.1	3.6	4.4	8.0	10.9	14.1	15.9	11.0
Rainfall (mm)													
Mean	76	123	76	49	49	48	29	33	47	50	83	60	716
Rain days (Number)													
Mean	11	12	11	10	10	10	8	6	7	9	12	11	118

Source: BOM (2014) Climate averages for Station: 067105; Commenced: 1993 – last record 2014; Latitude: 33.60°S; Longitude: 150.24 °E

5 ODOUR EMISSIONS

To characterise the potential odour impacts of the proposed development, odour sampling was completed at a similar facility in Pitt Town, NSW (**Pacific Environment 2013**, **Pacific Environment 2014**). The purpose of the monitoring was to characterise the odour from the existing facility and use the data to derive odour emission rates (OERs) for use in odour impact assessments for future proposed facilities.

5.1 Monitoring Methodology

Odour samples from each chamber were taken using an isolation flux hood (in accordance with AS/NZS 4323.4:2009 "Area source sampling – Flux chamber technique" and the method described in the US EPA technical report "EPA/60068-86/008"). The IFH was floated on the surface of each chamber and odour-free nitrogen was forced into the hood via odour free Teflon tubing until it has reached equilibrium. The nitrogen flow (5 L/min) purges the flux hood with a residence time of 4 times the chamber volume occurring before sampling begins (24 minutes). The odorous sample is then drawn at a sample rate of approximately 3 L/min over a period of 30 minutes into a single use, odour-free Nalophan sample bag, secured inside a drum kept under vacuum using a pump.

The odour samples were collected on the morning of 20 November 2014 as part of the most recent odour monitoring campaign:

- 1 x sample taken at the MBR Membrane Chamber. The sample was drawn from the surface of the liquid inside the chamber.
- 1 x sample taken at the MBR Aerobic Chamber. The sample was drawn from the surface of the liquid inside the chamber.
- 1 x sample taken at the MBR Anoxic Chamber. The sample was drawn from the surface of the liquid inside the chamber.

Following collection, all odour samples were analysed within 30 hours at a NATA accredited laboratory using dynamic olfactometry [a] (in accordance with AS/NZS 4323.3:2001 "Determination of Odour Concentration by Dynamic Olfactometry" (**AS/NZS, 2001**).

The results of the odour monitoring are presented as odour concentrations measured in odour units (OU) in **Table 5.2**. The laboratory report from the odour monitoring in is presented in **Appendix B**.

[a] There are no instrument-based methods that can measure an odour response in the same way as the human nose and "dynamic olfactometry" is therefore the preferred method for odour analysis. Dynamic olfactometry is the measurement of odour by presenting a sample of odorous air to a panel of people with decreasing quantities of clean odour-free air. The panellists then note when the smell becomes detectable. The correlations between the known dilution ratios and the panellists' responses are then used to calculate the number of dilutions of the original sample required to achieve the odour detection threshold. The units for odour measurement using dynamic olfactometry are "odour units" (OU) which are dimensionless and are effectively "dilutions to threshold".

Table 5.1: Odour Monitoring Results

Sample	Sample Date	Sample Time	Odour Concentration (OU)	Specific Odour Emission Rate ($OU.m^3/s/m^2$)[b]
1 – MBR Tank – Membrane Chamber	20/11/2014	13:51	197	0.068
2 – MBR Tank – Aerobic Chamber	20/11/2014	11:37	362	0.119
3 – MBR Tank –Anoxic Chamber	20/11/2014	11:35	431	0.142

5.2 Odour Control Unit

Flow Systems propose to install an odour control system at Box Hill North similar to that installed at their, as yet non-operational, Wyee local water centre. The system includes both biological and activated carbon filtration to remove the majority of the odorous air from the flow balance tanks. The Operating and Maintenance Manual for the proposed Odour Control System (**OCR, 2014**) advises that between 90-98% of odours can be removed via biological treatment (FiltaOdor™), and then a further 99% via the activated carbon filter (FiltaCarb™).

This OCU proposed for Box Hill North is very different to the OCU currently operating at Pitt Town and so the measurements made at the Pitt Town OCU vent stack are not relevant for this study. In March 2013 and November 2014, odour samples were also taken from the head space in the Pitt Town FBT which would represent the odours prior to treatment and ventilation through the OCU stack. These samples were taken using the same flux-hood methodology as described in **Section 5.1** and listed in **Table 5.2**. Assuming that the untreated odour in the Pitt Town FBT will be similar to that at Box Hill North, the minimum biofilter efficiency of 90% control and a further 99% via the activated carbon filter was applied to these values to represent the resulting odour concentrations (shaded) which may be present in the vent stack.

Table 5.2: Odour sampling of the FBT headspace

Sample	Odour Concentration (OU)	90% control after biological filtration (OU)	Further 99% control after activated carbon filtration (OU)
FBT headspace March 2013	77,900	779	78
FBT headspace November 2014	114,000	1,140	114

In 2011, Sydney Water published standard specifications for manufacturers and installers of odour control units (**Sydney Water, 2011**). It is required that reliable and effective odour removal is provided, to a level of the minimum requirements outlined in that document. One such requirement is that the odour concentrations at the exit of the vent stack be no more than 500 OU, which is only slightly higher than the 446 OU level measured at the Pitt Town OCU stack in March 2013, and significantly higher than the values in **Table 5.2**, calculated by applying the combined control efficiencies likely to be achieved using the biological and activated carbon filtration system proposed for Box Hill North. Applying the minimum Sydney Water requirement of 500 OU at the vent stack is therefore conservative and has been used for this modelling study.

[b] Specific odour emission rate (SOER) is calculated from the sweep gas flow rate and area of flux hood. That is: SOER = odour concentration (ou) x sweep gas flow rate (Nm^3/s) x area (m^2). The SOER is only used when the source is represented as an area source. For the point source (FBT OCU vent), the measured odour concentration is multiplied by the volumetric flow rate to determine an estimated emission rate.

6 APPROACH TO ASSESSMENT

The overall approach to the assessment follows the Approved Methods using the Level 2 assessment methodology. The Approved Methods specify how assessments based on the use of air dispersion models should be completed. They include guidelines for the preparation of meteorological data to be used in dispersion models and the relevant air quality criteria for assessing the significance of predicted concentration and deposition rates from the project. The approach taken in this assessment follows as closely as possible the approaches suggested by the guidelines.

6.1 Dispersion model

The air dispersion modelling conducted for this assessment is based on an advanced modelling system using the AERMET/AERMOD model. AERMOD was chosen as the most suitable model due to the source types, location of nearest receptors and nature of local topography. AERMOD is the US-EPA's recommended steady-state plume dispersion model for regulatory purposes. AERMOD replaced the Industrial Source Complex (ISC) model for regulatory purposes in the US in December 2006 as it incorporates more recent, and potentially more accurate, algorithms to represent both meteorological interactions and air quality dispersion. AUSPLUME, a steady state Gaussian plume dispersion model developed by the Victorian EPA and frequently used in Australia for simple near-field applications is based on ISC, which has now been replaced by AERMOD.

A significant feature of AERMOD is the Pasquill-Gifford stability based dispersion is replaced with a turbulence-based approach that uses the Monin-Obukhov length scale to account for the effects of atmospheric turbulence based dispersion.

The AERMOD system includes AERMET, used for the preparation of meteorological input files and AERMAP, used for the preparation of terrain data. Terrain data were sourced from NASA's Shuttle Radar Topography Mission (SRTM) Data (3 arc-second (~90m) resolution) and processed within AERMAP to create the necessary input files.

AERMET requires surface and upper air meteorological data as inputs. Surface data were sourced from the BoM meteorological station at Richmond RAAF located approximately 11 km northwest of the project. Cloud cover data are required for AERMET and these were sourced from the Richmond RAAF station.

Appropriate values for three surface characteristics are required for AERMET as follows:

- Surface roughness, which is the height at which the mean horizontal wind speed approaches zero, based on a logarithmic profile.
- Albedo, which is an indicator of reflectivity of the surface.
- Bowen ratio, which is an indicator of surface moisture.

Values of surface roughness, bowen ratio and albedo were determined based on a review of aerial photography for a radius of 3 km centred on the Project site. Default values for cultivated land were chosen for a single sector sectors to represent the land use type in the surrounding area.

Building wake effects were included in the modelling simulations to represent the plant building on-site at a height of 3.5 m. The OCU stack was represented as a point source at 6.4 m above ground level.

6.1.1 Atmospheric Stability

An important aspect of pollutant dispersion is the level of turbulence in the lowest 1 km or so of the atmosphere, known as the planetary boundary layer (PBL). Turbulence controls how effectively a plume is diffused into the surrounding air and hence diluted. It acts by increasing the cross-sectional area of the plume due to random motions. With stronger turbulence, the rate of plume diffusion increases. Weak turbulence limits diffusion and contributes to high plume concentrations downwind of a source.

Turbulence is generated by both thermal and mechanical effects to varying degrees. Thermally driven turbulence occurs when the surface is being heated, in turn transferring heat to the air above by convection. Mechanical turbulence is caused by the frictional effects of wind moving over the earth's surface, and depends on the roughness of the surface as well as the flow characteristics.

Turbulence in the boundary layer is influenced by the vertical temperature gradient, which is one of several indicators of stability. Plume models use indicators of atmospheric stability in conjunction with other meteorological data to estimate the dispersion conditions in the atmosphere.

Stability can be described across a spectrum ranging from highly unstable through neutral to highly stable. A highly unstable boundary layer is characterised by strong surface heating and relatively light winds, leading to intense convective turbulence and enhanced plume diffusion. At the other extreme, very stable conditions are often associated with strong temperature inversions and light winds, which commonly occur under clear skies at night and in the early morning. Under these conditions plumes can remain relatively undiluted for considerable distances downwind. Neutral conditions are linked to windy and/or cloudy weather, and short periods around sunset and sunrise, when surface rates of heating or cooling are very low.

The stability of the atmosphere plays a large role in determining the dispersion of a plume and it is important to have it correctly represented in dispersion models. Current air quality dispersion models (such as AERMOD and CALPUFF) use the Monin-Obukhov Similarity Theory (MOST) to characterise turbulence and other processes in the PBL. One of the measures of the PBL is the Monin-Obukhov length (L), which approximates the height at which turbulence is generated equally by thermal and mechanical effects (**Seinfeld and Pandis 2006**). It is a measure of the relative importance of mechanical and thermal forcing on atmospheric turbulence. Because values of L diverge to + and - infinity as stability approaches neutral from the stable and unstable sides, respectively, it is often more convenient to use the inverse of L (i.e., 1/L) when describing stability.

Figure 6.1 shows the hourly averaged 1/L for the site computed from all data in the AERMET surface file. Based on **Table 6.1** this plot indicates that the PBL is stable overnight and becomes unstable as radiation from the sun heats the surface layer of the atmosphere and drives convection. The changes from positive to negative occur at the shifts between day and night. This indicates that the diurnal patterns of stability are realistic.

Table 6.1: Inverse of the Monin-Obukhov length L with respect to atmospheric stability

1/L	Atmospheric Stability
Negative	Unstable
Zero	Neutral
Positive	Stable

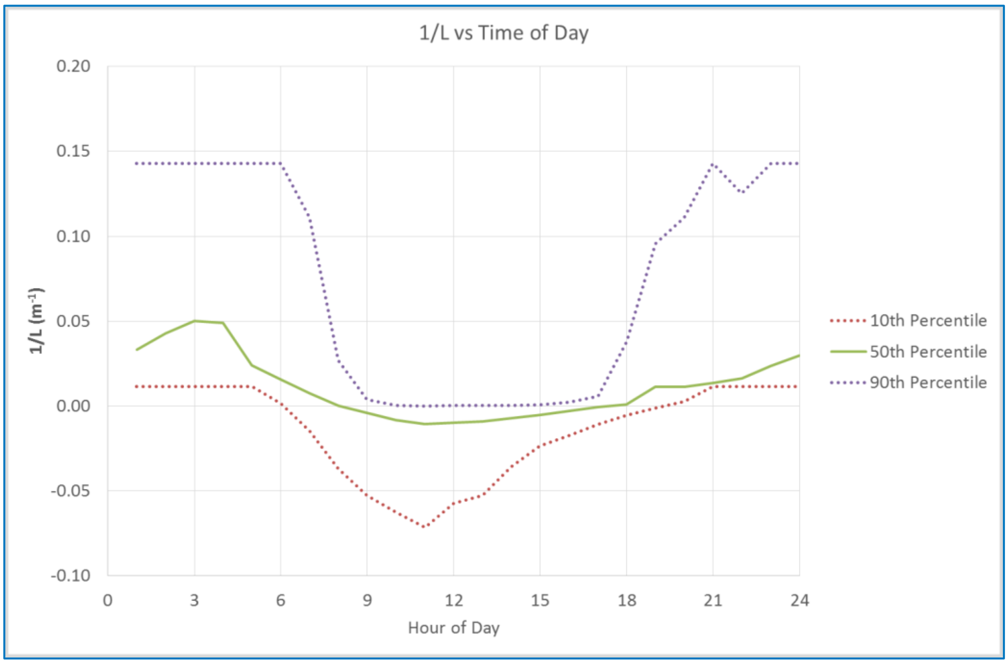


Figure 6.1: Annual statistics of 1/L by hour of the day

Figure 6.2 shows the variations in stability over the year by hour of the day, with reference to the widely known Pasquill-Gifford classes of stability. The relationship between L and stability classes is based on values derived by **Golder (1972)** set out in **EPA 2005**. Note that the reference to stability categories here is only for convenience in describing stability. The model uses calculated values of L across a continuum.

Figure 6.2 shows that neutral and very stable conditions occur for about 50% of the time, which is typical for inland locations that regularly experience temperature inversions at night. Atmospheric instability increases during the day and reaches a peak around noon as solar-driven convective energy peaks. A stable atmosphere is prevalent during the night. These profiles indicate that pollutant dispersion is most effective during the daytime and least effective at night.

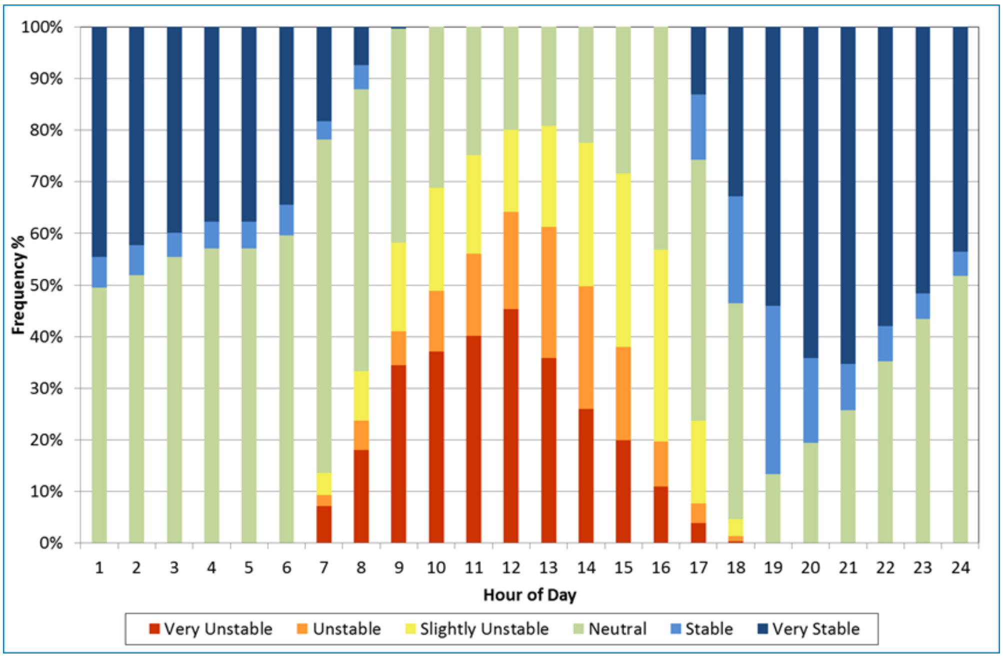


Figure 6.2: Annual distribution of stability type by hour of the day

6.2 Odour emission rates

Odour emission rates (OER) and other input parameters are shown in **Table 6.2** and **Table 6.3** for point and area sources, respectively. The OERs from the measured data and the OERs used in the modelling are both presented. The modelled OERs include a peak-to-mean of 2.3 for point sources, and a value of 2.5 for area sources, as described in **Section 3.2**.

Table 6.2: Modelling parameters used for point source (FBT OCU stack)

Model Parameter	Value
Stack location FBT OCU Vents	305,310 m, 6,277,835 m 305,349 m, 6,277,818 m
Release height	6.4 m
Temperature	27.75 °C
Stack diameter	0.3 m
Exit velocity	11.8 m/s
Flow rate	0.83 m^3/s
In-stack odour concentration	500 OU
Odour emission rate (OER)	416 $OU.m^3/s$
Peak to mean factor	2.3
OER incorporating peak to mean	958 $OU.m^3/s$

Table 6.3: Modelling parameters used for area sources

Source Name	Odour Concentration (OU)	SOER ($OU.m^3/s/m^2$)	Peak to mean factor	SOER used for modelling ($OU.m^3/s/m^2$)
Pre-anoxic Tank A	431	0.142	2.5	0.35
Pre-anoxic Tank B	431	0.142	2.5	0.35
Post-anoxic Tank A	431	0.142	2.5	0.35
Post-anoxic Tank B	431	0.142	2.5	0.35
Membrane Tank A	197	0.068	2.5	0.17
Membrane Tank B	197	0.068	2.5	0.17
Bioreactor A	362	0.119	2.5	0.30
Bioreactor B	362	0.119	2.5	0.30

For the purposes of presenting the results, all predicted odour levels at each receptor have been retained by the model and a contour plot has been prepared showing the distribution of the 99th percentile 1-hour levels at ground-level. The 99th percentile levels are plotted as the impact assessment criteria are set to ensure that the predicted odour level is not exceeded more than 1 percent of the year. Predicted odour levels are shown in **Section 7**.

7 ASSESSMENT OF IMPACTS

The odour impact at the site was assessed for two scenarios as follows:

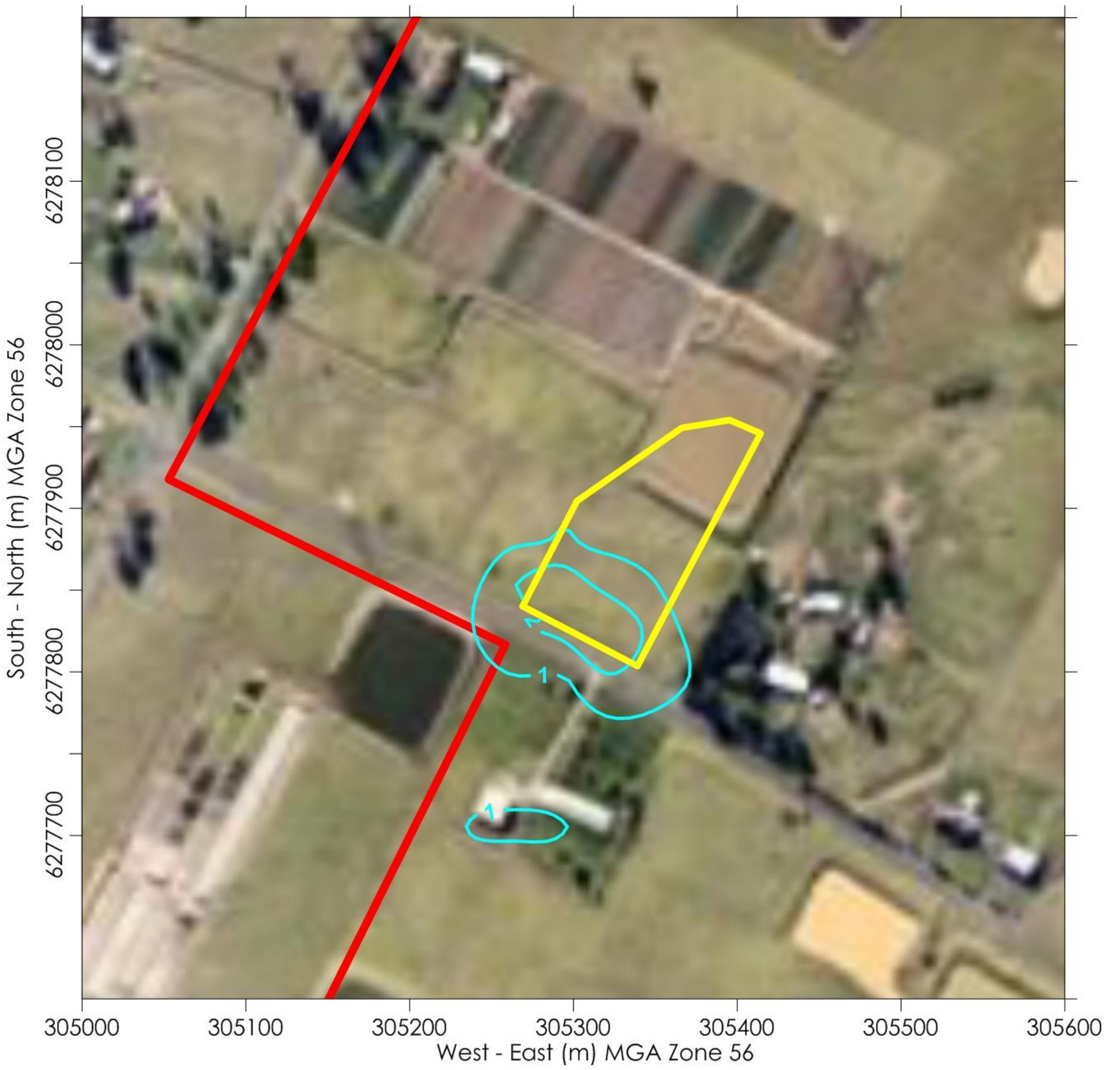
- Only ISST operational
- Two fully operational plants and ISST decommissioned

The predicted odour concentrations for the ISST only are shown in **Figure 7.1** and for the two fully operational plants combined, in **Figure 7.2**. Peak-to-mean factors have been applied in the modelling and are included in the predictions. It is also noted that the OCU vent stack emissions are likely to be conservative, for the reasons outlined in **Section 5.2** and therefore ground level odour concentrations may be lower than those predicted.

It can be seen from both plots that 2 OU (99^{th} percentile) is not predicted to be exceeded at any of the nearest sensitive receptors and is considered to comply with the NSW EPA odour assessment criterion.

Species: Odour	Location: Box Hill North	Scenario: ISST Only	Percentile: 99%	Averaging Time: 1-hour
Model Used: AERMOD v8.2	Units: Odour Units (OU)	Criterion: 2 OU	Met Data: 2013 – 2014	Plot: J. Firth

Figure 7.1: Predicted 99th percentile odour concentration (OU) for Interim FBT operations



Species: Odour	Location: Box Hill North	Scenario: Fully Operational	Percentile: 99%	Averaging Time: 1-hour
Model Used: AERMOD v8.2	Units: Odour Units (OU)	Criterion: 2 OU	Met Data: 2013 – 2014	Plot: J. Firth

Figure 7.2: Predicted 99th percentile odour concentration (OU) for the fully operational plant

8 CONCLUSIONS

This study assessed the air quality impacts of the proposed Local Water Centre at Box Hill North. The odour assessment was based on odour emission rates derived both from measurements at a similar facility, Sydney Water standards for odour control units and technical specifications for the odour control units proposed to be used. This information was combined with local meteorological data and computer-based dispersion modelling to predict the ground level odour concentrations in the vicinity of the plant.

Results from the dispersion modelling indicated that predicted odour concentrations from the proposed facility would comply with the most stringent assessment criterion of 2 OU (99th percentile) at all sensitive receivers outside the plant boundary.

The predicted odour concentrations are at or below 1 OU, the theoretical level at which odour becomes detectable but not necessarily distinguishable, at all receivers.

9 REFERENCES

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Appendix A PEAK TO MEAN RATIOS

Table A.1: Factors for Estimating Peak Concentration

Source Type	Pasquill-Gifford stability class	Near field P/M60*	Far field P/M60
Area	A, B, C, D	2.5	2.3
	E, F	2.3	1.9
Line	A – F	6	6
Surface point	A, B, C	12	4
	D, E, F	25	7
Tall wake-free point	A, B, C	17	3
	D, E, F	35	6
Wake-affected point	A – F	2.3	2.3
Volume	A – F	2.3	2.3

*Ratio of peak 1-second average concentrations to mean 1-hour average concentrations

Appendix B ODOUR MEASUREMENTS FROM PITT TOWN

Measurements taken at the open sources and FBT headspace taken in November 2014

Odour Sample Measurement Results
Panel Roster Number: SYD20141121_101

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Panel Size	Valid ITEs	Nominal Sample Dilution	Actual Sample Dilution (Adjusted for Temperature)	Sample Odour Concentration (as received, in the bag) (ou)	Sample Odour Concentration (Final, allowing for dilution) (ou)	Specific Odour Emission Rate (ou.m^3/m^2/s)
Sample #1 – Anoxic	SC14715	20/11/2014 1135hrs	21/11/2014 1031hrs	4	8	-	-	431	431	-
Sample #2 – Aerobic	SC14716	20/11/2014 1137hrs	21/11/2014 1103hrs	4	8	-	-	362	362	-
Sample #3 – Membrane	SC14717	20/11/2014 1351hrs	21/11/2014 1134hrs	4	8	-	-	197	197	-
Sample #6 – FBT Headspace	SC14720	20/11/2014 1340hrs	21/11/2014 1341hrs	4	8	-	-	77,900	77,900	-

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd:
1. The collection of Isolation Flux Hood (IFH) samples and the calculation of the Specific Odour Emission Rate (SOER).
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd. have performed the dilution of samples.

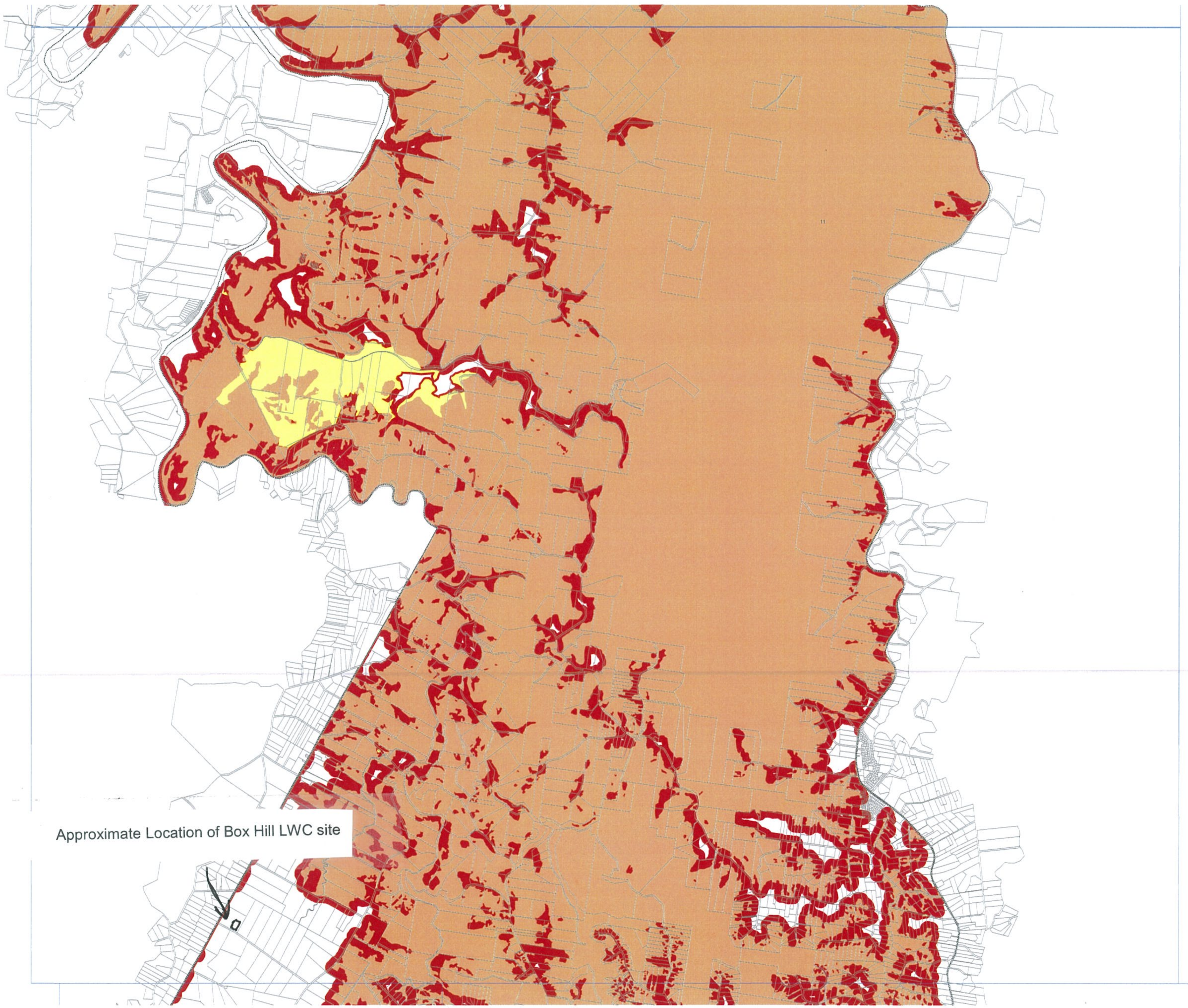
Measurements at the FBT headspace and OCU stack taken in March 2013

Sample Location	TOU Sample ID	Sampling Date & Time	Analysis Date & Time	Sample Odour Concentration (as received, in the bag) (ou)	Sample Odour Concentration (Final, allowing for dilution) (ou)	Odour Character
Sample #1 – Membrane Chamber	SC13176	18/03/2013 1405hrs	19/03/2013 1031hrs	34	34	Musty
Sample #2 – Aerobic Chamber	SC13177	18/03/2013 1444hrs	19/03/2013 1059hrs	42	42	Musty
Sample #3 – Anoxic Chamber	SC13178	18/03/2013 1544hrs	19/03/2013 1127hrs	52	52	Musty, Rubbery, Garlic
Sample #4 – FBT OCU Vent	SC13179	18/03/2013 1615hrs	19/03/2013 1201hrs	446	446	H^2S, Rotten Egg, Cabbage
Sample #5 – FBT Headspace	SC13180	18/03/2013 1645hrs	19/03/2013 1227hrs	114,000	114,000	H2S, Rotten Egg

Note: The following are not covered by the NATA Accreditation issued to The Odour Unit Pty Ltd:
1. The collection of Isolation Flux Hood (IFH) samples and the calculation of the Specific Odour Emission Rate (SOER).
2. Final results that have been modified by the dilution factors where parties other than The Odour Unit Pty Ltd. have performed the dilution of samples.

Appendix 17

Bushfire Prone Land Map



THE HILLS
SHIRE COUNCIL

SHEET 11
BUSHFIRE PRONE LAND MAP
2012

N

SCALE: 1:25,000

300 0 300 600 900 1,200 1,500
Metres

KEY MAP

Bushfire Prone Land

- BFPL Vegetation Category 1
- BFPL Vegetation Category 2
- BFPL Vegetation Buffer - 100m and 30m

RFS CERTIFICATION 8/05/2012

NOTE

THIS LOCAL ENVIRONMENTAL PLAN MAY BE SUBJECT TO AMENDMENT BY SUBSEQUENT LOCAL ENVIRONMENTAL PLANS. ANY PERSON USING THIS PLAN SHOULD CONTACT COUNCIL SO AS TO ENSURE THAT ANY INFORMATION SHOWN HAS NOT BEEN SUBJECT TO AMENDMENT

THE HILLS SHIRE COUNCIL DOES NOT GIVE ANY GUARANTEES CONCERNING THE ACCURACY, COMPLETENESS OR CURRENCY OF THE TEXTUAL INFORMATION HELD IN OR GENERATED FROM ITS DATABASE

Appendix 18

Detailed Site Investigation Report

E.J. Cooper and Son Pty Ltd
Detailed Site Investigation

Box Hill North, NSW

4 August 2014
43376/58442 (Rev A)
JBS&G

E.J. Cooper and Son Pty Ltd
Detailed Site Investigation

Box Hill North, NSW

4 August 2014
43376/58442 (Rev A)
JBS&G

Table of Contents

List of Abbreviations vi

Executive Summary vii

1. Introduction 1
    - 1.1 Introduction and Background 1
    - 1.2 Objectives 1
    - 1.3 Scope of Works 1
2. Site Conditions and Description 3
    - 2.1 Site Identification 3
    - 2.2 Site Description 4
    - 2.3 Surrounding Land use 4
    - 2.4 Topography 5
    - 2.5 Geology 5
    - 2.6 Hydrology 5
    - 2.7 Hydrogeology 5
    - 2.8 Acid Sulfate Soils 8
3. Summary Site History 9
4. Previous Site Investigation Information 10
5. Conceptual Site Model 12
    - 5.1 Potentially Contaminated Media 12
6. Sampling and Analytical Plan 14
    - 6.1 Data Quality Objectives 14
        - 6.1.1 State the Problem 14
        - 6.1.2 Identify the Decision 14
        - 6.1.3 Identify Inputs to the Decision 14
        - 6.1.4 Define the Study Boundaries 15
        - 6.1.5 Develop a Decision Rule 15
        - 6.1.6 Specify Limits of Decision Error 16
        - 6.1.7 Optimise the Design for Obtaining Data 19
    - 6.2 Soil Sampling Methodology 32
        - 6.2.1 Soil Investigations 32
        - 6.2.2 Sampling Nomenclature 32

6.2.3 Field PID Screening 33
6.2.4 Composite Sampling 33
6.2.5 Decontamination 33
6.2.6 Duplicate and Triplicate Sample Preparation 34
6.3 Observation Test Pits 34
6.4 Sediment Sampling 34
6.5 Groundwater Sampling Methodology 34
6.5.1 Groundwater Investigation 34
6.6 Laboratory Analyses 35
6.7 Hazardous Building Materials Survey 35
7. Assessment Criteria 37
7.1 Regulatory Guidelines 37
7.2 Soil Criteria 37
7.3 Groundwater Criteria 40
7.4 Biologicals 41
8. Quality Assurance / Quality Control 42
8.1 QA/QC Results 42
8.2 QA/QC Discussion 43
8.2.1 Precision 43
8.2.2 Accuracy 44
8.2.3 Representativeness 44
8.2.4 Comparability 45
8.2.5 Completeness 46
8.2.6 Sensitivity 46
8.3 QA/QC Conclusions 46
9. Results 47
9.1 Field Observations 47
9.1.1 Potential Aesthetic Issues 47
9.1.2 Soil Properties 47
9.1.3 Potential Acid Sulfate Soils 47
9.2 Soil Analytical Results 48
9.2.1 Biologicals 55

9.3 Groundwater Quality 55

9.4 Groundwater Analytical Results 55

9.4.1 TRH/BTEX 55

9.4.2 VOCs 55

9.4.3 OCPs/OPPs 55

9.4.4 Metals 55

9.5 Hazardous Materials Survey 56

10. Site Characterisation 57

10.1 Are there any unacceptable health risks to likely future onsite receptors from contamination at the site? 57

10.2 Are there any issues relating to background soil concentrations? 58

10.3 Are there any impacts of chemical mixtures? 58

10.4 Are there any aesthetic issues? 58

10.5 Is there any evidence of, or potential for, migration of contaminants from the site? 58

10.6 Is a site management strategy required? 58

11. Conclusions and Recommendations 60

11.1 Conclusions 60

11.2 Recommendations 60

12. Limitations 62

Tables

Table 2.1: General Site Information 3
Table 2.2 Summary Site Details 3
Table 2.3 Groundwater Bores 6
Table 3.1 Summary of Site History 9
Table 5.1 Areas or Activities of Environmental Concern and Associated Contaminants of Potential Concern 12
Table 6.1 Summary of Decision Rules 16
Table 6.2 Summary of Quality Assurance/ Quality Control Program 18
Table 6.3 Implemented Sampling Strategy 20
Table 6.4 Sampling and Analytical Schedule 35
Table 6.4 Sampling and Analytical Program (Hazmat) 36
Table 7.1 Health Based Investigation Criteria and Management Limits (mg/kg) 38
Table 7.2 Asbestos in Soil Health Based Assessment Criteria (mg/kg) 39
Table 7.3 Ecological Investigation/Screening Levels (mg/kg) 39
Table 7.4 Groundwater Assessment Criteria (µg/L unless noted) 40
Table 7.5 Biosolid Based Criteria 41
Table 8.1 Summary of QAQC Results 42
Table 9.1 Soil Properties 47
Table 9.2 Summarised Soil Analytical Results 49

Figures

Figure 1: Site Location
Figure 2: Site Layout
Figure 3: Areas of Environmental Concern
Figure: 4a-4e Samples Locations
Figures 5: Groundwater Monitoring Well Locations
Figures: 6a-6e: Soil Exceedances

Appendices

Summary Tables

Appendix A: Photographic Log

Appendix B: Hazardous Materials Survey

Appendix C: Laboratory Reports

Appendix D: Logs

Appendix F: QA/QC Tables

List of Abbreviations

ACM – Asbestos Containing Material

AEC – Area of Environmental Concern

AST - Above Ground Storage Tank

bgs – Below Ground Surface

COPC – Contaminant of Potential Concern

DCP – Development Control Plan

DECCW - NSW Department of Environment, Climate Change and Water (now OEH)

DQI – Data Quality Indicator

DQO – Data Quality Objective

EPA – NSW Environment Protection Authority

ESA – Environmental Site Assessment

ha - Hectare

HIL - Health Investigation Level

LOR - Limit of Reporting

NOW - Office of Water (formerly Department of Water and Energy, DWE)

OEH – NSW Office of Environment and Heritage

OCPs – Organochlorine Pesticides

OPPs – Organophosphate Pesticides

PAHs – Polycyclic Aromatic Hydrocarbons

PCBs – Polychlorinated Biphenyls

SEPP – State Environment Protection Policy

TRH – Total Recoverable Hydrocarbons

UST - Underground Storage Tank

WHS – Work Health and Safety

Executive Summary

JBS&G (NSW & WA) Pty Ltd (JBS&G) was engaged by E.J. Cooper and Son Pty Ltd (EJC, the client) c/- APP Corporation Pty Ltd (APP) to conduct Detailed Site Investigation (DSI) at land at Box Hill North, NSW (the site). The site occupies part of the land bound by Boundary Road to the west, Old Pitt Town Road to the south, Maguires Road to the north, and Janpieter Road to the east, and has an area of approximately 380 hectares. The site location is show in **Figures 1** and **2**.

It is understood that the site is proposed to be subdivided and developed comprising the following land uses:

- Approximately 290 hectares of residential land, comprising 4100 lots;
- A 5.5 hectare town centre incorporating a mix of retail, commercial and business uses;
- A 2.2 hectare school site;
- Over 77 hectares of active and passive open space; and
- New roads and infrastructure.

In July 2013, JBS&G (formerly JBS Environmental Pty Ltd) prepared a *Draft Preliminary Site Investigation* (PSI) report for the site (JBS 2013[1]). Based on the results of the investigation, it was concluded that there was potential for subsurface contamination to be present resulting from current and previous site use (agricultural use). The PSI identified a number of Areas/Activities of Environmental Concern (AECs) across the site, as shown in **Figure 3**. While it was considered unlikely that potential impacts would prevent planning and development of the land for the intended use(s), a DSI was recommended to assess the extent of potential contamination. Subsequently, a sampling, analysis and quality plan (SAQP) was prepared (JBS&G 2014[2]) and implemented, consistent with relevant NSW Environment Protection Authority (EPA) made and endorsed guidelines.

The scope of works completed for this assessment comprised:

- Review and summary of relevant published geological and hydrogeological data;
- Review of existing site investigation information;
- A detailed inspection of the site;
- Preparation of a SAQP;
- Soil sampling within 31 lots within the site boundary;
- Installation and groundwater sampling from five groundwater monitoring wells;
- Analysis of selected soil samples for various contaminants of potential concern (COPCs);
- Analysis of three groundwater samples for various COPCs;
- A detailed site inspection for hazardous building materials and preparation of a hazardous materials assessment report;
- Assessment of field observations and laboratory analytical results including comparison of COPC concentrations against EPA endorsed NEPC (2013) investigation/screening levels for the range of intended land uses including the most sensitive residential with accessible soil and public open space land use scenarios.

---

[1] Draft Preliminary Site Investigation, Box Hill North, NSW, JBS Environmental, July 2013 (JBS 2013).

[2] Sampling Analysis and Quality Plan, Box Hill North, NSW. JBS&G, 23 June 2014 (JBS&G 2014).

- Preparation of this DSI report in general accordance with guidelines made or approved by the NSW EPA.

Based on the findings of this investigation and subject to the limitations in **Section 12,** the following conclusions are made with respect to the site:

- Fill material was encountered from the ground surface at all sampling locations and generally comprised silty clay.
- Concentrations of arsenic, chromium and/or lead were reported in some soil samples exceeding the adopted health criterion in five separate lots.
- Concentrations of carcinogenic PAHs (including B(a)P) were reported to exceed the adopted health criterion in one soil sample collected from one lot.
- A total of eight soil samples exceeded the ecological criterion for TRH fractions, with these located in four lots.
- A total of five soil samples exceeded the Management Limits for TRH fractions, with these located within two lots.
- Non-friable ACM was observed across the site in 11 different locations within five lots. It should be noted that lots with heavy vegetation may obscure the occurrence of additional potential ACM fragment impacts. These pose a potential future risk to site users and if weathered could pose a potential migration risk from the site. Free asbestos (FA) fibres or asbestos fines (AF) were also reported in seven soil samples analysed from four lots.
- Aesthetic impacts have been identified including ACM on ground surfaces and in surface soils (as noted above), friable asbestos in soil, as well as minor isolated surface staining and odorous soils. These areas will require management as part of future development works at the site.
- Groundwater monitoring wells were installed at five locations across the site, with three being sampled. Two of the groundwater monitoring wells were found to be dry.
- Concentrations of COPCs were either not detected or below adopted investigation levels within the groundwater samples collected, which indicates that identified soil impacts are not impacting groundwater.
- The ASTs currently present at the site require management to prevent further impacts to the site.
- The DSI did not identify any widespread or gross soil contamination, with potentially unacceptable risks from soil contamination typically localised, limited in extent, and able to be readily managed to enable all proposed land uses at the site.

It is recommended that a management strategy including preparation of a Remedial Action Plan (RAP) be developed in accordance with the relevant regulatory requirements to address the identified contamination issues to render the site suitable for the proposed land uses. The strategy would include a framework for delineating identified impacts within relevant lots, an appropriate material classification methodology for waste soils and stockpiles, safety and environmental protection controls, unexpected finds protocol and contingency measures to be implemented during remediation, and validation requirements.

1. Introduction

1.1 Introduction and Background

JBS&G (NSW & WA) Pty Ltd (JBS&G) was engaged by E.J. Cooper and Son Pty Ltd (EJC, the client) c/- APP Corporation Pty Ltd (APP) to conduct Detailed Site Investigation (DSI) at land at Box Hill North, NSW (the site). The site occupies part of the land bound by Boundary Road to the west, Old Pitt Town Road to the south, Maguires Road to the north, and Janpieter Road to the east, and has an area of approximately 380 hectares. The site location is show in **Figure 1**.

It is understood that the site is proposed to be subdivided and developed comprising the following land uses:

- Approximately 290 hectares of residential land, comprising 4100 lots;
- A 5.5 hectare town centre incorporating a mix of retail, commercial and business uses;
- A 2.2 hectare school site;
- Over 77 hectares of active and passive open space; and
- New roads and infrastructure.

In July 2013, JBS&G (formerly JBS Environmental Pty Ltd) prepared the *Draft Preliminary Site Investigation* (PSI) report for the site (JBS 2013[3]).

Based on the results of the investigation, it was concluded that there was potential for subsurface contamination to be present resulting from current and previous site use (agricultural use). The PSI identified a number of Areas/Activities of Environmental Concern (AECs) across the site.

It was considered unlikely that the AECs identified would have impacted the land to a degree that would prevent planning and development of the land for the intended use(s). It was recommended that a DSI be completed to assess the extent of contamination prior to future development. The DSI would assist with the planning decision process and assists in preventing inappropriate land use decisions, detrimental effects on the environment and increased risk to human health (DUAP/EPA 1998[4]).

It was also recommended that, based on the age of the structures as identified on-site, and the presence of suspected ACM, a hazardous materials building inspection be conducted for all structures located on the site to enable appropriate management during future development.

The DSI scope was developed in general accordance with relevant guidelines made or approved by the NSW Environmental Protection Authority (NSW EPA).

1.2 Objectives

The objectives of the DSI were to confirm the contamination status of the AECs identified in the PSI (JBS 2013) and assess the nature and extent of contamination to enable appropriate management with regards to future potential land use scenarios.

1.3 Scope of Works

The scope of works comprised:

- Review and summary of relevant published geological and hydrogeological data;

[3] Draft Preliminary Site Investigation, Box Hill North, NSW, JBS Environmental, July 2013 (JBS 2013).
[4] Managing Land Contamination Planning Guidelines SEPP 55 – Remediation of Land, Department of Urban Affairs and Planning and EPA (DUAP/EPA 1998).

- Review of existing site investigation information;
- A detailed inspection of the site;
- Preparation of a Sampling Analysis and Quality Plan (SAQP) (JBS&G 2014[5]);
- Soil sampling within 31 lots within the site boundary;
- Installation and groundwater sampling from five groundwater monitoring wells;
- Analysis of selected soil samples for various contaminants of potential concern (COPCs);
- Analysis of groundwater samples for various COPCs;
- A detailed site inspection for hazardous building materials and preparation of a hazardous materials assessment report;
- Preparation of this DSI report in general accordance with guidelines made or approved by the NSW EPA.

[5] Sampling Analysis and Quality Plan, Box Hill North, NSW. JBS&G, 23 June 2014 (JBS&G 2014).

2. Site Conditions and Description

2.1 Site Identification

The location of the site is shown in **Figure 1**. Site details are summarised in **Tables 2.1** and **2.2** and on **Figure 2**, and are described in more detail in the following sections.

Table 2.1: General Site Information

Local Government Authority	The Hills Shire (formerly Baulkham Hills Shire)
Approximate co-ordinates (MGA 56) of the centre of the site	E: 305908.887, N: 6277394.06
Current Use	Rural Residential, Agricultural. Current ownership as per **Table 2.2**
Previous Use	Rural Residential, Agricultural, open space/vacant
Total Site Area	Approx. 380 ha (based on information provided by APP).
Proposed Use	Residential, Commercial/Industrial and Open Space, Recreational
Zoning	Zoning as per **Table 2.2.**

The site was inspected during the previous investigation undertaken (JBS&G 2013).

The site is located approximately 42 km northwest of Sydney's CBD within a predominantly rural residential/agricultural area. The site is comprised of 31 lots and are summarised in **Table 2.2**.

Table 2.2 Summary Site Details

Map Ref (Figs 4a, 4b, 4c)	Lot/DP	Address	Current Owner	Size (ha)	Current Zoning*
8	9/593517	155 Boundary Road, Box Hill 2765	Brian & Susan Eveston	10.01	RU6 Transition
27	17/255616	8 Cataract Road, Box Hill 2765	John & Lorraine Earl	12.03	RU6 Transition
3	1/207750	181-191 Boundary Road, Maraylya 2765	Anthony & Angela Brisindi	11.09	RU6 Transition
2	2/11126	195-205 Boundary Road, Maraylya 2765	Mario Rechichi & Mary Lawler	12.07	RU6 Transition
9	10/593517	153 Boundary Road, Box Hill 2765	Joe & Stella Sant	10.01	RU6 Transition
31	4/253552	121 Old Pitt Town Road, Box Hill 2765	Eugene Kavanagh	10.02	RU6 Transition
14	27/255616	14 Red Gables Road, Box Hill 2765	Michael & Jane Mathers	10.02	RU6 Transition
16	30/255616	5 Janpieter Road, Box Hill 2765	Fred & Elaine Dominello	10.01	RU6 Transition
23	18/255616	6 Cataract Road, Box Hill 2765	Charlie & Mary Portelli	10.06	RU6 Transition
11	23/255616	6 Red Gables Road, Box Hill 2765	Garry & Mary Galea	10.01	RU6 Transition
21	44/255616	7 Red Gables Road, Box Hill 2765	Joseph & Steven Bugeja	10.01	RU6 Transition
22	43/255616	9 Red Gables Road, Box Hill 2765	Zaren & Rose Bugeja	10.01	RU6 Transition
30	2/253552	117 Old Pitt Town Road, Box Hill 2765	D & A Kavanagh, T Akuila, R & R Edwards	10.35	RU6 Transition
5	4/135304 A & B	97 Maguires Road, Maraylya 2765	Paul & Margaret Gaudry	12.68	RU6 Transition
28	41/255616	11 Janpieter Road, Box Hill 2765	Paul & Diane Sammut	10.01	RU6 Transition
1	1/11126	207-217 Boundary Road, Maraylya 2765	John & Daphne Cox	12.07	RU6 Transition

20	45/255616	5 Red Gables Road, Box Hill 2765	E, M E G & A Micallef	10.02	RU6 Transition
19	46/255616	5 Red Gables Road, Box Hill 2765	E, M E G & A Micallef	10.03	RU6 Transition
13	26/255616	12 Red Gables Road, Box Hill 2765	Charlie & Pauline D'Anastasi	10.01	RU6 Transition
26	21/255616	7 Cataract Road, Box Hill 2765	Vera Joy Howes	11.02	RU6 Transition
6	5/658286	151 Maguires Road, Maraylya 2765	Twihaven Pty Limited	12.65	RU6 Transition
25	16/255616	5 Cataract Road, Box Hill 2765	John Martin Camilleri	10.56	RU6 Transition
15	31/255616	3 Janpieter Road, Box Hill 2765	Diverse Construction Group Pty Limited	10.34	RU6 Transition
4	3/11126	89 Maguires Road, Maraylya 2765	Maguires Road Pty Limited	12.68	RU6 Transition
29	40/255616	13 Janpieter Road, Box Hill 2765	Mahmoud & Jamila Hussein	10.01	RU6 Transition
17	29/255616	18 Red Gables Road, Box Hill 2765	Norma Jean Pike	10.08	RU6 Transition
12	25/255616	10 Red Gables Road, Box Hill 2765	Sam D'Anastasi	10.01	RU6 Transition
7	1/564211	169 Maguires Road, Maraylya 2765	John & Joyce Saliba	12.00	RU6 Transition
24	15/255616	3 Cataract Road, Box Hill 2765	I & M Zalac & G & C Galdes	10.03	RU6 Transition
10	22/255616	4 Red Gables Road, Box Hill 2765	E.J. Cooper & Son PL	10.13	RU6 Transition
18	47/255616	3 Red Gables Road, Box Hill 2765	E.J. Cooper & Son PL	10.15	RU6 Transition

*As per Local Environmental Plan: The Hills Environmental Plan 2012

2.2 Site Description

A detailed inspection of accessible areas of the site was conducted between 20 and 24 May 2013 as part of the PSI (JBS 2013). Identified AECs are shown in **Figure 3** and are summarised in **Table 6.3**.

The site was comprised of predominantly rural residential/agricultural land which had been subdivided into 31 separate lots of between 10 and 12.7 ha. The majority of the site lots contained rural residences and agriculturally-related outbuildings including workshops, with agricultural fields and uncleared woodlot. The agricultural fields consisted primarily of grazing land (cattle, horse stables) and land for growing crops (market gardens). Numerous farm dams and associated creeks were also located throughout the site. An electrical transmission corridor, oriented northeast-southwest, transected the northwest portion of the site.

A selection of site photographs is provided in **Appendix A**.

2.3 Surrounding Land use

The current land uses of adjacent properties or properties across adjacent roads are summarised below:

- North - Maguires Road with rural residential, vacant/agricultural land, and bushland beyond.
- East – Janpieter Road and/or rural residential and vacant/agricultural land.
- South – Old Pitt Town Road and/or rural residential and vacant/agricultural land.
- West – Boundary Road and/or rural residential and vacant/agricultural land, and Sheyville National Park approximately 0.5 km further west.

2.4 Topography

Review of the regional topographic data (NATMAP[6]) indicated the site lies at approximately 40 m Australian Height Datum (AHD), with an overall gradient sloping gently to the west. The general topography of the site is relatively flat to gently rolling. Numerous small creeks cross the site, connecting farm dams, with the main creek, Cataract Creek, and oriented north-south at Lot 4 DP135304A&B at the north portion of the site.

2.5 Geology

Review of the regional geological map (DMR 1991[7]) indicated the site is underlain by Middle Triassic Bringelly Shale, Mittagong Formation and Ashfield Shale, all part of the Wianamatta Group. The Bringelly Shale consists of shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff. The Mittagong Formation consists of fine to medium-grained quartz-lithic sandstone. The Ashfield Shale consists of dark-grey to black claystone-siltstone and fine sandstone-siltstone laminite.

Review of the regional soil map (SCS 9030[8]) indicated the site is located within two soil landscape groups, the residual Lucas Heights and Blacktown Soil Landscapes.

The Lucas Heights Landscape soils are typically found on gently undulating crests and ridges on plateau surfaces of the Mittagong Formation, with local reliefs of up to 30 m and shallow slopes. The soils generally consist of moderately deep hard setting yellow podzolic and yellow soloth soils. The profile is characterised by stony soil, low soil fertility and low available water capacity.

The Blacktown Soil Landscape soils are typically found on gently undulating rises overlying shales of the Wianamatta Group, with local reliefs of up to 30 m and shallow slopes. The soils generally consist of shallow to moderately deep hard setting podzolic soils, typically mottled red and brown on crests and grading to yellow on lower slopes and within drainage lines. The profile is characterised by moderately reactive highly plastic subsoils, low soil fertility and poor soil drainage.

The intrusive investigation completed recently for the various lots indicates that the majority of the site is underlain by a silty clay and shale from near the surface.

2.6 Hydrology

The site lies approximately 7 km southeast of the Hawkesbury River, and Cataract Creek (a tributary to the Hawkesbury River) lies approximately 0.5 km northeast of the site. The site is predominantly unsealed, and as such the majority of precipitation falling on the site is expected to infiltrate to the underlying soils and/or be collected by numerous small creeks which flow to existing on-site farm dams. In addition, surface runoff across the site area is expected to flow to Cataract Creek, likely via an unnamed creek (oriented north-south) at Lot 4 DP135304A&B at the north portion of the site.

2.7 Hydrogeology

Details for 30 registered groundwater bores within the site and up to a 1 km radius of the site are summarised in **Table 2.3** below. Groundwater bore information obtained from the Natural Resource Atlas. Reference to the Natural Resource Atlas indicates seven groundwater bores are located at the site, and the majority of the groundwater bores at the site and surrounding site area are registered for domestic stock watering and irrigation.

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[6] National Topographic Map Series, Sheet 9030 (Edition 1), Australian Government Division of National Mapping 1975 (NATMAP 1975).

[7] Sydney 1:100 000 Geological Series Sheet 9030 (Edition 1), Geological Survey of NSW Department of Minerals and Energy, 1991 (DMR 1991).

[8] Sydney Soil Landscape Series Sheet 9030. Soil Conservation Service of NSW, 1989 (SCS 1989).

Table 2.3 Groundwater Bores

Bore ID	Distance from Site (approx.)	Intended Purpose	Drilled Depth (m)	SWL[1] (mbgl)	Water Bearing Zones (mbgl)	Geological Profile
GW031663	Site	Irrigation	91.4	-	10.6-10.6, 42.6-45.6, 77.7-77.7	Sand (0-6.7 m), sandstone (6.7-36.57 m), shale (36.57-64.0 m) then sandstone
GW108167		Domestic Stock	180.0	180.0	96.5-98.0, 132.0-132.5, 157.0-158.0, 160.0-161.0	Sandstone, shale and siltstone
GW072414		Domestic Stock	132.5	-	45.90-46.10, 88.5-88.7, 124.1-124.3	Clay (0-4.4 m), shale (4.4-18.1 m) then sandstone
GW100182		Domestic Stock	248.0	30.0	23.0-23.2, 53.0-53.2, 170.0-170.4, 190.0-190.3, 215.0-215.3	Clay (0-13.0 m), sandstone (13.0-49.0 m), shale (49.0-53.0 m), sandstone (53.0-243.0 m) then basalt.
GW106075		Domestic Stock	198.5	54.0	64.3-68.0, 104.0-106.0, 150.5-151.3, 174.5-179.0	Clay (0-1.0 m), shale (1.0-3.0 m) then sandstone with some shale at 45.0-45.7 m
GW069066		Domestic	96.5	23.0	11.5-13.5, 79.5-82.0	Soil (0-0.5 m) then sandstone with some shale bands
GW072083		Domestic Farming Stock	304.0	-	168.0-168.0, 180.0-180.0, 220.0-220.0, 296.0-296.0	Clay (0.0-3.0) then shale and sandstone

Bore ID	Distance from Site (approx.)	Intended Purpose	Drilled Depth (m)	SWL[1] (mbgl)	Water Bearing Zones (mbgl)	Geological Profile
GW051330	0.2 to 1 km north/NE of the site	Stock	100.0	-	13.0-13.5, 29.0-30.0, 40.0-41.0, 81.0-82.0	Topsoil (0-1.0 m) then sandstone (described as 'sand')
GW072199		Domestic Stock	96.0	5.0	15.0-23.0	Topsoil/clay (0-7.0 m) then sandstone
GW071102		Irrigation	223.0	64.0	75.0-80.0, 170.0-180.0, 220.0-223.0	-
GW019591		Oil Explor-ation	9.1	-	-	Shale
GW106739		Domestic Stock	-	-	-	-
GW108163		Domestic Stock	120.0	16.4	27.0-28.0, 52.0-56.0	Topsoil/clay (0-3.5 m), ironstone (3.5-4.0 m) then sandstone with some shale and siltstone
GW052833		Domestic Stock	52.0	-	24.0-25.0, 31.0-32.0, 39.0-40.0	Shale (0-17.5 m),then sandstone (described as 'sand')
GW101179	0.1 to 1 km east/southeast of the site	Industrial	168.0	55.0	123.0-126.0, 156.0-164.5	Clay (0-2.0 m), then sandstone with some shale
GW102933		Domestic Stock	150.0	21.0	23.0-24.0, 77.0-80.0, 126.0-130.0, 138.0-140.0	Topsoil (0-0.5 m) then sandstone with some shale
GW109056		Domestic Stock	156.0	14.8	-	-
GW023100		Domestic Stock	10.7	-	9.1-9.1	Soil (0-0.6 m) then sandstone
GW105879		Domestic Stock	-	-	-	-
GW109933		Domestic Stock	138.0	38.0	68.0-74.0, 82.0-85.0, 123.0-136.0	Sandstone with some ironstone and siltstone
GW100126		Domestic Stock	104.0	36.0	45.0-48.0, 97.0-98.0	Sandstone with some shale
GW105687		Domestic Stock	150.3	49.6	40.2-40.5, 51.7-52.2, 82.5-90.9, 103.5-103.6	Clay (0-0.6 m) then sandstone with some shale

GW102284		Domestic Stock	120.5	89.0	99.0-99.5	Topsoil/clay (0-1.5 m), sandstone (1.5-18.0 m), clay (18.0–18.4 m) then sandstone with some claystone
GW070265	0.1 to 0.5 km south of the site	Domestic Stock	235.0	-	33.0-34.0, 138.0-140.0, 160.0-160.5, 180.0-181.0, 204.0-210.0	-
GW100184		Domestic Stock	227.0	25.0	35.0-35.5, 112.0-113.0, 160.0-160.3, 175.0-175.3, 190.0-190.2, 210.0-210.3	Clay (0-4.0 m), shale (4.0–35 m), sandstone (35.0–96.0 m), shale (96.0-105.0 m), sandstone (105.0-112.0 m). shale (112.0–113.0 m) then sandstone
GW100485		Domestic Stock	228.0	-	190.0-195.3, 203.1-206.7, 214.0-216.6	Clay (0-0.1 m), shale (0.1-25.3 m) then sandstone
GW104606		Domestic Stock	193.0	41.0	173.3-177.0, 187.0-187.5	Clay (0-5.8 m), shale (5.8-24.5 m) then sandstone with some siltstone at 187.5-189.0 m
GW072142	0.2 to 0.8 km southwest of the site	Domestic	174.5	45.0	45.0-45.5, 79.0-80.0, 140.0-141.5, 151.0-154.0	Soil and clay (0-6.0 m), then sandstone with some shale
GW100080		Domestic Stock	138.5	26.5	90.0-95.0, 115.5-116.5, 129.0-129.5, 134.0-136.5	Soil and clay (0-2.5 m), shale (2.5-50.5 m) then sandstone with some shale
GW108620		Domestic Stock	210.0	44.5	51.5-53.5, 137.0-148.0, 152.0-153.0, 166.5-168.0	Clay (0-0.7 m), shale (0.7-5.0 m) then sandstone with some shale

Note: [1]Standing Water Level (SWL) registered as m below ground level (m bgl)

Based on local topography, groundwater flow is anticipated to be to the northwest towards the Hawkesbury River and/or north to Cataract Creek (a tributary of the Hawkesbury River). Shallow (perched) groundwater is anticipated to be present at the soil-bedrock interface, otherwise groundwater aquifers are at depth (>10m) in bedrock. A total of five groundwater monitoring wells were installed at the site, with groundwater being observed to be at between 2.8 m and 7.4 m.

2.8 Acid Sulfate Soils

Review of the previous investigation (JBS 2013) indicates that there is no High or Low probability of occurrence of acid sulfate soils within the soil profile located on the site. Additionally, no evidence of acid sulfate soils were reported during the DSI.

3. Summary Site History

Based on the historical information provided in the previous investigation (JBS&G 2013) report, the history of the site is summarised in **Table 3.1** below.

Table 3.1 Summary of Site History

Period	Activity	Source
1900s to 1940s	Portions of the site are owned by an orchardist and farmers (including dairy farmers). In the 1947 aerial photograph the site is mostly open grassed agricultural land with some limited rural residential farmhouses at the northern portion of the site off of Maguires Road. Medium density woodland/scrubland also located at the northern portion of the site.	Titles and 1947 aerial photograph
1940s-1970s	Site remains mostly as open grassed agricultural land, with increasing number of farm dams at scattered locations across the site. Woodland cover at the northern portion of the site gradually decreases. The south eastern portion of the site may have been used for horse training purposes. In1978 Red Gables Road and Cataract Road appear to be under construction, and additional rural residential buildings at the northern portion of the site (between Red Gables Road and Maguires Road).	Titles and 1955, 1961, 1970 and 1978 aerial photographs
1979-1980	The site has been subdivided into its current layout, with site use predominantly remaining agricultural (market gardens).	Titles
1980s - present	The subdivision of the site as referenced for 1979-1980 is apparent (as observed in the 1986 aerial photograph) with rural residential buildings at the majority of the subdivided lots at the approximate centre and southern areas of the site (between Red Gables Road and Old Pitt Town Road, east of Cataract Road). Site use (agricultural, rural residential) appears consistent between 1980s and present.	1986, 1994 and 2005 aerial photographs, site inspection (May 2013).

4. Previous Site Investigation Information

The previous investigation completed at the site are discussed below:

JBS Environmental 2013

JBS was engaged by APP to conduct a PSI at land at Box Hill North, NSW.

The objectives of the investigation were to assess the potential for widespread contamination based on the current and historical site activities and to draw preliminary conclusions of the potential contamination status of the site, with the consideration of potential development of the site for residential use.

The scope of work comprised:

- Review of topography, geology and hydrogeology of the site and surrounding areas;
- Review of available Council documentation, aerial photos, legal title information, EPA records and Heritage records to identify areas of environmental concern and associated COPCs;
- Conducting a detailed inspection of 31 properties comprising the site; and
- Preparation of a PSI report.

The site investigation identified the following issues at the site:

- Areas in which asbestos fragments and asbestos containing material (ACM) piping were observed on and embedded in the ground surface, and buildings containing ACM were identified;
- Potential lead paint associated with current/historic buildings;
- Current/former workshop areas in which oil staining was observed, and at areas where petroleum products/diesel fuel were stored;
- Areas of surface debris, drums, burn pits and debris stockpiles;
- Areas where former orchards/tree nurseries were identified; and
- Areas where disturbed terrain/stockpiles and/or imported fill were observed.

Based on the results of the investigation, it was concluded that there was potential for subsurface contamination to be present resulting from current and previous site use (agricultural use). Based on the site observations and agriculturally-related site activities, it was considered that the potential for widespread contamination across the site was low, with the possible exception of asbestos.

Due to site observations at some site lots (such as large maintenance sheds, petrol/diesel and chemical storage), observations of potential commercial activities at some site lots, and limited access to some buildings and lot areas, there had been and currently was storage of Dangerous Goods at the site.

It was considered unlikely that the AECs identified would have impacted the land to a degree that would prevent planning and development of the land for the intended use(s). It was recommended that a Detailed Site Investigation (DSI) be completed to assess the extent of contamination prior to future development.

It was also recommended that, based on the age of the structures as identified on-site, and the presence of suspected ACM, a hazardous materials building inspection be conducted for all structures located on the site to enable appropriate management during future development.

5. Conceptual Site Model

The conceptual site modal (CSM) is presented below. The site layout shows the various site portions and is provided in **Figure 2**. The identified AECs are provided in **Figure 3**.

Potential Areas of Environmental Concern

Based on the history review and field observations from the site, areas of environmental concern have been categorised and are presented in **Table 5.1** below.

Table 5.1 Areas or Activities of Environmental Concern and Associated Contaminants of Potential Concern

Area or Activity of Environmental Concern (AEC)	Contaminants of Potential Concern (COPC)
Fill material used to alter the sites topography, such as at the following: Stockpiles; Buildings; Disturbed terrain; Around farm dams/filled-in farm dams and creeks; Tracks/access roads.	Heavy metals, Total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphorous pesticides (OPPs), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), asbestos, acid sulfate soils (ASS)
Former site structures	Lead paint, arsenic, OCPs asbestos
Contamination associated with agricultural landuse, including former orchards and/or tree nurseries	Heavy metals, OCPs, OPPs and herbicides
Potential underground and/or above ground storage tanks at the site (in particular at farm workshops)	Heavy metals, TPH/BTEX, PAHs and VOCs
Hazardous materials storage (pesticides) and maintenance areas/workshops with associated oil storage/staining.	Heavy metals, TPH/BTEX, PAHs, OCPs, PCBs, VOCs, asbestos
Surface debris/debris stockpiles (including asbestos containing materials) and burn pits.	Heavy metals, TPH/BTEX, PAHs, OCPs, PCBs, VOCs, asbestos
Regional groundwater (regional use predominantly agricultural)	OCPs, OPPs, metals, TPH/BTEX, VOCs, nutrients.

It should also be noted that where potential biological AECs were observed, such as animal carcasses, samples were collected for microbiological COPC including E.coli and Total Coliforms.

No information in relation to product spills/losses, discharges to the land, water or air associated with chemical storage at the site has been identified as part of this assessment.

Sensitive receptors at the site are considered to include: residents and site users (i.e. farmers) who may come into contact with potentially contaminated media within the site.

5.1 Potentially Contaminated Media

Potentially contaminated media present at the site include:

- Fill material;
- Natural soils and/or bedrock; and
- Groundwater.

The historical review identified that previous site activities has included agricultural activities which may have impacted the historical soils. In addition, the reclamation and filling of around farm dams has the potential for impacted material to have been imported to the site for use as fill. It is acknowledged that fill material at the majority of the farm dam areas of the site may have been sourced from the site, and as such the potential for impacted material to have been imported for use as fill is considered low. However, areas of disturbed terrain/fill in which of some anthropogenic materials were observed warrants further investigation.

Based on the potential mobility of contaminants and their associated potential leachability through the soil/fill profile, vertical migration of contaminants from the surface soils and fill material into the underlying natural soils/sandstone bedrock may have occurred. As a result, the natural soils and underlying sandstone bedrock are also considered to be potentially contaminated media.

Given the occurrence of alluvial soil conditions at the site, there is a possibility of shallow perched groundwater occurring within either alluvial deposits or occurring across the bedrock interface in near surface soils, particularly following sustained rainfall events. The anticipated shallow depth to underlying sandstone bedrock of low permeability may result in the potential for lateral migration of contaminants within subsoil water across the bedrock interface in surface and near-surface fill material and/or natural soil especially following rainfall events

Taking into account the likely depth of groundwater and the potential leachability of the identified contaminants of concern, it is considered that groundwater is a potentially contaminated medium. As with the natural soils, the potential for contamination of groundwater will depend upon the actual nature, occurrence and characteristics of contamination within the overlying fill material and potentially natural soils.

Potential for Migration

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- the nature of the contaminants (solid/liquid and mobility characteristics);
- the extent of the contaminants (isolated or widespread);
- the location of the contaminants (surface soils or at depth); and
- the site topography, geology, hydrology and hydrogeology.

The potential contaminants identified as part of the site history review and site inspection are generally in either a solid form (e.g. heavy metals, PAHs, asbestos, OCPs, etc) or liquid form (e.g. fuel, oils, pesticides etc).

As the ground surface across the site comprises predominantly unsealed areas, the potential for windblown dust from the site is considered moderate, and the potential for contamination migration via surface water movement and infiltration of water and subsequent migration through the soil profile is considered to be moderate.

The main pathway for migration of potential contaminants is likely to be shallow groundwater at the site.

6. Sampling and Analytical Plan

6.1 Data Quality Objectives

Data quality objectives (DQOs) were developed for the investigation of contamination, as discussed in the following sections.

6.1.1 State the Problem

The PSI (JBS 2013) identified a number of potential AECs and associated COPCs in a range of locations within the site as a result of historical site use and current site improvements. These findings have been compiled as a conceptual site model, included in **Section 5**.

The client requested a DSI to confirm the contamination status of the AECs identified in the PSI (JBS 2013) and assess the nature and extent of contamination to enable appropriate management with regards to future potential land use scenarios.

6.1.2 Identify the Decision

The following decisions are required to be made to resolve the problem:

- Are there any unacceptable health risks to likely future onsite receptors from contamination at the site?
- Are there any issues relating to the local area background soil concentrations?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues?
- Is there any evidence of, or potential for, migration of contaminants from the site?
- Is a site management strategy required?

6.1.3 Identify Inputs to the Decision

Inputs to the decisions are:

Identified AECs and COPCs at the site (**Section 5**);

- Previous site assessment information including physical observations as documented in the previous assessment (JBS 2013);
- The delineation and interpretation of fill and natural material via excavation of test pits, drilling of boreholes and collection of soil samples;
- groundwater quality information via the installation and sampling of groundwater monitoring wells;
- Development of appropriate assessment criteria for evaluation of soil and groundwater conditions;
- Laboratory analysis of samples of potentially contaminated media for contaminants of potential concern; and
- Confirmation that data generated by sample analysis are of an acceptable quality to allow reliable comparison to assessment criteria by assessment of quality assurance / quality control (QC) as per the data quality indicators.

Specifically, sufficient data need to be collected from each of the identified potentially impacted media (e.g. fill material, natural soils and groundwater) in the identified AECs from the associated

COPCs as identified in the conceptual site model such that answers to the assessment decisions can be obtained.

6.1.4 Define the Study Boundaries

The study area was broadly defined as Box Hill North, located as shown in **Figures 1** and **2**. The site occupies part of the land bound by Boundary Road to the west, Old Pitt Town Road to the south, Maguires Road to the north, and Janpieter Road to the east, and has an area of approximately 380 hectares.

The vertical extent of the soil assessment was approximately 0.5 m into the natural soil/rock across the site, or refusal on bedrock.

The vertical extent of the groundwater investigation was approximately 2 m below the site groundwater seepage level, or a maximum of 6 m below ground surface, whichever was the shallower as per requirements of DEC 2007 .

Due to the nature of potential contaminants identified and with consideration to project deadline requirements, factors including seasonality and other temporal variables will not be assessed as part of this detailed investigation. The temporal boundaries are anticipated to comprise the period of field investigation to be completed for this investigation.

6.1.5 Develop a Decision Rule

Soil analytical data collected during the investigation activities was assessed using EPA endorsed criteria including:

- *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*, National Environment Protection Council, 2013 (NEPC 2013).

Where a reduced density of sampling was adopted (such as at general background/agricultural areas noted below in **Table 6.3** and **Figures 4a – 4e**), in the first instance the analytical results was compared to background concentration ranges to confirm the expected low levels of contamination and verify sampling densities were appropriate. In these instances, the background ranges published in NEPC 1999 were considered.

Groundwater was assessed against NSW EPA endorsed criteria including:

- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Australian and New Zealand Environment and Conservation Council and Agricultural and Resource Management Council of Australia and New Zealand, October 2000 (ANZECC/ARMCANZ 2000);
- *Australian Drinking Water Guidelines 6, National Health and Medical Research Council, NHMRC* (NHMRC 2011); and
- *Guidelines for Managing Risks in Recreational Water, NHMRC, 2008* (NHMRC 2008).

In the event EPA endorsed criteria were not currently available for specific compounds in soil and/or groundwater, analytical data was assessed against the laboratory LOR as an initial screening level.

The decision rules adopted to answer the decisions identified in **Section 6.1.2** are summarised in **Table 6.1.**

Table 6.1 Summary of Decision Rules

Decision Required to be Made	Decision Rule
1. Are there any unacceptable health risks to onsite future receptors?	Soil and groundwater analytical data were compared against adopted EPA endorsed criteria. Statistical analyses in accordance with relevant guidance documents were undertaken, if appropriate, to facilitate the decisions. The following statistical criteria were adopted with respect to soils: Either: the reported concentrations were all below the site criteria; Or: the average site concentration for each analyte was below the adopted site criterion; no single analyte concentration exceeded 250% of the adopted site criterion; and the standard deviation of the results was less than 50% of the site criteria. And: the 95% upper confidence limit (UCL) of the average concentration for each analyte was below the adopted site criterion. Were contaminants present at concentrations exceeding the published groundwater guidelines? If the statistical criteria stated above were satisfied, the decision was No. If the statistical criteria were not satisfied, the decision was Yes
2. Are there any issues relating to the local area background soil concentrations that exceed appropriate soil criteria?	If the 95% UCL of surface soils exceeded published background concentrations (NEPC 1999), the decision was Yes. Otherwise, the decision was No.
3. Are there any chemical mixtures?	Were there more than one group of contaminants present which increase the risk of harm? If there was, the decision was Yes. Otherwise, the decision was No.
4. Are there any soil odours or aesthetic issues?	If there were any ACM fragments on the ground surface, any unacceptable odours or soil discolouration, the decision was Yes. Otherwise, the decision was No.
5. Is there any evidence of, or potential for, migration of contaminants from the site?	Consideration will be given to whether there are any elevated contaminant concentrations in soil or groundwater in proximity to or at site boundaries and where site conditions may lead to the potential to migrate off site. If yes, the decision was Yes. Otherwise, the decision was No.
6. Is a site management strategy required?	Was the answer to any of the above decisions Yes? If yes, a site management strategy is required. If no, a site management strategy is not required.

6.1.6 Specify Limits of Decision Error

The decision maker's tolerable limits on decision errors are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Appropriate indicators of data quality (DQIs) have been pre-determined for this project and 95 % compliance with this these DQIs is considered appropriate for the nominated acceptable decision error. The pre-determined DQIs established for the project are discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters), and are shown in **Table 6.2**.

- **Precision** - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** - measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.

- **Representativeness** –expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 6.2 Summary of Quality Assurance/ Quality Control Program

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Split duplicates (intra laboratory)	1 / 20 samples – all chemical analytes and asbestos	<50% RPD[1]
Blind duplicates (inter laboratory)	1 / 20 samples– all chemical analytes and asbestos	<50% RPD[1]
Laboratory Duplicates	1 / 20 samples	<50% RPD[1]
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	All samples, including asbestos assessment	-[2]
Samples extracted and analysed within holding times.	All samples	Soil: organics (14 days), inorganics (6 months) Groundwater: sTPH/PAHs/sVOCs: 7 d to extract/ 40 d analysis; vTPH/VOCs: 14 days Metals: 6 m Nutrients etc: TKN: 14 d, NOx and Ammonia: 28 days.
Laboratory Blanks	1 per lab batch	<LOR
Trip spike	1 per lab batch	70-130% recovery
Storage blank	1 per lab batch	<LOR
Rinsate sample	1 per sampling event/media	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	-[2]
Standard analytical methods used for all analyses	All Samples	Reference to NEPC (2013) and NATA accredited laboratory methods.
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples[2]
Limits of reporting appropriate and consistent	All Samples	All samples[2]
Completeness		
Sample description and COCs completed and appropriate	All Samples	All samples[2]
Appropriate documentation	All Samples	All samples[2]
Satisfactory frequency and result for QC samples		95% compliance
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria	All samples	LOR<= Site assessment criteria

1. If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.
2. A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

6.1.7 Optimise the Design for Obtaining Data

Various strategies for developing a statistically based sampling plan are identified in EPA (1995) *Contaminated Sites: Sampling Design Guidelines*, including judgemental, random, systematic and stratified sampling patterns. The (EPA 1995) provide no guidance for an appropriate sampling density for sites greater than 5 ha. Instead, EPA (1995) recommends that the site should be broken up into smaller land Parcels.

Based on the size of the site, the potential areas of concern as identified during the preliminary site assessment as discussed in the CSM and the objectives of this stage of assessment, a combined systematic grid and targeted sampling plan was considered most appropriate to provide data for addressing the decision rules. A SAQP (JBS&G 2014) was prepared prior to implementation of the DSI sampling, analysis and data assessment program.

The sampling requirements at each lot is provided below in **Table 6.3**.

Table 6.3 Implemented Sampling Strategy

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
9/593517 155 Boundary Road, Box Hill (#8 on Figure 4a)	No access to view sheds, sheds appear to be used as dog kennels.	3	Targeted sampling at locations related to potential impacts	Asbestos, metals, OCP	0.0-0.1	4x metals, 2x PAHs, 2x TRH/BTEX, 2x PCBs, 4x OCPs, 3 x asbestos
	Wood stockpile behind house. Unknown if additional debris present.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Additional: 2 General Soil/Agricultural test pits 3 Visual test pits	2 (not incl. visual)	Grid based and targeted sampling at locations related to potential impacts	Metals, OCP		
17/255616 8 Cataract Road, Box Hill (#27 on Figure 4c)	ACM observed near the residence at waste stockpiles, and suspected ACM used to construct greyhound kennel.	7	Targeted sampling at locations related to potential impacts	Asbestos (soil)	0.0-0.2	8x metals, 1x chlorinated hydrocarbon, 7x PAHs, 7x TRH/BTEX, 7x PCBs, 7x OCPs, 15x asbestos
	ACM fragments observed at base of a step up to a shed	1	Targeted sampling at locations related to potential impacts	Asbestos (soil)		
	Suspected ACM pipes were observed in a stockpile of building materials east of the main residence.	2	Targeted sampling at locations related to potential impacts	Asbestos (soil)		
	Some staining on the concrete slab floor of shed.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs		
	Disturbed terrain around farm dams	5	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, Acid Sulfate Soils (ASS)		
	Additional: 2 General Soil/Agricultural test pit/surface samples	2	Targeted sampling at locations related to potential impacts	Metals, OCPs		
1/207750 181-191 Boundary Road, Maraylya (#3 on Figure 4a)	Stockpiles of building materials including drums near main residence and sheds.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-1.4	27x metals, 5x chlorinated hydrocarbons, 14x PAHs, 14x TRH/BTEX, 27 OCPs, 10x OPPs, 2x herbicides, 14x asbestos
	Apparent burn area near sheds.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	Staining observed on floors of the older sheds.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs		
	Burnt-out car near Boundary Road.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH		
	Footprint of a former structure (building materials unknown) in approximate centre of lot.	3	Targeted sampling at locations related to potential impacts	Asbestos, metals, OCP		
	During PSI - no access to interior of the recently built main shed.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Disturbed terrain around farm dam	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS; herbicides (2 samples)		
	Former orchard	9 composite samples	Targeted sampling at locations related to potential impacts	Metals, OCP and OPP; herbicides (2 samples)		
	Additional: 1 General Soil/Agricultural test pits at NSW area of lot 1 Additional test pit near debris area at northwest area of Lot 3 surface samples at house on Boundary Rd	5	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos (2 sample - additional test pits at NW area); Asbestos, OCPs and metals (3 surface samples near house at Boundary Rd)		
2/11126 195-205 Boundary Road, Maraylya (#2 on Figure 4a)	Area of mounded soil near residence	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-0.1	3x metals, 2x PAHs, 2x TRH/BTEX, 2x PCBs, 11x OCPs, 11x OPPs, 1x herbicides, 2x asbestos
	Former orchard	8 composite samples	Targeted sampling at locations related to potential impacts	Metals, OCP and OPP; herbicides (1 sample)		
	Additional: 1 General Soil/Agricultural surface samples	2	Targeted sampling at locations related to potential impacts	Metals, OCPs		
10/593517 153 Boundary Road, Box Hill (#9 on Figure 4a)	Areas in vicinity of sheds used for equipment/ materials storage incl. disused drums. Some oil staining observed.	4	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos	0.0-1.5	19x metals, 4x chlorinated hydrocarbons, 17x PAHs, 17x TRH/BTEX, 15x PCBs, 17x OCPs, 14x asbestos.
	AST (petrol) near small sheds.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	Some ACM fragments observed near dam – observed in stockpiles and disturbed terrain. Farm area also highly modified.	26 samples from 10 locations	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 2 General Soil/Agricultural test pits 2 Visual test pits	2 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs		
4/253552 **121 Old Pitt Town Road, Box Hill** **(#31 on Figure 4c)**	Sheds used for storage of old machinery, farm equipment, building materials, firewood, surface staining.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos,	0.0-0.2	9x metals, 7x PAHs, 7x TRH/BTEX, 5x PCBs, 9x OCPs, 1x Herbicides, 7x asbestos,
	Disturbed terrain around farm dams	5 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 2 General Soil/Agricultural grab samples 1 Visual test pit	2 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
27/255616 **14 Red Gables Road, Box Hill** **(#14 on Figure 4b)**	Large building material stockpile at central-eastern portion of lot.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos.	0.0-0.1	4x metals, 2x PAHs, 2x TRH/BTEX, 2x PCBs, 4x OCPs, 1x herbicides, 2x asbestos
	Scrap metal/old machinery at back of lot.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Additional: 2 General Soil/Agricultural test pit 3 Visual test pits	2 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
30/255616 **5 Janpieter Road, Box Hill** **(#16 on Figure 4b)**	Building material stockpile observed at northwest portion of lot.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-2.2	10x metals, 2x chlorinated hydrocarbons, 9x PAHs, 9x TRH/BTEX, 9x PCBs, 9x OCPs, 2x asbestos
	Multiple drums with old machinery at central-southern portion of lot.	4	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	Disturbed terrain around farm dam	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 1 General Soil/Agricultural test pit 3 Visual test pits	1 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs		
18/2556166 Cataract Road, Box Hill (#23 on Figure 4b)	Disturbed terrain around farm dams	5 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS	0.0-0.5	7x metals, 6x PAHs, 6x TRH/BTEX, 6x PCBs, 6x OCPs, 4x asbestos
	Additional: 1 General Soil/Agricultural surface sample	1	Targeted sampling at locations related to potential impacts	Metals, OCPs		
23/255616 6 Red Gables Road, Box Hill (#11 on Figure 4b)	Small soil stockpile in central area of site.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-0.9	7x metals, 2x chlorinated hydrocarbons, 5x PAHs, 5x TRH/BTEX, 5x PCBs, 7x OCPs, 1x herbicides, 3x asbestos
	Some disused machinery stored near shed, some staining observed in front of and inside shed.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs		
	Fire pit at gate near front of property.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos		
	Disturbed terrain around farm dam	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 2 General Soil/Agricultural test pit 2 Visual test pits	2 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
44/255616 7 Red Gables Road, Box Hill (#21 on Figure 4b)	Stockpiles of building materials (including ACM fragments) near the south residence.	3	Targeted sampling at locations related to potential impacts	Asbestos (soil)	0.0-0.5	9x metals, 7x PAHs, 7x TRH/BTEX, 7x PCBs, 8x OCPs, 1x herbicide, 7x asbestos
	Some fill near the main shed appears to contain anthropogenic materials including ACM.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	No access to interior of main shed during PSI.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	Disturbed terrain around farm dams	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Additional: 2 General Soil/Agricultural test pits 3 Visual test pits	2 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
43/255616 9 Red Gables Road, Box Hill (#22 on Figure 4b)	Some staining observed on floor of large shed.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs	0.0-0.5	7x metals, 1x chlorinated hydrocarbons, 5x PAHs, 5x TRH/BTEX, 5x PCBs, 7x OCPs, 8x asbestos
	ACM pipe along residence driveway.	3	Targeted sampling at locations related to potential impacts	Asbestos (soil)		
	Burn pit near residence.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Disturbed terrain around farm dams	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Additional: 2 General Soil/Agricultural test pits	2 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, OCPs		
2/253552 117 Old Pitt Town Road, Box Hill (#30 on Figure 4c)	Burn pit in tennis court carpark.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos	0.0-0.2	7x metals, 1 chlorinated hydrocarbon, 5x PAHs, 5x TRH/BTEX, 5x PCBs, 6x OCPs, 5x asbestos
	Stockpile of old furniture and organic matter located near residence.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Disturbed terrain around farm dams/carpark.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 2 General Soil/Agricultural test pits	2	Targeted sampling at locations related to potential impacts	Metals, OCPs		
4/135304 A & B 97 Maguires Road, Maraylya (#5 on Figure 4a)	Portions of chicken coop possibly made of ACM.	2	Targeted sampling at locations related to potential impacts	Asbestos (soil)	0.0-0.1	2x metals, 5x OCPs, 3x OPPs, 1x herbicides, 4x asbestos
	Former orchard	3 composite samples	Targeted sampling at locations related to potential impacts	Metals, OCPs and OPPs; herbicides (1 sample)		
	Footprint of a former building	2	Targeted sampling at locations related to potential impacts	Asbestos, metals, OCP		
	Additional:	2	Targeted sampling at locations related to potential impacts	Metals, OCPs		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	2 General Soil/Agricultural surface sample/test pits					
41/255616 11 Janpieter Road, Box Hill (#28 on Figure 4c)	Some soil stockpiles at the eastern and central-western portion of site.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-0.9	7x metals, 6x PAHs, 6x TRH/BTEX, 5x PCBs, 5x asbestos
	Disturbed terrain around farm dams	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 1 General Soil/Agricultural test pit	1 (sediment)	Targeted sampling at locations related to potential impacts	Metals, OCPs		
1/11126 207-217 Boundary Road, Maraylya (#1 on Figure 4a)	Stockpiles of building materials observed around the sheds at the eastern portion of the lot.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-0.5	17x metals, 1x chlorinated hydrocarbons, 7x PAHs, 7x TRH/BTEX, 7x PCBs, 17 OCPs, 4X OPPs, 4x herbicides, 24 asbestos
	Most structures appear to be constructed of ACM, and damaged ACM fragments were observed on surrounding ground surface.	22	Targeted sampling at locations related to potential impacts	Asbestos (soil – all locations); metals and OCPs (5 samples)		
	Staining observed on slabs of most shed structures.	5	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos		
	Former orchard	4 composite samples	Targeted sampling at locations related to potential impacts	Metals, OCP and OPP; herbicides (1 sample)		
	Disturbed terrain around farm dams and some buildings	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 3 General Soil/Agricultural surface samples	3	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
45/255616 5 Red Gables Road, Box Hill and 46/255616 5 Red Gables Road, Box Hill (#19 and #20 on Figure 4b)	Many soil stockpiles overgrown with vegetation, some used as fertiliser soil (containing rotted vegetables, chicken carcasses).	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, microbiologicals	0.0-0.9	31x metals, 2x chlorinated hydrocarbons, 31x PAHs, 31x TRH/BTEX, 23x PCBs, 23x OCPs, 2x herbicides, 21x asbestos, 3x microbiologicals (E.coli, Total Coliforms)
	Some stockpiles near a farm dam at south end of site have anthropogenic materials (tyres).	7	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	Multiple areas of old machinery and equipment across the northern portion of the site.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Drums stored near the shed area.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs		
	General landscape across much of these lots appears highly modified.	8	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Fuel ASTs near greenhouse/shed area	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAHs		
	Additional: 2 General Soil/Agricultural test pits	2 (both sediment)	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
26/255616 Red Gables Road, Box Hill (#13 on Figure 4b)	Scrap metal observed near a farm dam, and highly disturbed terrain around dam and stockpile.	7 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-0.6	8x metals, 7x PAHs, 7x TRH/BTEX, 7x PCBs, 8x OCPs, 6x asbestos
	Additional: 1 General Soil/Agricultural test pit	1	Targeted sampling at locations related to potential impacts	Metals, OCPs		
21/255616 7 Cataract Road, Box Hill (#26 on Figure 4c)	Some imported sand was stockpiled and used at a horse training area at north-central portion of lot.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-0.6	9x metals, 2x chlorinated hydrocarbons, 8x PAHs, 8x TRH/BTEX, 8x PCBs, 9x OCPs, 8x asbestos
	Shed used for the storage of vehicles (tractors, old cars) and agricultural chemicals; some minor oil staining observed in the concrete floors of the car port and in main shed.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos		
	Disturbed terrain around farm dams	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 2 General Soil/Agricultural test pits	2 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	1 Visual test pit					
5/658286 151 Maguires Road, Maraylya (#6 on Figure 4a)	Sheds used for storage of machinery, vehicles. Some oil staining on floors of shed (dirt floors)	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs	0.0-0.6	23x metals, 3x chlorinated hydrocarbons, 7x PAHs, 7x TRH/BTEX, 7x PCBs, 23x OCPs, 16x OPPs, 3x herbicides, 9x asbestos
	An ACM shed is located near the residence.	5	Targeted sampling at locations related to potential impacts	Asbestos (soil)		
	Former orchards (X2)	16 composite samples	Targeted sampling at locations related to potential impacts	Metals, OCPs and OPPs; herbicides (3 samples)		
	Disturbed terrain around farm dams and some sheds	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 2 Visual test pits	-	Targeted sampling at locations related to potential impacts	-		
16/255616 5 Cataract Road, Box Hill (#25 on Figure 4c)	Old machinery and cars scattered around sheds. Sheds used for storage of equipment and for conducting maintenance, with some staining on floor.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos	0.0-0.4	6x metals, 4x chlorinated hydrocarbons, 5x PAHs, 5x TRH/BTEX, 5x PCBs, 6x OCPs, 1x herbicides, 5x asbestos
	Burn pit near sheds.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs asbestos		
	Additional: 1 General Soil/Agricultural test pit 2 Visual test pits	1 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs, herbicides		
31/255616 3 Janpieter Road, Box Hill (#15 on Figure 4b)	Some ACM observed in the brick shed.	2	Targeted sampling at locations related to potential impacts	Asbestos (soil)	0.0-0.3	4x metals, 3x PAHs, 3x TRH/BTEX, 3x PCBs, 4x OCPs, 4x asbestos
	Disturbed terrain around farm dams	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 1 General Soil/Agricultural test pit	1	Targeted sampling at locations related to potential impacts	Metals, OCPs		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
3/11126 89 Maguires Road, Maraylya (#4 on Figure 4a)	Suspected ACM fragments were observed around abandoned house and nearby abandoned shed.	10	Targeted sampling at locations related to potential impacts	Asbestos (soil)		
	Building material stockpiles are around some sheds/disturbed terrain around farm dams.	4	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Former orchard	10 composite samples	Targeted sampling at locations related to potential impacts	Metals, OCPs and OPPs; herbicides (2 samples)		
	Additional: 2 General Soil/Agricultural test pits/grab samples 2 Visual test pits	2 (not incl. visual, 1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
40/255616 13 Janpieter Road, Box Hill (#29 on Figure 4c)	Front portion of residence used as a mechanical works area, some oil staining observed.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs	0.0-0.4	6x metals, 1x chlorinated hydrocarbons, 5x PAHs, 5x TRH/BTEX, 4x PCBs, 5x OCPs, 1x herbicides, 3x asbestos
	No access was available to sheds at western portion of the lot, however some possible stockpiles of building materials may be present.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Disturbed terrain around farm dams	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 1 General Soil/Agricultural grab sample 2 Visual test pits	1 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs; herbicides (1 sample)		
29/255616 18 Red Gables Road, Box Hill (#17 on Figure 4b)	Building materials/wood stockpile observed at north paddock.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-2.0	10x metals, 9 PAHs, 9x TRH/BTEX, 7x PCBs, 8x OCPs, 1x herbicides, 7x asbestos, SPOCAS (PASS)
	Old machinery stored around sheds.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs		
	Two petrol/diesel ASTs located near sheds.	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAHs		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
	Small portable shed possibly made of ACM.	2	Targeted sampling at locations related to potential impacts	Asbestos (soil)		
	Disturbed terrain around farm dams	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 1 General Soil/Agricultural grab sample	1	Targeted sampling at locations related to potential impacts	Metals, OCPs, herbicides		
25/255616 10 Red Gables Road, Box Hill (#12 on Figures 4a and 4b)	Damaged suspected ACM at south end of greenhouse (possibly not located on this lot).	5	Targeted sampling at locations related to potential impacts	Asbestos (soil)	0.0-0.4	8x metals, 3x chlorinated hydrocarbons, 6x PAHs, 6x TRH/BTEX, 5x PCBs, 7x OCPs, 6x asbestos
	Some drums stored at main shed/residence, some stockpiles of ACM piping/sheeting at shed/residence.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos		
	Disturbed terrain around farm dams	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 2 General Soil/Agricultural test pits/grab samples 2 Visual test pits	2 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs		
1/564211 169 Maguires Road, Maraylya (#7 on Figure 4a)	Farm dam at north portion of site with stockpiles of building materials (including a large stockpile of roofing tiles) scattered near the dam.	4 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS	0.0-0.4	7x metals, 4x PAHs, 4x TRH/BTEX, 4x PCBs, 7x OCPs, 4x asbestos
	ACM fragments observed at area in north paddock.	5	Targeted sampling at locations related to potential impacts	Asbestos (soil)		
	Additional: 3 General Soil/Agricultural test pits/grab samples 2 Visual test pits	3 (not incl. visual)	Targeted sampling at locations related to potential impacts	Metals, OCPs		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
15/255616 **3 Cataract Road, Box Hill** **(#24 on Figure 4c)**	One shed used for storage/equipment maintenance.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, VOCs, asbestos	0.0-0.4	7x metals, 1x chlorinated hydrocarbons, 6x PAHs, 6x TRH/BTEX, 5x PCBs, 6x OCPs, 4x asbestos
	Building waste stockpiles (mostly wood) around shed area.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	AST (possibly petrol/diesel) at shed area.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAHs		
	Disturbed terrain around farm dams	3 (1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 1 General Soil/Agricultural grab sample 1 test pit advanced in vicinity of hydroponics area at northeast corner of lot	2	Targeted sampling at locations related to potential impacts	Metals, OCPs		
22/255616 **4 Red Gables Road, Box Hill** **(#10 on Figure 4a)**	Limited lot access during PSI, some potential disturbed terrain around farm dam(s).	2	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS	0.0-0.4	7x metals, 1x chlorinated hydrocarbon, 6x PAHs, 6x TRH/BTEX, 5x PCBs, 6x OCPs, 4x asbestos
	Some minor debris piles in vicinity of residence/ garage.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos		
	Additional: 2 General Soil/Agricultural test pits/grab samples 1 Visual test pit	2 (not incl. visual, 1 = sediment)	Targeted sampling at locations related to potential impacts	Metals, OCPs		
47/255616 **3 Red Gables Road, Box Hill** **(#18 on Figure 4b)**	No access to interior of shed, use of shed unknown.	1	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos	0.0-0.9	6x metals, 6x PAHs, 6x TRH/BTEX, 6x PCBs, 6x OCPs, 3x asbestos
	Disturbed terrain around farm dams and debris pile southeast of farm dam.	3	Targeted sampling at locations related to potential impacts	Metals, TPH, BTEX, PAH, OCP, PCBs, asbestos, ASS		
	Additional: 3 General Soil/Agricultural test pits/grab samples 1 Visual test pit	3 (not incl. visual, 2 = sediment)	Targeted sampling at locations related to potential impacts	Metals, OCPs		

Lot/DP, address & map ref (Property ID # for Figure references)	AEC	Sampling Regime, Sampling Locations	Justification	Contaminants of Concern	Sampling Depths (m)	Number of samples for analysis
Site-Wide	Groundwater impact from above AECs	5	Density appropriate to assess presence of significant widespread contamination impacts. (2x Dry wells)	OCPs, OPPs, metals, TPH/BTEX, VOCs, nutrients	-	3x metals, 3x VOCs, 3x TRH/BTEX, 3x OCPs, 3x OPPs, 3x total nitrogen, 3x alkali metals

6.2 Soil Sampling Methodology

6.2.1 Soil Investigations

Based on the size of the site and the distribution of the identified AECs, each of the AECs listed in **Table 6.3** were individually targeted, with additional locations placed on a generally systematic (grid) basis throughout the site, as shown on **Figures 4a** to **4e**.

The Sampling and Design Guidelines (EPA 1995) do not provide guidance for sites larger than 5 ha. Consequently, sites above 5 ha are assessed using a stratified approach. Sample locations were determined in the field based on visual observations, with some locations pre-determined using aerial photography (such as filling at historic dams/creeks, former access roads, etc.). The co-ordinates of the pre-determined sample locations were be programmed into a Trimble GPS unit and used in the field. The Trimble GPS was also be used in the field to record any additional sampling locations or locations that were modified in the field (where necessary).

Soil samples were collected by surface sampling (grab samples/trowel) or test pits. Due to the nature and distribution of the anticipated COPCs, surface samples were collected within the upper 0.1 m of the soil profile (grab samples/sample trowel). Samples from test pits were collected from the ground surface (0-0.1 m) and at approximately 0.2 m, 0.3 m, 0.5 m and then at 0.5 m intervals to a maximum depth of 2.2 m or 0.5 m into natural materials (or prior refusal), whichever was the shallower.

Where physical evidence of gross contamination was identified during the works, sampling locations was extended to vertically delineate contamination. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted.

Collected samples were immediately transferred to laboratory supplied sample jars. The sample jars were be transferred to a chilled ice box for sample preservation prior to and during shipment to the National Association of Testing Authorities (NATA) accredited testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory. Based upon field observations, samples were analysed in accordance with the laboratory schedule (**Table 6.3**). Samples to be analysed for asbestos were collected into separate 500 mL bags as per the requirements of NEPC 2013.

Not all samples collected were analysed. All samples will remain at the primary laboratory for a period of two months for possible future analysis (subject to holding times) if required following the receipt of sample results.

6.2.2 Sampling Nomenclature

The individual lots that comprise the site were assigned a "Lot Identification Number" as referenced below in **Table 6.3** and as referenced on **Figures 2, 4a-4e**. This lot numbering system was utilised when sample labelling, to make it easier to track the identified AECs.

Sample labelling at each lot was also conducted to identify the issue being sampled, such as:

- O = orchard;
- ACM;
- G = general agricultural/background (which may include additional issues such as filled-in dams/creeks, access roads);
- D = debris;
- AST;

- BP = burn pit;
- S = staining;
- SP = stockpile or area of fill/disturbed terrain;
- SED = sediment; and
- BLD = building or shed, including interior floors.

In addition, the method of sampling also indicated (i.e. TP for test pit, SS for surface sample/grab sample), as well as the sample depth.

Additionally, if there was more than one AEC with the same classification within the same lot, consideration was given to allocating unique identifiers to these areas (e.g., O1, O2 for Site #6 where there are two distinct historical orchard areas).

6.2.3 Field PID Screening

Soil samples were screened during field works using a photo-ionisation detector (PID) to assess the potential presence of VOCs including petroleum hydrocarbons. Samples obtained for PID screening were placed in a sealed plastic bag for approximately 5 minutes to equilibrate, prior to a PID being attached to the bag. Readings were then monitored for a period of approximately 30 seconds or until values stabilise and the stabilise/highest reading was recorded on the borehole/testpit logs. The PID was calibrated prior to the commencement of field works and then check readings were completed on a daily basis during the field program using suitable calibration gas. If required, the PID was re-calibrated during the field program in accordance with manufacturer's instructions. Calibration records are included in Appendix D.

6.2.4 Composite Sampling

Composite sampling was conducted at the areas of the site identified as former orchards. The composite sampling comprised the following protocols:

- Composites were collected as per the Sampling Design Guidelines (NSW EPA 1995) and the Guidelines for Assessing Former Orchards and Market Gardens (NSW DEC 2005) and comprised no more than 4 sub-samples, and each sub-sample was:

  -Equal in size;

  -From immediately adjacent sampling points (i.e. from locations <15 m of each other);

  -Evenly spaced;

  -Composted laterally.

- Each sub-sample comprised samples that were collected from the upper soil horizon (i.e. 0.1-0.2 m).
- The samples were composited in the field using a mixing bowl that was cleaned between sampling locations, prior to transferring to laboratory prepared sample jars. The samples were stored and analysed accordingly as per the sampling procedures outlined above in **Section 6.2.1**.

6.2.5 Decontamination

Prior to the commencement of sampling activities, non-disposable sampling equipment including sampling trowel/knives were cleaned with a high pressure water/ detergent spray, rinsed with water and then air dried. The equipment was then inspected to ensure that no soil, oil, debris or other contaminants are apparent on the equipment prior to the commencement of works.

Sampling equipment was subsequently decontaminated using the above process between each sampling location.

6.2.6 Duplicate and Triplicate Sample Preparation

Field soil duplicate and triplicate samples were obtained using the above sampling methods for both soil chemical contaminant and 500 mL soil asbestos sampling. Each sample was then divided laterally into three samples with minimal disturbance and placed in clean glass jars and zip lock bags (asbestos). Each sample was then labelled with a primary, duplicate or triplicate sample identification before being placed in the same chilled ice box for transport to the laboratory.

6.3 Observation Test Pits

In addition to the above soil sampling at test pits/surface sampling locations, some additional areas of the site (such as areas of suspected significant filling/dumping associated with filled-in farm dams, creeks, access tracks) were investigated through a series of 'observation test pits'.

The locations are outlined in **Table 6.3** and on **Figures 4a – 4e**.

These test pits were conducted in conjunction with other test pitting to enable the JBS&G field scientist to compare soil (or fill) types and investigate if anything appeared to be suspect. Where evidence of suspected imported fill or potential areas of buried debris were observed, these areas were further investigated with additional soil samples collected and analysed accordingly as per the sampling procedures outlined above in **Section 6.2.1**.

6.4 Sediment Sampling

Sediment from farm dams were also be sampled as per the locations outlined in **Table 6.3** and **Figures 4a – 4e**. Sediment samples were collected from below the water level in the farm dams using a grab sampler on an extendable pole, or from previously inundated areas if the dam was dry.

6.5 Groundwater Sampling Methodology

6.5.1 Groundwater Investigation

Boreholes were advanced at five strategic locations (**Figures 4a-4e** and **Figure 5**) which were converted into groundwater monitoring wells. A licence for each of the monitoring wells was obtained from NSW Office of Water, and copies are included in **Appendix D**.

The wells were installed to a maximum depth of 10 m below ground surface (bgs) or 2 m below the encountered groundwater depth, or refusal on bedrock, whichever was shallower. All but two monitoring wells were installed to 10 m depth, with MW01 installed to 4.5 m and MW05 installed to 2.5 m, where drilling at these locations encountered bedrock. No significant moisture was observed during drilling prior to installation of the monitoring wells. The wells were constructed from 50 mm uPVC screen and casing, combined with a lockable cap and steel gatic cover. A Registered Surveyor was subcontracted to provide a relative height survey (m AHD) of the monitoring well locations to allow interpretation of groundwater flow directions at the site. The monitoring wells were developed after construction using a disposable bailer to remove turbidity created by the drilling and construction process.

The monitoring wells were allowed to settle for at least 7 days after development. Each monitoring well was then be gauged and sampled. Prior to sampling, the wells were purged to remove the standing water. Field parameters of pH, conductivity, redox and temperature were taken and samples obtained once the parameters settle to within approximately 10%. Groundwater samples were obtained through the use of a low flow peristaltic pump and flow cell.

Collected groundwater samples were immediately filtered (as necessary) and transferred to laboratory supplied sample bottles. The sample containers were then transferred to a chilled iced box for sample preservation prior to and during shipment to the NATA accredited testing laboratory. A chain-of-custody form will be completed and forwarded with the samples. Samples will be analysed in accordance with the laboratory schedule (**Table 6.4**).

6.6 Laboratory Analyses

JBS&G contracted project laboratories which are NATA accredited for the required analyses. In addition, the laboratories were required to meet JBS&G's internal Quality Assurance requirements.

The completed laboratory analysis program is outlined in **Table 6.4.**

Bulk soil samples (500 mL) for asbestos analysis were collected where analysis for asbestos was proposed or where visible asbestos containing material (ACM) was observed or has previously been reported at surface or in fill.

In addition, for QA/QC purposes, field duplicates and triplicates were collected and submitted for analysis at the rates specified in **Section 8**. Rinsate samples were obtained from all reusable sampling equipment per day of sampling, and trip spike and storage blank samples accompanied the samples for each batch of samples submitted to the laboratory.

Table 6.4 Sampling and Analytical Schedule

Sample Type	# Sampling Locations	Analyses (ex QA/QC)
Soil	Property ID #1-31	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 279 samples PAH – 204 samples TPH/BTEX –204 samples PCBs – 198 samples OCPs –262 samples Asbestos – 203 samples Herbicides – 19 samples
Groundwater	3 of 5 Monitoring Wells (2 wells dry)	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 3 samples TPH/BTEX – 3 samples OCPs/OPPs – 3 samples Total Nitrogen – 3 samples Alkali metals – 3 samples VOCs – 3 samples

It should also be noted that where potential biological AECs were observed, such as animal carcasses, biological samples were collected.

6.7 Hazardous Building Materials Survey

The hazardous building materials (Hazmat) survey was undertaken by experienced JBS&G staff and was overseen by an experienced JBS&G Hazardous Material Survey Auditor. The following hazardous materials were included in the survey:

- Asbestos containing materials and asbestos containing dust;
- Synthetic mineral fibres (SMF);
- Lead based paint and lead in settled dust; and
- Polychlorinated biphenyls (PCBs).

The asbestos survey took the form of a visual inspection by experienced staff of all accessible structures present at the site, noting this was limited to external visible surfaces of residences due to access issues. Samples were taken as appropriate and analysed for asbestos using stereobinocular microscopy and polarised light microscopy with dispersion staining by a laboratory that is accredited with NATA.

SMF was identified by visual inspection during the assessment.

The presence of lead paint was assessed through visual inspection of painted surfaces during the inspection as required and using an X-Ray Fluorescence (XRF) spectrometer which delivered real-time results while avoiding additional laboratory costs.

Electrical appliances that may have PCB-containing capacitors were identified by visual inspection. Representative samples of each type of light fitting or electrical appliance was inspected and the make and model of the capacitor compared with the ones listed in the Australian and New Zealand Environment and Conservation Council (ANZECC) document Identification of PCB-Containing Capacitors.

JBS&G contracted a project laboratory which was NATA registered for the required analyses. In addition, the laboratory was required to meet JBS&G's internal Quality Assurance requirements. The analytical schedule was been developed in accordance with typical requirements for hazardous materials surveys (**Table 6.4**).

Table 6.4 Sampling and Analytical Program (Hazmat)

Sample Type	No. of Sampling Locations	Analyses (exc. QA/QC)
Potential Asbestos Containing Materials	4 samples/lot	Asbestos

Building identification numbers were included, with reference to the "Lot Identification Number" designation as outlined in **Figure 2**.

Following the receipt of laboratory results, the data assessment and reporting for the site was undertaken as follows:

- Preparation of a single Hazardous Materials Report for the surveyed area; and
- Preparation of a single Hazardous Materials Register for the surveyed area.

The above documents are provided in **Appendix B**.

7. Assessment Criteria

7.1 Regulatory Guidelines

The investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1), National Environment Protection Council (NEPC 2013)*
- *Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (EPA 1995)*
- *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA, 1997 (OEH 2011)*
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 2nd Edition, NSW EPA, 2006 (DEC 2006)*
- *Contaminated Sites: Guidelines on Duty to Report Contamination under the Contaminated Land Management Act 1997, NSW DECC, June 2009 (DECC 2009).*
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination, NSW DEC, March 2007 (DEC 2007)*
- *Waste Classification Guidelines Part 1: Classifying Waste. NSW DECCW, December 2009 (DECCW 2009).*
- *Guidelines for Managing Risks in Recreational Water, NHMRC, 2008 (NHMRC 2008).*
- *Australian Drinking Water Guidelines 6, NHMRC, 2011 (NHMRC 2011).*
- *Use and Disposal of Biosolids Products "Stabilisation Grade A Product", NSW EPA (1997).*

7.2 Soil Criteria

It is understood that a range of potential site uses may in the future be considered for various portions of the site including, but not limited to residential use, public open space/ recreational use, educational, community and commercial uses. As per the decision process for assessment of urban development site (DEC 2006), a set of health and ecological assessment thresholds derived from NEPC 2013 were used for evaluation of site contamination data collected for this assessment in relation to the various land use scenarios.

As an initial step, the soil data was compared against the most sensitive land use criteria comprising residential with gardens/accessible soil. However, consideration of less sensitive land use scenarios and the associated contaminant thresholds was necessary in evaluation of the data to provide the client with a broad understanding of potential contamination risks with respect to future land uses. On this basis, adopted guidelines as summarised in **Tables 7.1, 7.2** and **7.3** following will be derived from the:

- Health Investigation and Screening Levels (HILs/HSLs) for various sensitive exposure scenarios - Tables 1A(1) and 1A(3), Schedule B1, NEPC (2013);
- Ecological Screening Levels (ESLs) for urban residential and public open space uses and commercial/industrial uses - Table 1B(6), Schedule B1, NEPC (2013);
- Soil Quality Guidelines (site specific EILs) for urban residential and public open space uses and commercial/industrial uses – Schedule B5C, NEPC (2013);
- HSLs/ESLs for asbestos contamination in soil – for various sensitive exposure scenarios – Table 7, NEPC Schedule B1, NEPC (2013);

- Management Limits for TPH fractions in Soil for residential, parkland and public open space and commercial/industrial use - Table 1B (7) Schedule B1, NEPC (2013).

In addition, as referenced in **Section 6.1.5**, the background ranges published in NEPC 1999 were considered where a low density of sampling is adopted.

Table 7.1 Health Based Investigation Criteria and Management Limits (mg/kg)

	Limit of Reporting	Laboratory Method	Health Investigation/ Screening Levels			
			Residential – Soil Access HIL-A	Residential – Minimal Soil Access HIL-B	Recreational/ Open Space HIL-C	Commercial industrial HIL-D
METALS						
Arsenic	4.0	ICP-AES (USEPA 200.7)	100	500	300	3000
Cadmium	0.4	ICP-AES (USEPA 200.7)	20	150	90	900
Chromium	1.0	ICP-AES (USEPA 200.7)	100[1]	500[1]	300[1]	3600[1]
Copper	1.0	ICP-AES (USEPA 200.7)	6000	30 000	17 000	240000
Nickel	1.0	ICP-AES (USEPA 200.7)	400	1200	1200	6000
Lead	1.0	ICP-AES (USEPA 200.7)	300	1200	600	1500
Zinc	1.0	ICP-AES (USEPA 200.7)	7400	60 000	30 000	400 000
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	40[2]	120[2]	80[2]	730[2]
POLYCYCLIC AROMATIC HYDROCARBONS						
Carcinogenic PAHs (as B(a)P TEF)[3]	0.028	GCMS (USEPA8270)	3	4	3	40
Total PAHs[4]	0.4	GCMS (USEPA8270)	300	400	300	4000
BTEX						
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	0.5[5]	0.5[5]	NL[5]	3[5]
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	160[5]	160[5]	NL[5]	NL[5]
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	55[5]	55[5]	NL[5]	NL[5]
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	40	40[5]	NL[5]	230[5]
TOTAL RECOVERABLE HYDROCARBONS						
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	45[6,6]	45[6]	NL[6]	260[6]
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	110[6]	110[6]	NL[6]	NL[6]
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)	-	-	-	-
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)	-	-	-	-
ORGANOCHLORINE PESTICIDES						
DDT + DDD + DDE	0.3	GCECD (USEPA8140,8080)	240	600	400	3600
Aldrin + Dieldrin	0.2	GCECD (USEPA8140,8080)	6	10	10	45
Chlordane	0.1	GCECD (USEPA8140,8080)	50	90	70	530
Endosulfan	0.3	GCECD (USEPA8140,8080)	270	400	340	2000
Endrin	0.1	GCECD (USEPA8140,8080)	10	20	20	100
Heptachlor	0.1	GCECD (USEPA8140,8080)	6	10	10	50
HCB	0.1	GCECD (USEPA8140,8080)	10	15	10	80
Methoxychlor	0.1	GCECD (USEPA8140,8080)	300	500	400	2500
PCBs						
Total PCBs	0.7	GCECD (USEPA8140,8080)	1	1	1	7
VOLATILE ORGANIC COMPOUNDS						
PCE	1.0	Purge Trap-GCMS (USEPA8260)	2	2	40	8
TCE	1.0	Purge Trap-GCMS (USEPA8260)	0.02	0.02	0.4	0.08
Cis 1,2 DCE	1.0	Purge Trap-GCMS (USEPA8260)	0.08	0.08	2	0.3
VC	1.0	Purge Trap-GCMS (USEPA8260)	0.03	0.03	0.5	0.1
OTHER						
Cyanide (free)	0.5	Colorimetric (EPA 335.4)	250	300	240	1500
Phenol	5	Distillation/Colorimetric (APHA 5530)	3000	45 000	40 000	240 000

1. Guideline values presented are for Chromium (VI) in absence of total Chromium values. Where total Chromium results are elevated, samples will be analysed for Chromium (VI).
2. Guideline values are for inorganic mercury. Where elevated mercury concentrations are encountered and/or site information suggests the potential presence of elemental mercury and/or methyl mercury, consideration of applicability would be needed.
3. Carcinogenic PAHs calculated as per Benzo(a)pyrene Toxicity Equivalent Factor requirements presented in NEPC (2013)
4. Total PAHs calculated as per requirements presented in NEPC (2013).
5. Soil Health Screening Levels for Vapour Intrusion: Clay Soils. Values presented are those for 0 to <1 m bgs as the most conservative level. Reference should be made to results tables for further detail of levels at greater depths. NL: Non-limiting.
6. Values for F1 C6-C9 are obtained by subtracting BTEX (Sum) from laboratory result for C6-C9 TRH. Naphthalene is not subtracted as there is separate limits for Naphthalene.
7. No EPA endorsed criteria, The LOR is proposed as a screening level in the absence of endorsed site specific criteria.

Table 7.2 Asbestos in Soil Health Based Assessment Criteria (mg/kg)

	Health Screening Level (w/w)[1]			
Form of Asbestos	Residential – Access HIL-A	Residential – Minimal Access HIL-B	Recreational/ Open Space HIL-C	Commercial industrial HIL-D
Bonded ACM	0.01%	0.04%	0.02%	0.05%
Fibrous asbestos or asbestos fines		0.001%		
All forms of asbestos		No visible ACM for surface soil (0 – 0.1 m bgs).		

Notes: 1. Sampling and analytical methods as outlined in NEPC 2013 for asbestos are to be adopted. Sample volume to be collected and analysed will be 500 mL.

Table 7.3 Ecological Investigation/Screening Levels (mg/kg)

	Limit of Reporting	Laboratory Method	EILs/ESLs	
			Urban Residential and public open space**	Commercial and industrial**
Metals				
Arsenic	4.0	ICP-AES (USEPA 200.7)	100	160
Cadmium	0.4	ICP-AES (USEPA 200.7)	-	-
Chromium	1.0	ICP-AES (USEPA 200.7)	190	310
Chromium (VI)	1.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)	-	-
Copper	1.0	ICP-AES (USEPA 200.7)	130	190
Nickel	1.0	ICP-AES (USEPA 200.7)	30	55
Lead	1.0	ICP-AES (USEPA 200.7)	1100	1800
Zinc	1.0	ICP-AES (USEPA 200.7)	180	280
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	-	-
PAHs				
Benzo(a)pyrene	0.5	GCMS (USEPA8270)	0.7	1.4
Naphthalene	0.1	GCMS (USEPA8270)	170	370
BTEX				
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	65	95
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	105	135
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	125	185
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	45	95
TPH				
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	180[1]	215[1]
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	120	170
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)	1300	2500
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)	5600	6600
OCPs				
DDT	0.1	GCECD (USEPA8140,8080)	180	640

1. Values for F1 C6-C9 are obtained by subtracting BTEX (Sum) from laboratory result for C6-C9 TRH.

2. Value for Chromium (III) adopted for evaluation of total Chromium in the absence of known Chromium (VI) source.

** ESLs/EILs sourced from NEPC 2013 Tables 1B (1-6). Hydrocarbon ESLs for fine grained soil texture used.

7.3 Groundwater Criteria

The groundwater criteria presented in **Table 7.4** shall be considered when assessing groundwater data collected during assessment activities, as required by the detection of potentially leachable soil contamination, including petroleum hydrocarbons.

Table 7.4 Groundwater Assessment Criteria (µg/L unless noted)

	Aquatic Ecosystems[1]	Recreation[3]	Visual Amenity[4]	Drinking Water[9]	Irrigation[11]	LOR[7]
Total Petroleum Hydrocarbons						
TPH (C_6 – C_{36})	7[2]	-	No sheen or odour	90[10]	-	250[7]
Monocyclic Aromatic Hydrocarbons						
Benzene	950	10	-	1	-	-
Toluene	180[2]	-	-	800	-	-
Ethylbenzene	80[2]	-	-	300	-	-
Xylene (m+o+p)	75[2] (m-xylene)	-	-	600	-	-
Phenols						
Phenol	320	2	-	11,000[6]	-	-
Heavy Metals						
Aluminium	55	2000	-	200[8]	5,000	-
Arsenic (V)	13[5]	70	-	7	100	-
Barium	-	7000	-	700	-	-
Boron	370	40 000	-	4000	500	-
Cadmium	0.2[1]	20	-	2	10	-
Chromium (III)	-	500	-	-	-	-
Chromium (VI)	1.0		-	50	100	-
Copper	1.4	4000	-	2000	200	-
Lead	3.4	100	-	10	2000	-
Manganese	1900	5000	-	500	200	-
Mercury	0.06[1]	10	-	1	2	-
Nickel	11	200	-	20	200	-
Zinc	8	30 000	-	3000[8]	2000	-
Polycyclic Aromatic Hydrocarbons						
Naphthalene	16	62	-	6.2[6]	-	-
2-methylnaphthalene	-	-	-	-	-	10
Acenaphthylene	-	-	-	-	-	0.1
Acenapthene	-	3700	-	370[6]	-	-
Fluorene	-	2400	-	240[6]	-	-
Phenanthrene	0.62	-	-	-	-	0.1
Anthracene	0.01[2]	18 000	-	1800[6]	-	-
Fluoranthene	1[2]	15 000	-	1500[6]	-	-
Pyrene	-	1800	-	180[6]	-	-
Benzo(a)anthracene	-	0.92	-	0.092[6]	-	-
Chrysene	-	92	-	9.2[6]	-	-
Benzo(b&k)fluoranthene	-	0.92	-	0.092[6]	-	-
Indeno(1,2,3-cd)perylene	-	0.92	-	0.092[6]	-	-
Benzo(g,h,i)perylene	-	-	-	-	-	0.1
Dibenz(a,h)anthracene	-	-	-	-	-	0.1
Benzo(a)pyrene	0.1[2]	0.1	-	0.01	-	0.1
OTHERS						
Ammonia	910	3910 @ pH 7.011	-	5008	-	-
Total NOx	720012			80		50

Notes

1. 95% protection levels (freshwater ecosystems) have been used. When these levels fail to protect key test species, the 99% protection levels were used - ANZECC/ARMCANZ (2000).
2. Insufficient data to derive a reliable trigger value. In these instances, reference has been made to low reliability trigger levels contained in ANZECC/ARMCANZ (2000).
3. Recreational purposes – NHMRC (2008) – 10 times Drinking Water
4. Recreational water quality and aesthetics – s.5.2.3.3 ANZECC/ARMCANZ (2000)
5. Criteria for As (V) selected
6. US EPA (2010) Regional Screening Levels (RSLs) for Chemical Contaminants at Superfund Sites, tap water criteria
7. Laboratory limit of reporting provided for substances with insufficient published ecological / health investigation guidelines, or where published guidelines fall below laboratory limit of detection.
8. Based on aesthetic considerations. No Health based guideline published.
9. NHMRC (2011) 'Australian Drinking Water Guidelines 6'
10. Lowest of fraction specific criteria provided to WHO (2005) 'Petroleum Products in Drinking Water'
11. ANZECC/ARMCANZ (2000) Table 8.3.7 value to be adjusted based on field pH
12. Screening value for NOx adopted in absence of endorsed guideline. Screening value is based on Nitrate guideline values as corrected via NIWA Memorandum Nitrate Guideline Values in ANZECC 2000. 20 September 2002, Reg: MFE02237 (NIWA 2000). Nitrate freshwater trigger value adopted as marine low reliability as per ANZECC (2000) advice. Nitrate guideline values converted to Nitrate-N for consistency with laboratory reporting format.

7.4 Biologicals

Biological data collected during the assessment where required was compared against the NSW EPA 1997[9]. The criteria is in **Table 7.5** below:

Table 7.5 Biosolid Based Criteria

Parameter	Standard
E.Coli	<100 MPN per g (dry weight)
Faecal Coliforms	<1,000 MPN per g (dry weight)

[9] Use and Disposal of Biosolids Products "Stabilisation Grade A Product", NSW EPA (1997).

8. Quality Assurance / Quality Control

8.1 QA/QC Results

The results of the QA/QC program are presented in **Table 8.1** and discussed in **Section 8.2** and **Section 8.3**. Detailed QC/QC results are included with the laboratory reports in **Appendix C**.

Table 8.1 Summary of QAQC Results

Data Quality Objective	Frequency	Results	DQO met?
Precision			
Soil Blind duplicates (intra laboratory)	20/279	0 – 250%	Partial
Soil Blind duplicates (inter laboratory)	21/279	0 – 105 %	Partial
Water Blind duplicates (intra laboratory)	1/3	RPD 70-130%	Yes
Water Blind duplicates (inter laboratory)	1/3	RPD 70-130%.	Yes
Laboratory duplicates	1/batch	0 – 50 %	Partial
Storage blank	1 per sampling event	<LOR	Yes
Rinsate blank	1 per sampling event where reusable sampling equipment used	<LOR	Yes
Accuracy			
Surrogate spikes	All organic analytes	70- 130%	Partial
Laboratory Control Samples	1 per lab batch	60-140%	Partial
Matrix spikes	1 per lab batch	60-140%	Partial
Representativeness			
Sampling appropriate for media and analytes	All media /analytes	Sampling conducted in accordance with JBS&G procedures	Yes
Trip Spike	1 per sampling event when sampling for volatile or semi-volatile COPC	80-114 %	Yes
Laboratory blanks	1 per lab batch	<LOR	Yes
Samples extracted and analysed within holding times.	All samples	Soil: 14 days for organics, 6 months for metals, asbestos Water: TPH/PAH 7 days, SVOC/vTPH – 14 days, 6 months for metals	Yes
Comparability			
Standard operating procedures for sample collection & handling	All samples	JBS&G field scientist completed all sampling works using standard operating procedures.	Yes

Standard analytical methods used for all analyses	All samples	Analytical methods as commercially available and as adopted for assessment phase activities employed for validation assessment as documented in Appendix D.	Yes
Consistent field conditions, sampling staff and laboratory analysis	All samples	All sampling and visual inspections were completed by experienced JBS&G field scientist. The primary and secondary laboratories remained the same throughout the investigation.	Yes
Limits of reporting appropriate and consistent	All samples	Limits of reporting were consistent and appropriate	Yes
Completeness			
Sample description and COCs completed and appropriate	All samples	All bore / sample log and COCs were completed appropriately	Yes
Appropriate documentation	All samples	Appropriate field documentation included in the Appendices	Yes
Satisfactory frequency and result for QC samples	All samples	The QC results are considered adequate for the purposes of the investigation	Yes
Data from critical samples is considered valid	All samples	All	Yes
Sensitivity			
Analytical methods and limits of recovery appropriate for media and adopted site assessment criteria	All samples	Appropriate laboratory analysis methods and detection limits were considered to have been achieved during the field and laboratory phases of this investigation.	Yes

8.2 QA/QC Discussion

8.2.1 Precision

Blind and Split Duplicates

Soil field blind (intra-laboratory) duplicates were collected at a rate of 20 per 279 primary samples analysed, slightly above the adopted 1/20 DQI frequency. Soil field split (inter-laboratory) triplicates were collected at a rate of 21 per 279 primary samples analysed, slightly above the adopted 1/20 DQI frequency. It should be noted that duplicate sample QC10 was not analysed due to a COC error, however the primary and triplicate was analysed. However, the frequency of QC sampling is sufficient so that this error does not affect the outcomes of the report.

Groundwater field blind intra-laboratory) duplicates were collected at a rate of 1 per 3 primary samples analysed, slightly above the adopted 1/20 DQI frequency. Groundwater field split (inter-laboratory) triplicates were collected at a rate of 1 per 3 primary samples analysed, slightly above the adopted 1/20 DQI frequency and consequently meets the adopted DQOs.

No high RPD calculations were observed between the primary, blind duplicate and triplicate soil samples, with the exception of elevated RPD calculations for some metals and PAHs results. The elevated RPD calculations for the soil blind and split duplicates may be attributed to the heterogeneous nature of the fill present at the site and the potentially increased laboratory limit of reporting (LOR).

No high RPD calculations were observed between the primary, blind duplicate and triplicate groundwater samples.

Laboratory Duplicates

All concentrations in the primary and duplicate soil samples were less than the laboratory limits of reporting, or returned RPD values were within the acceptable limits of 0 – 50%. Some samples exceeded the JBS&G 70-130 % DQO criteria but were within the laboratories internal QC requirements and therefore are not considered to affect the outcomes of this report.

All concentrations in the primary and duplicate groundwater samples were less than the laboratory limits of reporting, or returned RPD values were within the acceptable limits of 0 – 50%.

The consistency of other laboratory duplicate RPDs indicate that these results do not affect the precision of the dataset.

8.2.2 Accuracy

Surrogate Spikes

Surrogate analyses were completed for all individual organic analyses. Surrogate samples analysed reported recoveries within the acceptable range.

Matrix Spikes

Soil matrix spike samples were completed at a suitable frequency. Matrix spikes analysed reported recoveries within the acceptable range for the majority of the samples. Where exceptions were reported, the results were reported within the laboratory internal QC requirements and were likely caused by the heterogeneity of some of the samples. These are not considered to affect the outcomes of the report.

Groundwater matrix spike samples were completed at a suitable frequency. Matrix spikes analysed reported recoveries within the acceptable range.

Laboratory Control Samples

Soil laboratory control samples analysed reported recoveries within the acceptable range.

Groundwater laboratory control samples analysed reported recoveries within the acceptable range.

The DQIs for accuracy are considered to have been achieved for this assessment.

8.2.3 Representativeness

Sampling appropriate for media and analytes

All soil and groundwater sampling works completed during the investigation were conducted in accordance with JBS&G standard operating procedures. Soil sampling was conducted with the advancement of hand augers, considered appropriate for the potential site contaminants. Groundwater was completed with the use of a low flow peristaltic pump and flow cell and considered appropriate for the potential site contaminants.

All samples collected for asbestos analysis during the validation works were required to be 500 mL samples as per the NEPM 2013.

All sampling was completed by trained and experienced field scientists. The current investigation was completed by Tyler Creese. Tyler has four years environmental management experience including three years' experience in the contaminated land industry. He has a Bachelor of Science (Sustainable Resource Management) from the University of Sydney and has received internal training on the appropriate sampling techniques for soil and groundwater sampling.

Tyler completed the field works under the guidance of Ken Henderson, the project manager for the works. Ken has 10 years of experience in the contaminated land industry.

It should be noted that some primary samples were mislabelled by the laboratory and this is indicated in the various analytical tables.

Trip spikes

Ten trip spikes for TRH (C_6-C_9)/BTEX compounds were included with the batch of soil samples submitted for analysis. The recoveries of the trip spike samples were all within the nominated acceptance criteria.

One trip spike for TRH (C_6-C_9)/BTEX compounds was included with the batch of groundwater samples submitted for analysis. The recoveries of the trip spike samples were all within the nominated acceptance criteria.

Storage blanks

Ten storage blanks were provided, one with each batch of soil samples and subsequent analysed for BTEX compounds. All levels of analytes in the trip blanks were below the laboratory LOR.

One storage blank was provided with the batch of groundwater samples and subsequently analysed for BTEX compounds. All levels of analytes in the trip blanks were below the laboratory LOR.

Laboratory blanks

At least one laboratory blank was analysed for each analyte with each batch of samples. All levels of analytes in laboratory blanks were below detection limits.

Rinsate Samples

Twelve rinsate samples were prepared during equipment decontamination activities when reusable sampling equipment was used. Subsequent analysis of the rinsate samples indicated all levels of analytes were below the laboratory LOR.

One rinsate sample was prepared during the groundwater equipment decontamination activities. Subsequent analysis of the rinsate sample indicated all levels of analytes were below the laboratory LOR.

Holding times

All soil analyses have been undertaken within holding times.

All groundwater analysis was completed within the scheduled holding times.

8.2.4 Comparability

Common and consistent JBS&G Field Personnel have been used to collect samples throughout the project. Field works have been undertaken in accordance with JBS&G field operating procedures. All required field forms and sampling logs have been appropriately completed by sampling personnel.

8.2.5 Completeness

Documentation

Samples were transported under full chain of custody (COC) documentation. The COC documentation was completed correctly and the selected analyses were correctly conducted.

All documentation was completed to the required standard. Borehole logs are provided as **Appendix D**. Chain of custody forms are provided with laboratory documentation included as **Appendix C**.

Frequency for QC Samples

The frequency of QC samples is considered to be sufficient and meets the project DQI's

8.2.6 Sensitivity

Laboratory analysis methods for all contaminants in soil adopted during the assessment used limits of reporting significantly less than the site assessment criteria to ensure that contaminant concentrations could be confidently identified as being less than the adopted soil site assessment criteria.

8.3 QA/QC Conclusions

The field sampling and handling procedures produced QA/QC results which indicate that the soil and groundwater data are of an acceptable quality and are suitable for use in site characterisation. The QA/QC table is provided in **Appendix F**.

The NATA certified laboratory results sheets indicate that the project laboratory was achieving levels of performance within its recommended control limits during the period when the samples from this program were analysed.

While several recoveries and RPD's fell outside the DQI limit, the non-conformances described in **Section 8.2** are considered to be acceptable due to factors such as consistency of the remaining data, many results falling within the NATA accredited range and results significantly below the adopted site assessment criteria.

On the basis of the results of the field and laboratory QA/QC program, the soil data are of an acceptable quality upon which to draw conclusions regarding the environmental condition of the site.

9. Results

9.1 Field Observations

A total of 31 Lots were inspected and soil samples collected from each lot. The Parcels sampled are shown in **Figure 4a** to **4e**. The field logging records are presented in **Appendix D**.

Fill material was encountered from the ground surface at all sampling locations and generally comprised topsoil of silty clay.

Anthropogenic materials were observed on the ground surface and in the topsoil/fill material throughout the whole site and included ACM fragments, building waste, ceramic, bricks, chemical drums, wood, machinery, tyres and burnt wood.

Further discussion of the extent of identified ACM materials is presented in the Hazardous Materials Assessment Report included as **Appendix B**.

9.1.1 Potential Aesthetic Issues

Organic odours were noted during the assessment works at within four locations within one lot (ID # 20 – Lot 46/255616). No other odours were noted during the works.

Petroleum staining was observed on the ground surface within one lot (ID # 22- Lot 43/255616). Additionally, staining that appeared blue-like was observed in property # 18 (ID # Lot 47/255616) on the surface of a stockpile of material.

Additionally, potential animal carcasses were reported in property ID # 20 (Lot 46/255616), with an associated organic odour noted.

Additionally, ACM fragments were identified on ground surfaces and in surface soils within five lots at 11 locations. No visible friable asbestos was reported during the assessment.

The locations of potential aesthetic issues are shown on Figure(s)???

9.1.2 Soil Properties

A total of 6 samples were analysed for cation exchange capacity (CEC) and pH.

The results are summarised in **Table 9.1** below

Table 9.1 Soil Properties

Analyte	Concentration (average)
CEC	10.7
pH	6.3

9.1.3 Potential Acid Sulfate Soils

Additionally, a total of 28 samples were analysed for potential acid sulfate soils (PASS). None of the samples analysed indicated the presence of PASS or actual acid sulfate soils. One soil sample (#24-TP02 0.3-0.4 m) and one sediment sample (#19-SED01) was reported with Sulfur – Peroxide Oxidisable Sulfur (% SPOS) of 0.02 %S and 0.03 %S respectively, both results below ASSMAC (1998) action criteria for medium to fine textured soils (<1000 tonnes disturbed).

Some results indicate potential acidic soil conditions based on lower than average pH and acid trail only results (e.g. #22-TP04 0.4-0.5 m, #15-TP02 0.2-0.3 m, #13-TP06 1.9-2.0 m, #24-TP02 0.3-0.4 m, #3-TP06 1.3-1.4 m). Dam sediment samples (e.g. SED01, #3-SED01) also exhibited potential acidic conditions based on lower than average pH and acid trail only results.

9.2 Soil Analytical Results

The soil sampling locations are shown on **Figure 4a-4e** and a summary of collected samples is provided in **Table A**. Detailed laboratory reports and chain of custody documentation is provided in **Appendix C**.

The results of soil sample analyses are summarised by Parcel in **Table 9.2** below

Table 9.2 Summarised Soil Analytical Results

Lots	Analysed	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Further Comments
1/11126 207-217 Boundary Road, Maraylya (#1 on Figure 4a)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, OPPs, herbicides and fungicides asbestos	EILs: 2x copper, 3x nickel, 8x zinc HILs: 1x Chromium (VI) ACM in soil -4	2 samples from 17 for copper reported above EIL with 410 mg/kg in 1-SS02 (0.0-0.1 m) and 320 mg/kg in 1-A-SS10 (0.0-0.1 m). 3 samples from 17 for nickel above EIL with 63 mg/kg in 1-SS02 (0.0-0.1 m), 33 mg/kg in 1-A-SS10 (0.0-0.1 m) and 31 mg/kg in 1-SS15 (0.0-0.1 m) 8 samples from 17 for zinc above the EIL with 1100 mg/kg in 1-SS02 (0.0-0.1 m), 260 mg/kg in 1-SS04 (0.0-0.1 m), 180 mg/kg in 1-O-SS07 (0.0-0.1 m), 2300 mg/kg in 1-SS18 (0.0-0.1 m), 690 mg/kg in 1-TP02 (0.0-0.1 m), 370 mg/kg in 1-TP04 (0.0-0.1 m). 1 sample from 17 for Cr reported above the HIL-A with 120 mg/kg in 1-SS02 (0-0.1)/ 4 samples from 25 with asbestos in soil (1-SS01 (0-0.1 m), 1-A-SS 09 (0-0.1 m), 1-A-SS20 (0-0.1 m) and 1-A-SS28 (0-0.1 m)). All other results below adopted criteria	ACM reported in surface soil
2/11126 195-205 Boundary Road, Maraylya (#2 on Figure 4a)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, OPPs, herbicides and fungicides asbestos	None	All results below adopted criteria	Organic matter and tree mulch
1/207750 181-191 Boundary Road, Maraylya (#3 on Figure 4a)	Metals, chlorinated hydrocarbons, PAHs, TRH/BTEX, PCBs, OCPs, OPPs, herbicides and fungicides asbestos	EILs: 1x copper, 3x zinc ACM in soil - 1	1 sample from 27 for copper reported above EIL with 240 mg/kg in 3-S-SS20 (0.0-0.1 m) 3 samples from 27 for zinc reported above EIL with 610 mg/kg in 3-S-SS18 (0.0-0.1 m), 580mg/kg in 3-S-SS20 (0.0-0.1 m) and 380 mg/kg in 3-TP03 (0.0-0.1 m). 1 sample from 14 with asbestos in soil (3-TP03 (0-0.1 m)).	Bricks, concrete, plastic, cement tiles and charcoal present in fill

Lots	Analysed	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Further Comments
			All other results below adopted criteria	
3/11126 89 Maguires Road, Maraylya (#4 on Figure 4a)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, OPPs, herbicides and fungicides asbestos	<u>EILs:</u> 2x zinc	2 samples from 10 for zinc reported above EIL with 230 mg/kg in 4-SD-TP07 (0.0-0.1 m) and 230 mg/kg in 4-SD-TP07 (0.0-0.1 m) All other results below adopted criteria	Bricks, concrete, plastic, cement tiles and charcoal present in fill
4/135304 A & B 97 Maguires Road, Maraylya (#5 on Figure 4a)	Metals, OCPs, OPPs, PCBs, herbicides and fungicides and asbestos	None	All results below adopted criteria	ACM reported in surface soil
5/658286 151 Maguires Road, Maraylya (#6 on Figure 4a)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, OPPs, herbicides and fungicides asbestos	<u>EILs:</u> 1x nickel, 2x zinc	2 samples from 23 for zinc reported above EIL with 260 mg/kg in 6-O-SS12 (0.0-0.1 m) and 6500 mg/kg in 6-S-SS16 (0.0-0.1 m) 1 sample from 23 for nickel reported above the EIL with 67 for 6-S-SS16 (0.0-0.1 m). All other results below adopted criteria	Some sandstone inclusions
1/564211 169 Maguires Road, Maraylya (#7 on Figure 4a)	Metals, PAHs, OCPs, TRH/BTEX, asbestos	ACM in soil - 1	1 sample from 4 with asbestos in soil (7-SS01 (0-0.1 m)). All other results below adopted criteria	-
9/593517 155 Boundary Road, Box Hill (#8 on Figure 4a)	Metals, PAHs, OCPs, TRH/BTEX, asbestos	ACM in soil - 1	1 sample from 3 with asbestos in soil (8-SS01 (0-0.1 m)). All results below adopted criteria	Brick and wood reported in fill
10/593517 153 Boundary Road, Box Hill (#9 on Figure 4a)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	<u>EILs:</u> 1x nickel and zinc <u>ESL:</u> 2x TRH >C10-C16 2x TRH >C16-C34 1x TRH >C34-C40 <u>Management Limits:</u> 1x TRH >C10-C16 2x TRH >C16-C34	1 sample from 19 for nickel (reported above EIL with 75 mg/kg in 9-TP08 (0.0-0.1 m)) and zinc (reported above EIL with 530 in 9-TP08 (0.0-0.1 m)) 2 samples from 17 for TRH >C10-C16, >C16-C34 and/or >C34-C40 above ESLs (samples #9-AST-SS01 (0-0.1) and #9-SD-SS04 (0-0.1)), with TRH ranging between 140 mg/kg and 53 000 mg/kg 2 samples from 17 for TRH >C10-C16 and/or >C16-C36	Some plastic, AST

Lots	Analysed	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Further Comments
			above Management Limits (samples #9-AST-SS01 (0-0.1) and #9-SD-SS04 (0-0.1)), with TRH ranging between 2500 mg/kg and 53 000 mg/kg All other results below adopted criteria.	
22/255616 4 Red Gables Road, Box Hill (#10 on Figure 4a)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EILs: 1x zinc	1 sample from 6 for zinc reported above EIL with 200 mg/kg in 10-SD-SS02 (0.0-0.1 m) All other results below adopted criteria	-
23/255616 6 Red Gables Road, Box Hill (#11 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, OPPs, herbicides and fungicides asbestos	EILs: 1x zinc	1 sample from 7 for zinc reported above EIL with 2800 mg/kg in 11-TP02 (0.0-0.1 m) All other results below adopted criteria	Some gravel inclusions
25/255616 10 Red Gables Road, Box Hill (#12 on Figures 4a and 4b)	Metals, PAHs, TRH/BTEX, PCBs, OPPs, OCPs, asbestos	EILs: 1x zinc	1 sample from 8 for zinc reported above EIL with 1600 mg/kg in 12-AST-SS09 (0.0-0.1 m) All other results below adopted criteria	Bricks and ceramics present in fill AST
26/255616 Red Gables Road, Box Hill (#13 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	None	All results below adopted criteria	Steel and glass in the fill material
27/255616 14 Red Gables Road, Box Hill (#14 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos, herbicides and fungicides	None	All results below adopted criteria	-
31/255616 3 Janpieter Road, Box Hill (#15 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	None	All results below adopted criteria	-
30/255616 5 Janpieter Road, Box Hill (#16 on Figure 4b)	Metals, chlorinated hydrocarbons, PAHs, TRH/BTEX, OCPs, asbestos	ESL: 1x TRHs EILs: 1x zinc	1 of 11 samples for TRH (C_{16}-C_{34}) reported above the ESL at 1600 mg/kg in 16-SD-HA01 (0.0-0.1 m). 1 sample from 10 for zinc reported above EIL with 1100 mg/kg in 16-SD-HA04 (0.0-0.1 m) All other results below adopted criteria	-

Lots	Analysed	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Further Comments
29/255616 18 Red Gables Road, Box Hill (#17 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EILs: 1x copper, nickel zinc HIL: 1 x lead	1 of 11 samples reported lead above the HIL-A with 530 mg/kg in 17-SD-SS03 (0.0-0.1) 1 of 11 samples reported zinc above the EIL with 660 mg/kg, copper with 180 mg/kg and nickel with 35 mg/kg in 17-SD-SS03 (0.0-0.1) All other results below adopted criteria	-
47/255616 3 Red Gables Road, Box Hill (#18 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EILs: 1x zinc	1 of 6 samples analysed for zinc reported above EIL with 280 mg/kg) in 18-SD-SS01 (0.0-0.1)	Blue staining in stockpile
45/255616 5 Red Gables Road, Box Hill and 46/255616 5 Red Gables Road, Box Hill (#19 and #20 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos, herbicides, biologicals	EILs: 4x zinc, 1x nickel HIL: 1x lead HSLs: 4x TRH Management Limits: 3x TRH	1 of 32 samples for lead reported above HIL-A and HIL-C with 650 mg/kg in 20-SD-SS07 (0.0-0.1 m) 2 of 32 samples for TRH (C_{10}-C_{16}) reported above ESLs with 310 mg/kg in 20-SD-SS01 (0.0-0.1 m) and 12000 mg/kg in 20-AST-SS02 (0.0-0.1 m) 1 of 32 samples for TRH (C_{10}-C_{16}) reported above Management Limits with 12000 mg/kg in 20-AST-SS02 (0.0-0.1 m) 4 of 32 samples for TRH (C_{16}-C_{34}) reported above HSLs with 19000 mg/kg in 20-SD-SS01 (0.0-0.1 m), 26000 mg/kg in 20-AST-SS02 (0.0-0.1 m), 11000 mg/kg in 20-AST-SS07 (0.0-0.1 m) and 1400 mg/kg in #20-SS11 (0-0.1 m) 3 of 32 samples for TRH (C_{16}-C_{34}) reported above Management Limits with 19000 mg/kg in 20-SD-SS01 (0.0-0.1 m), 26000 mg/kg in 20-AST-SS02 (0.0-0.1 m), 11000 mg/kg in 20-AST-SS07 (0.0-0.1 m). 1 of 32 samples for TRH (C_{34}-C_{40}) reported above HSLs with 14000 mg/kg in 20-SD-SS01 (0.0-0.1 m)	Animal Remains identified. AST and Drums. Organic odours reported

Lots	Analysed	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Further Comments
			5 of 32 samples for zinc reported above EIL with 1800 mg/kg in 20-SD-SS07 (0.0-0.1 m), 210 mg/kg in 20-SD-SS08 (0.0-0.1 m), 220 mg/kg in 20-SS11 (0.0-0.1 m), 240 mg/kg in 20-SD-SS12 (0.0-0.1 m) and 680 mg/kg in #20-TP05 (0.9-1.0 m) 3 of 32 samples for nickel reported above EIL with 62 mg/kg in 20-SD-SS07 (0.0-0.1 m), 41 mg/kg in 20-SD-SS08 (0.0-0.1 m), 37 mg/kg in 20-TP09 (0.8-0.9).	
44/255616 7 Red Gables Road, Box Hill (#21 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos, herbicide	EIL: 1x zinc ESL: 1x PAHs	1 of 9 samples for zinc reported above EIL with 910 mg/kg in 21-SS01 (0.0-0.1 m) 1 of 7 samples for PAHs (benzo(a)pyrene) reported above ESL with 1.5 mg/kg in 21-SS01 (0.0-0.1 m)	ACM on surface reported
43/255616 9 Red Gables Road, Box Hill (#22 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EILs: 1x zinc ESL: 1x TRH	1 of 7 samples for zinc reported above EIL with 180 mg/kg in 22-S-SS05 (0.0-0.1 m) 1 of 5 samples for TRH (C_{16}-C_{34}) above ESL with 1700 mg/kg in 22-S-SS05 (0.0-0.1 m) All other results below adopted criteria	Staining reported ACM on surface reported Dam wall present
18/2556166 Cataract Road, Box Hill (#23 on Figure 4b)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	None	All results below adopted criteria	-
15/255616 3 Cataract Road, Box Hill (#24 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EIL: 2x zinc	2 of 7 samples for zinc reported above EIL with 310 mg/kg in 24-AST-SS02 (0.0-0.1 m) and 180 mg/kg in #24-SP-TP01 (0.0-0.1 m) All other results below adopted criteria	AST Wood and corrugated iron
16/255616 5 Cataract Road, Box Hill (#25 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EIL: 1x arsenic, 1x copper, 3x zinc HIL: 1x chromium 1x arsenic	1 of 6 samples for arsenic reported above the HIL-A and EIL with 270 mg/kg in 25-F-SS01 (0.0-0.1 m). 1 of 6 samples for chromium reported above the HIL-A with 140 mg/kg in 25-F-SS01 (0.0-0.1 m).	Charcoal in fill material

Lots	Analysed	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Further Comments
			1 of 6 samples for copper reported above the EIL with 240 mg/kg in 25-F-SS01 (0.0-0.1 m). 3 of 6 samples for zinc reported above the EIL with 300 mg/kg in 25-F-SS01 (0.0-0.1 m), 390 mg/kg in 25-S-SS02 (0.0-0.1 m) and 400 mg/kg in 25-SD-SS04 (0.0-0.1 m)	
21/255616 7 Cataract Road, Box Hill (#26 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EIL: 1x zinc	1 of 6 samples for zinc reported above the EIL with 260 mg/kg in 26-SS02 (0.0-0.1 m).	-
17/255616 8 Cataract Road, Box Hill (#27 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	1x nickel	1 of 8 samples for zinc reported above the EIL with 33 mg/kg in 27-TP0515 (0.0-0.1 m).	-
41/255616 11 Janpieter Road, Box Hill (#28 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs	None	All results below adopted criteria	ACM reported in fill material and stockpiled material
40/255616 13 Janpieter Road, Box Hill (#29 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	None	All results below adopted criteria	-
2/253552 117 Old Pitt Town Road, Box Hill (#30 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	EILs: 1x arsenic, 1x copper, 1X chromium 1x zinc HIL: 1x arsenic, 1x chromium	1 of 7 samples for arsenic reported above HIL-A and EIL with 700 mg/kg in 30-F-SS01 (0.0-0.1 m) 1 of 7 samples for copper reported above EIL with 1100 mg/kg in 30-F-SS01 (0.0-0.1 m) 1 of 7 samples for zinc reported above the EIL with 290 mg/kg in 30-F-SS01 (0.0-0.1 m) 1 of 7 samples for chromium reported above HIL-A and EIL with 240 mg/kg in 30-F-SS01 (0.0-0.1 m)	-
4/253552 121 Old Pitt Town Road, Box Hill (#31 on Figure 4c)	Metals, PAHs, TRH/BTEX, PCBs, OCPs, asbestos	None	All results below adopted criteria	AST

9.2.1 Biologicals

One sample (TP05 0.9-1.0) from within Lot 20 (46/255616), from within the fill material was analysed for microbiologicals including E.Coli and faecal coliforms. The results for the sample were below the adopted site criteria.

9.3 Groundwater Quality

The locations of the groundwater monitoring wells are presented in **Figure 5**. Groundwater field water quality parameters and gauging data are displayed in **Table C**.

During groundwater purging, between 6 and 14 L of groundwater was purged from each of the monitoring wells, with the water quality parameters stabilising after approximately 25 minutes.

It should be noted that two of the monitoring wells (MW3 and MW5) were dry.

The following water quality parameters were measured for the shallow groundwater samples:

- pH ranged from 6.2 to 7.7;
- Electrical conductivity (EC) from 5.88 ms/cm to 2014 µS/cm;
- Redox (Eh) from 27 mV to 78 mV;
- Dissolved oxygen ranged from 1.58 to 2.14 mg/L;
- Temperature ranged from 18.0 to 18.8 degrees Celsius; and
- Total Dissolved Solids ranged from 9.91 ppk to 873 ppm.

The measured depth to groundwater ranged from 2.8 m below top of casing (btoc) to 7.4 (btoc).

By reference to NHMRC (1996) 'Australian Drinking Water Guidelines' and NHMRC (2004) 'Australian Drinking water Guidelines' the water is classified as 'maybe corrosion and acceptable water based on taste'.

9.4 Groundwater Analytical Results

The groundwater sampling locations are shown on **Figure 5** and a summary of collected samples is provided in **Table B**. Detailed laboratory reports and chain of custody documentation is provided in **Appendix C**.

The results of groundwater sample analyses are summarised below.

9.4.1 TRH/BTEX

Concentrations of TRH/BTEX were not reported above the laboratory LOR in any of the samples collected and analysed.

9.4.2 VOCs

Concentrations of VOC compounds were not reported above the laboratory LOR in any of the samples collected and analysed.

9.4.3 OCPs/OPPs

Concentrations of OCPs and OPPs were not reported above the laboratory LOR in any of the samples collected and analysed.

9.4.4 Metals

Concentrations of heavy metals were not reported above the adopted site criteria in any of the samples collected and analysed.

9.5 Hazardous Materials Survey

The hazardous materials survey results are reported in **Appendix B**.

10. Site Characterisation

The results are discussed in the following section in relation to the identified decisions developed as part of the DQO process (**Section 6**). Based on the decision making process for assessing urban redevelopment sites detailed in DECC (2006), the following decisions must be made:

- Are there any unacceptable health risks to likely future onsite receptors from contamination at the site?
- Are there any issues relating to the local area background soil concentrations?
- Are there any impacts of chemical mixtures?
- Are there any aesthetic issues?
- Is there any evidence of, or potential for, migration of contaminants from the site?
- Is a site management strategy required?

10.1 Are there any unacceptable health risks to likely future onsite receptors from contamination at the site?

Direct comparison of the soil analytical data with the health and ecological investigation levels for 'residential with accessible soils criteria' adopted for this assessment has identified the following:

- Lead concentrations in two soil samples in two separate lots (17 and 20) exceed health-based criteria;
- Arsenic concentrations in two soil samples in two separate lots exceed health-based criteria (25 and 30);
- Chromium concentrations in three soil samples in three separate lots exceed health-based criteria for chromium VI (1, 25 and 30);
- Metals concentrations in a number of soil samples across the site exceed ecological based criteria;
- Concentrations of carcinogenic PAHs (as B(a)P) exceeded the adopted ecological based criterion in a soil sample collected from one lot (21);
- Eight sample locations exceeded the ecological criteria for TRH fractions from four lots (9, 16, 20 and 22).
- Five sample locations exceeded the Management Limits for TRH fractions from two lots (9 and 20).
- Asbestos fibres (AF/FA) were reported in soil in seven samples from four lots (1, 3, 7 and 8).

It should be noted that application of NEPC (2013) Ecological Screening Levels (ESLs) is considered to be of limited value in assessing requirements for benzo(a)pyrene management given the ESLs reported are of low reliability. Plants have a limited ability to take up PAHs through the roots, especially for higher molecular weight PAHs (such as benzo (a) pyrene). Higher molecular weight PAHs are strongly absorbed to the soil, which limits availability of PAHs to the plants (NEPC 2013). On this basis, further consideration of the potential requirements to address an unacceptable ecological risk from benzo(a)pyrene is not necessary.

10.2 Are there any issues relating to background soil concentrations?

The soil samples collected from the fill material indicated metal concentrations were generally below the background metal concentrations provided in NEPC 1999. However, as noted in **Section 10.1**, there does exist the potential for ecological impacts from some metal concentrations that will require management.

10.3 Are there any impacts of chemical mixtures?

There were no potential chemical mixtures identified during the investigation that may increase the risk of harm at the site or require special management.

10.4 Are there any aesthetic issues?

As discussed in **Section 9.1**, non-friable (bonded) ACM was identified in the surface soils (<0.1 m bgs) within 5 of the 31 lots across the site and within stockpiled material in one lot. The non-friable ACM impacts identified at the site are considered to pose an aesthetic issue with respect to future site occupant/user concerns in addition to potential health risks where present in high concentrations. Friable asbestos was also reported in soil at a number of sampling locations, which also poses an aesthetic issue and potential health risks to future site occupants/users.

Staining of the ground surface observed at some lots and in stockpiles are considered to pose an aesthetic issue.

Organic odours were reported during the assessment works within one lot and is considered to pose an aesthetic issue.

Additionally, animal carcasses potentially located within lot 20 are considered to be an aesthetic risk to future site users.

10.5 Is there any evidence of, or potential for, migration of contaminants from the site?

Friable ACM was identified during implementation of this assessment, and there is also considered to be a risk that ACM at the site could become weathered such that site activities and/or weather conditions may result in asbestos fibres being liberated from one or more areas of the site.

With respect to chemical contaminants identified at the site the general scale of identified areas of impacted soil are relatively low. In addition, whilst there is the potential for movement of impacted soils via surface water run-off, sedimentation, dust generation or other manner, the generally vegetated nature of the ground is considered likely to limit the scale of such contaminant migration during current site activities. In the event that site activities include the removal of large areas of ground cover, management controls will be required to limit the increased risk of such migration.

Groundwater sampling completed for the site did not identify impacts above the laboratory LOR. There does not appear to be any migration of contaminants to or in groundwater.

10.6 Is a site management strategy required?

Based on the results of the investigation and subject to the limitations presented in **Section 12**, it is considered that a site management strategy is required to address identified contamination issues in the soil, including hydrocarbons, heavy metals and asbestos in surface and near surface fill material in various lots.

Additionally, aesthetic issues including ACM, friable asbestos, surface staining and odourous soils will require further consideration in development of a site management strategy.

Additionally, the ASTs present at the site will require management to prevent further impacts to the various lots.

11. Conclusions and Recommendations

11.1 Conclusions

Based on the findings of this investigation and subject to the limitations in **Section 12**, the following conclusions are made with respect to the site:

- Fill material was encountered from the ground surface at all sampling locations and generally comprised silty clay.
- Concentrations of arsenic, chromium and/or lead were reported in some soil samples exceeding the adopted health criterion in five separate lots.
- Concentrations of carcinogenic PAHs (including B(a)P) were reported to exceed the adopted health criterion in one soil sample collected from one lot.
- A total of eight soil samples exceeded the ecological criterion for TRH fractions, with these located in four lots.
- A total of five soil samples exceeded the Management Limits for TRH fractions, with these located within two lots.
- Non-friable ACM was observed across the site in 11 different locations within five lots. It should be noted that lots with heavy vegetation may obscure the occurrence of additional potential ACM fragment impacts. These pose a potential future risk to site users and if weathered could pose a potential migration risk from the site. Free asbestos (FA) fibres or asbestos fines (AF) were also reported in seven soil samples analysed from four lots.
- Aesthetic impacts have been identified including ACM on ground surfaces and in surface soils (as noted above), friable asbestos in soil, as well as minor isolated surface staining and odorous soils. These areas will require management as part of future development works at the site.
- Groundwater monitoring wells were installed at five locations across the site, with three being sampled. Two of the groundwater monitoring wells were found to be dry.
- Concentrations of COPCs were either not detected or below adopted investigation levels within the groundwater samples collected, which indicates that identified soil impacts are not impacting groundwater.
- The ASTs currently present at the site require management to prevent further impacts to the site.
- The DSI did not identify any widespread or gross soil contamination, with potentially unacceptable risks from soil contamination typically localised, limited in extent, and able to be readily managed to enable all proposed land uses at the site.

11.2 Recommendations

It is recommended that a management strategy including preparation of Remedial Action Plan (RAP) be developed in accordance with the relevant regulatory requirements to address the identified contamination issues to render the site suitable for the proposed land uses.

The management strategy and RAP would include:

- A framework for delineation of the extent of impacted material(s) within relevant lots prior to the commencement of redevelopment works;

- Appropriate waste classification methodology for soils and stockpiles, where required, to be removed and disposed of offsite;
- Development of human health and environmental management procedures to be implemented;
- Environmental management procedures to be implemented during the safe removal of asbestos containing materials from the site;
- Contingency actions to address potential unexpected finds and/or alternative management options for the asbestos, heavy metal and hydrocarbon contaminated fill;
- Requirements for documentation of remedial works; and
- Validation of the residual soils in any resulting excavations to demonstrate suitability of remaining materials to remain on the site

12. Limitations

This report has been prepared for use by the client who commissioned the works in accordance with the project brief only and has been based in part on information obtained from other parties. The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements and site history, not on sampling and analysis of all media at all locations for all potential contaminants.

Limited sampling and laboratory analyses were undertaken as part of the investigations, as described herein. Ground conditions between sampling locations may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the sites, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures

Figure 1: Site Location

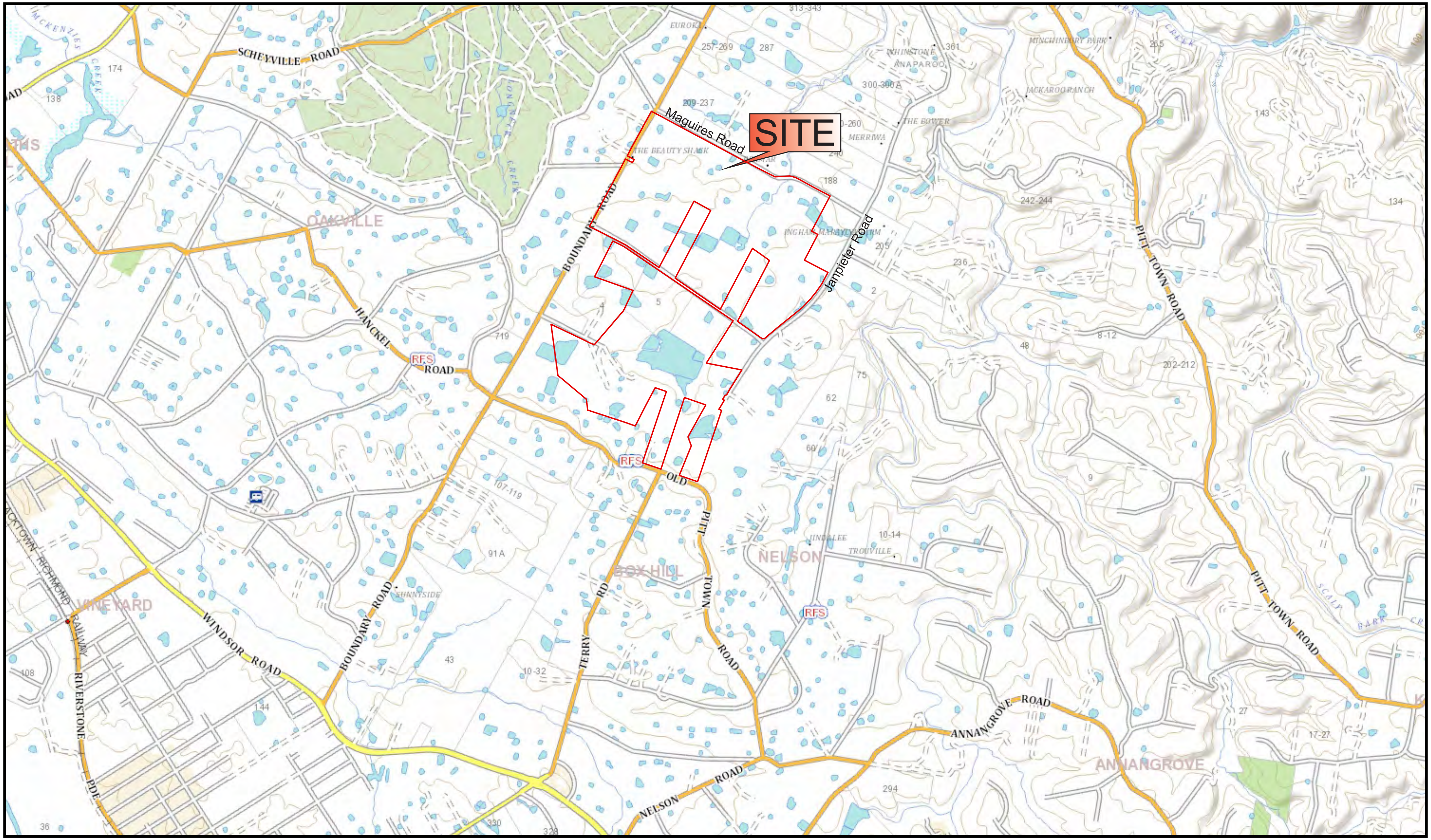
Figure 2: Site Layout

Figure 3: Areas of Environmental Concern

Figure: 4a-4e Samples Locations

Figures 5: Groundwater Monitoring Well Locations

Figures: 6a-6e: Soil Exceedances



Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, accessed 12-04-2013

0 750 1500 m

Scale: Approximate

Datum: MGA94 Zone 56 - AHD

A4

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

Approximate Site Boundary

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Figure 1: Site Location

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376_01

File Name: 43376_01

Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, imagery date 13-04-2011, accessed 12-04-2013

0 125 250 500 m

Scale: 1:13,500

Datum: GDA 1994 MGA Zone 56 - AHD

Legend:
- Approximate Site Boundary
- Approximate Lot Boundary
- Eletrical Transmission Line
- # Site Identification Number

A4			
A	Original Issue - R02	SE	04-08-2014
Rev	Description	Drn.	Date:

JBS&G **Figure 2: Site Layout**

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376 File Name: 43376_02

Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, imagery date 13-04-2011, accessed 12-04-2013

0 125 250 500 m

Scale: 1:13,500

Datum: GDA 1994 MGA Zone 56 - AHD

Legend:
Approximate Lot Boundary
LA Limited Access

JBS&G

Figure 3: Areas of Environmental Concern

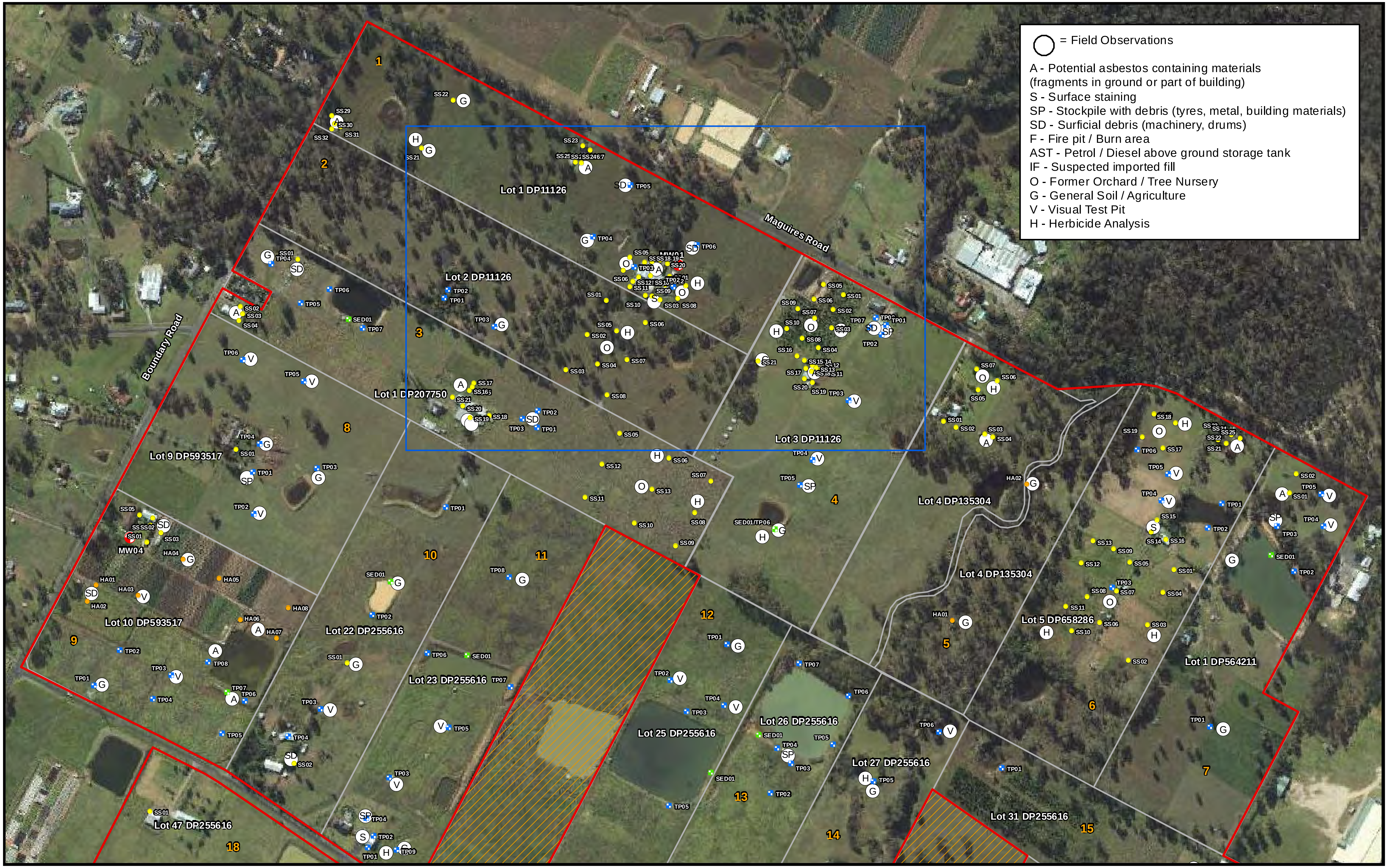
Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_03

A4			
A	Original Issue - R02	SE	04-08-2014
Rev	Description	Drn.	Date:



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

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Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

- # Site Identification Number
- Extent of Figure 4b

JBS&G

Figure 4a: Sample Locations - Northern Lots

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376 File Name: 43376_04a

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale: 1:2,000

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	LL	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

Site Identification Number

JBS&G

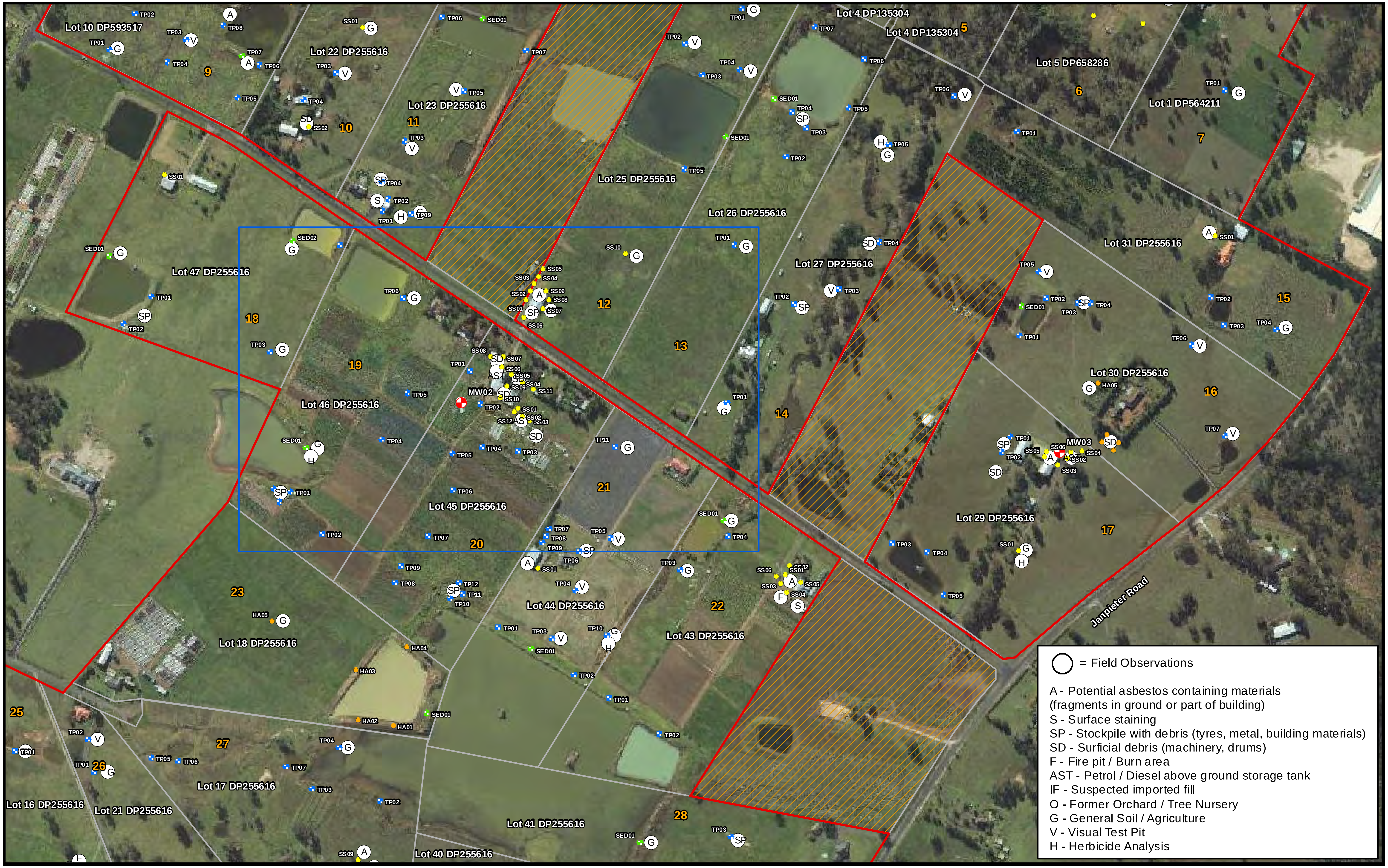
Figure 4b: Northern Surface Sample Locations

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_04b



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

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Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

- # Site Identification Number
- Extent of Figure 4d

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Figure 4c: Sample Locations - Central Lots

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_04c

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:1,965

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

- # Site Identification Number
- Extent of Figure 4d

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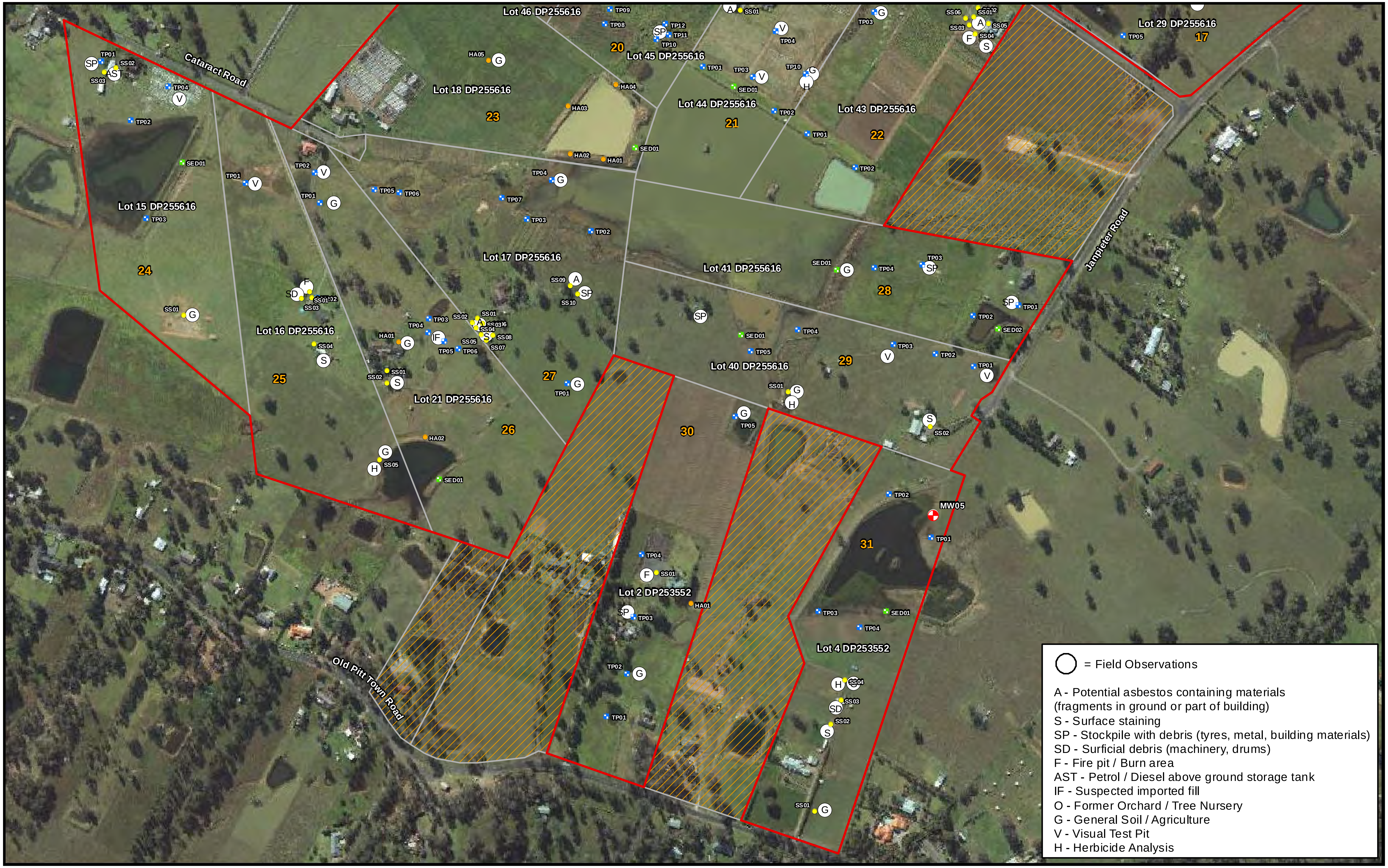
Figure 4d: Sample Locations - Central Lots (inset of Figure 4c)

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_04d



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,500

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

Site Identification Number

JBS&G

Figure 4e: Sample Locations - Southern Lots

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_04e

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed: 12/04/2014

0 137.5 275 550 m

Scale: 1:13,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
A	Original Issue - R02	SE	04-08-2014
Rev	Description	Drn.	Date:

Legend:

- Approximate Lot Boundary
- Groundwater Monitoring Well Locations
- Approximate Site Boundary
- Additional Properties Not Included in PSI

JBS&G

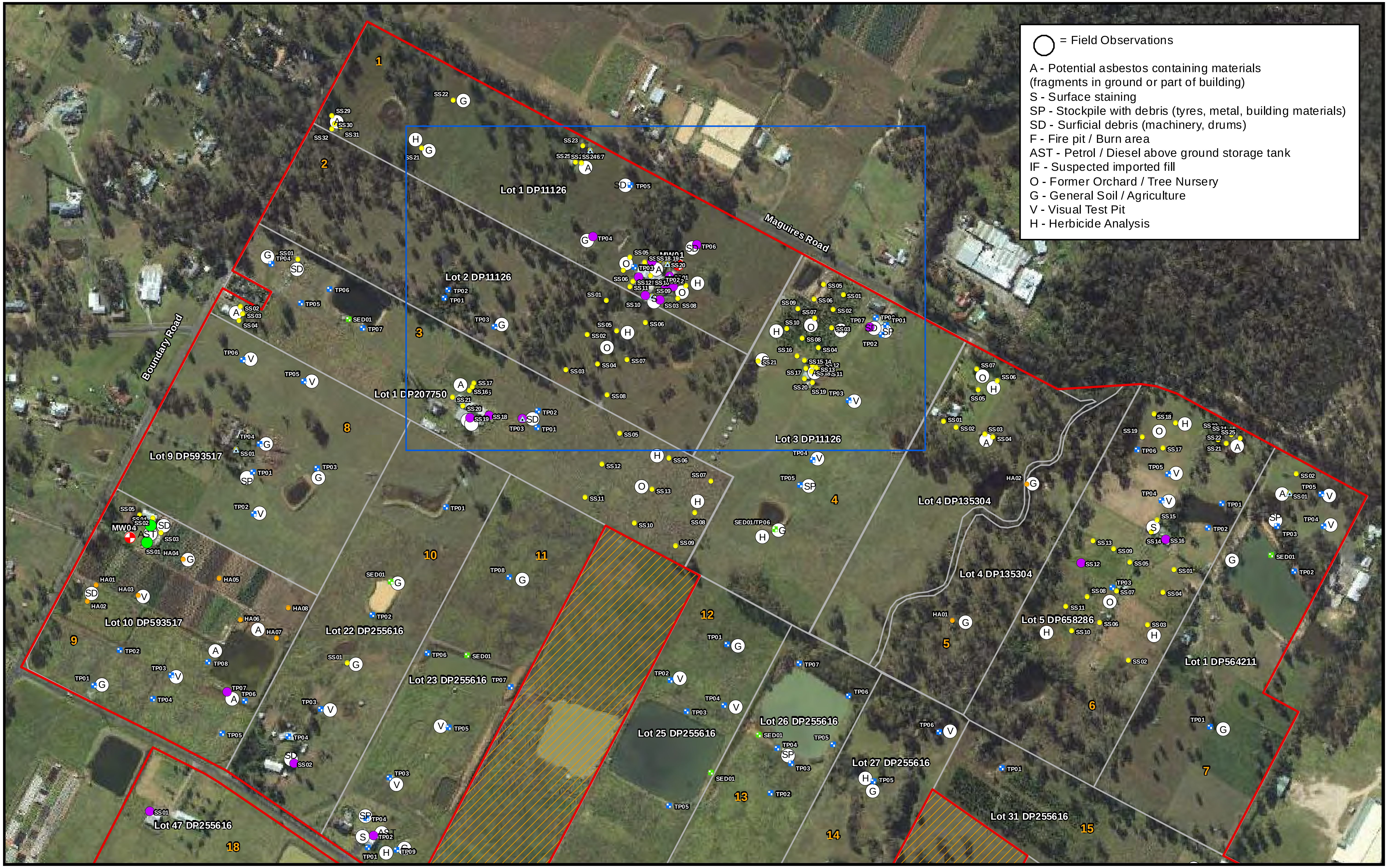
Figure 5: Monitoring Well Locations

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_05



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Extent of Figure 4b

JBS&G

Figure 6a: Guideline Exceedances - Northern Lots

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_06a

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:2,000

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	LL	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH

Site Identification Number

JBS&G

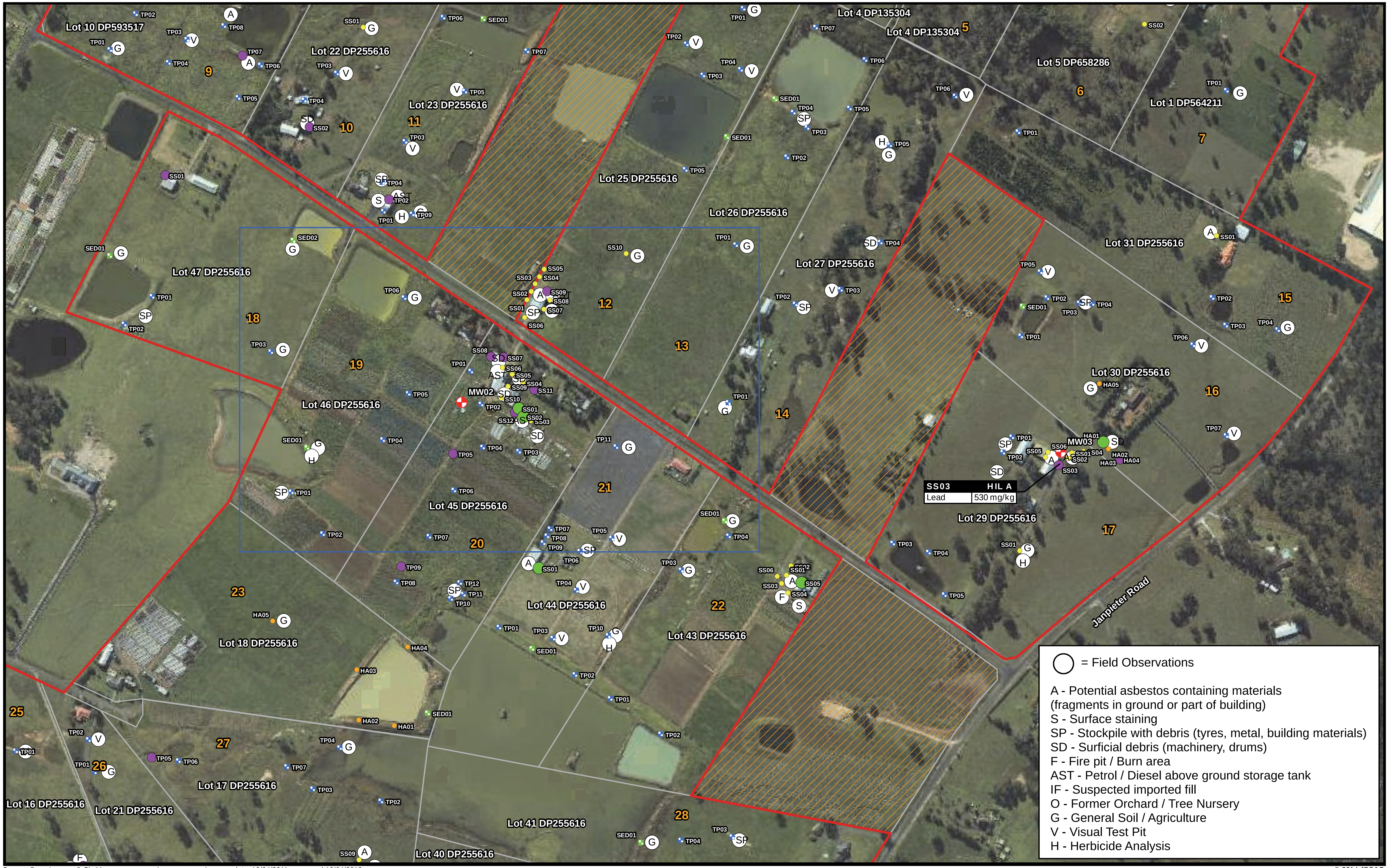
Figure 6b: Guideline Exceedances - Northern Lots (Detail Map)

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_06b



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Site Identification Number
- Extent of Figure 4d

JBS&G

Figure 6c: Guideline Exceedances - Central Lots

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_06c

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m
Scale: 1:1,965
Datum: GDA 1994 MGA Zone 56 - AHD
A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:
- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations
- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH

Site Identification Number

JBS&G

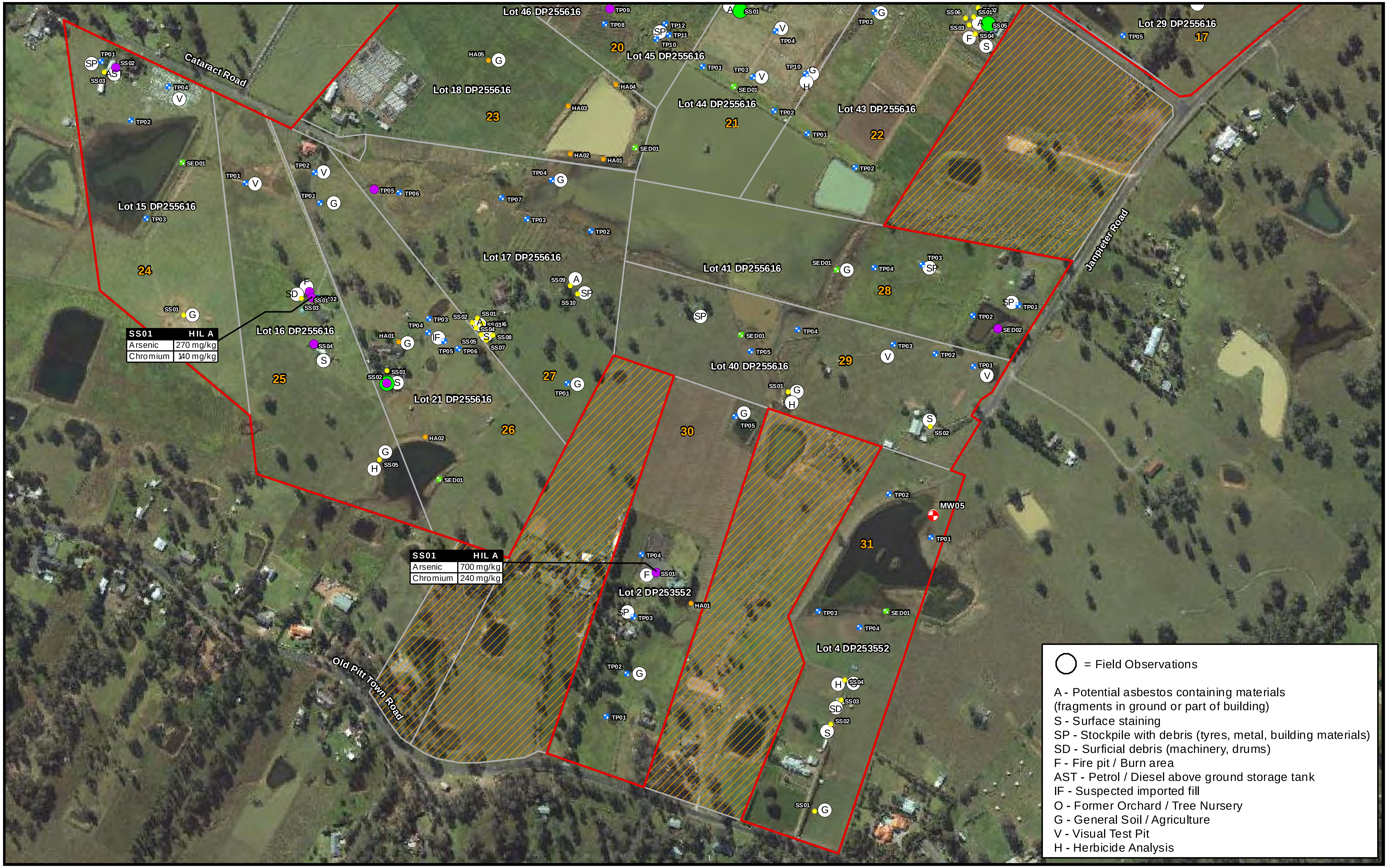
Figure 6d: Guideline Exceedances - Central Lots (Detail Map)

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_06d



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,500

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R02	SE	04-08-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- # Site Identification Number

JBS&G

Figure 6e: Guideline Exceedances - Southern Lots

Client: APP Corporation

Project: Box Hill North, NSW - ESA

Job No: 43376

File Name: 43376_06e

Summary Tables

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

Site	Field ID	Sample Depth	Sample Date	Metals & Metalloids								Non-Metallic Inorganics			Chlorinated Alkanes								
				Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Ammonia	Nitrate (as Nitrate)	Phosphorus	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	EQL			2	0.4	1	1	1	0.05	1	1	0.1	0.1	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	CRC Care 2011 Soil HSL A for Direct Contact																						
	CRC Care 2011 Soil HSL B for Direct Contact																						
	CRC Care 2011 Soil HSL C for Direct Contact																						
	CRC Care 2011 Soil HSL D for Direct Contact																						
	NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial			*160*		*310*	*190*	*1800*		*55*	*280*												
	NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space			*100*		*190*	*130*	*1100*		*30*	*180*												
	NEPC 2013 ESL Commercial and Industrial, Coarse Soil																						
	NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																						
	NEPC 2013 Management Limits - Commercial and Industrial, Fine																						
	NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																						
	NEPC 2013 Soil HIL A			100	20	100*	6000	300	40	400	7400												
	NEPC 2013 Soil HIL B			500	150	500*	30000	1200	120	1200	60000												
	NEPC 2013 Soil HIL C			300	90	300*	17000	600	80	1200	30000												
	NEPC 2013 Soil HIL D			3000	900	3600*	240000	1500	730	6000	400000												
	Field ID	**Sample Depth**	**Sample Date**																				
1/11126 207-217 Boundary Road, Maraylya	#1-A-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SS01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SS02	0-0.1	25/06/2014	10	0.6	120	*410*	77	0.19	*63*	*1100*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#1-SS03	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-S-SS04	0-0.1	25/06/2014	23	<0.4	41	62	50	0.08	15	*260*	-	-	-	-	-	-	-	-	-	-	-	-
	#1-O-SS05	0-0.1	25/06/2014	15	<0.4	25	16	26	<0.05	9.2	34	-	-	-	-	-	-	-	-	-	-	-	-
	#1-O-SS06	0-0.1	25/06/2014	22	<0.4	27	16	25	<0.05	7.4	35	-	-	-	-	-	-	-	-	-	-	-	-
	#1-O-SS07	0-0.1	25/06/2014	14	<0.4	20	16	18	0.1	20	180	-	-	-	-	-	-	-	-	-	-	-	-
	#1-O-SS08	0-0.1	25/06/2014	8.3	<0.4	16	19	22	0.07	8.5	46	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS10	0-0.1	4/07/2014	28	0.4	99	*320*	42	<0.05	*33*	*310*	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SS12	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SS14	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SS15	0-0.1	4/07/2014	4.1	0.6	62	21	28	<0.05	*31*	180	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SS17	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SS18	0-0.1	4/07/2014	<2	0.6	11	10	18	<0.05	5.9	*2300*	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS20	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-G-SS21	0-0.1	4/07/2014	3.4	<0.4	16	7.7	44	<0.05	<5	60	-	-	-	-	-	-	-	-	-	-	-	-
	#1-G-SS22	0-0.1	4/07/2014	3.8	0.8	27	11	18	<0.05	5.7	55	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS23	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS24	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS26	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS28	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS29	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS30	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS31	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-A-SS32	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-TP01	0.4-0.5	25/06/2014	5.4	<0.4	17	20	13	<0.05	20	47	-	-	-	-	-	-	-	-	-	-	-	-
	#1-TP02	0-0.1	25/06/2014	10	0.4	28	22	29	<0.05	15	*690*	-	-	-	-	-	-	-	-	-	-	-	-
	#1-TP03	0-0.1	25/06/2014	13	<0.4	23	17	28	<0.05	11	70	-	-	-	-	-	-	-	-	-	-	-	-
	#1-TP04	0-0.1	25/06/2014	8.6	0.5	21	17	43	0.07	11	*370*	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SD-TP05	0-0.1	25/06/2014	12	<0.4	21	17	26	<0.05	8	44	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SD-TP06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#1-SD-TP06	0.4-0.5	25/06/2014	4.9	<0.4	20	51	12	0.15	*52*	150	-	-	-	-	-	-	-	-	-	-	-	-
2/11126 195-205 Boundary Road, Maraylya	#2-O-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-O-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-O-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-O-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#2-TP01	0-0.1	26/06/2014	4.4	<0.4	12	9.7	14	<0.05	7.1	32	-	-	-	-	-	-	-	-	-	-	-	-
	#2-TP02	0-0.1	26/06/2014	4.5	<0.4	14	9.6	13	<0.05	6.7	31	-	-	-	-	-	-	-	-	-	-	-	-
	#2-TP03	0-0.1	26/06/2014	10	<0.4	24	11	23	<0.05	6.5	16	-	-	-	-	-	-	-	-	-	-	-	-
1/207750 181-191 Boundary Road, Maraylya	#3-SD-SS01	0-0.1	2/07/2014	16	<0.4	42	21	26	<0.05	6.3	40	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#3-A-SS02	0-0.1	2/07/2014	8.5	<0.4	24	28	52	0.06	18	130	-	-	-	-	-	-	-	-	-	-	-	-
	#3-A-SS03	0-0.1	2/07/2014	11	<0.4	38	27	66	<0.05	19	130	-	-	-	-	-	-	-	-	-	-	-	-
	#3-A-SS04	0-0.1	2/07/2014	7.3	0.7	24	42	71	<0.05	19	170	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS05	0-0.1	2/07/2014	14	<0.4	20	29	25	<0.05	5.8	36	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS06	0-0.1	2/07/2014	6.2	<0.4	23	28	25	<0.05	7.9	59	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS07	0-0.1	2/07/2014	11	<0.4	22	16	32	<0.05	8.5	72	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS08	0-0.1	2/07/2014	8.4	<0.4	15	22	21	<0.05	<5	34	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS09	0-0.1	2/07/2014	7.6	<0.4	15	15	19	<0.05	<5	17	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS10	0-0.1	2/07/2014	5.9	<0.4	22	29	23	<0.05	<5	23	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS11	0-0.1	2/07/2014	5.4	<0.4	21	14	23	<0.05	<5	31	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS12	0-0.1	2/07/2014	7.6	<0.4	21	14	22	<0.05	<5	33	-	-	-	-	-	-	-	-	-	-	-	-
	#3-O-SS13	0-0.1	2/07/2014	6.7	<0.4	31	15	24	<0.05	7.2	36	-	-	-	-	-	-	-	-	-	-	-	-
	#3-A-SS15	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#3-A-SS16	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#3-A-SS17	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#3-S-SS18	0-0.1	2/07/2014	15	1.7	27	43	87	<0.05	14	*610*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#3-S-SS19	0-0.1	2/07/2014	5.2	<0.4	15	75	29	<0.05	10	170	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#3-S-SS20	0-0.1	2/07/2014	8.5	1	28	*240*	45	<0.05	21	*580*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#3-S-SS21	0-0.1	2/07/2014	3.5	<0.4	17	97	23	<0.05	16	160	-	-	-	-	-	-	-	-	-	-	-	-
	#3-SD-SS23	0-0.1	7/07/2014	8.4	0.5	18	18	17	<0.05	6.8	63	-	-	-	-	-	-	-	-	-	-	-	-
	#3-F-SS24	0-0.1	7/07/2014	8.5	<0.4	16	13	17	<0.05	6.4	38	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#3-SED01	0-0.1	27/06/2014	14	<0.4	15	17	14	<0.05	<5	19	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP01	0-0.1	26/06/2014	10	<0.4	16	25	21	<0.05	5.5	120	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP02	0-0.1	26/06/2014	7.2	<0.4	15	30	19	<0.05	7.3	70	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP03	0-0.1	26/06/2014	9	0.8	14	55	30	<0.05	8.5	*380*	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP04	0-0.1	27/06/2014	12	<0.4	49	21	36	<0.05	12	66	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP05	0-0.1	27/06/2014	6	<0.4	22	17	21	<0.05	11	130	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP06	0.5-0.6	27/06/2014	6.6	<0.4	15	19	22	<0.05	8.5	53	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP06	1.3-1.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP07	0-0.1	27/06/2014	9.1	<0.4	10	13	13	<0.05	<5	16	-	-	-	-	-	-	-	-	-	-	-	-
	#3-TP07	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

	JBS&G			Metals & Metalloids								Non-Metallic Inorganics			Chlorinated Alkanes								
				Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Ammonia	Nitrate (as Nitrate)	Phosphorus	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	EQL			2	0.4	1	1	1	0.05	1	1	0.1	0.1	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	CRC Care 2011 Soil HSL A for Direct Contact																						
	CRC Care 2011 Soil HSL B for Direct Contact																						
	CRC Care 2011 Soil HSL C for Direct Contact																						
	CRC Care 2011 Soil HSL D for Direct Contact																						
	NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial			*160*		*310*	*190*	*1800*		*55*	*280*												
	NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space			*100*		*190*	*130*	*1100*		*30*	*180*												
	NEPC 2013 ESL Commercial and Industrial, Coarse Soil																						
	NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																						
	NEPC 2013 Management Limits - Commercial and Industrial, Fine																						
	NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																						
	NEPC 2013 Soil HIL A			100	20	100*	6000	300	40	400	7400												
	NEPC 2013 Soil HIL B			500	150	500*	30000	1200	120	1200	60000												
	NEPC 2013 Soil HIL C			300	90	300*	17000	600	80	1200	30000												
	NEPC 2013 Soil HIL D			3000	900	3600*	240000	1500	730	6000	400000												
	Field ID	**Sample Depth**	**Sample Date**																				
3/11126 89 Maguires Road, Maraylya	#4-O-SS01	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS02	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS03	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS04	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS05	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS06	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS07	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS08	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS09	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-O-SS10	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-A-SS11	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-A-SS13	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-A-SS15	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-A-SS16	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-A-SS17	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-A-SS19	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-A-SS20	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-G-SS21	Surface	3/07/2014	6.4	0.4	21	16	21	<0.05	6.3	92	-	-	-	-	-	-	-	-	-	-	-	-
	#4-SED01	Surface	25/06/2014	9.9	<0.4	22	6.7	16	<0.05	<5	19	-	-	-	-	-	-	-	-	-	-	-	-
	#4-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-TP01	0.7-0.8	25/06/2014	5.9	<0.4	17	<5	17	<0.05	<5	16	-	-	-	-	-	-	-	-	-	-	-	-
	#4-TP02	0-0.1	25/06/2014	7.1	<0.4	26	<5	15	<0.05	<5	11	-	-	-	-	-	-	-	-	-	-	-	-
	#4-SP-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-SP-TP05	0.5-0.6	25/06/2014	3.3	<0.4	8	<5	10	<0.05	<5	86	-	-	-	-	-	-	-	-	-	-	-	-
	#4-TP06[1]	0-0.1	25/06/2014	11	<0.4	25	8.7	23	<0.05	<5	18	-	-	-	-	-	-	-	-	-	-	-	-
	#4-TP06[1]	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#4-SD-TP07	0-0.1	25/06/2014	9.3	<0.4	22	9.1	34	0.07	<5	*230*	-	-	-	-	-	-	-	-	-	-	-	-
	#4-SD-TP08	0.2-0.3	25/06/2014	5.3	<0.4	13	17	22	<0.05	13	47	-	-	-	-	-	-	-	-	-	-	-	-
4/135304 A &B 97 Maguires Road, Maraylya	#5-SS01	0-0.1	3/07/2014	4.7	4.7	8	<5	16	<0.05	<5	120	-	-	-	-	-	-	-	-	-	-	-	-
	#5-SS02	0-0.1	3/07/2014	4.1	<0.4	7.7	<5	12	<0.05	<5	29	-	-	-	-	-	-	-	-	-	-	-	-
	#5-A-SS03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#5-A-SS04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#5-O-SS05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#5-O-SS06	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#5-O-SS07	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5/658286 151 Maguires Road, Maraylya	#6-IF-SS01	0-0.1	27/06/2014	<2	<0.4	5.1	<5	<5	<0.05	<5	20	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS02	0-0.1	27/06/2014	11	<0.4	21	<5	10	<0.05	<5	9.6	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS03	0-0.1	27/06/2014	7.3	<0.4	14	<5	10	<0.05	<5	20	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS04	0-0.1	27/06/2014	<2	<0.4	5.5	<5	<5	<0.05	<5	21	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS05	0-0.1	27/06/2014	7	<0.4	14	17	11	<0.05	<5	16	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS06	0-0.1	27/06/2014	5.2	<0.4	12	<5	6.3	<0.05	<5	9.3	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS07	0-0.1	27/06/2014	6.2	<0.4	13	<5	7.8	<0.05	<5	16	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS08	0-0.1	27/06/2014	5.1	<0.4	13	<5	8.7	<0.05	<5	25	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS09	0-0.1	27/06/2014	5.6	<0.4	11	<5	8.5	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS10	0-0.1	27/06/2014	5.2	<0.4	9.4	<5	9.8	<0.05	<5	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS11	0-0.1	27/06/2014	2.8	<0.4	7.4	<5	7.9	<0.05	<5	34	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS12	0-0.1	27/06/2014	8.4	<0.4	12	<5	10	0.21	12	*260*	-	-	-	-	-	-	-	-	-	-	-	-
	#6-O-SS13	0-0.1	27/06/2014	9.5	<0.4	24	<5	12	<0.05	<5	12	-	-	-	-	-	-	-	-	-	-	-	-
	#6-S-SS14[2]	0-0.1	27/06/2014	6.3	<0.4	15	19	22	<0.05	13	170	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#6-S-SS15	0-0.1	27/06/2014	4.2	<0.4	13	19	19	<0.05	14	140	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#6-S-SS16	0-0.1	27/06/2014	3.9	<0.4	69	33	19	0.07	*67*	*6500*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#6-0-SS17[3]	0-0.1	27/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	6.2	-	-	-	-	-	-	-	-	-	-	-	-
	#6-0-SS18[4]	0-0.1	27/06/2014	<2	<0.4	<5	<5	5.8	<0.05	<5	6.4	-	-	-	-	-	-	-	-	-	-	-	-
	#6-S-SS19[5]	0-0.1	27/06/2014	<2	<0.4	<5	<5	10	<0.05	<5	16	-	-	-	-	-	-	-	-	-	-	-	-
	#6-0-SS20[6]	0-0.1	27/06/2014	<2	<0.4	<5	<5	7.3	<0.05	<5	22	-	-	-	-	-	-	-	-	-	-	-	-
	#6-A-SS21	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#6-A-SS22	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#6-A-SS23	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#6-A-SS24	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#6-A-SS25	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#6-TP01	0-0.1	27/06/2014	<2	<0.4	<5	<5	6.1	<0.05	<5	9	-	-	-	-	-	-	-	-	-	-	-	-
	#6-TP01	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#6-TP02	0-0.1	27/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	8.5	-	-	-	-	-	-	-	-	-	-	-	-
	#6-TP06	0-0.1	27/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	34	-	-	-	-	-	-	-	-	-	-	-	-
1/564211 169 Maguires Road, Maraylya	#7-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#7-SS02[7]	0-0.1	27/06/2014	3.4	<0.4	7.3	<5	14	<0.05	<5	29	-	-	-	-	-	-	-	-	-	-	-	-
	#7-A-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#7-A-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#7-SED01	0-0.1	27/06/2014	12	<0.4	11	<5	7.4	<0.05	<5	7	-	-	-	-	-	-	-	-	-	-	-	-
	#7-TP01	0-0.1	27/06/2014	14	<0.4	23	5.8	20	<0.05	<5	17	-	-	-	-	-	-	-	-	-	-	-	-
	#7-TP02	0-0.1	27/06/2014	4.9	<0.4	9.3	<5	6.8	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	#7-TP02	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#7-TP03	0-0.1	27/06/2014	3.9	<0.4	6.6	<5	5.5	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	#7-TP04	0-0.1	27/06/2014	<2	<0.4	<5	5.4	6.9	<0.05	<5	88	-	-	-	-	-	-	-	-	-	-	-	-
	#7-TP05	0-0.1	27/06/2014	8.1	<0.4	19	6.8	26	<0.05	5.4	28	-	-	-	-	-	-	-	-	-	-	-	-
9/593517 155 Boundary Road, Box Hill	#8-SS01	0-0.1	7/07/2014	8.1	0.5	23	24	25	<0.05	8.9	48	-	-	-	-	-	-	-	-	-	-	-	-
	#8-SP-TP01	0-0.1	1/07/2014	7.7	<0.4	21	25	32	0.06	16	53	-	-	-	-	-	-	-	-	-	-	-	-
	#8-TP03	0-0.1	1/07/2014	10	<0.4	26	24	34	<0.05	18	85	-	-	-	-	-	-	-	-	-	-	-	-
	#8-TP04	0-0.1	1/07/2014	6.6	<0.4	19	32	22	<0.05	11	44	-	-	-	-	-	-	-	-	-	-	-	-
10/593517 153 Boundary Road, Box Hill	#9-SP-HA01	0.3-0.4	7/07/2014	10	0.5	25	19	31	<0.05	12	90	-	-	-	-	-	-	-	-	-	-	-	-
	#9-SP-HA02	0-0.1	7/07/2014	12	0.5	20	24	26	<0.05	12	99	-	-	-	-	-	-	-	-	-	-	-	-
	#9-G-HA04	0-0.1	7/07/2014	11	0.9	28	19	24	<0.05	9.8	48	-	-	-	-	-	-	-	-	-	-	-	-
	#9-G-HA04	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#9-HA05	0-0.1	7/07/2014	11	0.8	32	39	24	<0.05	11	98	-	-	-	-	-	-	-	-	-	-	-	-
	#9-HA06	0-0.1	7/07/2014	6.9	<0.4	12	13	14	<0.05	7.1	25	-	-	-	-	-	-	-	-	-	-	-	-
	#9-HA07	0-0.1	7/07/2014	9.4	0.4	12	17	17	0.06	<5	32	-	-	-	-	-	-	-	-	-	-	-	-
	#9-HA08	0-0.1	7/07/2014	7.4	0.5	25	26	23	<0.05	8.9	76	-	-	-	-	-	-	-	-	-	-	-	-
	#9-AST-SS01	0-0.1	7/07/2014	14	0.5	17	51	31	<0.05	10	120	-	-	-	-	-	-	-	-	-	-	-	-
	#9-S-SS02	0-0.1	7/07/2014	14	0.9	35	28	26	<0.05	12	97	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#9-SD-SS03	0-0.1	7/07/2014	12	0.7	29	27	28	<0.05	12	120	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#9-SD-SS04	0-0.1	7/07/2014	8.1	0.4	18	35	19	<0.05	9.5	140	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#9-SD-SS05	0-0.1	7/07/2014	4.6	0.4	6	41	21	0.07	12	66	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#9-G-TP01	0-0.1	23/06/2014	7.9	<0.4	23	22	23	<0.05	14	78	-	-	-	-	-	-	-	-	-	-	-	-
	#9-TP02	0-0.1	23/06/2014	10	<0.4	21	15	19	<0.05	6.3	36	-	-	-	-	-	-	-	-	-	-	-	-
	#9-TP04	0-0.1	23/06/2014	5.1	<0.4	12	12	11	<0.05	<5	31	-	-	-	-	-	-	-	-	-	-	-	-
	#9-TP05	0-0.1	23/06/2014	5.1	<0.4	12	12	11	<0.05	<5	31	-	-	-	-	-	-	-	-	-	-	-	-
	#9-A-TP06	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#9-A-TP06	0.4-0.5	23/06/2014	4.2	<0.4	12	8.9	9.9	<0.05	<5	10	-	-	-	-	-	-	-	-	-	-	-	-
	#9-TP07	0-0.1	23/06/2014	9.7	<0.4	33	20	18	0.64	*75*	*530*	-	-	-	-	-	-	-	-	-	-	-	-
	#9-TP08	0-0.1	23/06/2014	7.5	<0.4	15	14	13	<0.05	6.6	27	-	-	-	-	-	-	-	-	-	-	-	-
	#9-TP08	1.4-1.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

				Metals & Metalloids								Non-Metallic Inorganics			Chlorinated Alkanes								
				Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Ammonia	Nitrate (as Nitrate)	Phosphorus	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	EQL			2	0.4	1	1	1	0.05	1	1	0.1	0.1	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	CRC Care 2011 Soil HSL A for Direct Contact																						
	CRC Care 2011 Soil HSL B for Direct Contact																						
	CRC Care 2011 Soil HSL C for Direct Contact																						
	CRC Care 2011 Soil HSL D for Direct Contact																						
	NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial			*160*		*310*	*190*	*1800*		*55*	*280*												
	NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space			*100*		*190*	*130*	*1100*		*30*	*180*												
	NEPC 2013 ESL Commercial and Industrial, Coarse Soil																						
	NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																						
	NEPC 2013 Management Limits - Commercial and Industrial, Fine																						
	NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																						
	NEPC 2013 Soil HIL A			100	20	100*	6000	300	40	400	7400												
	NEPC 2013 Soil HIL B			500	150	500*	30000	1200	120	1200	60000												
	NEPC 2013 Soil HIL C			300	90	300*	17000	600	80	1200	30000												
	NEPC 2013 Soil HIL D			3000	900	3600*	240000	1500	730	6000	400000												
	Field ID	**Sample Depth**	**Sample Date**																				
22/255616 4 Red Gables Road, Box Hill	#10-SS01	0-0.1	2/07/2014	21	<0.4	45	41	41	<0.05	14	63	-	-	-	-	-	-	-	-	-	-	-	-
	#10-SD-SS02	0-0.1	2/07/2014	6.4	<0.4	13	13	23	<0.05	<5	*200*	-	-	-	-	-	-	-	-	-	-	-	-
	#10-SED01	0-0.1	2/07/2014	3.9	<0.4	15	22	24	<0.05	5.3	37	-	-	-	-	-	-	-	-	-	-	-	-
	#10-TP01	0-0.1	2/07/2014	10	<0.4	22	12	21	<0.05	7.8	33	-	-	-	-	-	-	-	-	-	-	-	-
	#10-TP02	0-0.1	2/07/2014	9.6	<0.4	30	17	24	<0.05	12	43	-	-	-	-	-	-	-	-	-	-	-	-
	#10-TP04	0-0.1	2/07/2014	4.6	<0.4	10	25	30	0.05	5.2	42	-	-	-	-	-	-	-	-	-	-	-	-
23/255616 6 Red Gables Road, Box Hill	#11-S-TP01	0-0.1	30/06/2014	5.5	<0.4	14	18	20	<0.05	7.4	57	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#11-TP02	0-0.1	1/07/2014	7.8	1.5	19	32	54	0.09	10	*2800*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#11-TP06	0.8-0.9	1/07/2014	5.2	<0.4	5.4	14	11	0.07	<5	21	-	-	-	-	-	-	-	-	-	-	-	-
	#11-TP07	0-0.1	1/07/2014	11	<0.4	19	26	24	0.05	12	54	-	-	-	-	-	-	-	-	-	-	-	-
	#11-TP07	0.3-0.4	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#11-G-TP08	0-0.1	1/07/2014	8.4	<0.4	22	15	32	0.05	12	43	-	-	-	-	-	-	-	-	-	-	-	-
	#11-G-TP09	0-0.1	1/07/2014	5.5	<0.4	16	8	17	<0.05	<5	27	-	-	-	-	-	-	-	-	-	-	-	-
	#11-SED01[8]	0-0.1	1/07/2014	3.6	<0.4	7.4	11	15	<0.05	<5	10	-	-	-	-	-	-	-	-	-	-	-	-
25/255616 10 Red Gables Road, Box Hill	#12-A-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#12-A-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#12-A-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#12-A-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#12-SD-SS06	0-0.1	4/07/2014	9.2	<0.4	8	31	19	<0.05	*33*	39	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#12-SD-SS07	0-0.1	4/07/2014	17	0.5	39	31	15	<0.05	10	71	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#12-SD-SS08	0-0.1	4/07/2014	3.7	0.5	14	17	15	<0.05	6.2	58	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#12-AST-SS09	0-0.1	4/07/2014	7.6	0.6	25	37	30	<0.05	9.7	*1600*	-	-	-	-	-	-	-	-	-	-	-	-
	#12-G-SS10	0-0.1	4/07/2014	25	0.8	18	20	14	<0.05	6.9	40	-	-	-	-	-	-	-	-	-	-	-	-
	#12-G-TP01	0-0.1	30/06/2014	5.1	<0.4	14	5.8	13	<0.05	<5	20	-	-	-	-	-	-	-	-	-	-	-	-
	#12-TP03	0-0.1	30/06/2014	12	<0.4	24	10	26	<0.05	5.1	24	-	-	-	-	-	-	-	-	-	-	-	-
	#12-TP05	0-0.1	30/06/2014	6	<0.4	9.7	8.3	20	<0.05	<5	29	-	-	-	-	-	-	-	-	-	-	-	-
	#12-TP05	0.3-0.4	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26/255616 12 Red Gables Road, Box Hill	#13-SED01	0-0.1	30/06/2014	7.9	<0.4	11	14	15	<0.05	10	33	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP01	0-0.1	30/06/2014	12	<0.4	33	8.5	19	<0.05	<5	19	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP01	0.5-0.6	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP02	0-0.1	30/06/2014	4.7	<0.4	15	<5	6.4	<0.05	<5	6.1	-	-	-	-	-	-	-	-	-	-	-	-
	#13-SP-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#13-SP-TP03	0.4-0.5	30/06/2014	4.3	<0.4	12	7.4	14	<0.05	<5	14	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP04[9]	0-0.1	30/06/2014	7.7	<0.4	15	9.4	21	<0.05	5.3	24	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP05	0-0.1	30/06/2014	11	<0.4	21	12	23	<0.05	7.7	28	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP06	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP06	0.9-1	30/06/2014	5.1	<0.4	10	9.5	11	<0.05	<5	15	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP06	1.9-2	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#13-TP07	0-0.1	30/06/2014	8.1	<0.4	21	15	20	<0.05	8.3	100	-	-	-	-	-	-	-	-	-	-	-	-
27/255616 14 Red Gables Road, Box Hill	#14-G-TP01	0-0.1	3/07/2014	4.7	<0.4	10	<5	7.6	<0.05	<5	19	-	-	-	-	-	-	-	-	-	-	-	-
	#14-SD-TP02	0-0.1	3/07/2014	3	<0.4	5.3	<5	6.5	<0.05	<5	23	-	-	-	-	-	-	-	-	-	-	-	-
	#14-SD-TP04	0-0.1	3/07/2014	6.3	<0.4	14	<5	16	<0.05	<5	7.4	-	-	-	-	-	-	-	-	-	-	-	-
	#14-G-TP05	0-0.1	3/07/2014	5	<0.4	6.7	6.2	11	<0.05	<5	9.7	-	-	-	-	-	-	-	-	-	-	-	-
31/255616 3 Janpieter Road, Box Hill	#15-SS01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#15-TP01	0-0.1	1/07/2014	7.7	<0.4	16	<5	11	<0.05	<5	8.6	-	-	-	-	-	-	-	-	-	-	-	-
	#15-TP02	0-0.1	1/07/2014	14	<0.4	18	15	16	<0.05	6.5	38	-	-	-	-	-	-	-	-	-	-	-	-
	#15-TP02	0.2-0.3	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#15-TP03	0.1-0.2	1/07/2014	7.9	<0.4	10	6.7	14	<0.05	<5	21	-	-	-	-	-	-	-	-	-	-	-	-
	#15-TP04	0-0.1	1/07/2014	15	<0.4	20	7.6	20	<0.05	5.1	27	-	-	-	-	-	-	-	-	-	-	-	-
30/255616 5 Janpieter Road, Box Hill	#16-SED01	0-0.1	23/06/2014	7.5	<0.4	27	<5	8.6	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	#16-TP01	0-0.1	23/06/2014	5.6	<0.4	16	<5	7.2	<0.05	<5	6.1	-	-	-	-	-	-	-	-	-	-	-	-
	#16-TP01	2.1-2.2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#16-TP02	0-0.1	23/06/2014	4.1	<0.4	10	<5	8.9	<0.05	<5	6.8	-	-	-	-	-	-	-	-	-	-	-	-
	#16-TP03	0-0.1	23/06/2014	5.9	<0.4	12	<5	8.1	<0.05	<5	10	-	-	-	-	-	-	-	-	-	-	-	-
	#16-TP04	0-0.1	23/06/2014	3.1	<0.4	6.9	<5	11	<0.05	<5	17	-	-	-	-	-	-	-	-	-	-	-	-
	#16-SD-HA01	0-0.1	7/07/2014	2.3	1.3	8.4	6.9	19	<0.05	<5	89	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#16-SD-HA02	0-0.1	7/07/2014	6	<0.4	8.1	8.1	22	<0.05	<5	28	-	-	-	-	-	-	-	-	-	-	-	-
	#16-SD-HA03	0-0.1	7/07/2014	8.5	<0.4	16	<5	13	<0.05	<5	28	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#16-SD-HA04	0-0.1	7/07/2014	3.2	0.5	7.7	5.8	30	<0.05	<5	*1100*	-	-	-	-	-	-	-	-	-	-	-	-
	#16-G-HA05	0-0.1	7/07/2014	3.7	0.5	9.7	8.6	13	<0.05	<5	35	-	-	-	-	-	-	-	-	-	-	-	-
29/255616 18 Red Gables Road, Box Hill	#17-A-SS01[10]	0-0.1	20/06/2014	5.2	<0.4	19	<5	11	<0.05	<5	6.3	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SS01	Surface	2/07/2014	15	<0.4	35	16	37	<0.05	<5	51	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SS02	0-0.1	2/07/2014	15	<0.4	32	14	31	<0.05	<5	36	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SD-SS03	0-0.1	2/07/2014	18	6.5	77	*180*	530	0.41	*35*	*660*	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SD-SS04	0-0.1	2/07/2014	5	<0.4	9.9	8.4	19	<0.05	<5	28	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SD-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SD-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SP-TP01	0-0.1	20/06/2014	8.5	0.8	32	5.1	16	<0.05	<5	8.4	-	-	-	-	-	-	-	-	-	-	-	-
	#17-SP-TP02	0-0.1	20/06/2014	17	1	48	9.2	21	<0.05	<5	9.8	-	-	-	-	-	-	-	-	-	-	-	-
	#17-TP03	0.2-0.3	23/06/2014	5	<0.4	11	<5	9.3	<0.05	<5	8.6	-	-	-	-	-	-	-	-	-	-	-	-
	#17-TP03	1.9-2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#17-TP04	0-0.1	23/06/2014	3	<0.4	6.6	<5	6.8	<0.05	<5	8.3	-	-	-	-	-	-	-	-	-	-	-	-
	#17-TP05	0-0.1	23/06/2014	7.7	<0.4	18	<5	13	<0.05	<5	9.8	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

				Metals & Metalloids								Non-Metallic Inorganics			Chlorinated Alkanes								
				Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Ammonia	Nitrate (as Nitrate)	Phosphorus	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	EQL			2	0.4	1	1	1	0.05	1	1	0.1	0.1	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	CRC Care 2011 Soil HSL A for Direct Contact																						
	CRC Care 2011 Soil HSL B for Direct Contact																						
	CRC Care 2011 Soil HSL C for Direct Contact																						
	CRC Care 2011 Soil HSL D for Direct Contact																						
	NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial			*160*		*310*	*190*	*1800*		*55*	*280*												
	NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space			*100*		*190*	*130*	*1100*		*30*	*180*												
	NEPC 2013 ESL Commercial and Industrial, Coarse Soil																						
	NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																						
	NEPC 2013 Management Limits - Commercial and Industrial, Fine																						
	NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																						
	NEPC 2013 Soil HIL A			100	20	100*	6000	300	40	400	7400												
	NEPC 2013 Soil HIL B			500	150	500*	30000	1200	120	1200	60000												
	NEPC 2013 Soil HIL C			300	90	300*	17000	600	80	1200	30000												
	NEPC 2013 Soil HIL D			3000	900	3600*	240000	1500	730	6000	400000												
	Field ID	**Sample Depth**	**Sample Date**																				
47/255616 3 Red Gables Road, Box Hill	#18-SD-SS01	0-0.1	7/07/2014	8.2	0.7	26	23	34	<0.05	6	*280*	-	-	-	-	-	-	-	-	-	-	-	-
	#18-SED01	0-0.1	26/06/2014	4.8	<0.4	11	34	19	<0.05	21	74	-	-	-	-	-	-	-	-	-	-	-	-
	#18-SED02	0-0.1	26/06/2014	5.7	<0.4	18	21	18	<0.05	11	47	-	-	-	-	-	-	-	-	-	-	-	-
	#18-TP01	0-0.1	26/06/2014	4.2	<0.4	10	43	22	<0.05	23	81	-	-	-	-	-	-	-	-	-	-	-	-
	#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#18-TP02	0-0.1	26/06/2014	3.7	<0.4	6.6	8.4	6.9	0.15	<5	22	-	-	-	-	-	-	-	-	-	-	-	-
	#18-TP03	0.3-0.4	26/06/2014	4.5	<0.4	15	23	17	<0.05	6.2	28	-	-	-	-	-	-	-	-	-	-	-	-
45 & 46/255616 5 Red Gables Road, Box Hill	#19-SED01	0-0.1	24/06/2014	8.7	<0.4	29	37	26	<0.05	13	86	-	-	-	-	-	-	-	-	-	-	-	-
	#19-TP01	0-0.1	24/06/2014	6.6	<0.4	21	33	22	<0.05	11	72	-	-	-	-	-	-	-	-	-	-	-	-
	#19-TP02	0-0.1	24/06/2014	6.4	<0.4	24	41	19	<0.05	15	72	-	-	-	-	-	-	-	-	-	-	-	-
	#19-TP03	0-0.1	24/06/2014	7.4	<0.4	20	47	21	<0.05	8.9	79	-	-	-	-	-	-	-	-	-	-	-	-
	#19-TP04	0-0.1	24/06/2014	11	<0.4	32	48	31	<0.05	19	110	-	-	-	-	-	-	-	-	-	-	-	-
	#19-TP05	0-0.1	24/06/2014	15	<0.4	31	52	25	<0.05	19	110	-	-	-	-	-	-	-	-	-	-	-	-
	#19-TP06	0-0.1	24/06/2014	9.2	<0.4	29	34	21	<0.05	12	69	-	-	-	-	-	-	-	-	-	-	-	-
	#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SD-SS01	0-0.1	26/06/2014	14	0.5	36	41	26	<0.05	12	110	-	-	-	-	-	-	-	-	-	-	-	-
	#20-AST-SS02	0-0.1	26/06/2014	8.5	<0.4	36	26	20	<0.05	16	99	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#20-AST-SS03	0-0.1	26/06/2014	3.4	<0.4	11	17	8.3	<0.05	12	56	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SD-SS04	0-0.1	26/06/2014	6.6	<0.4	20	33	20	<0.05	16	170	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#20-SD-SS05	0-0.1	26/06/2014	7.9	<0.4	21	32	24	<0.05	14	140	-	-	-	-	-	-	-	-	-	-	-	-
	#20-AST-SS06	0-0.1	26/06/2014	6.2	<0.4	19	37	19	<0.05	13	87	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SD-SS07	0-0.1	26/06/2014	7.6	0.6	96	48	650	<0.05	*62*	*1800*	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SD-SS08	0-0.1	26/06/2014	7.3	<0.4	75	53	21	<0.05	*41*	*210*	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SD-SS09	0-0.1	26/06/2014	<2	<0.4	11	39	9.2	<0.05	8.8	100	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SD-SS10	0-0.1	26/06/2014	7	<0.4	21	45	24	<0.05	16	170	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SS11	0-0.1	26/06/2014	9	<0.4	27	100	24	<0.05	14	*220*	-	-	-	-	-	-	-	-	-	-	-	-
	#20-SD-SS12	0-0.1	26/06/2014	5	5.2	31	72	270	<0.05	18	*240*	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP01	0-0.1	24/06/2014	14	<0.4	29	48	21	0.06	8.7	100	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP02	0.5-0.6	24/06/2014	2.2	<0.4	8.3	8.9	<5	<0.05	8.4	52	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP03	0.4-0.5	24/06/2014	7.3	<0.4	18	22	16	<0.05	9.1	68	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP04	0-0.1	24/06/2014	11	<0.4	23	31	19	<0.05	9.5	99	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP05	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP05	0.9-1	24/06/2014	12	<0.4	9.8	110	6.9	0.07	11	*680*	800	83	32000	-	-	-	-	-	-	-	-	-
	#20-TP06	0-0.1	24/06/2014	12	<0.4	26	33	20	<0.05	13	100	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP07	0-0.1	24/06/2014	10	<0.4	28	41	25	<0.05	15	150	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP08	0-0.1	24/06/2014	11	<0.4	34	50	32	<0.05	17	99	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP08	0.4-0.5	24/06/2014	8.6	<0.4	17	36	18	<0.05	11	120	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP09	0.8-0.9	24/06/2014	<2	<0.4	9	19	5	<0.05	*37*	54	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP11	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP11	0.9-1	24/06/2014	4.7	<0.4	13	31	16	0.09	9.1	130	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP12	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#20-TP12	0.6-0.7	24/06/2014	5.1	<0.4	<5	6.6	5.4	0.12	<5	25	-	-	-	-	-	-	-	-	-	-	-	-
44/255616 7 Red Gables Road, Box Hill	#21-SED01	0-0.1	2/07/2014	7.7	<0.4	19	22	46	<0.05	7.7	40	-	-	-	-	-	-	-	-	-	-	-	-
	#21-SS01	0-0.1	3/07/2014	11	1.6	33	32	41	<0.05	16	*910*	-	-	-	-	-	-	-	-	-	-	-	-
	#21-TP01	0-0.1	2/07/2014	10	<0.4	25	17	23	<0.05	7.3	31	-	-	-	-	-	-	-	-	-	-	-	-
	#21-TP01	1.9-2	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#21-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#21-TP02	0.3-0.4	2/07/2014	7.6	<0.4	18	16	20	<0.05	5.8	26	-	-	-	-	-	-	-	-	-	-	-	-
	#21-SP-TP06	0.4-0.5	3/07/2014	3.3	<0.4	8.4	<5	<5	<0.05	<5	19	-	-	-	-	-	-	-	-	-	-	-	-
	#21-TP07	0.3-0.4	3/07/2014	7.1	<0.4	13	14	17	<0.05	5.6	20	-	-	-	-	-	-	-	-	-	-	-	-
	#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#21-TP09	0.3-0.4	3/07/2014	6.9	<0.4	12	19	17	<0.05	5.3	25	-	-	-	-	-	-	-	-	-	-	-	-
	#21-G-TP10	0-0.1	3/07/2014	6.3	<0.4	8.2	11	9.1	<0.05	6.5	21	-	-	-	-	-	-	-	-	-	-	-	-
	#21-G-TP11	0-0.1	3/07/2014	12	0.6	28	28	24	<0.05	17	78	-	-	-	-	-	-	-	-	-	-	-	-
43/255616 9 Red Gables Road, Box Hill	#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#22-F-SS04	0-0.1	7/07/2014	5.3	0.7	23	13	15	<0.05	11	67	-	-	-	-	-	-	-	-	-	-	-	-
	#22-S-SS05	0-0.1	7/07/2014	7.6	0.6	23	20	18	<0.05	8.1	180	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#22-SED01	0-0.1	3/07/2014	7.1	<0.4	14	7.3	9.7	<0.05	<5	6.5	-	-	-	-	-	-	-	-	-	-	-	-
	#22-TP01	0.3-0.4	2/07/2014	8	1	18	22	24	0.06	12	51	-	-	-	-	-	-	-	-	-	-	-	-
	#22-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#22-TP02	0.3-0.4	2/07/2014	12	<0.4	37	16	27	<0.05	6.9	31	-	-	-	-	-	-	-	-	-	-	-	-
	#22-G-TP03	0-0.1	3/07/2014	2.7	<0.4	6.9	7.1	<5	<0.05	<5	22	-	-	-	-	-	-	-	-	-	-	-	-
	#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#22-TP04	0-0.1	3/07/2014	9.5	<0.4	17	14	15	<0.05	<5	30	-	-	-	-	-	-	-	-	-	-	-	-
	#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18/255616 6 Cataract Road, Box Hill	#23-HA01	0-0.1	4/07/2014	5.7	0.6	12	26	17	<0.05	8.5	42	-	-	-	-	-	-	-	-	-	-	-	-
	#23-HA02	0-0.1	4/07/2014	4	0.5	13	22	15	<0.05	7.6	32	-	-	-	-	-	-	-	-	-	-	-	-
	#23-HA03	0-0.1	4/07/2014	8.7	0.5	16	26	18	<0.05	10	48	-	-	-	-	-	-	-	-	-	-	-	-
	#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#23-HA04	0-0.1	4/07/2014	3.7	1	23	24	23	<0.05	12	52	-	-	-	-	-	-	-	-	-	-	-	-
	#23-G-HA05	0-0.1	4/07/2014	<2	0.6	20	33	19	<0.05	12	71	-	-	-	-	-	-	-	-	-	-	-	-
	#23-SED01	0-0.1	24/06/2014	9.4	<0.4	28	34	28	<0.05	18	74	-	-	-	-	-	-	-	-	-	-	-	-
	#23-SED01	0-0.1	4/07/2014	4.5	0.5	25	21	25	<0.05	12	36	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

				Metals & Metalloids								Non-Metallic Inorganics			Chlorinated Alkanes								
				Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Ammonia	Nitrate (as Nitrate)	Phosphorus	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	EQL			2	0.4	1	1	1	0.05	1	1	0.1	0.1	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	CRC Care 2011 Soil HSL A for Direct Contact																						
	CRC Care 2011 Soil HSL B for Direct Contact																						
	CRC Care 2011 Soil HSL C for Direct Contact																						
	CRC Care 2011 Soil HSL D for Direct Contact																						
	NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial			*160*		*310*	*190*	*1800*		*55*	*280*												
	NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space			*100*		*190*	*130*	*1100*		*30*	*180*												
	NEPC 2013 ESL Commercial and Industrial, Coarse Soil																						
	NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																						
	NEPC 2013 Management Limits - Commercial and Industrial, Fine																						
	NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																						
	NEPC 2013 Soil HIL A			100	20	100*	6000	300	40	400	7400												
	NEPC 2013 Soil HIL B			500	150	500*	30000	1200	120	1200	60000												
	NEPC 2013 Soil HIL C			300	90	300*	17000	600	80	1200	30000												
	NEPC 2013 Soil HIL D			3000	900	3600*	240000	1500	730	6000	400000												
	Field ID	**Sample Depth**	**Sample Date**																				
15/255616 3 Cataract Road, Box Hill	#24-G-SS01	0-0.1	4/07/2014	9.2	0.8	19	25	14	<0.05	<5	40	-	-	-	-	-	-	-	-	-	-	-	-
	#24-AST-SS02	0-0.1	4/07/2014	7.6	1	26	26	33	<0.05	13	*310*	-	-	-	-	-	-	-	-	-	-	-	-
	#24-SS03	0-0.1	4/07/2014	12	1.2	27	16	26	<0.05	9.2	92	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#24-SED01	0-0.1	4/07/2014	6.6	0.9	16	25	19	<0.05	6.6	54	-	-	-	-	-	-	-	-	-	-	-	-
	#24-SP-TP01	0-0.1	26/06/2014	11	<0.4	28	30	27	<0.05	12	*180*	-	-	-	-	-	-	-	-	-	-	-	-
	#24-SP-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#24-TP02	0-0.1	26/06/2014	15	<0.4	24	13	23	<0.05	6.5	37	-	-	-	-	-	-	-	-	-	-	-	-
	#24-TP02	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#24-TP03	0-0.1	26/06/2014	12	<0.4	19	11	13	<0.05	5.5	29	-	-	-	-	-	-	-	-	-	-	-	-
16/255616 5 Cataract Road, Box Hill	#25-F-SS01	0-0.1	4/07/2014	*270*	0.6	140	*240*	36	0.06	7.9	*300*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#25-S-SS02	0-0.1	4/07/2014	48	0.9	43	66	48	0.06	9.9	*390*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#25-SD-SS03	0-0.1	4/07/2014	49	1	57	63	22	<0.05	8.1	120	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#25-SD-SS04	0-0.1	4/07/2014	19	1.1	30	51	32	0.08	12	*400*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#25-G-SS05	0-0.1	4/07/2014	7.6	0.8	23	12	17	<0.05	6.2	39	-	-	-	-	-	-	-	-	-	-	-	-
	#25-TP02[11]	0.3-0.4	19/06/2014	11	1	33	24	21	0.07	14	28	-	-	-	-	-	-	-	-	-	-	-	-
21/255616 7 Cataract Road, Box Hill	#26-HA01	0-0.1	20/06/2014	3.4	<0.4	16	25	13	<0.05	6.8	55	-	-	-	-	-	-	-	-	-	-	-	-
	#26-HA02	0-0.1	20/06/2014	7.6	0.8	27	36	26	<0.05	12	57	-	-	-	-	-	-	-	-	-	-	-	-
	#26-SED01	0-0.1	20/06/2014	11	0.9	34	42	28	<0.05	16	76	-	-	-	-	-	-	-	-	-	-	-	-
	#26-SS01	0-0.1	20/06/2014	3.7	0.7	14	37	14	<0.05	18	84	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#26-SS02	0-0.1	20/06/2014	4.4	0.6	13	33	14	<0.05	15	*260*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#26-TP03	0-0.1	20/06/2014	8.1	0.7	19	22	19	<0.05	6.6	52	-	-	-	-	-	-	-	-	-	-	-	-
	#26-TP03	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#26-TP04	0-0.1	20/06/2014	3.3	<0.4	<5	<5	<5	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	#26-TP05	0-0.1	20/06/2014	7	0.7	21	7.4	13	<0.05	5.3	22	-	-	-	-	-	-	-	-	-	-	-	-
	#26-TP06	0.5-0.6	20/06/2014	16	1	33	27	22	<0.05	8.5	44	-	-	-	-	-	-	-	-	-	-	-	-
17/255616 8 Cataract Road, Box Hill	#27-G-TP01	0.1-0.2	19/06/2014	7.8	0.6	26	18	28	<0.05	13	27	-	-	-	-	-	-	-	-	-	-	-	-
	#27-TP02[12]	0-0.1	19/06/2014	5.5	<0.4	11	12	15	<0.05	<5	13	-	-	-	-	-	-	-	-	-	-	-	-
	#27-TP02[13]	1.9-2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-TP03[14]	0-0.1	19/06/2014	5.8	<0.4	9.8	11	15	<0.05	<5	17	-	-	-	-	-	-	-	-	-	-	-	-
	#27-TP04[15]	0-0.1	19/06/2014	9.7	0.4	21	19	22	<0.05	6.1	30	-	-	-	-	-	-	-	-	-	-	-	-
	#27-TP05[16]	0-0.1	19/06/2014	3.2	0.4	19	25	<5	<0.05	*33*	22	-	-	-	-	-	-	-	-	-	-	-	-
	#27-TP06[17]	1-1.1	19/06/2014	5.1	<0.4	9.9	5.7	11	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	#27-TP07	0-0.1	20/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS03	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS05	0-0.1	18/06/2014	<2	<0.4	17	18	11	<0.05	18	170	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#27-SS06	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS07	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS08	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS09	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#27-SS10	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41/255616 11 Janpieter Road, Box Hill	#28-SED01	0-0.1	18/06/2014	14	1.5	58	12	30	<0.05	8.8	30	-	-	-	-	-	-	-	-	-	-	-	-
	#28-SED02	0-0.1	18/06/2014	22	1.6	66	83	48	<0.05	*32*	150	-	-	-	-	-	-	-	-	-	-	-	-
	#28-SP-TP01	0.5-0.6	18/06/2014	6.5	0.7	25	17	24	<0.05	7.9	24	-	-	-	-	-	-	-	-	-	-	-	-
	#28-SP-TP01	1	18/06/2014	<2	<0.4	7.5	16	72	<0.05	<5	77	-	-	-	-	-	-	-	-	-	-	-	-
	#28-TP02	0.1-0.2	18/06/2014	11	1	39	17	25	<0.05	11	38	-	-	-	-	-	-	-	-	-	-	-	-
	#28-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#28-SP-TP03	0.4-0.3	18/06/2014	14	0.5	12	28	120	<0.05	5.9	54	-	-	-	-	-	-	-	-	-	-	-	-
	#28-SP-TP03	0.9-0.8	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#28-TP04	0-0.1	7/07/2014	9.9	0.6	26	13	18	<0.05	6	27	-	-	-	-	-	-	-	-	-	-	-	-
40/255616 13 Janpieter Road, Box Hill	#29-A-SS01[18]	0-0.1	18/06/2014	9.2	0.8	43	15	25	<0.05	6	32	-	-	-	-	-	-	-	-	-	-	-	-
	#29-S-SS02	0-0.1	18/06/2014	2.6	0.6	25	28	20	<0.05	15	55	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#29-TP02	0.3-0.4	18/06/2014	9.4	0.5	24	19	15	<0.05	5.6	26	-	-	-	-	-	-	-	-	-	-	-	-
	#29-TP04	0-0.1	18/06/2014	6.2	0.6	31	9	21	<0.05	5.7	7.9	-	-	-	-	-	-	-	-	-	-	-	-
	#29-TP04	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#29-TP05	0-0.1	7/07/2014	6.2	<0.4	16	11	16	<0.05	5.4	23	-	-	-	-	-	-	-	-	-	-	-	-
	#29-SED01	0-0.1	7/07/2014	30	1.5	77	11	36	<0.05	12	55	-	-	-	-	-	-	-	-	-	-	-	-
2/253552 117 Old Pitt Town Road, Box Hill	#30-F-SS01	0-0.1	17/06/2014	*700*	13	*240*	*1100*	71	<0.05	16	*290*	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	#30-HA01[19]	0-0.1	17/06/2014	8.5	0.6	25	18	17	<0.05	6.6	41	-	-	-	-	-	-	-	-	-	-	-	-
	#30-D-TP01	0.1-0.2	17/06/2014	9.4	0.6	21	22	22	<0.05	10	52	-	-	-	-	-	-	-	-	-	-	-	-
	#30-G-TP02	0.1-0.2	17/06/2014	5.9	0.5	14	14	16	<0.05	<5	24	-	-	-	-	-	-	-	-	-	-	-	-
	#30-SP-TP03	0.1-0.2	17/06/2014	8.2	0.7	23	22	14	<0.05	6.8	40	-	-	-	-	-	-	-	-	-	-	-	-
	#30-TP04[20]	0.1-0.2	17/06/2014	<2	<0.4	<5	13	14	0.1	<5	12	-	-	-	-	-	-	-	-	-	-	-	-
	#30-TP05	0.1-0.2	17/06/2014	5	<0.4	18	18	15	<0.05	6.7	31	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

				Metals & Metalloids								Non-Metallic Inorganics			Chlorinated Alkanes								
				Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Ammonia	Nitrate (as Nitrate)	Phosphorus	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	EQL			2	0.4	1	1	1	0.05	1	1	0.1	0.1	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	CRC Care 2011 Soil HSL A for Direct Contact																						
	CRC Care 2011 Soil HSL B for Direct Contact																						
	CRC Care 2011 Soil HSL C for Direct Contact																						
	CRC Care 2011 Soil HSL D for Direct Contact																						
	NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial			*160*		*310*	*190*	*1800*		*55*	*280*												
	NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space			*100*		*190*	*130*	*1100*		*30*	*180*												
	NEPC 2013 ESL Commercial and Industrial, Coarse Soil																						
	NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																						
	NEPC 2013 Management Limits - Commercial and Industrial, Fine																						
	NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																						
	NEPC 2013 Soil HIL A			100	20	100*	6000	300	40	400	7400												
	NEPC 2013 Soil HIL B			500	150	500*	30000	1200	120	1200	60000												
	NEPC 2013 Soil HIL C			300	90	300*	17000	600	80	1200	30000												
	NEPC 2013 Soil HIL D			3000	900	3600*	240000	1500	730	6000	400000												
	Field ID	**Sample Depth**	**Sample Date**																				
4/256552 121 Old Pitt Town Road, Box Hill	#31-G-SS01	0-0.1	17/06/2014	4.4	0.4	12	20	14	<0.05	9.2	67	-	-	-	-	-	-	-	-	-	-	-	-
	#31-S-SS02	0-0.1	17/06/2014	4.5	<0.4	13	27	21	<0.05	12	140	-	-	-	-	-	-	-	-	-	-	-	-
	#31-SD-SS03	0-0.1	17/06/2014	<2	<0.4	<5	20	<5	<0.05	6.1	90	-	-	-	-	-	-	-	-	-	-	-	-
	#31-H-SS04	0-0.1	17/06/2014	5.3	0.4	8.3	28	9.5	<0.05	13	94	-	-	-	-	-	-	-	-	-	-	-	-
	#31-SED01	0-0.1	17/06/2014	6.2	<0.4	16	20	14	<0.05	5.2	26	-	-	-	-	-	-	-	-	-	-	-	-
	#31-TP01	0-0.1	17/06/2014	5.5	<0.4	14	34	16	<0.05	14	67	-	-	-	-	-	-	-	-	-	-	-	-
	#31-TP02	0.3-0.4	17/06/2014	2.8	<0.4	5.8	12	12	<0.05	<5	8.6	-	-	-	-	-	-	-	-	-	-	-	-
	#31-TP03	0-0.1	17/06/2014	7.9	0.6	29	23	21	<0.05	7.3	39	-	-	-	-	-	-	-	-	-	-	-	-
	#31-TP04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	#31-TP04	0.3-0.4	17/06/2014	6.6	0.9	20	23	16	<0.05	7.4	41	-	-	-	-	-	-	-	-	-	-	-	-
	QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	6.6	0.7	18	41	20	<0.05	17	88	-	-	-	-	-	-	-	-	-	-	-	-
	QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	<4	<0.4	8	12	9	<0.1	3	15	-	-	-	-	-	-	-	-	-	-	-	-
	QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	11	1.1	33	22	28	<0.05	13	46	-	-	-	-	-	-	-	-	-	-	-	-
	QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	30	<0.4	21	23	20	<0.1	7	38	-	-	-	-	-	-	-	-	-	-	-	-
	QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	7	0.6	27	8.2	22	<0.05	<5	8.8	-	-	-	-	-	-	-	-	-	-	-	-
	QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	7	<0.4	19	8	26	<0.1	5	10	-	-	-	-	-	-	-	-	-	-	-	-
	QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	6.9	0.7	21	38	21	<0.05	16	55	-	-	-	-	-	-	-	-	-	-	-	-
	QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	7	0.4	21	18	26	<0.1	13	36	-	-	-	-	-	-	-	-	-	-	-	-
	QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	<2	<0.4	<5	<5	6	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	<4	<0.4	4	2	5	<0.1	1	3	-	-	-	-	-	-	-	-	-	-	-	-
	QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	4.1	<0.4	8.5	<5	8.1	<0.05	<5	9.5	-	-	-	-	-	-	-	-	-	-	-	-
	QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	<4	<0.4	7	<1	7	<0.1	<1	5	-	-	-	-	-	-	-	-	-	-	-	-
	QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	15	<0.4	29	47	20	<0.05	7.8	93	-	-	-	-	-	-	-	-	-	-	-	-
	QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	9	<0.4	20	33	15	<0.1	6	60	-	-	-	-	-	-	-	-	-	-	-	-
	QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	7.7	<0.4	20	33	25	<0.05	9.7	66	-	-	-	-	-	-	-	-	-	-	-	-
	QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	4	<0.4	11	17	13	<0.1	5	33	-	-	-	-	-	-	-	-	-	-	-	-
	QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	15	<0.4	28	20	29	1.3	18	*250*	-	-	-	-	-	-	-	-	-	-	-	-
	QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	10	<0.4	22	16	25	<0.1	10	57	-	-	-	-	-	-	-	-	-	-	-	-
	QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	<4	<0.4	4	7	6	0.2	3	16	-	-	-	-	-	-	-	-	-	-	-	-
	QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	7.4	<0.4	17	27	19	<0.05	7.3	64	-	-	-	-	-	-	-	-	-	-	-	-
	QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	7	<0.4	18	29	20	<0.1	8	64	-	-	-	-	-	-	-	-	-	-	-	-
	QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	10	<0.4	34	21	27	<0.05	9.5	49	-	-	-	-	-	-	-	-	-	-	-	-
	QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	5	<0.4	16	35	19	<0.1	11	69	-	-	-	-	-	-	-	-	-	-	-	-
	QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	<4	<0.4	4	<1	3	<0.1	<1	2	-	-	-	-	-	-	-	-	-	-	-	-
	QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	15	<0.4	38	8.9	23	<0.05	5.4	21	-	-	-	-	-	-	-	-	-	-	-	-
	QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	10	0.5	28	8	17	<0.1	3	15	-	-	-	-	-	-	-	-	-	-	-	-
	QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	2.4	<0.4	9.8	<5	8.8	<0.05	<5	<5	-	-	-	-	-	-	-	-	-	-	-	-
	QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	4	<0.4	8	6	11	<0.1	3	13	-	-	-	-	-	-	-	-	-	-	-	-
	QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	6.1	<0.4	12	40	18	0.07	*59*	180	-	-	-	-	-	-	-	-	-	-	-	-
	QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	6	<0.4	11	32	18	<0.1	*45*	130	-	-	-	-	-	-	-	-	-	-	-	-
	QC17	Duplicate of #3-O-SS07	2/07/2014	7	<0.4	25	18	24	<0.05	7.4	47	-	-	-	-	-	-	-	-	-	-	-	-
	QC17/A	Triplicate of #3-O-SS07	2/07/2014	8	<0.4	28	17	23	<0.1	7	43	-	-	-	-	-	-	-	-	-	-	-	-
	QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	2.5	<0.4	7	8	<5	<0.05	<5	21	-	-	-	-	-	-	-	-	-	-	-	-
	QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	4	<0.4	11	7	7	<0.1	2	23	-	-	-	-	-	-	-	-	-	-	-	-
	QC19	Duplicate of #1-SS21	4/07/2014	4.2	<0.4	17	8.1	160	<0.05	<5	34	-	-	-	-	-	-	-	-	-	-	-	-
	QC19/A	Triplicate of #1-SS21	4/07/2014	4	<0.4	14	7	140	<0.1	4	31	-	-	-	-	-	-	-	-	-	-	-	-
	QC20	Duplicate of #25-SS05	4/07/2014	7.1	0.8	26	12	20	<0.05	7.9	40	-	-	-	-	-	-	-	-	-	-	-	-
	QC20/A	Triplicate of #25-SS05	4/07/2014	10	<0.4	23	12	19	<0.1	7	37	-	-	-	-	-	-	-	-	-	-	-	-
	QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	5.1	0.7	23	20	29	<0.05	14	95	-	-	-	-	-	-	-	-	-	-	-	-
	QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	9	<0.4	27	20	29	<0.1	15	85	-	-	-	-	-	-	-	-	-	-	-	-

Notes
*Criteria for Chromium (VI)
1 Reported as '#4-SP-TP06' in laboratory report 423116-S
2 Reported as '#6-0-SS14' in laboratory report 423382-S
3 Reported as '#6-S-SS17' in laboratory report 423382-S
4 Reported as '#6-S-SS18' in laboratory report 423382-S
5 Reported as '#6-S-SS19' in laboratory report 423382-S
6 Reported as '#6-S-SS20' in laboratory report 423382-S
7 Reported as '#7-A-SS02' in laboratory report 423382-S
8 Reported as 'SED01' in laboratory report 423743-S
9 Reported as '#13-SP-TP04' in laboratory report 423678-S
10 Reported as '#17H-SS01 (0-0.1)' in laboratory report 422618-S
11 Reported as '#25-G-TP02 (0.3-0.4)' in laboratory report 422618-S
12 Reported as '#27-G-TP02 (0-0.1)' in laboratory report 422618-S
13 Reported as '#27-G-TP02 (1.9-2.0)' in laboratory report 422618-S
14 Reported as '#27-G-TP03 (0-0.1)' in laboratory report 422618-S
15 Reported as '#27-G-TP04 (0-0.1)' in laboratory report 422618-S
16 Reported as '#27-G-TP05 (0-0.1)' in laboratory report 422618-S
17 Reported as '#27-G-TP06 (1.0-1.1)' in laboratory report 422618-S
18 Reported as '29-H-SS01' in laboratory report 422457-S
19 Reported as '#30-SP-HA01 (0-0.1)' in laboratory report 422131-S
20 Reported as '#30-SP-TP04 (0.1-0.2)' in laboratory report 422131-S

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Chlorinated Alkanes									Chlorinated Alkenes									Miscellaneous Hydrocarbons						Monocyclic Aromatic Hydrocarbons				
			bromodichloromethane	Carbon tetrachloride	Chloroform	dibromochloromethane	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Dibromomethane	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	isopropylbenzene	styrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																															
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A																															
NEPC 2013 Soil HIL B																															
NEPC 2013 Soil HIL C																															
NEPC 2013 Soil HIL D																															
Field ID	**Sample Depth**	**Sample Date**																													
#1-A-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS02	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-SS03	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-S-SS04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS07	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS08	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS12	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS14	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS15	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS17	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS18	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS20	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS22	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS23	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS24	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS26	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS28	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS29	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS30	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS31	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS32	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP01	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP03	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SD-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SD-TP06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SD-TP06	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-SD-SS01	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-A-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS09	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS10	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS11	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS12	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS13	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS15	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS16	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS17	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS18	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-S-SS19	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.1
#3-S-SS20	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-S-SS21	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-SD-SS23	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-F-SS24	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-SED01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP06	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP06	1.3-1.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP07	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP07	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results

Project Number: 43376

Project Name: Box Hill North DSI RAP

			Chlorinated Alkanes									Chlorinated Alkenes									Miscellaneous Hydrocarbons						Monocyclic Aromatic Hydrocarbons				
			bromodichloromethane	Carbon tetrachloride	Chloroform	dibromochloromethane	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Dibromomethane	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	isopropylbenzene	styrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																															
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A																															
NEPC 2013 Soil HIL B																															
NEPC 2013 Soil HIL C																															
NEPC 2013 Soil HIL D																															
Field ID	**Sample Depth**	**Sample Date**																													
#4-O-SS01	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS02	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS03	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS04	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS05	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS06	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS07	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS08	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS09	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS10	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS11	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS13	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS15	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS16	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS17	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS19	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS20	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-G-SS21	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SED01	Surface	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP01	0.7-0.8	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SP-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SP-TP05	0.5-0.6	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SD-TP07	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SD-TP08	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-SS02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS06	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS07	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-IF-SS01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS03	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS06	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS07	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS08	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS09	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS10	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS11	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS12	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS13	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-S-SS14[2]	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-S-SS15	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-S-SS16	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-0-SS17[3]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-0-SS18[4]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-S-SS19[5]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-0-SS20[6]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS21	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS22	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS23	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS24	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS25	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP01	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP06	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SS02[7]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SED01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP02	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP03	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-SP-TP01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-TP03	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA01	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-G-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-G-HA04	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA07	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA08	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-AST-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-S-SS02	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-SD-SS03	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-SD-SS04	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-SD-SS05	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-G-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP02	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP05	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-A-TP06	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-A-TP06	0.4-0.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP07	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP08	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP08	1.4-1.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Chlorinated Alkanes									Chlorinated Alkenes									Miscellaneous Hydrocarbons						Monocyclic Aromatic Hydrocarbons				
			bromodichloromethane	Carbon tetrachloride	Chloroform	dibromochloromethane	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Dibromomethane	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	isopropylbenzene	styrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																															
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A																															
NEPC 2013 Soil HIL B																															
NEPC 2013 Soil HIL C																															
NEPC 2013 Soil HIL D																															
Field ID	**Sample Depth**	**Sample Date**																													
#10-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-SD-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-TP01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-TP04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-S-TP01	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#11-TP02	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP06	0.8-0.9	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP07	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP07	0.3-0.4	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP08	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP09	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-SED01[8]	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-SD-SS06	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-SD-SS07	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-SD-SS08	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-AST-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-G-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-G-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP05	0.3-0.4	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SED01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP01	0.5-0.6	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP02	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SP-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SP-TP03	0.4-0.5	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP04[9]	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	0.9-1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	1.9-2	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP07	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-G-TP01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-SD-TP02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-SD-TP04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-G-TP05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-SS01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP02	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP02	0.2-0.3	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP03	0.1-0.2	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SED01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP01	2.1-2.2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP02	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP03	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SD-HA01	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-SD-HA02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SD-HA03	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-SD-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-G-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-A-SS01[10]	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SS01	Surface	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SP-TP01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SP-TP02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP03	0.2-0.3	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP03	1.9-2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP05	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

Field ID	Sample Depth	Sample Date	Chlorinated Alkanes									Chlorinated Alkenes								
			bromodichloromethane	Carbon tetrachloride	Chloroform	dibromochloromethane	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																				
CRC Care 2011 Soil HSL B for Direct Contact																				
CRC Care 2011 Soil HSL C for Direct Contact																				
CRC Care 2011 Soil HSL D for Direct Contact																				
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																				
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																				
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																				
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																				
NEPC 2013 Management Limits - Commercial and Industrial, Fine																				
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																				
NEPC 2013 Soil HIL A																				
NEPC 2013 Soil HIL B																				
NEPC 2013 Soil HIL C																				
NEPC 2013 Soil HIL D																				
#18-SD-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-SED01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-SED02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP03	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-SED01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP05	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP06	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS02	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-AST-SS03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS04	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-SD-SS05	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS06	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS07	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS08	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS09	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS10	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SS11	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS12	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0.5-0.6	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP03	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP06	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP07	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP08	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP08	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP09	0.8-0.9	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP11	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP11	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0.6-0.7	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP01	1.9-2	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SP-TP06	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP07	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP09	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-G-TP10	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-G-TP11	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-F-SS04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-S-SS05	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-SED01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP01	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-G-HA05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Field ID	Sample Depth	Sample Date	Miscellaneous Hydrocarbons						Monocyclic Aromatic Hydrocarbons				
			1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Dibromomethane	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	isopropylbenzene	styrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact													
CRC Care 2011 Soil HSL B for Direct Contact													
CRC Care 2011 Soil HSL C for Direct Contact													
CRC Care 2011 Soil HSL D for Direct Contact													
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil													
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil													
NEPC 2013 Management Limits - Commercial and Industrial, Fine													
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine													
NEPC 2013 Soil HIL A													
NEPC 2013 Soil HIL B													
NEPC 2013 Soil HIL C													
NEPC 2013 Soil HIL D													
#18-SD-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-
#18-SED01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#18-SED02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#18-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#18-TP03	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-SED01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-TP05	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-TP06	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS02	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.9	1.9	<0.5	<0.5	<0.5
#20-AST-SS03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS04	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-SD-SS05	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS06	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS07	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS08	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS09	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS10	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SS11	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS12	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0.5-0.6	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP03	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP06	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP07	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP08	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP08	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP09	0.8-0.9	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP11	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP11	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0.6-0.7	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#21-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-TP01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-TP01	1.9-2	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-SP-TP06	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-TP07	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-TP09	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-G-TP10	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#21-G-TP11	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-F-SS04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-S-SS05	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-SED01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-TP01	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-
#23-HA01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-
#23-HA02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-
#23-HA03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-
#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-
#23-HA04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-
#23-G-HA05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

			Chlorinated Alkanes									Chlorinated Alkenes									Miscellaneous Hydrocarbons						Monocyclic Aromatic Hydrocarbons				
			bromodichloromethane	Carbon tetrachloride	Chloroform	dibromochloromethane	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Dibromomethane	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	isopropylbenzene	styrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																															
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A																															
NEPC 2013 Soil HIL B																															
NEPC 2013 Soil HIL C																															
NEPC 2013 Soil HIL D																															
Field ID	**Sample Depth**	**Sample Date**																													
#24-G-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-AST-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SS03	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#24-SED01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SP-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SP-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP02	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-F-SS01	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-S-SS02	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-SD-SS03	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-SD-SS04	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-G-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-TP02[11]	0.3-0.4	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-HA01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-HA02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-SED01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-SS01	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-SS02	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-TP03	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP03	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP04	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP05	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP06	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-G-TP01	0.1-0.2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP02[12]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP02[13]	1.9-2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP03[14]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP04[15]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP05[16]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP06[17]	1-1.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP07	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS03	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS05	0-0.1	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-SS06	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS07	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS08	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS09	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS10	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP01	0.5-0.6	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP01	1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP02	0.1-0.2	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.4-0.3	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.9-0.8	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-A-SS01[18]	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-S-SS02	0-0.1	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#29-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP04	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-SED01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-F-SS01	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#30-HA01[19]	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-D-TP01	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-G-TP02	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-SP-TP03	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-TP04[20]	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-TP05	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

			Chlorinated Alkanes									Chlorinated Alkenes									Miscellaneous Hydrocarbons						Monocyclic Aromatic Hydrocarbons				
			bromodichloromethane	Carbon tetrachloride	Chloroform	dibromochloromethane	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane	1,1,2,2-tetrachloroethylene	1,1-Dichloroethene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromoform	Bromomethane	Dibromomethane	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	Bromobenzene	isopropylbenzene	styrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																															
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A																															
NEPC 2013 Soil HIL B																															
NEPC 2013 Soil HIL C																															
NEPC 2013 Soil HIL D																															
Field ID	**Sample Depth**	**Sample Date**																													
#31-G-SS01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-S-SS02	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-SD-SS03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-H-SS04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-SED01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP02	0.3-0.4	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP04	0.3-0.4	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC17	Duplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC17/A	Triplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

*Criteria for Chromium (VI)

[1] Reported as '#4-SP-TP06' in laboratory report 423116-S
[2] Reported as '#6-0-SS14' in laboratory report 423382-S
[3] Reported as '#6-S-SS17' in laboratory report 423382-S
[4] Reported as '#6-S-SS18' in laboratory report 423382-S
[5] Reported as '#6-S-SS19' in laboratory report 423382-S
[6] Reported as '#6-S-SS20' in laboratory report 423382-S
[7] Reported as '#7-A-SS02' in laboratory report 423382-S
[8] Reported as 'SED01' in laboratory report 423743-S
[9] Reported as '#13-SP-TP04' in laboratory report 423678-S
[10] Reported as '#17H-SS01 (0-0.1)' in laboratory report 422618-S
[11] Reported as '#25-G-TP02 (0.3-0.4)' in laboratory report 422618-S
[12] Reported as '#27-G-TP02 (0-0.1)' in laboratory report 422618-S
[13] Reported as '#27-G-TP02 (1.9-2.0)' in laboratory report 422618-S
[14] Reported as '#27-G-TP03 (0-0.1)' in laboratory report 422618-S
[15] Reported as '#27-G-TP04 (0-0.1)' in laboratory report 422618-S
[16] Reported as '#27-G-TP05 (0-0.1)' in laboratory report 422618-S
[17] Reported as '#27-G-TP06 (1.0-1.1)' in laboratory report 422618-S
[18] Reported as '29-H-SS01' in laboratory report 422457-S
[19] Reported as '#30-SP-HA01 (0-0.1)' in laboratory report 422131-S
[20] Reported as '#30-SP-TP04 (0.1-0.2)' in laboratory report 422131-S

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Polycyclic Aromatic Hydrocarbons																									BTEX							
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)	Benzo(a)pyrene TEQ (medium bound)	Benzo(a)pyrene TEQ (upper bound)	Benzo(a)pyrene TEQ (WHO)	Benzo(b,k)fluoranthene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Carcinogenic PAHs as B(a)P TPE	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	PAHs (Sum of Total)	Total +ve PAHs	Benzene	Ethylbenzene	BTEX (Sum of Total)	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Xylene (Sum of Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.5			0.1	0.1		0.1	0.2	0.1	0.3	
CRC Care 2011 Soil HSL A for Direct Contact																						**1400**						**100**	**4500**		**14000**			**12000**	
CRC Care 2011 Soil HSL B for Direct Contact																						**2200**						**140**	**5900**		**21000**			**17000**	
CRC Care 2011 Soil HSL C for Direct Contact																						**1900**						**120**	**5300**		**18000**			**15000**	
CRC Care 2011 Soil HSL D for Direct Contact																						**11000**						**430**	**27000**		**99000**			**81000**	
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																						*370*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																						*170*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil							1.4																					95	185		135			95	
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil							0.7																					65	125		105			45	
NEPC 2013 Management Limits - Commercial and Industrial, Fine																																			
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																																			
NEPC 2013 Soil HIL A																					3				300	300									
NEPC 2013 Soil HIL B																					4				400	400									
NEPC 2013 Soil HIL C																					3				300	300									
NEPC 2013 Soil HIL D																					40				4000	4000									
Field ID	**Sample Depth**	**Sample Date**																																	
#1-A-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS02	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#1-SS03	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-S-SS04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS07	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS08	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS12	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS14	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS15	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS17	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS18	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS20	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS22	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS23	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS24	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS26	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS28	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS29	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS30	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS31	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS32	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#1-TP01	0.4-0.5	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#1-TP02	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#1-TP03	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#1-TP04	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#1-SD-TP05	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#1-SD-TP06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#1-SD-TP06	0.4-0.5	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#2-O-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-TP01	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#2-TP02	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#2-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-SD-SS01	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-A-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS09	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS10	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS11	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS12	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS13	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS15	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS16	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS17	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS18	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-S-SS19	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	0.6	0.7	1	1.3	-	-	1	0.9	<0.5	<0.5	<0.5	1	<0.5	<0.5	1.037	<0.5	<0.5	0.8	4.3	7.55	-	<0.1	0.5	0.9	0.2	<0.2	<0.1	<0.3	0.15
#3-S-SS20	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-S-SS21	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-SD-SS23	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-F-SS24	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-SED01	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP01	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP02	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP03	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP04	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP05	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP06	0.5-0.6	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP06	1.3-1.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP07	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#3-TP07	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)	Benzo(a)pyrene TEQ (medium bound)	Benzo(a)pyrene TEQ (upper bound)	Benzo(a)pyrene TEQ (WHO)	Benzo(b,k)fluoranthene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Carcinogenic PAHs as B(a)P TPE	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	PAHs (Sum of Total)	Total +ve PAHs	Benzene	Ethylbenzene	BTEX (Sum of Total)	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Xylene (Sum of Total)
JBS&G			Polycyclic Aromatic Hydrocarbons																									BTEX							
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.5			0.1	0.1		0.1	0.2	0.1	0.3	
CRC Care 2011 Soil HSL A for Direct Contact																						1400						100	4500		14000			12000	
CRC Care 2011 Soil HSL B for Direct Contact																						2200						140	5900		21000			17000	
CRC Care 2011 Soil HSL C for Direct Contact																						1900						120	5300		18000			15000	
CRC Care 2011 Soil HSL D for Direct Contact																						11000						430	27000		99000			81000	
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																						*370*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																						*170*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil							1.4																					95	185		135			95	
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil							0.7																					65	125		105			45	
NEPC 2013 Management Limits - Commercial and Industrial, Fine																																			
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																																			
NEPC 2013 Soil HIL A																					3				300	300									
NEPC 2013 Soil HIL B																					4				400	400									
NEPC 2013 Soil HIL C																					3				300	300									
NEPC 2013 Soil HIL D																					40				4000	4000									
Field ID	**Sample Depth**	**Sample Date**																																	
#4-O-SS01	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS02	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS03	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS04	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS05	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS06	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS07	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS08	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS09	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-O-SS10	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS11	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS13	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS15	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS16	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS17	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS19	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS20	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-G-SS21	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SED01	Surface	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#4-TP01	0.7-0.8	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#4-TP02	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#4-SP-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#4-SP-TP05	0.5-0.6	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#4-TP06[1]	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SD-TP07	0-0.1	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#4-SD-TP08	0.2-0.3	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#5-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-SS02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS06	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS07	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-IF-SS01	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#6-O-SS02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS03	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS06	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS07	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS08	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS09	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS10	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS11	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS12	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS13	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-S-SS14[2]	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#6-S-SS15	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#6-S-SS16	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#6-O-SS17[3]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS18[4]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-S-SS19[5]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS20[6]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS21	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS22	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS23	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS24	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS25	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP01	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#6-TP01	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP02	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#6-TP06	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#7-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SS02[7]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SED01	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#7-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP02	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#7-TP02	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP03	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#7-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP05	0-0.1	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#8-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-SP-TP01	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#8-TP03	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#8-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA01	0.3-0.4	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-SP-HA02	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-G-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-G-HA04	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA05	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-HA06	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-HA07	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-HA08	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-AST-SS01	0-0.1	7/07/2014	<5	<5	<5	<5	<5	<5	6	12	-	-	<5	<5	<5	<5	<5	<5	<5	<5	6.05	<0.5	<5	<5	<5	35.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-S-SS02	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-SD-SS03	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-SD-SS04	0-0.1	7/07/2014	<5	<5	<5	<5	<5	<5	6	12	-	-	<5	<5	<5	<5	<5	<5	<5	<5	6.05	<0.5	<5	<5	<5	36.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-SD-SS05	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-G-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP02	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-TP04	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-TP05	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-A-TP06	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#9-A-TP06	0.4-0.5	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-TP07	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-TP08	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#9-TP08	1.4-1.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Polycyclic Aromatic Hydrocarbons																									BTEX							
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)	Benzo(a)pyrene TEQ (medium bound)	Benzo(a)pyrene TEQ (upper bound)	Benzo(a)pyrene TEQ (WHO)	Benzo(b,k)fluoranthene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Carcinogenic PAHs as B(a)P TPE	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	PAHs (Sum of Total)	Total +ve PAHs	Benzene	Ethylbenzene	BTEX (Sum of Total)	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Xylene (Sum of Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.5			0.1	0.1		0.1	0.2	0.1	0.3	
CRC Care 2011 Soil HSL A for Direct Contact																						**1400**						**100**	**4500**		**14000**			**12000**	
CRC Care 2011 Soil HSL B for Direct Contact																						**2200**						**140**	**5900**		**21000**			**17000**	
CRC Care 2011 Soil HSL C for Direct Contact																						**1900**						**120**	**5300**		**18000**			**15000**	
CRC Care 2011 Soil HSL D for Direct Contact																						**11000**						**430**	**27000**		**99000**			**81000**	
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																						*370*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																						*170*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil							1.4																					95	185		135			95	
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil							0.7																					65	125		105			45	
NEPC 2013 Management Limits - Commercial and Industrial, Fine																																			
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																																			
NEPC 2013 Soil HIL A																					3				300	300									
NEPC 2013 Soil HIL B																					4				400	400									
NEPC 2013 Soil HIL C																					3				300	300									
NEPC 2013 Soil HIL D																					40				4000	4000									
Field ID	**Sample Depth**	**Sample Date**																																	
#10-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-SD-SS02	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#10-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-TP01	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#10-TP02	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#10-TP04	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#11-S-TP01	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#11-TP02	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#11-TP06	0.8-0.9	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#11-TP07	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#11-TP07	0.3-0.4	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP08	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP09	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-SED01[8]	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#12-A-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-SD-SS06	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#12-SD-SS07	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#12-SD-SS08	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#12-AST-SS09	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#12-G-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-G-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP03	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#12-TP05	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#12-TP05	0.3-0.4	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SED01	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP01	0.5-0.6	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP02	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#13-SP-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#13-SP-TP03	0.4-0.5	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#13-TP04[9]	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#13-TP05	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#13-TP06	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#13-TP06	0.9-1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#13-TP06	1.9-2	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP07	0-0.1	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#14-G-TP01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-SD-TP02	0-0.1	3/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#14-SD-TP04	0-0.1	3/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#14-G-TP05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-SS01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP01	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#15-TP02	0-0.1	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#15-TP02	0.2-0.3	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP03	0.1-0.2	1/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#15-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SED01	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-TP01	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-TP01	2.1-2.2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP02	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-TP03	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-TP04	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-SD-HA01	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-SD-HA02	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-SD-HA03	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-SD-HA04	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#16-G-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-A-SS01[10]	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SS01	Surface	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-SS02	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-SD-SS03	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-SD-SS04	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-SD-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SP-TP01	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-SP-TP02	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-TP03	0.2-0.3	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-TP03	1.9-2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP04	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#17-TP05	0-0.1	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Polycyclic Aromatic Hydrocarbons																								BTEX							
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)	Benzo(a)pyrene TEQ (medium bound)	Benzo(a)pyrene TEQ (upper bound)	Benzo(a)pyrene TEQ (WHO)	Benzo(b,k)fluoranthene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Carcinogenic PAHs as B(a)P TPE	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	PAHs (Sum of Total)	Total +ve PAHs	Benzene	Ethylbenzene	BTEX (Sum of Total)	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Xylene (Sum of Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.5			0.1	0.1		0.1	0.2	0.1	0.3	
CRC Care 2011 Soil HSL A for Direct Contact																						1400						100	4500		14000			12000	
CRC Care 2011 Soil HSL B for Direct Contact																						2200						140	5900		21000			17000	
CRC Care 2011 Soil HSL C for Direct Contact																						1900						120	5300		18000			15000	
CRC Care 2011 Soil HSL D for Direct Contact																						11000						430	27000		99000			81000	
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																						*370*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																						*170*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil							1.4																					95	185		135			95	
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil							0.7																					65	125		105			45	
NEPC 2013 Management Limits - Commercial and Industrial, Fine																																			
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																																			
NEPC 2013 Soil HIL A																					3				300	300									
NEPC 2013 Soil HIL B																					4				400	400									
NEPC 2013 Soil HIL C																					3				300	300									
NEPC 2013 Soil HIL D																					40				4000	4000									
Field ID	**Sample Depth**	**Sample Date**																																	
#18-SD-SS01	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#18-SED01	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#18-SED02	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	1.45	1.2	<0.2	<0.1	<0.3	0.15
#18-TP01	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#18-TP03	0.3-0.4	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-SED01	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-TP01	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-TP02	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-TP03	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-TP04	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-TP05	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-TP06	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS01	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-AST-SS02	0-0.1	26/06/2014	<5	<5	<5	<5	<5	<5	6	12	-	-	<5	<5	<5	<5	<5	<5	<5	<5	6.05	<0.5	<5	<5	<5	35.25	-	<0.1	<0.1	0.35	<0.1	<0.2	0.1	<0.3	0.2
#20-AST-SS03	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SD-SS04	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SD-SS05	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-AST-SS06	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SD-SS07	0-0.1	26/06/2014	<5	<5	<5	<5	<5	<5	6	12	-	-	<5	<5	<5	<5	<5	<5	<5	<5	6.05	<0.5	<5	<5	<5	35.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SD-SS08	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SD-SS09	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SD-SS10	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SS11	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-SD-SS12	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	0.7	<0.5	0.7	4.2	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP01	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0.5-0.6	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#20-TP03	0.4-0.5	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP04	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP05	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.9-1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP06	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP07	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP08	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP08	0.4-0.5	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP09	0.8-0.9	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP11	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#20-TP11	0.9-1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#20-TP12	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#20-TP12	0.6-0.7	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-SED01	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-SS01	0-0.1	3/07/2014	<0.5	<0.5	0.7	1.9	1.5	2.1	2.4	2.6	-	-	1.1	1.2	2.2	1.6	<0.5	3.7	<0.5	0.9	2.388	<0.5	0.8	3.4	19	20.65	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-TP01	0-0.1	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-TP01	1.9-2	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#21-TP02	0.3-0.4	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-SP-TP06	0.4-0.5	3/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-TP07	0.3-0.4	3/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP09	0.3-0.4	3/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#21-G-TP10	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-G-TP11	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-F-SS04	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#22-S-SS05	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-SED01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP01	0.3-0.4	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#22-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-
#22-TP02	0.3-0.4	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0-0.1	3/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA01	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#23-HA02	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#23-HA03	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA04	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#23-G-HA05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#23-SED01	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Polycyclic Aromatic Hydrocarbons																								BTEX							
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)	Benzo(a)pyrene TEQ (medium bound)	Benzo(a)pyrene TEQ (upper bound)	Benzo(a)pyrene TEQ (WHO)	Benzo(b,k)fluoranthene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Carcinogenic PAHs as B(a)P TPE	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	PAHs (Sum of Total)	Total +ve PAHs	Benzene	Ethylbenzene	BTEX (Sum of Total)	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Xylene (Sum of Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.5			0.1	0.1		0.1	0.2	0.1	0.3	
CRC Care 2011 Soil HSL A for Direct Contact																						1400						100	4500		14000			12000	
CRC Care 2011 Soil HSL B for Direct Contact																						2200						140	5900		21000			17000	
CRC Care 2011 Soil HSL C for Direct Contact																						1900						120	5300		18000			15000	
CRC Care 2011 Soil HSL D for Direct Contact																						11000						430	27000		99000			81000	
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																						370													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																						170													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil							1.4																					95	185		135			95	
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil							0.7																					65	125		105			45	
NEPC 2013 Management Limits - Commercial and Industrial, Fine																																			
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																																			
NEPC 2013 Soil HIL A																					3				300	300									
NEPC 2013 Soil HIL B																					4				400	400									
NEPC 2013 Soil HIL C																					3				300	300									
NEPC 2013 Soil HIL D																					40				4000	4000									
Field ID	**Sample Depth**	**Sample Date**																																	
#24-G-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-AST-SS02	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#24-SS03	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#24-SED01	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#24-SP-TP01	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#24-SP-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP02	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#24-TP02	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP03	0-0.1	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#25-F-SS01	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	0.1	<0.1	0.4	0.1	<0.2	<0.1	<0.3	0.15
#25-S-SS02	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#25-SD-SS03	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#25-SD-SS04	0-0.1	4/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#25-G-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-TP02[11]	0.3-0.4	19/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-HA01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-HA02	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-SED01	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-SS01	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-SS02	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	0.605	<0.5	<0.5	<0.5	1	6	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-TP03	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-TP03	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP04	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-TP05	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#26-TP06	0.5-0.6	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-G-TP01	0.1-0.2	19/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-TP02[12]	0-0.1	19/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-TP02[13]	1.9-2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP03[14]	0-0.1	19/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-TP04[15]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP05[16]	0-0.1	19/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-TP06[17]	1-1.1	19/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-TP07	0-0.1	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-SS01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS03	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS05	0-0.1	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#27-SS06	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS07	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS08	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS09	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS10	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED02	0-0.1	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#28-SP-TP01	0.5-0.6	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#28-SP-TP01	1	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#28-TP02	0.1-0.2	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#28-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.4-0.3	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#28-SP-TP03	0.9-0.8	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP04	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#29-A-SS01[18]	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-S-SS02	0-0.1	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#29-TP02	0.3-0.4	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#29-TP04	0-0.1	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#29-TP04	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP05	0-0.1	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#29-SED01	0-0.1	7/07/2014	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	0.6	1.2	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.0605	<0.05	<0.05	<0.05	<0.05	1.875	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#30-F-SS01	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5 - 0.6	<0.5	<0.5	0.6	5.6	-	1.5	<0.1	2.3	0.6	<0.2	<0.1	<0.3	0.15
#30-HA01[19]	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#30-D-TP01	0.1-0.2	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#30-G-TP02	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-SP-TP03	0.1-0.2	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#30-TP04[20]	0.1-0.2	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#30-TP05	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results

Project Number: 43376

Project Name: Box Hill North DSI RAP

			Polycyclic Aromatic Hydrocarbons																									BTEX							
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)	Benzo(a)pyrene TEQ (medium bound)	Benzo(a)pyrene TEQ (upper bound)	Benzo(a)pyrene TEQ (WHO)	Benzo(b,k)fluoranthene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Carcinogenic PAHs as B(a)P TPE	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	PAHs (Sum of Total)	Total +ve PAHs	Benzene	Ethylbenzene	BTEX (Sum of Total)	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Xylene (Sum of Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.5			0.1	0.1		0.1	0.2	0.1	0.3	
CRC Care 2011 Soil HSL A for Direct Contact																						**1400**						**100**	**4500**		**14000**			**12000**	
CRC Care 2011 Soil HSL B for Direct Contact																						**2200**						**140**	**5900**		**21000**			**17000**	
CRC Care 2011 Soil HSL C for Direct Contact																						**1900**						**120**	**5300**		**18000**			**15000**	
CRC Care 2011 Soil HSL D for Direct Contact																						**11000**						**430**	**27000**		**99000**			**81000**	
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																						*370*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																						*170*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil							1.4																					95	185		135			95	
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil							0.7																					65	125		105			45	
NEPC 2013 Management Limits - Commercial and Industrial, Fine																																			
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																																			
NEPC 2013 Soil HIL A																					3				300	300									
NEPC 2013 Soil HIL B																					4				400	400									
NEPC 2013 Soil HIL C																					3				300	300									
NEPC 2013 Soil HIL D																					40				4000	4000									
Field ID	**Sample Depth**	**Sample Date**																																	
#31-G-SS01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-S-SS02	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#31-SD-SS03	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#31-H-SS04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-SED01	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#31-TP01	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#31-TP02	0.3-0.4	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#31-TP03	0-0.1	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
#31-TP04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP04	0.3-0.4	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	<0.1	<0.1	<0.1	<0.1	0.14	-	-	-	<0.5	0.3	-	0.2	-	0.1	<0.1	0.1	<0.1	0.2	-	<0.1	<0.1	0.2	-	-	1.2	<0.2	<1	-	<0.5	<2	<1	-	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	<0.5	0	0	<0	1.5	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC17	Duplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC17/A	Triplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0	<0.2	<1	-	<0.5	<2	<1	-	-

Notes

*Criteria for Chromium (VI)

[1] Reported as '#4-SP-TP06' in laboratory report 423116-S

[2] Reported as '#6-0-SS14' in laboratory report 423382-S

[3] Reported as '#6-S-SS17' in laboratory report 423382-S

[4] Reported as '#6-S-SS18' in laboratory report 423382-S

[5] Reported as '#6-S-SS19' in laboratory report 423382-S

[6] Reported as '#6-S-SS20' in laboratory report 423382-S

[7] Reported as '#7-A-SS02' in laboratory report 423382-S

[8] Reported as 'SED01' in laboratory report 423743-S

[9] Reported as '#13-SP-TP04' in laboratory report 423678-S

[10] Reported as '#17H-SS01 (0-0.1)' in laboratory report 422618-S

[11] Reported as '#25-G-TP02 (0.3-0.4)' in laboratory report 422618-S

[12] Reported as '#27-G-TP02 (0-0.1)' in laboratory report 422618-S

[13] Reported as '#27-G-TP02 (1.9-2.0)' in laboratory report 422618-S

[14] Reported as '#27-G-TP03 (0-0.1)' in laboratory report 422618-S

[15] Reported as '#27-G-TP04 (0-0.1)' in laboratory report 422618-S

[16] Reported as '#27-G-TP05 (0-0.1)' in laboratory report 422618-S

[17] Reported as '#27-G-TP06 (1.0-1.1)' in laboratory report 422618-S

[18] Reported as '29-H-SS01' in laboratory report 422457-S

[19] Reported as '#30-SP-HA01 (0-0.1)' in laboratory report 422131-S

[20] Reported as '#30-SP-TP04 (0.1-0.2)' in laboratory report 422131-S

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			TPHs (NEPC 1999)						TRHs (NEPC 2013)							Chlorinated Benzenes				Polychlorinated Biphenyls							
			>C10-C36 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C10-C40 (Sum of Total)	C6-C10 Fraction	C6 - C10 less BTEX (F1)	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	50	50	100	100	50		20	20	0.5	0.5	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
CRC Care 2011 Soil HSL A for Direct Contact									**3300**	**4500**	**6300**			**4400**													
CRC Care 2011 Soil HSL B for Direct Contact									**4200**	**5800**	**8100**			**5600**													
CRC Care 2011 Soil HSL C for Direct Contact									**3800**	**5300**	**7400**			**5100**													
CRC Care 2011 Soil HSL D for Direct Contact									**20000**	**27000**	**38000**			**26000**													
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																											
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																											
NEPC 2013 ESL Commercial and Industrial, Coarse Soil									170	2500	6600			215													
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil									120	1300	5600			180													
NEPC 2013 Management Limits - Commercial and Industrial, Fine									1000	5000				800													
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine									1000	3500				800													
NEPC 2013 Soil HIL A																			10								1
NEPC 2013 Soil HIL B																			15								1
NEPC 2013 Soil HIL C																			10								1
NEPC 2013 Soil HIL D																			80								7
Field ID	**Sample Depth**	**Sample Date**																									
#1-A-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS02	0-0.1	25/06/2014	600	<20	<20	190	400	590	<50	520	140	<50	685	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-SS03	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-S-SS04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-O-SS05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-O-SS06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-O-SS07	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-O-SS08	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-A-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-SS12	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS14	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS15	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-SS17	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS18	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-A-SS20	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-G-SS22	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#1-A-SS23	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS24	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS26	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS28	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS29	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS30	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS31	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS32	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-TP01	0.4-0.5	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP02	0-0.1	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-TP03	0-0.1	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-TP04	0-0.1	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-SD-TP05	0-0.1	25/06/2014	95	<20	<20	<50	60	60	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-SD-TP06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-SD-TP06	0.4-0.5	25/06/2014	521	<20	21	110	390	520	<50	390	240	<50	655	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-O-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-O-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-O-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#2-TP01	0-0.1	26/06/2014	170	<20	<20	87	73	160	<50	120	<100	<50	195	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-TP02	0-0.1	26/06/2014	106	<20	<20	71	<50	71	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-SD-SS01	0-0.1	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-A-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-A-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-A-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS09	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS10	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS11	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS12	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-O-SS13	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-A-SS15	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS16	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS17	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS18	0-0.1	2/07/2014	120	<20	<20	<50	85	85	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-S-SS19	0-0.1	2/07/2014	633	<20	23	320	290	630	<50	570	230	<50	825	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-S-SS20	0-0.1	2/07/2014	430	<20	<20	120	300	420	<50	370	170	<50	565	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-S-SS21	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#3-SD-SS23	0-0.1	7/07/2014	96	<20	<20	<50	61	61	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#3-F-SS24	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-SED01	0-0.1	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP01	0-0.1	26/06/2014	91	<20	<20	<50	56	56	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP02	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP03	0-0.1	26/06/2014	107	<20	<20	<50	72	72	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP04	0-0.1	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP05	0-0.1	27/06/2014	115	<20	<20	<50	80	80	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP06	0.5-0.6	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP06	1.3-1.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP07	0-0.1	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-TP07	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

			TPHs (NEPC 1999)						TRHs (NEPC 2013)							Chlorinated Benzenes				Polychlorinated Biphenyls							
			>C10-C36 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C10-C40 (Sum of Total)	C6-C10 Fraction	C6 - C10 less BTEX (F1)	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	50	50	100	100	50		20	20	0.5	0.5	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
CRC Care 2011 Soil HSL A for Direct Contact									**3300**	**4500**	**6300**			**4400**													
CRC Care 2011 Soil HSL B for Direct Contact									**4200**	**5800**	**8100**			**5600**													
CRC Care 2011 Soil HSL C for Direct Contact									**3800**	**5300**	**7400**			**5100**													
CRC Care 2011 Soil HSL D for Direct Contact									**20000**	**27000**	**38000**			**26000**													
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																											
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																											
NEPC 2013 ESL Commercial and Industrial, Coarse Soil									170	2500	6600			215													
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil									120	1300	5600			180													
NEPC 2013 Management Limits - Commercial and Industrial, Fine									1000	5000				800													
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine									1000	3500				800													
NEPC 2013 Soil HIL A																			10								1
NEPC 2013 Soil HIL B																			15								1
NEPC 2013 Soil HIL C																			10								1
NEPC 2013 Soil HIL D																			80								7
Field ID	**Sample Depth**	**Sample Date**																									
#4-O-SS01	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS02	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS03	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS04	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS05	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS06	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS07	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS08	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS09	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-O-SS10	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-A-SS11	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS13	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS15	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS16	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS17	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS19	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS20	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-G-SS21	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-SED01	Surface	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-TP01	0.7-0.8	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP02	0-0.1	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-SP-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-SP-TP05	0.5-0.6	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#4-TP06[1]	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SD-TP07	0-0.1	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-SD-TP08	0.2-0.3	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#5-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#5-SS02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#5-A-SS03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#5-O-SS06	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#5-O-SS07	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-IF-SS01	0-0.1	27/06/2014	96	<20	<20	<50	61	61	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS03	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS06	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS07	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS08	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS09	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS10	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS11	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS12	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-O-SS13	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-S-SS14[2]	0-0.1	27/06/2014	111	<20	<20	<50	76	76	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-S-SS15	0-0.1	27/06/2014	155	<20	<20	<50	120	120	<50	130	<100	<50	205	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-S-SS16	0-0.1	27/06/2014	432	<20	<20	62	360	420	<50	290	160	<50	475	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-0-SS17[3]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-0-SS18[4]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-S-SS19[5]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-0-SS20[6]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#6-A-SS21	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS22	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS23	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS24	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS25	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP01	0-0.1	27/06/2014	106	<20	<20	<50	71	71	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-TP01	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP02	0-0.1	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-TP06	0-0.1	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#7-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SS02[7]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#7-A-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SED01	0-0.1	27/06/2014	183	<20	26	57	100	180	<50	130	<100	<50	205	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#7-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#7-TP02	0-0.1	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#7-TP02	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP03	0-0.1	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#7-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#7-TP05	0-0.1	27/06/2014	187	<20	<20	57	120	180	<50	150	<100	<50	225	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#8-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#8-SP-TP01	0-0.1	1/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#8-TP03	0-0.1	1/07/2014	60	<20	<20	<50	73	73	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#8-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#9-SP-HA01	0.3-0.4	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA02	0-0.1	7/07/2014	86	<20	<20	<50	51	51	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-G-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#9-G-HA04	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA05	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-HA06	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-HA07	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-HA08	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-AST-SS01	0-0.1	7/07/2014	49550	<20	250	48000	1300	50000	2500	**53000**	750	2500	56250	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#9-S-SS02	0-0.1	7/07/2014	261	<20	<20	170	81	250	<50	240	<100	<50	315	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-SD-SS03	0-0.1	7/07/2014	110	<20	<20	75	<50	75	<50	110	<100	<50	185	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-SD-SS04	0-0.1	7/07/2014	50040	<20	36	17000	33000	50000	140	**46000**	**11000**	140	57140	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-SD-SS05	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-G-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#9-TP02	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-TP04	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-TP05	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-A-TP06	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-A-TP06	0.4-0.5	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP07	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-TP08	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#9-TP08	1.4-1.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G			TPHs (NEPC 1999)						TRHs (NEPC 2013)							Chlorinated Benzenes				Polychlorinated Biphenyls							
			>C10-C36 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C10-C40 (Sum of Total)	C6-C10 Fraction	C6 - C10 less BTEX (F1)	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	50	50	100	100	50		20	20	0.5	0.5	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
CRC Care 2011 Soil HSL A for Direct Contact									**3300**	**4500**	**6300**			**4400**													
CRC Care 2011 Soil HSL B for Direct Contact									**4200**	**5800**	**8100**			**5600**													
CRC Care 2011 Soil HSL C for Direct Contact									**3800**	**5300**	**7400**			**5100**													
CRC Care 2011 Soil HSL D for Direct Contact									**20000**	**27000**	**38000**			**26000**													
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																											
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																											
NEPC 2013 ESL Commercial and Industrial, Coarse Soil									170	2500	6600			215													
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil									120	1300	5600			180													
NEPC 2013 Management Limits - Commercial and Industrial, Fine									1000	5000				800													
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine									1000	3500				800													
NEPC 2013 Soil HIL A																			10								1
NEPC 2013 Soil HIL B																			15								1
NEPC 2013 Soil HIL C																			10								1
NEPC 2013 Soil HIL D																			80								7
Field ID	**Sample Depth**	**Sample Date**																									
#10-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#10-SD-SS02	0-0.1	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#10-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#10-TP01	0-0.1	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#10-TP02	0-0.1	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#10-TP04	0-0.1	2/07/2014	215	<20	<20	<50	180	180	<50	140	240	<50	405	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#11-S-TP01	0-0.1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#11-TP02	0-0.1	1/07/2014	60	<20	<20	<50	66	66	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#11-TP06	0.8-0.9	1/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP07	0-0.1	1/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#11-TP07	0.3-0.4	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP08	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#11-G-TP09	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#11-SED01[8]	0-0.1	1/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-A-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-SD-SS06	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-SD-SS07	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-SD-SS08	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-AST-SS09	0-0.1	4/07/2014	570	<20	<20	240	320	560	<50	470	110	<50	605	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#12-G-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#12-G-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#12-TP03	0-0.1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-TP05	0-0.1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#12-TP05	0.3-0.4	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SED01	0-0.1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#13-TP01	0.5-0.6	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP02	0-0.1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#13-SP-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#13-SP-TP03	0.4-0.5	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP04[9]	0-0.1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#13-TP05	0-0.1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#13-TP06	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#13-TP06	0.9-1	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	1.9-2	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP07	0-0.1	30/06/2014	93	<20	<20	<50	58	58	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#14-G-TP01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#14-SD-TP02	0-0.1	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#14-SD-TP04	0-0.1	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#14-G-TP05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#15-SS01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP01	0-0.1	1/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#15-TP02	0-0.1	1/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#15-TP02	0.2-0.3	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP03	0.1-0.2	1/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#15-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#16-SED01	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-TP01	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-TP01	2.1-2.2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP02	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-TP03	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-TP04	0-0.1	23/06/2014	165	<20	<20	69	86	160	<50	110	<100	<50	185	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-SD-HA01	0-0.1	7/07/2014	1856	<20	66	590	1200	1900	68	1600	460	68	2128	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-SD-HA02	0-0.1	7/07/2014	119	<20	<20	<50	84	84	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-SD-HA03	0-0.1	7/07/2014	320	<20	50	80	190	320	<50	220	<100	<50	295	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-SD-HA04	0-0.1	7/07/2014	379	<20	49	120	210	380	<50	300	120	<50	445	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#16-G-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#17-A-SS01[10]	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#17-SS01	Surface	2/07/2014	640	<20	<20	390	240	630	<50	610	120	<50	755	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#17-SS02	0-0.1	2/07/2014	1310	<20	<20	860	440	1300	<50	1200	350	<50	1575	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS03	0-0.1	2/07/2014	1167	<20	27	400	740	1200	51	1100	400	51	1551	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#17-SD-SS04	0-0.1	2/07/2014	370	<20	<20	120	240	360	<50	280	200	<50	505	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#17-SD-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SP-TP01	0-0.1	20/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#17-SP-TP02	0-0.1	20/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#17-TP03	0.2-0.3	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#17-TP03	1.9-2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP04	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#17-TP05	0-0.1	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table A - Soil Analytical Results

Project Number: 43376

Project Name: Box Hill North DSI RAP

			TPHs (NEPC 1999)						TRHs (NEPC 2013)							Chlorinated Benzenes				Polychlorinated Biphenyls							
			>C10-C36 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C10-C40 (Sum of Total)	C6-C10 Fraction	C6 - C10 less BTEX (F1)	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	50	50	100	100	50		20	20	0.5	0.5	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
CRC Care 2011 Soil HSL A for Direct Contact									**3300**	**4500**	**6300**			**4400**													
CRC Care 2011 Soil HSL B for Direct Contact									**4200**	**5800**	**8100**			**5600**													
CRC Care 2011 Soil HSL C for Direct Contact									**3800**	**5300**	**7400**			**5100**													
CRC Care 2011 Soil HSL D for Direct Contact									**20000**	**27000**	**38000**			**26000**													
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																											
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																											
NEPC 2013 ESL Commercial and Industrial, Coarse Soil									170	2500	6600			215													
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil									120	1300	5600			180													
NEPC 2013 Management Limits - Commercial and Industrial, Fine									1000	5000				800													
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine									1000	3500				800													
NEPC 2013 Soil HIL A																			10								1
NEPC 2013 Soil HIL B																			15								1
NEPC 2013 Soil HIL C																			10								1
NEPC 2013 Soil HIL D																			80								7
Field ID	**Sample Depth**	**Sample Date**																									
#18-SD-SS01	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#18-SED01	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#18-SED02	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#18-TP01	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#18-TP03	0.3-0.4	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-SED01	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-TP01	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-TP02	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-TP03	0-0.1	24/06/2014	107	<20	<20	<50	72	72	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-TP04	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-TP05	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-TP06	0-0.1	24/06/2014	128	<20	<20	51	67	120	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS01	0-0.1	26/06/2014	24180	<20	180	8000	16000	24000	310	**19000**	**14000**	310	33310	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-AST-SS02	0-0.1	26/06/2014	36940	<20	3700	33000	240	37000	**12000**	**26000**	<100	12000	38050	70	70	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-
#20-AST-SS03	0-0.1	26/06/2014	104	<20	<20	69	<50	69	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS04	0-0.1	26/06/2014	364	<20	<20	74	280	350	<50	280	260	<50	565	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-SD-SS05	0-0.1	26/06/2014	340	<20	<20	120	210	330	<50	260	160	<50	445	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS06	0-0.1	26/06/2014	265	<20	<20	<50	230	230	<50	200	190	<50	415	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS07	0-0.1	26/06/2014	12210	<20	<20	3900	8300	12000	<50	**11000**	2500	<50	13530	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS08	0-0.1	26/06/2014	129	<20	<20	<50	94	94	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-SD-SS09	0-0.1	26/06/2014	190	<20	<20	80	100	180	<50	140	<100	<50	215	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS10	0-0.1	26/06/2014	320	<20	<20	120	190	310	<50	250	130	<50	405	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-SS11	0-0.1	26/06/2014	1690	<20	<20	890	790	1700	<50	1400	640	<50	2065	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS12	0-0.1	26/06/2014	1132	<20	42	590	500	1100	<50	940	380	<50	1345	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP01	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0.5-0.6	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP03	0.4-0.5	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP04	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP05	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.9-1	24/06/2014	1230	<20	<20	220	1000	1200	<50	960	340	<50	1325	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP06	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP07	0-0.1	24/06/2014	175	<20	<20	<50	140	140	<50	150	<100	<50	225	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP08	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP08	0.4-0.5	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP09	0.8-0.9	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP11	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP11	0.9-1	24/06/2014	105	<20	<20	<50	70	70	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#20-TP12	0.6-0.7	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#21-SED01	0-0.1	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#21-SS01	0-0.1	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#21-TP01	0-0.1	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#21-TP01	1.9-2	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#21-TP02	0.3-0.4	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#21-SP-TP06	0.4-0.5	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP07	0.3-0.4	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP09	0.3-0.4	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#21-G-TP10	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#21-G-TP11	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-F-SS04	0-0.1	7/07/2014	1010	<20	<20	340	660	1000	<50	910	290	<50	1225	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#22-S-SS05	0-0.1	7/07/2014	1900	<20	<20	690	1200	1900	<50	1700	410	<50	2135	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-SED01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#22-TP01	0.3-0.4	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#22-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#22-TP02	0.3-0.4	2/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0-0.1	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA01	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#23-HA02	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#23-HA03	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA04	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#23-G-HA05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#23-SED01	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table A - Soil Analytical Results

Project Number: 43376

Project Name: Box Hill North DSI RAP

JBS&G

			TPHs (NEPC 1999)						TRHs (NEPC 2013)							Chlorinated Benzenes				Polychlorinated Biphenyls							
			>C10-C36 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C10-C40 (Sum of Total)	C6-C10 Fraction	C6 - C10 less BTEX (F1)	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	50	50	100	100	50		20	20	0.5	0.5	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
CRC Care 2011 Soil HSL A for Direct Contact									**3300**	**4500**	**6300**			**4400**													
CRC Care 2011 Soil HSL B for Direct Contact									**4200**	**5800**	**8100**			**5600**													
CRC Care 2011 Soil HSL C for Direct Contact									**3800**	**5300**	**7400**			**5100**													
CRC Care 2011 Soil HSL D for Direct Contact									**20000**	**27000**	**38000**			**26000**													
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																											
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																											
NEPC 2013 ESL Commercial and Industrial, Coarse Soil									170	2500	6600			215													
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil									120	1300	5600			180													
NEPC 2013 Management Limits - Commercial and Industrial, Fine									1000	5000				800													
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine									1000	3500				800													
NEPC 2013 Soil HIL A																			10								1
NEPC 2013 Soil HIL B																			15								1
NEPC 2013 Soil HIL C																			10								1
NEPC 2013 Soil HIL D																			80								7
Field ID	**Sample Depth**	**Sample Date**																									
#24-G-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#24-AST-SS02	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#24-SS03	0-0.1	4/07/2014	152	<20	<20	65	77	140	<50	130	<100	<50	205	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#24-SED01	0-0.1	4/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#24-SP-TP01	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#24-SP-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP02	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#24-TP02	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP03	0-0.1	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-F-SS01	0-0.1	4/07/2014	134	<20	<20	<50	99	99	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-S-SS02	0-0.1	4/07/2014	306	<20	<20	66	230	300	<50	210	130	<50	365	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-SD-SS03	0-0.1	4/07/2014	175	<20	<20	<50	140	140	<50	120	<100	<50	195	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-SD-SS04	0-0.1	4/07/2014	245	<20	<20	<50	210	210	<50	200	130	<50	355	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#25-G-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#25-TP02[11]	0.3-0.4	19/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-HA01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#26-HA02	0-0.1	20/06/2014	131	<20	<20	<50	96	96	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-SED01	0-0.1	20/06/2014	193	<20	<20	63	120	180	<50	140	<100	<50	215	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-SS01	0-0.1	20/06/2014	670	<20	<20	300	360	660	<50	580	140	<50	745	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-SS02	0-0.1	20/06/2014	960	<20	50	380	530	960	79	740	180	79	999	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-TP03	0-0.1	20/06/2014	98	<20	<20	<50	63	63	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-TP03	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP04	0-0.1	20/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-TP05	0-0.1	20/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#26-TP06	0.5-0.6	20/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-G-TP01	0.1-0.2	19/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-TP02[12]	0-0.1	19/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-TP02[13]	1.9-2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP03[14]	0-0.1	19/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-TP04[15]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#27-TP05[16]	0-0.1	19/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-TP06[17]	1-1.1	19/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-TP07	0-0.1	20/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-SS01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS03	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS05	0-0.1	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#27-SS06	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS07	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS08	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS09	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS10	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#28-SED02	0-0.1	18/06/2014	87	<20	<20	<50	52	52	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#28-SP-TP01	0.5-0.6	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP01	1	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#28-TP02	0.1-0.2	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#28-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.4-0.3	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#28-SP-TP03	0.9-0.8	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP04	0-0.1	7/07/2014	95	<20	<20	<50	60	60	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#29-A-SS01[18]	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#29-S-SS02	0-0.1	18/06/2014	134	<20	<20	<50	99	99	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#29-TP02	0.3-0.4	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP04	0-0.1	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#29-TP04	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP05	0-0.1	7/07/2014	85	<20	<20	<50	50	50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#29-SED01	0-0.1	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#30-F-SS01	0-0.1	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.5	<0.5	<0.5	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#30-HA01[19]	0-0.1	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#30-D-TP01	0.1-0.2	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#30-G-TP02	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#30-SP-TP03	0.1-0.2	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#30-TP04[20]	0.1-0.2	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#30-TP05	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results

Project Number: 43376

Project Name: Box Hill North DSI RAP

			TPHs (NEPC 1999)						TRHs (NEPC 2013)							Chlorinated Benzenes				Polychlorinated Biphenyls							
			>C10-C36 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C10-C40 (Sum of Total)	C6-C10 Fraction	C6 - C10 less BTEX (F1)	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Hexachlorobenzene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	50	50	100	100	50		20	20	0.5	0.5	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
CRC Care 2011 Soil HSL A for Direct Contact									**3300**	**4500**	**6300**			**4400**													
CRC Care 2011 Soil HSL B for Direct Contact									**4200**	**5800**	**8100**			**5600**													
CRC Care 2011 Soil HSL C for Direct Contact									**3800**	**5300**	**7400**			**5100**													
CRC Care 2011 Soil HSL D for Direct Contact									**20000**	**27000**	**38000**			**26000**													
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																											
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																											
NEPC 2013 ESL Commercial and Industrial, Coarse Soil									170	2500	6600			215													
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil									120	1300	5600			180													
NEPC 2013 Management Limits - Commercial and Industrial, Fine									1000	5000				800													
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine									1000	3500				800													
NEPC 2013 Soil HIL A																			10								1
NEPC 2013 Soil HIL B																			15								1
NEPC 2013 Soil HIL C																			10								1
NEPC 2013 Soil HIL D																			80								7
Field ID	**Sample Depth**	**Sample Date**																									
#31-G-SS01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#31-S-SS02	0-0.1	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#31-SD-SS03	0-0.1	17/06/2014	1070	<20	30	220	820	1100	<50	830	260	<50	1115	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#31-H-SS04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
#31-SED01	0-0.1	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#31-TP01	0-0.1	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#31-TP02	0.3-0.4	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#31-TP03	0-0.1	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#31-TP04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP04	0.3-0.4	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	-	<25	<50	<100	150	-	<50	130	110	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	0	<20	0	0	0	<0	0	0	0	0	0	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC17	Duplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
QC17/A	Triplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-	-	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-

Notes

*Criteria for Chromium (VI)

[1] Reported as '#4-SP-TP06' in laboratory report 423116-S

[2] Reported as '#6-0-SS14' in laboratory report 423382-S

[3] Reported as '#6-S-SS17' in laboratory report 423382-S

[4] Reported as '#6-S-SS18' in laboratory report 423382-S

[5] Reported as '#6-S-SS19' in laboratory report 423382-S

[6] Reported as '#6-S-SS20' in laboratory report 423382-S

[7] Reported as '#7-A-SS02' in laboratory report 423382-S

[8] Reported as 'SED01' in laboratory report 423743-S

[9] Reported as '#13-SP-TP04' in laboratory report 423678-S

[10] Reported as '#17H-SS01 (0-0.1)' in laboratory report 422618-S

[11] Reported as '#25-G-TP02 (0.3-0.4)' in laboratory report 422618-S

[12] Reported as '#27-G-TP02 (0-0.1)' in laboratory report 422618-S

[13] Reported as '#27-G-TP02 (1.9-2.0)' in laboratory report 422618-S

[14] Reported as '#27-G-TP03 (0-0.1)' in laboratory report 422618-S

[15] Reported as '#27-G-TP04 (0-0.1)' in laboratory report 422618-S

[16] Reported as '#27-G-TP05 (0-0.1)' in laboratory report 422618-S

[17] Reported as '#27-G-TP06 (1.0-1.1)' in laboratory report 422618-S

[18] Reported as '29-H-SS01' in laboratory report 422457-S

[19] Reported as '#30-SP-HA01 (0-0.1)' in laboratory report 422131-S

[20] Reported as '#30-SP-TP04 (0.1-0.2)' in laboratory report 422131-S

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

			Organochlorine Pesticides																							
			Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	delta-BHC	Chlordane	DDD	gamma-Chlordane	DDE	DDT	DDT+DDE+DDD (Sum of Total)	Dieldrin	Endosulfan alpha	Endosulfan beta	Endosulfan Sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05		0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	1
CRC Care 2011 Soil HSL A for Direct Contact																										
CRC Care 2011 Soil HSL B for Direct Contact																										
CRC Care 2011 Soil HSL C for Direct Contact																										
CRC Care 2011 Soil HSL D for Direct Contact																										
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial													*640*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space													*180*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																										
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																										
NEPC 2013 Management Limits - Commercial and Industrial, Fine																										
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																										
NEPC 2013 Soil HIL A				6					50					240					10			6			300	20
NEPC 2013 Soil HIL B				10					90					600					20			10			500	30
NEPC 2013 Soil HIL C				10					70					400					20			10			400	30
NEPC 2013 Soil HIL D				45					530					3600					100			50			2500	160
Field ID	**Sample Depth**	**Sample Date**																								
#1-A-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS02	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-SS03	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-S-SS04	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-O-SS05	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-O-SS06	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-O-SS07	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-O-SS08	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-A-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS10	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-SS12	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS14	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS15	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-SS17	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS18	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-A-SS20	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS21	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-G-SS22	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-A-SS23	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS24	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS26	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS28	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS29	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS30	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS31	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS32	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP01	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-TP01	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP02	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-TP03	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-TP04	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-SD-TP05	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-SD-TP06	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#1-SD-TP06	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS01	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-O-SS02	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-O-SS03	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-O-SS04	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-O-SS05	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-O-SS06	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.08	<0.05	<0.2	<1
#2-O-SS07	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-O-SS08	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-TP01	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-TP02	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#2-TP03	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-SD-SS01	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-A-SS02	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-A-SS03	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-A-SS04	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS05	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	0.13	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS06	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS07	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.062	<0.05	<0.2	<1
#3-O-SS08	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS09	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS10	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS11	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS12	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-O-SS13	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-A-SS15	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS16	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS17	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS18	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-S-SS19	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-S-SS20	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-S-SS21	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-SD-SS23	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-F-SS24	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-SED01	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP01	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP02	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP03	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP04	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP05	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP06	0.5-0.6	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP06	1.3-1.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP07	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#3-TP07	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organochlorine Pesticides																							
			Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	delta-BHC	Chlordane	DDD	gamma-Chlordane	DDE	DDT	DDT+DDE+DDD (Sum of Total)	Dieldrin	Endosulfan alpha	Endosulfan beta	Endosulfan Sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05		0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	1
CRC Care 2011 Soil HSL A for Direct Contact																										
CRC Care 2011 Soil HSL B for Direct Contact																										
CRC Care 2011 Soil HSL C for Direct Contact																										
CRC Care 2011 Soil HSL D for Direct Contact																										
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial													*640*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space													*180*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																										
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																										
NEPC 2013 Management Limits - Commercial and Industrial, Fine																										
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																										
NEPC 2013 Soil HIL A				6					50					240					10			6			300	20
NEPC 2013 Soil HIL B				10					90					600					20			10			500	30
NEPC 2013 Soil HIL C				10					70					400					20			10			400	30
NEPC 2013 Soil HIL D				45					530					3600					100			50			2500	160
Field ID	**Sample Depth**	**Sample Date**																								
#4-O-SS01	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS02	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS03	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS04	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS05	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS06	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS07	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS08	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS09	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-O-SS10	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-A-SS11	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS13	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS15	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS16	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS17	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS19	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS20	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-G-SS21	Surface	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-SED01	Surface	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-TP01	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-TP01	0.7-0.8	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP02	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-SP-TP05	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-SP-TP05	0.5-0.6	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-TP06[1]	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SD-TP07	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#4-SD-TP08	0.2-0.3	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#5-SS01	0-0.1	3/07/2014	<0.05	0.415	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#5-SS02	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#5-A-SS03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS05	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#5-O-SS06	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#5-O-SS07	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-IF-SS01	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS02	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS03	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS04	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.15	<0.05	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS05	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.24	<0.05	0.29	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS06	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS07	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS08	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS09	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS10	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS11	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS12	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-O-SS13	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-S-SS14[2]	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.08	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-S-SS15	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.17	<0.05	0.22	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-S-SS16	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-0-SS17[3]	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-0-SS18[4]	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-S-SS19[5]	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-0-SS20[6]	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-A-SS21	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS22	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS23	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS24	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS25	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP01	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-TP01	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP02	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#6-TP06	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#7-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SS02[7]	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#7-A-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SED01	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#7-TP01	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#7-TP02	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#7-TP02	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP03	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#7-TP04	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#7-TP05	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#8-SS01	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#8-SP-TP01	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#8-TP03	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#8-TP04	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-SP-HA01	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA02	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-G-HA04	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-G-HA04	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA05	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-HA06	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-HA07	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-HA08	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-AST-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-S-SS02	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-SD-SS03	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-SD-SS04	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-SD-SS05	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-G-TP01	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-TP02	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-TP04	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-TP05	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-A-TP06	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-A-TP06	0.4-0.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP07	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-TP08	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#9-TP08	1.4-1.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organochlorine Pesticides																							
			Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	delta-BHC	Chlordane	DDD	gamma-Chlordane	DDE	DDT	DDT+DDE+DDD (Sum of Total)	Dieldrin	Endosulfan alpha	Endosulfan beta	Endosulfan Sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05		0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	1
CRC Care 2011 Soil HSL A for Direct Contact																										
CRC Care 2011 Soil HSL B for Direct Contact																										
CRC Care 2011 Soil HSL C for Direct Contact																										
CRC Care 2011 Soil HSL D for Direct Contact																										
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial													*640*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space													*180*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																										
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																										
NEPC 2013 Management Limits - Commercial and Industrial, Fine																										
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																										
NEPC 2013 Soil HIL A				6					50					240					10			6			300	20
NEPC 2013 Soil HIL B				10					90					600					20			10			500	30
NEPC 2013 Soil HIL C				10					70					400					20			10			400	30
NEPC 2013 Soil HIL D				45					530					3600					100			50			2500	160
Field ID	**Sample Depth**	**Sample Date**																								
#10-SS01	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#10-SD-SS02	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#10-SED01	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#10-TP01	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#10-TP02	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#10-TP04	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#11-S-TP01	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#11-TP02	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#11-TP06	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#11-TP06	0.8-0.9	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP07	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#11-TP07	0.3-0.4	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP08	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#11-G-TP09	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#11-SED01[8]	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#12-A-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-SD-SS06	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	1.4	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	0.41	<0.05	<0.2	<1
#12-SD-SS07	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#12-SD-SS08	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#12-AST-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-G-SS10	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#12-G-TP01	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#12-TP03	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#12-TP05	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#12-TP05	0.3-0.4	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SED01	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#13-TP01	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#13-TP01	0.5-0.6	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP02	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#13-SP-TP03	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#13-SP-TP03	0.4-0.5	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP04[9]	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#13-TP05	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#13-TP06	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#13-TP06	0.9-1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	1.9-2	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP07	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#14-G-TP01	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#14-SD-TP02	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#14-SD-TP04	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#14-G-TP05	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#15-SS01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP01	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#15-TP02	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#15-TP02	0.2-0.3	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP03	0.1-0.2	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#15-TP04	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-SED01	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-TP01	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-TP01	2.1-2.2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP02	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-TP03	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-TP04	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-SD-HA01	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-SD-HA02	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-SD-HA03	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-SD-HA04	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#16-G-HA05	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-A-SS01[10]	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-SS01	Surface	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS03	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-SD-SS04	0-0.1	2/07/2014	<0.05	1.325	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	1.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-SD-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SP-TP01	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-SP-TP02	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-TP03	0.2-0.3	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-TP03	1.9-2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP04	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#17-TP05	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organochlorine Pesticides																							
			Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	delta-BHC	Chlordane	DDD	gamma-Chlordane	DDE	DDT	DDT+DDE+DDD (Sum of Total)	Dieldrin	Endosulfan alpha	Endosulfan beta	Endosulfan Sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05		0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	1
CRC Care 2011 Soil HSL A for Direct Contact																										
CRC Care 2011 Soil HSL B for Direct Contact																										
CRC Care 2011 Soil HSL C for Direct Contact																										
CRC Care 2011 Soil HSL D for Direct Contact																										
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial													*640*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space													*180*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																										
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																										
NEPC 2013 Management Limits - Commercial and Industrial, Fine																										
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																										
NEPC 2013 Soil HIL A				6					50					240					10			6			300	20
NEPC 2013 Soil HIL B				10					90					600					20			10			500	30
NEPC 2013 Soil HIL C				10					70					400					20			10			400	30
NEPC 2013 Soil HIL D				45					530					3600					100			50			2500	160
Field ID	**Sample Depth**	**Sample Date**																								
#18-SD-SS01	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#18-SED01	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#18-SED02	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#18-TP01	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#18-TP03	0.3-0.4	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-SED01	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.07	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-TP01	0-0.1	24/06/2014	<0.05	0.285	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.12	<0.05	0.17	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-TP02	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-TP03	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-TP04	0-0.1	24/06/2014	<0.05	0.085	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.05	<0.05	0.1	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-TP05	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-TP06	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS01	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-AST-SS02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS04	0-0.1	26/06/2014	<0.05	0.185	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-SD-SS05	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS06	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS07	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS08	0-0.1	26/06/2014	<0.05	0.135	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-SD-SS09	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS10	0-0.1	26/06/2014	<0.05	0.155	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-SS11	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS12	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP01	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0.5-0.6	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP03	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP03	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP04	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP05	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.9-1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP06	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP07	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.1	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP08	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP08	0.4-0.5	24/06/2014	<0.05	0.105	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP09	0.8-0.9	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP11	0-0.1	24/06/2014	<0.05	0.105	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP11	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#20-TP12	0.6-0.7	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SED01	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#21-SS01	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#21-TP01	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#21-TP01	1.9-2	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#21-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SP-TP06	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP07	0.3-0.4	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP09	0.3-0.4	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#21-G-TP10	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#21-G-TP11	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-F-SS04	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	0.11	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-S-SS05	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	0.34	0.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-SED01	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-TP01	0.3-0.4	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-TP02	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA01	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#23-HA02	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#23-HA03	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA04	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#23-G-HA05	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.1	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#23-SED01	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#23-SED01	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organochlorine Pesticides																							
JBS&G			Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	delta-BHC	Chlordane	DDD	gamma-Chlordane	DDE	DDT	DDT+DDE+DDD (Sum of Total)	Dieldrin	Endosulfan alpha	Endosulfan beta	Endosulfan Sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05		0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	1
CRC Care 2011 Soil HSL A for Direct Contact																										
CRC Care 2011 Soil HSL B for Direct Contact																										
CRC Care 2011 Soil HSL C for Direct Contact																										
CRC Care 2011 Soil HSL D for Direct Contact																										
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial													*640*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space													*180*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																										
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																										
NEPC 2013 Management Limits - Commercial and Industrial, Fine																										
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																										
NEPC 2013 Soil HIL A				6					50					240					10			6			300	20
NEPC 2013 Soil HIL B				10					90					600					20			10			500	30
NEPC 2013 Soil HIL C				10					70					400					20			10			400	30
NEPC 2013 Soil HIL D				45					530					3600					100			50			2500	160
Field ID	**Sample Depth**	**Sample Date**																								
#24-G-SS01	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.1	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#24-AST-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SS03	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#24-SED01	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#24-SP-TP01	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#24-SP-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP02	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#24-TP02	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP03	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#25-F-SS01	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#25-S-SS02	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#25-SD-SS03	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#25-SD-SS04	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#25-G-SS05	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#25-TP02[11]	0.3-0.4	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-HA01	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-HA02	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-SED01	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-SS01	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-SS02	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-TP03	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-TP03	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP04	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-TP05	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#26-TP06	0.5-0.6	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-G-TP01	0.1-0.2	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-TP02[12]	0-0.1	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-TP02[13]	1.9-2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP03[14]	0-0.1	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-TP04[15]	0-0.1	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.14	<0.05	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-TP05[16]	0-0.1	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-TP06[17]	1-1.1	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-TP07	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-SS01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS03	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS05	0-0.1	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#27-SS06	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS07	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS08	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS09	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS10	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED01	0-0.1	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#28-SED02	0-0.1	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#28-SP-TP01	0.5-0.6	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP01	1	18/06/2014	<0.05	0.085	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#28-TP02	0.1-0.2	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#28-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.4-0.3	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#28-SP-TP03	0.9-0.8	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP04	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#29-A-SS01[18]	0-0.1	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#29-S-SS02	0-0.1	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#29-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP04	0-0.1	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#29-TP04	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP05	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#29-SED01	0-0.1	7/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#30-F-SS01	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#30-HA01[19]	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#30-D-TP01	0.1-0.2	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#30-G-TP02	0.1-0.2	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#30-SP-TP03	0.1-0.2	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#30-TP04[20]	0.1-0.2	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#30-TP05	0.1-0.2	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organochlorine Pesticides																							
			Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	delta-BHC	Chlordane	DDD	gamma-Chlordane	DDE	DDT	DDT+DDE+DDD (Sum of Total)	Dieldrin	Endosulfan alpha	Endosulfan beta	Endosulfan Sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05		0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	1
CRC Care 2011 Soil HSL A for Direct Contact																										
CRC Care 2011 Soil HSL B for Direct Contact																										
CRC Care 2011 Soil HSL C for Direct Contact																										
CRC Care 2011 Soil HSL D for Direct Contact																										
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial													*640*													
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space													*180*													
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																										
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																										
NEPC 2013 Management Limits - Commercial and Industrial, Fine																										
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																										
NEPC 2013 Soil HIL A				6					50					240					10			6			300	20
NEPC 2013 Soil HIL B				10					90					600					20			10			500	30
NEPC 2013 Soil HIL C				10					70					400					20			10			400	30
NEPC 2013 Soil HIL D				45					530					3600					100			50			2500	160
Field ID	**Sample Depth**	**Sample Date**																								
#31-G-SS01	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-S-SS02	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-SD-SS03	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-H-SS04	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-SED01	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-TP01	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-TP02	0.3-0.4	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-TP03	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
#31-TP04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP04	0.3-0.4	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	<0.05	0.215	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.08	<0.05	0.13	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC17	Duplicate of #3-O-SS07	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC17/A	Triplicate of #3-O-SS07	2/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC19	Duplicate of #1-SS21	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC19/A	Triplicate of #1-SS21	4/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC20	Duplicate of #25-SS05	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC20/A	Triplicate of #25-SS05	4/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-

Notes
*Criteria for Chromium (VI)
[1] Reported as '#4-SP-TP06' in laboratory report 423116-S
[2] Reported as '#6-0-SS14' in laboratory report 423382-S
[3] Reported as '#6-S-SS17' in laboratory report 423382-S
[4] Reported as '#6-S-SS18' in laboratory report 423382-S
[5] Reported as '#6-S-SS19' in laboratory report 423382-S
[6] Reported as '#6-S-SS20' in laboratory report 423382-S
[7] Reported as '#7-A-SS02' in laboratory report 423382-S
[8] Reported as 'SED01' in laboratory report 423743-S
[9] Reported as '#13-SP-TP04' in laboratory report 423678-S
[10] Reported as '#17H-SS01 (0-0.1)' in laboratory report 422618-S
[11] Reported as '#25-G-TP02 (0.3-0.4)' in laboratory report 422618-S
[12] Reported as '#27-G-TP02 (0-0.1)' in laboratory report 422618-S
[13] Reported as '#27-G-TP02 (1.9-2.0)' in laboratory report 422618-S
[14] Reported as '#27-G-TP03 (0-0.1)' in laboratory report 422618-S
[15] Reported as '#27-G-TP04 (0-0.1)' in laboratory report 422618-S
[16] Reported as '#27-G-TP05 (0-0.1)' in laboratory report 422618-S
[17] Reported as '#27-G-TP06 (1.0-1.1)' in laboratory report 422618-S
[18] Reported as '29-H-SS01' in laboratory report 422457-S
[19] Reported as '#30-SP-HA01 (0-0.1)' in laboratory report 422131-S
[20] Reported as '#30-SP-TP04 (0.1-0.2)' in laboratory report 422131-S

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

			Organophosphorus Pesticides																									
			Azinphos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Mevinphos	Monocrotophos	Parathion	Parathion methyl	Phorate	Profenofos	Prothiofos	Ronnel	Stirophos	Trichloronate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.5	1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	10	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																												
CRC Care 2011 Soil HSL B for Direct Contact																												
CRC Care 2011 Soil HSL C for Direct Contact																												
CRC Care 2011 Soil HSL D for Direct Contact																												
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																												
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																												
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																												
NEPC 2013 Management Limits - Commercial and Industrial, Fine																												
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																												
NEPC 2013 Soil HIL A					160																							
NEPC 2013 Soil HIL B					340																							
NEPC 2013 Soil HIL C					250																							
NEPC 2013 Soil HIL D					2000																							
Field ID	**Sample Depth**	**Sample Date**																										
#1-A-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS03	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-S-SS04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-O-SS05	0-0.1	25/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-O-SS06	0-0.1	25/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-O-SS07	0-0.1	25/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-O-SS08	0-0.1	25/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#1-A-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS12	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS14	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS15	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS17	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SS18	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS20	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-G-SS22	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS23	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS24	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS26	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS28	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS29	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS30	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS31	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-A-SS32	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP01	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP03	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SD-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SD-TP06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-SD-TP06	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-O-SS01	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-O-SS02	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-O-SS03	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-O-SS04	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-O-SS05	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-O-SS06	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-O-SS07	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-O-SS08	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#2-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-SD-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS05	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS06	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS07	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS08	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS09	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS10	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS11	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS12	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-O-SS13	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-A-SS15	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS16	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-A-SS17	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS18	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS19	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS20	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-S-SS21	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#3-SD-SS23	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-F-SS24	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-SED01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP06	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP06	1.3-1.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP07	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP07	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organophosphorus Pesticides																									
			Azinphos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Mevinphos	Monocrotophos	Parathion	Parathion methyl	Phorate	Profenofos	Prothiofos	Ronnel	Stirophos	Trichloronate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.5	1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	10	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																												
CRC Care 2011 Soil HSL B for Direct Contact																												
CRC Care 2011 Soil HSL C for Direct Contact																												
CRC Care 2011 Soil HSL D for Direct Contact																												
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																												
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																												
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																												
NEPC 2013 Management Limits - Commercial and Industrial, Fine																												
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																												
NEPC 2013 Soil HIL A					160																							
NEPC 2013 Soil HIL B					340																							
NEPC 2013 Soil HIL C					250																							
NEPC 2013 Soil HIL D					2000																							
Field ID	**Sample Depth**	**Sample Date**																										
#4-O-SS01	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS02	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS03	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS04	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS05	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS06	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS07	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS08	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS09	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-O-SS10	Surface	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#4-A-SS11	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS13	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS15	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS16	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS17	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS19	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-A-SS20	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-G-SS21	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SED01	Surface	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP01	0.7-0.8	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SP-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SP-TP05	0.5-0.6	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SD-TP07	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4-SD-TP08	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-SS02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-A-SS04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5-O-SS05	0-0.1	3/07/2014	0	-	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#5-O-SS06	0-0.1	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#5-O-SS07	0-0.1	3/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-IF-SS01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-O-SS02	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS03	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS04	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS05	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS06	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS07	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS08	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS09	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS10	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS11	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS12	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-O-SS13	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-S-SS14[2]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-S-SS15	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-S-SS16	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-0-SS17[3]	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-0-SS18[4]	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-S-SS19[5]	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-0-SS20[6]	0-0.1	27/06/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
#6-A-SS21	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS22	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS23	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS24	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-A-SS25	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP01	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP06	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SS02[7]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-A-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-SED01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP02	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP03	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#7-TP05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-SP-TP01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-TP03	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#8-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA01	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-G-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-G-HA04	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA07	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-HA08	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-AST-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-S-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SD-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SD-SS04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SD-SS05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-G-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP02	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP05	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-A-TP06	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-A-TP06	0.4-0.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP07	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP08	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-TP08	1.4-1.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

			Organophosphorus Pesticides																									
Field ID	Sample Depth	Sample Date	Azinphos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Mevinphos	Monocrotophos	Parathion	Parathion methyl	Phorate	Profenofos	Prothiofos	Ronnel	Stirophos	Trichloronate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.5	1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	10	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																												
CRC Care 2011 Soil HSL B for Direct Contact																												
CRC Care 2011 Soil HSL C for Direct Contact																												
CRC Care 2011 Soil HSL D for Direct Contact																												
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																												
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																												
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																												
NEPC 2013 Management Limits - Commercial and Industrial, Fine																												
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																												
NEPC 2013 Soil HIL A					160																							
NEPC 2013 Soil HIL B					340																							
NEPC 2013 Soil HIL C					250																							
NEPC 2013 Soil HIL D					2000																							
#10-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-SD-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-TP01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#10-TP04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-S-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP02	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP06	0.8-0.9	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP07	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP07	0.3-0.4	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP08	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-G-TP09	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-SED01[8]	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-A-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-SD-SS06	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-SD-SS07	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-SD-SS08	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-AST-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-G-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-G-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP05	0.3-0.4	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SED01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP01	0.5-0.6	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP02	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SP-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-SP-TP03	0.4-0.5	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP04[9]	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	0.9-1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP06	1.9-2	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP07	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-G-TP01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-SD-TP02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-SD-TP04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#14-G-TP05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-SS01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP02	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP02	0.2-0.3	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP03	0.1-0.2	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#15-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SED01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP01	2.1-2.2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP02	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP03	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SD-HA01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SD-HA02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SD-HA03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-SD-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#16-G-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-A-SS01[10]	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SS01	Surface	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SD-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SP-TP01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-SP-TP02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP03	0.2-0.3	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP03	1.9-2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP05	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organophosphorus Pesticides																									
			Azinphos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Mevinphos	Monocrotophos	Parathion	Parathion methyl	Phorate	Profenofos	Prothiofos	Ronnel	Stirophos	Trichloronate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.5	1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	10	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																												
CRC Care 2011 Soil HSL B for Direct Contact																												
CRC Care 2011 Soil HSL C for Direct Contact																												
CRC Care 2011 Soil HSL D for Direct Contact																												
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																												
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																												
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																												
NEPC 2013 Management Limits - Commercial and Industrial, Fine																												
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																												
NEPC 2013 Soil HIL A					160																							
NEPC 2013 Soil HIL B					340																							
NEPC 2013 Soil HIL C					250																							
NEPC 2013 Soil HIL D					2000																							
Field ID	**Sample Depth**	**Sample Date**																										
#18-SD-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-SED01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-SED02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP03	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-SED01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP05	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP06	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS04	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS05	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-AST-SS06	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS07	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS08	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS09	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS10	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SS11	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-SD-SS12	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP02	0.5-0.6	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP03	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP05	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP06	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP07	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP08	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP08	0.4-0.5	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP09	0.8-0.9	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP11	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP11	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP12	0.6-0.7	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP01	1.9-2	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-SP-TP06	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP07	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-TP09	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-G-TP10	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#21-G-TP11	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-F-SS04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-S-SS05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-SED01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP01	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-HA04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-G-HA05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organophosphorus Pesticides																									
			Azinphos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Mevinphos	Monocrotophos	Parathion	Parathion methyl	Phorate	Profenofos	Prothiofos	Ronnel	Stirophos	Trichloronate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.5	1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	10	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																												
CRC Care 2011 Soil HSL B for Direct Contact																												
CRC Care 2011 Soil HSL C for Direct Contact																												
CRC Care 2011 Soil HSL D for Direct Contact																												
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																												
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																												
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																												
NEPC 2013 Management Limits - Commercial and Industrial, Fine																												
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																												
NEPC 2013 Soil HIL A					160																							
NEPC 2013 Soil HIL B					340																							
NEPC 2013 Soil HIL C					250																							
NEPC 2013 Soil HIL D					2000																							
Field ID	**Sample Depth**	**Sample Date**																										
#24-G-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-AST-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SED01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SP-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-SP-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP02	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#24-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-F-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-S-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-SD-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-SD-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-G-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-TP02[11]	0.3-0.4	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-HA01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-HA02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-SED01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-SS01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-SS02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP03	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP03	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP04	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP05	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#26-TP06	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-G-TP01	0.1-0.2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP02[12]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP02[13]	1.9-2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP03[14]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP04[15]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP05[16]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP06[17]	1-1.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP07	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS03	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS05	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS06	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS07	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS08	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS09	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-SS10	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SED02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP01	0.5-0.6	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP01	1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP02	0.1-0.2	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.4-0.3	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.9-0.8	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#28-TP04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-A-SS01[18]	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-S-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP04	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-SED01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-F-SS01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-HA01[19]	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-D-TP01	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-G-TP02	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-SP-TP03	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-TP04[20]	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#30-TP05	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results

Project Number: 43376

Project Name: Box Hill North DSI RAP

			Organophosphorus Pesticides																									
			Azinphos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Mevinphos	Monocrotophos	Parathion	Parathion methyl	Phorate	Profenofos	Prothiofos	Ronnel	Stirophos	Trichloronate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.5	1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	10	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																												
CRC Care 2011 Soil HSL B for Direct Contact																												
CRC Care 2011 Soil HSL C for Direct Contact																												
CRC Care 2011 Soil HSL D for Direct Contact																												
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																												
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																												
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																												
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																												
NEPC 2013 Management Limits - Commercial and Industrial, Fine																												
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																												
NEPC 2013 Soil HIL A					160																							
NEPC 2013 Soil HIL B					340																							
NEPC 2013 Soil HIL C					250																							
NEPC 2013 Soil HIL D					2000																							
Field ID	**Sample Depth**	**Sample Date**																										
#31-G-SS01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-S-SS02	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-SD-SS03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-H-SS04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-SED01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP02	0.3-0.4	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP04	0.3-0.4	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC17	Duplicate of #3-O-SS07	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC17/A	Triplicate of #3-O-SS07	2/07/2014	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	-	-	-	-	-	-	-	-	-	<0.1	-	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

*Criteria for Chromium (VI)

1 Reported as '#4-SP-TP06' in laboratory report 423116-S

2 Reported as '#6-0-SS14' in laboratory report 423382-S

3 Reported as '#6-S-SS17' in laboratory report 423382-S

4 Reported as '#6-S-SS18' in laboratory report 423382-S

5 Reported as '#6-S-SS19' in laboratory report 423382-S

6 Reported as '#6-S-SS20' in laboratory report 423382-S

7 Reported as '#7-A-SS02' in laboratory report 423382-S

8 Reported as 'SED01' in laboratory report 423743-S

9 Reported as '#13-SP-TP04' in laboratory report 423678-S

10 Reported as '#17H-SS01 (0-0.1)' in laboratory report 422618-S

11 Reported as '#25-G-TP02 (0.3-0.4)' in laboratory report 422618-S

12 Reported as '#27-G-TP02 (0-0.1)' in laboratory report 422618-S

13 Reported as '#27-G-TP02 (1.9-2.0)' in laboratory report 422618-S

14 Reported as '#27-G-TP03 (0-0.1)' in laboratory report 422618-S

15 Reported as '#27-G-TP04 (0-0.1)' in laboratory report 422618-S

16 Reported as '#27-G-TP05 (0-0.1)' in laboratory report 422618-S

17 Reported as '#27-G-TP06 (1.0-1.1)' in laboratory report 422618-S

18 Reported as '29-H-SS01' in laboratory report 422457-S

19 Reported as '#30-SP-HA01 (0-0.1)' in laboratory report 422131-S

20 Reported as '#30-SP-TP04 (0.1-0.2)' in laboratory report 422131-S

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Herbicides & Fungicides																Organic Sulfur Compounds	Major Cations	Asbestos	Other									
			2,4,5-T	2,4-D	2,4-DB	Bromoxynil	Clopyralid	Dicamba	Dichloroprop	Dinitro-o-cresol	Dinoseb	Fenoprop	MCPA	MCPB	Mecoprop	Picloram	Actril (Ioxynil)	Triclopyr	Carbon disulfide	Cation Exchange Capacity	Asbestos	Moisture	Total Organic Carbon (Walkley Black)	3,5-Dichlorobenzoic acid	4-CPA	2,4,6-T	2,6-D	o-chlorophenoxy acetic acid	Acifluorfen	DCPA (Chlorthal) Diacid	MCPP
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	ww%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	<0.001	0.1	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																					**0.001**										
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A			600	900									600	600	600	4500															
NEPC 2013 Soil HIL B			900	1600									900	900	900	6600															
NEPC 2013 Soil HIL C			800	1300									800	800	800	5700															
NEPC 2013 Soil HIL D			5000	9000									5000	5000	5000	35000															
Field ID	**Sample Depth**	**Sample Date**																													
#1-A-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-SS01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile, amosite asbestos detected**	-	-	-	-	-	-	-	-	-	-
#1-SS02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	20	-	-	-	-	-	-	-	-	-
#1-SS03	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-S-SS04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#1-O-SS05	0-0.1	25/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#1-O-SS06	0-0.1	25/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#1-O-SS07	0-0.1	25/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	10	-	-	-	-	-	-	-	-	-
#1-O-SS08	0-0.1	25/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#1-A-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile, crocidolite asbestos detected**	-	-	-	-	-	-	-	-	-	-
#1-A-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	-	-	-	-	-	-	-
#1-SS12	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-SS14	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-SS15	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-
#1-SS17	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-SS18	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#1-A-SS20	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile, crocidolite asbestos detected**	-	-	-	-	-	-	-	-	-	-
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.1	-	-	-	-	-	-	-	-	-
#1-G-SS22	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-	-	-
#1-A-SS23	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-A-SS24	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-A-SS26	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-A-SS28	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile, crocidolite, amosite asbestos detected**	-	-	-	-	-	-	-	-	-	-
#1-A-SS29	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-A-SS30	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-A-SS31	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-A-SS32	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#1-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	3.5	-	-	-	-	-	-	-	-	-
#1-TP01	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	-	-
#1-TP02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
#1-TP03	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	17	-	-	-	-	-	-	-	-	-
#1-TP04	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
#1-SD-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	<0.001	10	-	-	-	-	-	-	-	-	-
#1-SD-TP06	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	2	-	-	-	-	-	-	-	-	-
#1-SD-TP06	0.4-0.5	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	-	-	-	-	-	-	-	-	-
#2-O-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	-	-	-	-	-	-	-
#2-O-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.8	-	-	-	-	-	-	-	-	-
#2-O-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#2-O-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-
#2-O-SS05	0-0.1	2/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#2-O-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-
#2-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#2-O-SS08	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#2-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	10	-	-	-	-	-	-	-	-	-
#2-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#2-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	-	-	-	-	-	-	-
#3-SD-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	7.5	-	-	-	-	-	-	-	-	-
#3-A-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	4.6	-	-	-	-	-	-	-	-	-
#3-A-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	3.8	-	-	-	-	-	-	-	-	-
#3-A-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.6	-	-	-	-	-	-	-	-	-
#3-O-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#3-O-SS06	0-0.1	2/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#3-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.4	-	-	-	-	-	-	-	-	-
#3-O-SS08	0-0.1	2/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#3-O-SS09	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-
#3-O-SS10	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-	-	-	-	-	-	-	-
#3-O-SS11	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	-	-	-	-	-	-	-
#3-O-SS12	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#3-O-SS13	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#3-A-SS15	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#3-A-SS16	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#3-A-SS17	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#3-S-SS18	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	13	-	-	-	-	-	-	-	-	-
#3-S-SS19	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	9.7	-	-	-	-	-	-	-	-	-
#3-S-SS20	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	15	-	-	-	-	-	-	-	-	-
#3-S-SS21	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-
#3-SD-SS23	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-
#3-F-SS24	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	17	-	-	-	-	-	-	-	-	-
#3-SED01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-
#3-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#3-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	13	-	-	-	-	-	-	-	-	-
#3-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#3-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile, amosite asbestos detected**	19	-	-	-	-	-	-	-	-	-
#3-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#3-TP05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
#3-TP06	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#3-TP06	1.3-1.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#3-TP07	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#3-TP07	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.4	-	14	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results

Project Number: 43376

Project Name: Box Hill North DSI RAP

			Herbicides & Fungicides																Organic Sulfur Compounds	Major Cations	Asbestos	Other									
			2,4,5-T	2,4-D	2,4-DB	Bromoxynil	Clopyralid	Dicamba	Dichloroprop	Dinitro-o-cresol	Dinoseb	Fenoprop	MCPA	MCPB	Mecoprop	Picloram	Actril (Ioxynil)	Triclopyr	Carbon disulfide	Cation Exchange Capacity	Asbestos	Moisture	Total Organic Carbon (Walkley Black)	3,5-Dichlorobenzoic acid	4-CPA	2,4,6-T	2,6-D	o-chlorophenoxy acetic acid	Acifluorfen	DCPA (Chlorthal) Diacid	MCPP
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	ww%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	<0.001	0.1	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																					**0.001**										
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A			600	900									600	600	600	4500															
NEPC 2013 Soil HIL B			900	1600									900	900	900	6600															
NEPC 2013 Soil HIL C			800	1300									800	800	800	5700															
NEPC 2013 Soil HIL D			5000	9000									5000	5000	5000	35000															
Field ID	**Sample Depth**	**Sample Date**																													
#4-O-SS01	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	-	-	-	-	-	-
#4-O-SS02	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	-	-	-	-	-	-	-
#4-O-SS03	Surface	3/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	9	-	-	-	-	-	-	-	-	-
#4-O-SS04	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-
#4-O-SS05	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	-	-	-	-	-	-	-	-	-
#4-O-SS06	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-	-	-	-	-	-	-	-
#4-O-SS07	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.1	-	-	-	-	-	-	-	-	-
#4-O-SS08	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.8	-	-	-	-	-	-	-	-	-
#4-O-SS09	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-	-	-	-	-	-	-	-
#4-O-SS10	Surface	3/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	29	-	-	-	-	-	-	-	-	-
#4-A-SS11	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#4-A-SS13	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#4-A-SS15	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#4-A-SS16	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#4-A-SS17	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#4-A-SS19	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#4-A-SS20	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#4-G-SS21	Surface	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#4-SED01	Surface	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-
#4-TP01	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.5	-	-	-	-	-	-	-	-	-
#4-TP01	0.7-0.8	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-
#4-TP02	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.5	-	-	-	-	-	-	-	-	-
#4-SP-TP05	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#4-SP-TP05	0.5-0.6	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0-0.1	25/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	20	-	-	-	-	-	-	-	-	-
#4-TP06[1]	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.8	-	19	-	-	-	-	-	-	-	-	-
#4-SD-TP07	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	26	-	-	-	-	-	-	-	-	-
#4-SD-TP08	0.2-0.3	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	7.2	-	-	-	-	-	-	-	-	-
#5-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	5.6	-	-	-	-	-	-	-	-	-
#5-SS02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	6.7	-	-	-	-	-	-	-	-	-
#5-A-SS03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#5-A-SS04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#5-O-SS05	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#5-O-SS06	0-0.1	3/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	8	-	-	-	-	-	-	-	-	-
#5-O-SS07	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	-	-
#6-IF-SS01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	6.4	-	-	-	-	-	-	-	-	-
#6-O-SS02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.4	-	-	-	-	-	-	-	-	-
#6-O-SS03	0-0.1	27/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	8.2	-	-	-	-	-	-	-	-	-
#6-O-SS04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#6-O-SS05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#6-O-SS06	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-	-	-	-	-	-	-	-
#6-O-SS07	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.3	-	-	-	-	-	-	-	-	-
#6-O-SS08	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	-	-	-	-	-	-	-	-	-
#6-O-SS09	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	-	-	-	-	-	-	-
#6-O-SS10	0-0.1	27/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	5.6	-	-	-	-	-	-	-	-	-
#6-O-SS11	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-
#6-O-SS12	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-
#6-O-SS13	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	-	-	-	-	-	-	-
#6-S-SS14[2]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	19	-	-	-	-	-	-	-	-	-
#6-S-SS15	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	21	-	-	-	-	-	-	-	-	-
#6-S-SS16	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	28	-	-	-	-	-	-	-	-	-
#6-0-SS17[3]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#6-0-SS18[4]	0-0.1	27/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	8.3	-	-	-	-	-	-	-	-	-
#6-S-SS19[5]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-
#6-0-SS20[6]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-
#6-A-SS21	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#6-A-SS22	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#6-A-SS23	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#6-A-SS24	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#6-A-SS25	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#6-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	29	-	-	-	-	-	-	-	-	-
#6-TP01	0.5-0.6	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#6-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
#6-TP06	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	5.5	-	-	-	-	-	-	-	-	-
#7-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile asbestos detected**	-	-	-	-	-	-	-	-	-	-
#7-SS02[7]	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.3	-	-	-	-	-	-	-	-	-
#7-A-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#7-A-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#7-SED01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	-	-
#7-TP01	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#7-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	7.3	-	-	-	-	-	-	-	-	-
#7-TP02	0.3-0.4	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#7-TP03	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-	-	-	-	-	-	-	-
#7-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-
#7-TP05	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-	-	-
#8-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**Chrysotile asbestos detected**	11	-	-	-	-	-	-	-	-	-
#8-SP-TP01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
#8-TP03	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.2	-	-	-	-	-	-	-	-	-
#8-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	-	-	-	-	-	-	-	-	-
#9-SP-HA01	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#9-SP-HA02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#9-G-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#9-G-HA04	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	21	-	-	-	-	-	-	-	-	-
#9-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	22	-	-	-	-	-	-	-	-	-
#9-HA06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	7.9	-	-	-	-	-	-	-	-	-
#9-HA07	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.3	-	-	-	-	-	-	-	-	-
#9-HA08	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	22	-	-	-	-	-	-	-	-	-
#9-AST-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.7	-	-	-	-	-	-	-	-	-
#9-S-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	20	-	-	-	-	-	-	-	-	-
#9-SD-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	16	-	-	-	-	-	-	-	-	-
#9-SD-SS04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	13	-	-	-	-	-	-	-	-	-
#9-SD-SS05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	16	-	-	-	-	-	-	-	-	-
#9-G-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#9-TP02	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#9-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#9-TP05	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#9-A-TP06	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
#9-A-TP06	0.4-0.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#9-TP07	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	17	-	-	-	-	-	-	-	-	-
#9-TP08	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#9-TP08	1.4-1.5	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Herbicides & Fungicides																Organic Sulfur Compounds	Major Cations	Asbestos	Other									
			2,4,5-T	2,4-D	2,4-DB	Bromoxynil	Clopyralid	Dicamba	Dichloroprop	Dinitro-o-cresol	Dinoseb	Fenoprop	MCPA	MCPB	Mecoprop	Picloram	Actril (Ioxynil)	Triclopyr	Carbon disulfide	Cation Exchange Capacity	Asbestos	Moisture	Total Organic Carbon (Walkley Black)	3,5-Dichlorobenzoic acid	4-CPA	2,4,6-T	2,6-D	o-chlorophenoxy acetic acid	Acifluorfen	DCPA (Chlorthal) Diacid	MCPP
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	ww%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	<0.001	0.1	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																					**0.001**										
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A			600	900									600	600	600	4500															
NEPC 2013 Soil HIL B			900	1600									900	900	900	6600															
NEPC 2013 Soil HIL C			800	1300									800	800	800	5700															
NEPC 2013 Soil HIL D			5000	9000									5000	5000	5000	35000															
Field ID	**Sample Depth**	**Sample Date**																													
#10-SS01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-
#10-SD-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#10-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-
#10-TP01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#10-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#10-TP04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#11-S-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	26	-	-	-	-	-	-	-	-	-
#11-TP02	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	24	-	-	-	-	-	-	-	-	-
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	10	-	-	-	-	-	-	-	-	-
#11-TP06	0.8-0.9	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#11-TP07	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#11-TP07	0.3-0.4	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.7	-	13	-	-	-	-	-	-	-	-	-
#11-G-TP08	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#11-G-TP09	0-0.1	1/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	22	-	-	-	-	-	-	-	-	-
#11-SED01[8]	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	24	-	-	-	-	-	-	-	-	-
#12-A-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#12-A-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#12-A-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#12-A-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#12-SD-SS06	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	7.1	-	-	-	-	-	-	-	-	-
#12-SD-SS07	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	16	-	-	-	-	-	-	-	-	-
#12-SD-SS08	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	10	-	-	-	-	-	-	-	-	-
#12-AST-SS09	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#12-G-SS10	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	-	-	-	-	-	-	-	-	-
#12-G-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.7	-	-	-	-	-	-	-	-	-
#12-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#12-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#12-TP05	0.3-0.4	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	13	-	-	-	-	-	-	-	-	-
#13-SED01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-	-
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#13-TP01	0.5-0.6	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	18	-	-	-	-	-	-	-	-	-
#13-TP02	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#13-SP-TP03	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.5	-	-	-	-	-	-	-	-	-
#13-SP-TP03	0.4-0.5	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#13-TP04[9]	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#13-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#13-TP06	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#13-TP06	0.9-1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#13-TP06	1.9-2	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#13-TP07	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#14-G-TP01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	-	-	-	-	-	-	-	-	-
#14-SD-TP02	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.5	-	-	-	-	-	-	-	-	-
#14-SD-TP04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	7	-	-	-	-	-	-	-	-	-
#14-G-TP05	0-0.1	3/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	15	-	-	-	-	-	-	-	-	-
#15-SS01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#15-TP01	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	10	-	-	-	-	-	-	-	-	-
#15-TP02	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	20	-	-	-	-	-	-	-	-	-
#15-TP02	0.2-0.3	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-	-
#15-TP03	0.1-0.2	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	6.8	-	-	-	-	-	-	-	-	-
#15-TP04	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.9	-	-	-	-	-	-	-	-	-
#16-SED01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-
#16-TP01	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	7.9	-	-	-	-	-	-	-	-	-
#16-TP01	2.1-2.2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.7	-	-	-	-	-	-	-	-	-
#16-TP02	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.6	-	-	-	-	-	-	-	-	-
#16-TP03	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	-	-	-	-	-	-	-
#16-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	-	-	-	-	-	-	-
#16-SD-HA01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	6.5	-	-	-	-	-	-	-	-	-
#16-SD-HA02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	-	-	-	-	-	-	-	-
#16-SD-HA03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	4.7	-	-	-	-	-	-	-	-	-
#16-SD-HA04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.3	-	-	-	-	-	-	-	-	-
#16-G-HA05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2	-	-	-	-	-	-	-	-	-
#17-A-SS01[10]	0-0.1	20/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	5.7	-	-	-	-	-	-	-	-	-
#17-SS01	Surface	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	-	-	-	-	-	-	-	-	-
#17-SS02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8	-	-	-	-	-	-	-	-	-
#17-SD-SS03	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-	-	-	-	-	-	-	-
#17-SD-SS04	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	-	-	-	-	-	-	-	-	-
#17-SD-SS05	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#17-SD-SS06	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#17-SP-TP01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
#17-SP-TP02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#17-TP03	0.2-0.3	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#17-TP03	1.9-2	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#17-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#17-TP05	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.8	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Herbicides & Fungicides																Organic Sulfur Compounds	Major Cations	Asbestos	Other									
			2,4,5-T	2,4-D	2,4-DB	Bromoxynil	Clopyralid	Dicamba	Dichloroprop	Dinitro-o-cresol	Dinoseb	Fenoprop	MCPA	MCPB	Mecoprop	Picloram	Actril (Ioxynil)	Triclopyr	Carbon disulfide	Cation Exchange Capacity	Asbestos	Moisture	Total Organic Carbon (Walkley Black)	3,5-Dichlorobenzoic acid	4-CPA	2,4,6-T	2,6-D	o-chlorophenoxy acetic acid	Acifluorfen	DCPA (Chlorthal) Diacid	MCPP
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	ww%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	<0.001	0.1	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																					**0.001**										
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A			600	900									600	600	600	4500															
NEPC 2013 Soil HIL B			900	1600									900	900	900	6600															
NEPC 2013 Soil HIL C			800	1300									800	800	800	5700															
NEPC 2013 Soil HIL D			5000	9000									5000	5000	5000	35000															
Field ID	**Sample Depth**	**Sample Date**																													
#18-SD-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	19	-	-	-	-	-	-	-	-	-
#18-SED01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#18-SED02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	-	-	-	-	-	-	-	-	-
#18-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.4	-	-	-	-	-	-	-	-	-
#18-TP01	0.8-0.9	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
#18-TP03	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	14	-	-	-	-	-	-	-	-	-
#19-SED01	0-0.1	24/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	8.9	-	-	-	-	-	-	-	-	-
#19-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	17	-	-	-	-	-	-	-	-	-
#19-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	5.6	-	-	-	-	-	-	-	-	-
#19-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.1	-	-	-	-	-	-	-	-	-
#19-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	10	-	-	-	-	-	-	-	-	-
#19-TP05	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#19-TP06	0-0.1	24/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.001	21	-	-	-	-	-	-	-	-	-
#19-TP06	0.3-0.4	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#20-SD-SS01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#20-AST-SS02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	11	-	-	-	-	-	-	-	-	-
#20-AST-SS03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#20-SD-SS04	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	16	-	-	-	-	-	-	-	-	-
#20-SD-SS05	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-
#20-AST-SS06	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#20-SD-SS07	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-
#20-SD-SS08	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41	-	-	-	-	-	-	-	-	-
#20-SD-SS09	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	44	-	-	-	-	-	-	-	-	-
#20-SD-SS10	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	27	-	-	-	-	-	-	-	-	-
#20-SS11	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	-	-	-	-	-	-	-	-	-
#20-SD-SS12	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	-	-	-	-	-	-	-	-
#20-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#20-TP02	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#20-TP02	0.5-0.6	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#20-TP03	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
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#20-TP04	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	20	-	-	-	-	-	-	-	-	-
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#20-TP05	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	240000	-	-	-	-	-	-	-	-
#20-TP06	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
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#20-TP08	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
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#20-TP11	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.4	-	-	-	-	-	-	-	-	-
#20-TP11	0.9-1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	-	-	-	-	-	-
#20-TP12	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	17	-	-	-	-	-	-	-	-	-
#20-TP12	0.6-0.7	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-
#21-SED01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-
#21-SS01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	2.3	-	-	-	-	-	-	-	-	-
#21-TP01	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	10	-	-	-	-	-	-	-	-	-
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#21-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-
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#21-TP07	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#21-TP08	0.3-0.4	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
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#21-G-TP10	0-0.1	3/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	21	-	-	-	-	-	-	-	-	-
#21-G-TP11	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-	-	-	-	-	-	-	-
#22-A-SS01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#22-A-SS02	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#22-A-SS03	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#22-F-SS04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	2.3	-	-	-	-	-	-	-	-	-
#22-S-SS05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	9.2	-	-	-	-	-	-	-	-	-
#22-A-SS06	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#22-SED01	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#22-TP01	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
#22-TP02	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#22-TP02	0.3-0.4	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	17	-	-	-	-	-	-	-	-	-
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#22-G-TP03	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.9	-	12	-	-	-	-	-	-	-	-	-
#22-TP04	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#22-TP04	0.4-0.5	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#23-HA01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#23-HA02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
#23-HA03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#23-HA03	0.4-0.5	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-
#23-HA04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#23-G-HA05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	-	-	-	-	-	-	-	-
#23-SED01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.8	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G			Herbicides & Fungicides																Organic Sulfur Compounds	Major Cations	Asbestos	Other									
			2,4,5-T	2,4-D	2.4-DB	Bromoxynil	Clopyralid	Dicamba	Dichloroprop	Dinitro-o-cresol	Dinoseb	Fenoprop	MCPA	MCPB	Mecoprop	Picloram	Actril (Ioxynil)	Triclopyr	Carbon disulfide	Cation Exchange Capacity	Asbestos	Moisture	Total Organic Carbon (Walkley Black)	3,5-Dichlorobenzoic acid	4-CPA	2,4,6-T	2,6-D	o-chlorophenoxy acetic acid	Acifluorfen	DCPA (Chlorthal) Diacid	MCPP
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	ww%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	<0.001	0.1	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																					**0.001**										
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A			600	900									600	600	600	4500															
NEPC 2013 Soil HIL B			900	1600									900	900	900	6600															
NEPC 2013 Soil HIL C			800	1300									800	800	800	5700															
NEPC 2013 Soil HIL D			5000	9000									5000	5000	5000	35000															
Field ID	**Sample Depth**	**Sample Date**																													
#24-G-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-
#24-AST-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	-	-	-	-	-	-
#24-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	20	-	-	-	-	-	-	-	-	-
#24-SED01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-
#24-SP-TP01	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#24-SP-TP01	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.6	-	10	-	-	-	-	-	-	-	-	-
#24-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
#24-TP02	0.3-0.4	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	-	-
#24-TP03	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	17	-	-	-	-	-	-	-	-	-
#25-F-SS01	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	3.7	-	-	-	-	-	-	-	-	-
#25-S-SS02	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	31	-	-	-	-	-	-	-	-	-
#25-SD-SS03	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	13	-	-	-	-	-	-	-	-	-
#25-SD-SS04	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	19	-	-	-	-	-	-	-	-	-
#25-G-SS05	0-0.1	4/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#25-TP02[11]	0.3-0.4	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	21	-	-	-	-	-	-	-	-	-
#26-HA01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-
#26-HA02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	5.5	-	-	-	-	-	-	-	-	-
#26-SED01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	-	-	-	-	-	-	-	-	-
#26-SS01	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	7.8	-	-	-	-	-	-	-	-	-
#26-SS02	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	18	-	-	-	-	-	-	-	-	-
#26-TP03	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	21	-	-	-	-	-	-	-	-	-
#26-TP03	0.5-0.6	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#26-TP04	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	2.4	-	-	-	-	-	-	-	-	-
#26-TP05	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
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#27-G-TP01	0.1-0.2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	-	-
#27-TP02[12]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#27-TP02[13]	1.9-2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-	-	-
#27-TP03[14]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	23	-	-	-	-	-	-	-	-	-
#27-TP04[15]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-
#27-TP05[16]	0-0.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
#27-TP06[17]	1-1.1	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
#27-TP07	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.5	-	-	-	-	-	-	-	-	-
#27-SS01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS03	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS05	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	19	-	-	-	-	-	-	-	-	-
#27-SS06	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS07	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS08	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS09	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#27-SS10	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#28-SED01	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-
#28-SED02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66	-	-	-	-	-	-	-	-	-
#28-SP-TP01	0.5-0.6	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	-	-	-	-
#28-SP-TP01	1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.1	-	-	-	-	-	-	-	-	-
#28-TP02	0.1-0.2	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	19	-	-	-	-	-	-	-	-	-
#28-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.4-0.3	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	20	-	-	-	-	-	-	-	-	-
#28-SP-TP03	0.9-0.8	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#28-TP04	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#29-A-SS01[18]	0-0.1	18/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	27	-	-	-	-	-	-	-	-	-
#29-S-SS02	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	24	-	-	-	-	-	-	-	-	-
#29-TP02	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
#29-TP04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
#29-TP04	0.3-0.4	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-
#29-TP05	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
#29-SED01	0-0.1	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-
#30-F-SS01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	<0.001	15	-	-	-	-	-	-	-	-	-
#30-HA01[19]	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	19	-	-	-	-	-	-	-	-	-
#30-D-TP01	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#30-G-TP02	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#30-SP-TP03	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#30-TP04[20]	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
#30-TP05	0.1-0.2	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G			Herbicides & Fungicides																Organic Sulfur Compounds	Major Cations	Asbestos	Other									
			2,4,5-T	2,4-D	2,4-DB	Bromoxynil	Clopyralid	Dicamba	Dichloroprop	Dinitro-o-cresol	Dinoseb	Fenoprop	MCPA	MCPB	Mecoprop	Picloram	Actril (Ioxynil)	Triclopyr	Carbon disulfide	Cation Exchange Capacity	Asbestos	Moisture	Total Organic Carbon (Walkley Black)	3,5-Dichlorobenzoic acid	4-CPA	2,4,6-T	2,6-D	o-chlorophenoxy acetic acid	Acifluorfen	DCPA (Chlorthal) Diacid	MCPP
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	ww%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05	<0.001	0.1	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care 2011 Soil HSL A for Direct Contact																					**0.001**										
CRC Care 2011 Soil HSL B for Direct Contact																															
CRC Care 2011 Soil HSL C for Direct Contact																															
CRC Care 2011 Soil HSL D for Direct Contact																															
NEPC 2013 EIL, EILs Aged Sediment - Commercial & Industrial																															
NEPC 2013 EIL, EILs Aged Sediment - Urban Res. & Pub. Open Space																															
NEPC 2013 ESL Commercial and Industrial, Coarse Soil																															
NEPC 2013 ESL Urban Residential and Public Open Space, Fine Soil																															
NEPC 2013 Management Limits - Commercial and Industrial, Fine																															
NEPC 2013 Management Limits - Residential, Parkland and Public Open Space, Fine																															
NEPC 2013 Soil HIL A			600	900									600	600	600	4500															
NEPC 2013 Soil HIL B			900	1600									900	900	900	6600															
NEPC 2013 Soil HIL C			800	1300									800	800	800	5700															
NEPC 2013 Soil HIL D			5000	9000									5000	5000	5000	35000															
Field ID	**Sample Depth**	**Sample Date**																													
#31-G-SS01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-
#31-S-SS02	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#31-SD-SS03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	47	-	-	-	-	-	-	-	-	-
#31-H-SS04	0-0.1	17/06/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	32	-	-	-	-	-	-	-	-	-
#31-SED01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	-	-	-	-	-	-	-	-	-
#31-TP01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
#31-TP02	0.3-0.4	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
#31-TP03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.7	-	-	-	-	-	-	-	-	-
#31-TP04	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	-	-	-
#31-TP04	0.3-0.4	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	20	-	-	-	-	-	-	-	-	-
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.1	-	-	-	-	-	-	-	-	-
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	8.4	-	-	-	-	-	-	-	-	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.7	-	-	-	-	-	-	-	-	-
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	19	-	-	-	-	-	-	-	-	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	19	-	-	-	-	-	-	-	-	-
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	18	-	-	-	-	-	-	-	-	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	22	-	-	-	-	-	-	-	-	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	22	-	-	-	-	-	-	-	-	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	17	-	-	-	-	-	-	-	-	-
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	14	-	-	-	-	-	-	-	-	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	9.6	-	-	-	-	-	-	-	-	-
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	11	-	-	-	-	-	-	-	-	-
QC17	Duplicate of #3-O-SS07	2/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	<0.001	13	-	-	-	-	-	-	-	-	-
QC17/A	Triplicate of #3-O-SS07	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-	<0.001	14	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	16	-	-	-	-	-	-	-	-	-
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	15	-	-	-	-	-	-	-	-	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	4	-	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	3.5	-	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	12	-	-	-	-	-	-	-	-	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	10	-	-	-	-	-	-	-	-	-

Notes

*Criteria for Chromium (VI)

[1] Reported as '#4-SP-TP06' in laboratory report 423116-S
[2] Reported as '#6-0-SS14' in laboratory report 423382-S
[3] Reported as '#6-S-SS17' in laboratory report 423382-S
[4] Reported as '#6-S-SS18' in laboratory report 423382-S
[5] Reported as '#6-S-SS19' in laboratory report 423382-S
[6] Reported as '#6-S-SS20' in laboratory report 423382-S
[7] Reported as '#7-A-SS02' in laboratory report 423382-S
[8] Reported as 'SED01' in laboratory report 423743-S
[9] Reported as '#13-SP-TP04' in laboratory report 423678-S
[10] Reported as '#17H-SS01 (0-0.1)' in laboratory report 422618-S
[11] Reported as '#25-G-TP02 (0.3-0.4)' in laboratory report 422618-S
[12] Reported as '#27-G-TP02 (0-0.1)' in laboratory report 422618-S
[13] Reported as '#27-G-TP02 (1.9-2.0)' in laboratory report 422618-S
[14] Reported as '#27-G-TP03 (0-0.1)' in laboratory report 422618-S
[15] Reported as '#27-G-TP04 (0-0.1)' in laboratory report 422618-S
[16] Reported as '#27-G-TP05 (0-0.1)' in laboratory report 422618-S
[17] Reported as '#27-G-TP06 (1.0-1.1)' in laboratory report 422618-S
[18] Reported as '29-H-SS01' in laboratory report 422457-S
[19] Reported as '#30-SP-HA01 (0-0.1)' in laboratory report 422131-S
[20] Reported as '#30-SP-TP04 (0.1-0.2)' in laboratory report 422131-S

Appendix A: Photographic Log

AST LOCATION IN LOT 9

LOT 9 DRUMS AND MACHINES

LOT 9

LOT 6 CHARCOAL FRAGMENTS

JBS&G

Job No: 43376	
Client: APP Corporation	
Version: A	Date: 31/07/2014
Drawn By: TH	Checked By: MB
Not to Scale	
Coord. Sys n/a	

Box Hill North
NSW

APPENDIX A

LOT 20 FILL MATERIAL

LOT 20 FILL MATERIAL

LOT 20 MARKET GARDEN MATERIAL

ACM FRAGMENTS IN LOT 5

JBS&G

Job No: 43376	
Client: APP Corporation	
Version: A	Date: 31/07/2014
Drawn By: TH	Checked By: MB
Not to Scale	
Coord. Sys n/a	

Box Hill North
NSW

APPENDIX A

AST IN LOT 17

TEST PITTING IN LOT 1

HAND AUGER COMPLETED IN LOT 9

NATURE MATERIAL FROM LOT 18

Job No: 43376

Client: APP Corporation

Version: A	Date: 31/07/2014
Drawn By: TH	Checked By: MB

Not to Scale

Coord. Sys n/a

Box Hill North
NSW

APPENDIX A

Appendix B: Hazardous Materials Survey

Appendix C: Laboratory Reports

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Tyler Creese**

Report **422131-S**
Client Reference BOX HILL 43376
Received Date Jun 18, 2014

Client Sample ID			**#30-D-TP01 (0.1-0.2)**	**#30-G-TP02 (0.1-0.2)**	**#30-SP-TP03 (0.1-0.2)**	**#30-SP-TP04 (0.1-0.2)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn13829**	**S14-Jn13832**	**S14-Jn13835**	**S14-Jn13838**
Date Sampled			**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	95	-	93	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			#30-D-TP01 (0.1-0.2)	#30-G-TP02 (0.1-0.2)	#30-SP-TP03 (0.1-0.2)	#30-SP-TP04 (0.1-0.2)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn13829**	**S14-Jn13832**	**S14-Jn13835**	**S14-Jn13838**
Date Sampled			**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	96	-	101	101
p-Terphenyl-d14 (surr.)	1	%	113	-	112	114
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	107	93	91	88
Tetrachloro-m-xylene (surr.)	1	%	103	88	94	96
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	107	-	91	88
Heavy Metals						
Arsenic	2	mg/kg	9.4	5.9	8.2	< 2
Cadmium	0.4	mg/kg	0.6	0.5	0.7	< 0.4
Chromium	5	mg/kg	21	14	23	< 5
Copper	5	mg/kg	22	14	22	13
Lead	5	mg/kg	22	16	14	14
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.10
Nickel	5	mg/kg	10	< 5	6.8	< 5
Zinc	5	mg/kg	52	24	40	12

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#30-D-TP01 (0.1-0.2) Soil S14-Jn13829 Jun 17, 2014	#30-G-TP02 (0.1-0.2) Soil S14-Jn13832 Jun 17, 2014	#30-SP-TP03 (0.1-0.2) Soil S14-Jn13835 Jun 17, 2014	#30-SP-TP04 (0.1-0.2) Soil S14-Jn13838 Jun 17, 2014
SPOCAS Suite						
pH-KCL	0.1	units	5.3	-	-	-
pH-OX	0.1	units	5.8	-	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	14	-	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	< 2	-	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	< 2	-	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	0.02	-	-	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
Sulfur - KCl Extractable	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02	-	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10	-	-	-
Calcium - KCl Extractable	0.02	% Ca	0.12	-	-	-
Calcium - Peroxide	0.02	% Ca	0.13	-	-	-
Acid Reacted Calcium	0.02	% Ca	< 0.02	-	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Magnesium - KCl Extractable	0.02	% Mg	0.04	-	-	-
Magnesium - Peroxide	0.02	% Mg	0.04	-	-	-
Acid Reacted Magnesium	0.02	% Mg	< 0.02	-	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
ANC Fineness Factor			1.5	-	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	0.02	-	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	14	-	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	1.0	-	-	-
Extraneous Material						
<2mm Fraction	0.005	g	n/a	-	-	-
>2mm Fraction	0.005		n/a	-	-	-
Analysed Material	0.1	%	100	-	-	-
Extraneous Material	0.1	%	< 0.1	-	-	-
% Moisture	0.1	%	16	12	16	14
Asbestos (% weight as per WA Guidelines)			see attached	-	see attached	see attached

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#30-SP-HA01 (0-0.1) Soil S14-Jn13840 Jun 17, 2014	#30-F-SS01 (0-0.1) Soil S14-Jn13842 Jun 17, 2014	#31-TP01 (0-0.1) Soil S14-Jn13843 Jun 17, 2014	#31-TP02 (0.3-0.4) Soil S14-Jn13846 Jun 17, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	1.5	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	95	87	95	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
1.1.1-Trichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.2-Trichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dibromoethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichloroethane	0.5	mg/kg	-	< 0.5	-	-
1.2-Dichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.2.3-Trichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	< 0.5	-	-
1.3-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
1.3-Dichloropropane	0.5	mg/kg	-	< 0.5	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	< 0.5	-	-
1.4-Dichlorobenzene	0.5	mg/kg	-	< 0.5	-	-
2-Butanone (MEK)	0.5	mg/kg	-	< 0.5	-	-
4-Chlorotoluene	0.5	mg/kg	-	< 0.5	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	< 0.5	-	-
Benzene	0.1	mg/kg	-	1.5	-	-
Bromobenzene	0.5	mg/kg	-	< 0.5	-	-
Bromochloromethane	0.5	mg/kg	-	< 0.5	-	-
Bromodichloromethane	0.5	mg/kg	-	< 0.5	-	-
Bromoform	0.5	mg/kg	-	< 0.5	-	-
Bromomethane	0.5	mg/kg	-	< 0.5	-	-
Carbon disulfide	0.5	mg/kg	-	< 0.5	-	-
Carbon Tetrachloride	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID			#30-SP-HA01 (0-0.1)	#30-F-SS01 (0-0.1)	#31-TP01 (0-0.1)	#31-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn13840**	**S14-Jn13842**	**S14-Jn13843**	**S14-Jn13846**
Date Sampled			**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**
Test/Reference	LOR	Unit				
Volatile Organics						
Chlorobenzene	0.5	mg/kg	-	< 0.5	-	-
Chloroethane	0.5	mg/kg	-	< 0.5	-	-
Chloroform	0.5	mg/kg	-	< 0.5	-	-
Chloromethane	0.5	mg/kg	-	< 0.5	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	< 0.5	-	-
Dibromochloromethane	0.5	mg/kg	-	< 0.5	-	-
Dibromomethane	0.5	mg/kg	-	< 0.5	-	-
Dichlorodifluoromethane	0.5	mg/kg	-	< 0.5	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	< 0.5	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
Methylene Chloride	0.5	mg/kg	-	< 0.5	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Styrene	0.5	mg/kg	-	< 0.5	-	-
Tetrachloroethene	0.5	mg/kg	-	< 0.5	-	-
Toluene	0.1	mg/kg	-	0.6	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	< 0.5	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	< 0.5	-	-
Trichloroethene	0.5	mg/kg	-	< 0.5	-	-
Trichlorofluoromethane	0.5	mg/kg	-	< 0.5	-	-
Vinyl chloride	0.5	mg/kg	-	< 0.5	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
Fluorobenzene (surr.)	1	%	-	88	-	-
4-Bromofluorobenzene (surr.)	1	%	-	87	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	103	107	104	104
p-Terphenyl-d14 (surr.)	1	%	116	110	116	118

Client Sample ID			#30-SP-HA01 (0-0.1)	#30-F-SS01 (0-0.1)	#31-TP01 (0-0.1)	#31-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn13840**	**S14-Jn13842**	**S14-Jn13843**	**S14-Jn13846**
Date Sampled			**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	117	114	101	88
Tetrachloro-m-xylene (surr.)	1	%	120	94	95	100
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	117	114	101	88
Heavy Metals						
Arsenic	2	mg/kg	8.5	700	5.5	2.8
Cadmium	0.4	mg/kg	0.6	13	< 0.4	< 0.4
Chromium	5	mg/kg	25	240	14	5.8
Copper	5	mg/kg	18	1100	34	12
Lead	5	mg/kg	17	71	16	12
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	6.6	16	14	< 5
Zinc	5	mg/kg	41	290	67	8.6
SPOCAS Suite						
pH-KCL	0.1	units	-	-	4.6	-
pH-OX	0.1	units	-	-	4.6	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	21	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	27	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	6.0	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.03	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#30-SP-HA01 (0-0.1) Soil S14-Jn13840 Jun 17, 2014	#30-F-SS01 (0-0.1) Soil S14-Jn13842 Jun 17, 2014	#31-TP01 (0-0.1) Soil S14-Jn13843 Jun 17, 2014	#31-TP02 (0.3-0.4) Soil S14-Jn13846 Jun 17, 2014
SPOCAS Suite						
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.04	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	< 0.02	-
Sulfur - KCl Extractable	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	< 0.02	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	< 10	-
Calcium - KCl Extractable	0.02	% Ca	-	-	0.03	-
Calcium - Peroxide	0.02	% Ca	-	-	0.03	-
Acid Reacted Calcium	0.02	% Ca	-	-	< 0.02	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Magnesium - KCl Extractable	0.02	% Mg	-	-	0.09	-
Magnesium - Peroxide	0.02	% Mg	-	-	0.09	-
Acid Reacted Magnesium	0.02	% Mg	-	-	< 0.02	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
ANC Fineness Factor			-	-	1.5	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	0.03	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	21	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	2.0	-
Extraneous Material						
<2mm Fraction	0.005	g	-	-	n/a	-
>2mm Fraction	0.005		-	-	n/a	-
Analysed Material	0.1	%	-	-	100	-
Extraneous Material	0.1	%	-	-	< 0.1	-
% Moisture	0.1	%	19	15	16	18
Asbestos (% weight as per WA Guidelines)			see attached	see attached	see attached	see attached

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#31-TP03 (0-0.1) Soil S14-Jn13847 Jun 17, 2014	#30-TP05 (0.1-0.2) Soil S14-Jn13849 Jun 17, 2014	#31-G-SS01 Soil S14-Jn13852 Jun 17, 2014	#31-S-SS02 Soil S14-Jn13853 Jun 17, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#31-TP03 (0-0.1) Soil S14-Jn13847 Jun 17, 2014	#30-TP05 (0.1-0.2) Soil S14-Jn13849 Jun 17, 2014	#31-G-SS01 Soil S14-Jn13852 Jun 17, 2014	#31-S-SS02 Soil S14-Jn13853 Jun 17, 2014
BTEX						
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	94	-	-	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	107	-	-	104
p-Terphenyl-d14 (surr.)	1	%	120	-	-	116
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			#31-TP03 (0-0.1)	#30-TP05 (0.1-0.2)	#31-G-SS01	#31-S-SS02
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn13847**	**S14-Jn13849**	**S14-Jn13852**	**S14-Jn13853**
Date Sampled			**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	92	91	110	113
Tetrachloro-m-xylene (surr.)	1	%	101	95	105	113
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	92	-	-	113
Heavy Metals						
Arsenic	2	mg/kg	7.9	5.0	4.4	4.5
Cadmium	0.4	mg/kg	0.6	< 0.4	0.4	< 0.4
Chromium	5	mg/kg	29	18	12	13
Copper	5	mg/kg	23	18	20	27
Lead	5	mg/kg	21	15	14	21
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	7.3	6.7	9.2	12
Zinc	5	mg/kg	39	31	67	140
% Moisture	0.1	%	8.7	14	12	16
Asbestos (% weight as per WA Guidelines)			see attached	-	-	see attached

Client Sample ID			#31-SD-SS03	#31-H-SS04	#31-TP04 (0-0.1)	#31-TP04 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn13854**	**S14-Jn13855**	**S14-Jn13856**	**S14-Jn13857**
Date Sampled			**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**	**Jun 17, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	30	-	-	< 20
TRH C15-C28	50	mg/kg	220	-	-	< 50
TRH C29-C36	50	mg/kg	820	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	1100	-	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2

Client Sample ID			#31-SD-SS03	#31-H-SS04	#31-TP04 (0-0.1)	#31-TP04 (0.3-0.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn13854	S14-Jn13855	S14-Jn13856	S14-Jn13857
Date Sampled			Jun 17, 2014	Jun 17, 2014	Jun 17, 2014	Jun 17, 2014
Test/Reference	LOR	Unit				
BTEX						
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	79	-	-	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	830	-	-	< 100
TRH >C34-C40	100	mg/kg	260	-	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	107	-	-	103
p-Terphenyl-d14 (surr.)	1	%	117	-	-	114
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05

Client Sample ID			#31-SD-SS03	#31-H-SS04	#31-TP04 (0-0.1)	#31-TP04 (0.3-0.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn13854	S14-Jn13855	S14-Jn13856	S14-Jn13857
Date Sampled			Jun 17, 2014	Jun 17, 2014	Jun 17, 2014	Jun 17, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	113	105	-	106
Tetrachloro-m-xylene (surr.)	1	%	118	113	-	98
Acid Herbicides						
2.4-D	0.5	mg/kg	-	< 0.5	-	-
2.4-DB	0.5	mg/kg	-	< 0.5	-	-
2.4.5-T	0.5	mg/kg	-	< 0.5	-	-
2.4.5-TP	0.5	mg/kg	-	< 0.5	-	-
Actril (Ioxynil)	0.5	mg/kg	-	< 0.5	-	-
Dicamba	0.5	mg/kg	-	< 0.5	-	-
Dichlorprop	0.5	mg/kg	-	< 0.5	-	-
Dinitro-o-cresol	0.5	mg/kg	-	< 0.5	-	-
Dinoseb	0.5	mg/kg	-	< 0.5	-	-
MCPA	0.5	mg/kg	-	< 0.5	-	-
MCPB	0.5	mg/kg	-	< 0.5	-	-
Mecoprop	0.5	mg/kg	-	< 0.5	-	-
Warfarin (surr.)	1	%	-	80	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	113	-	-	106
Heavy Metals						
Arsenic	2	mg/kg	< 2	5.3	-	6.6
Cadmium	0.4	mg/kg	< 0.4	0.4	-	0.9
Chromium	5	mg/kg	< 5	8.3	-	20
Copper	5	mg/kg	20	28	-	23
Lead	5	mg/kg	< 5	9.5	-	16
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Nickel	5	mg/kg	6.1	13	-	7.4
Zinc	5	mg/kg	90	94	-	41
% Moisture	0.1	%	47	32	-	20
Asbestos (% weight as per WA Guidelines)			see attached	-	see attached	-

Client Sample ID			#31-SED01	QC01	QC02
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn13858	S14-Jn13859	S14-Jn13860
Date Sampled			Jun 17, 2014	Jun 17, 2014	Jun 17, 2014
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	82	86	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	106	105	108
p-Terphenyl-d14 (surr.)	1	%	117	116	121
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#31-SED01 Soil S14-Jn13858 Jun 17, 2014	QC01 Soil S14-Jn13859 Jun 17, 2014	QC02 Soil S14-Jn13860 Jun 17, 2014
Organochlorine Pesticides					
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	100	103	110
Tetrachloro-m-xylene (surr.)	1	%	98	89	100
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	100	103	110
Heavy Metals					
Arsenic	2	mg/kg	6.2	6.6	11
Cadmium	0.4	mg/kg	< 0.4	0.7	1.1
Chromium	5	mg/kg	16	18	33
Copper	5	mg/kg	20	41	22
Lead	5	mg/kg	14	20	28
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	5.2	17	13
Zinc	5	mg/kg	26	88	46
% Moisture	0.1	%	35	14	11
Asbestos (% weight as per WA Guidelines)			-	see attached	see attached

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 19, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 18, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 19, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 19, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 18, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jun 18, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jun 19, 2014	14 Day
- Method: MGT 530			
% Moisture	Sydney	Jun 18, 2014	28 Day
- Method: E005 Moisture Content			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 19, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 19, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jun 20, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jun 20, 2014	0 Day

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 18, 2014 9:43 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422131	**Due:**	Jun 25, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
#30-D-TP01 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13829	X	X						X	X		X
#30-D-TP01 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13830			X								
#30-D-TP01 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13831			X								
#30-G-TP02 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13832	X			X		X					
#30-G-TP02 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13833			X								
#30-G-TP02 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13834			X								

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
#30-SP-TP03 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13835	X	X						X	X		
#30-SP-TP03 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13836			X								
#30-SP-TP03 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13837			X								
#30-SP-TP04 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13838	X	X						X	X		
#30-SP-TP04 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13839			X								
#30-SP-HA01 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13840	X	X						X	X		
#30-SP-HA01 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13841			X								

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
#30-F-SS01 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13842	X	X						X	X	X	
#31-TP01 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13843	X	X						X	X		X
#31-TP01 (0.4-0.5)	Jun 17, 2014		Soil	S14-Jn13844			X								
#31-TP02 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13845			X								
#31-TP02 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13846	X	X						X	X		
#31-TP03 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13847	X	X						X	X		
#31-TP03 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13848			X								

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
#30-TP05 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13849	X			X		X					
#30-TP05 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13850			X								
#30-TP05 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13851			X								
#31-G-SS01	Jun 17, 2014		Soil	S14-Jn13852	X			X		X					
#31-S-SS02	Jun 17, 2014		Soil	S14-Jn13853	X	X						X	X		
#31-SD-SS03	Jun 17, 2014		Soil	S14-Jn13854	X	X						X	X		
#31-H-SS04	Jun 17, 2014		Soil	S14-Jn13855	X			X	X	X					
#31-TP04 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13856		X									
#31-TP04 (0.3-	Jun 17, 2014		Soil	S14-Jn13857	X							X	X		

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Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 18, 2014 9:43 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422131	**Due:**	Jun 25, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
0.4)															
#31-SED01	Jun 17, 2014		Soil	S14-Jn13858	X							X	X		
QC01	Jun 17, 2014		Soil	S14-Jn13859	X	X						X	X		
QC02	Jun 17, 2014		Soil	S14-Jn13860	X	X						X	X		
RINSATE	Jun 17, 2014		Water	S14-Jn13861			X								
TRIP SPIKE	Jun 17, 2014		Water	S14-Jn13862							X				
TRIP BLANK	Jun 17, 2014		Water	S14-Jn13863							X				

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	79			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	104			70-130	Pass	
Toluene	%	104			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	108			70-130	Pass	
o-Xylene	%	108			70-130	Pass	
Xylenes - Total	%	108			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	127			70-130	Pass	
TRH C6-C10	%	97			70-130	Pass	
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	91			75-125	Pass	
1.1-Dichloroethene	%	91			70-130	Pass	
1.1.1-Trichloroethane	%	92			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	96			70-130	Pass	
1.1.2-Trichloroethane	%	94			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	91			70-130	Pass	
1.2-Dibromoethane	%	102			70-130	Pass	
1.2-Dichlorobenzene	%	100			70-130	Pass	
1.2-Dichloroethane	%	94			70-130	Pass	
1.2-Dichloropropane	%	97			70-130	Pass	
1.2.3-Trichloropropane	%	97			70-130	Pass	
1.2.4-Trimethylbenzene	%	101			70-130	Pass	
1.3-Dichlorobenzene	%	103			70-130	Pass	
1.3-Dichloropropane	%	95			70-130	Pass	
1.3.5-Trimethylbenzene	%	102			70-130	Pass	
1.4-Dichlorobenzene	%	101			70-130	Pass	
2-Butanone (MEK)	%	97			70-130	Pass	
4-Chlorotoluene	%	103			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	81			70-130	Pass	
Benzene	%	99			70-130	Pass	
Bromobenzene	%	97			70-130	Pass	
Bromochloromethane	%	98			70-130	Pass	
Bromodichloromethane	%	93			70-130	Pass	
Bromoform	%	92			70-130	Pass	
Bromomethane	%	90			70-130	Pass	
Carbon disulfide	%	102			70-130	Pass	
Carbon Tetrachloride	%	99			70-130	Pass	
Chlorobenzene	%	99			70-130	Pass	
Chloroethane	%	109			70-130	Pass	
Chloroform	%	100			70-130	Pass	
Chloromethane	%	100			70-130	Pass	
cis-1.2-Dichloroethene	%	103			70-130	Pass	
cis-1.3-Dichloropropene	%	92			70-130	Pass	
Dibromochloromethane	%	94			70-130	Pass	
Dibromomethane	%	107			70-130	Pass	
Dichlorodifluoromethane	%	102			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
Isopropyl benzene (Cumene)	%	101			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
Methylene Chloride	%	102			70-130	Pass	
o-Xylene	%	98			70-130	Pass	
Styrene	%	95			70-130	Pass	
Tetrachloroethene	%	105			70-130	Pass	
Toluene	%	99			70-130	Pass	
trans-1.2-Dichloroethene	%	94			70-130	Pass	
trans-1.3-Dichloropropene	%	92			70-130	Pass	
Trichloroethene	%	102			70-130	Pass	
Trichlorofluoromethane	%	103			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Vinyl chloride	%	115			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	98			70-130	Pass	
Acenaphthylene	%	94			70-130	Pass	
Anthracene	%	97			70-130	Pass	
Benz(a)anthracene	%	85			70-130	Pass	
Benzo(a)pyrene	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	94			70-130	Pass	
Benzo(k)fluoranthene	%	108			70-130	Pass	
Chrysene	%	110			70-130	Pass	
Dibenz(a.h)anthracene	%	91			70-130	Pass	
Fluoranthene	%	92			70-130	Pass	
Fluorene	%	96			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	93			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
Phenanthrene	%	87			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	99			70-130	Pass	
4.4'-DDD	%	99			70-130	Pass	
4.4'-DDE	%	102			70-130	Pass	
4.4'-DDT	%	101			70-130	Pass	
a-BHC	%	103			70-130	Pass	
Aldrin	%	102			70-130	Pass	
b-BHC	%	102			70-130	Pass	
d-BHC	%	99			70-130	Pass	
Dieldrin	%	101			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	98			70-130	Pass	
Endosulfan sulphate	%	102			70-130	Pass	
Endrin	%	102			70-130	Pass	
Endrin aldehyde	%	103			70-130	Pass	
Endrin ketone	%	98			70-130	Pass	
g-BHC (Lindane)	%	94			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	99			70-130	Pass	
Hexachlorobenzene	%	122			70-130	Pass	
Methoxychlor	%	110			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	87			70-130	Pass	
2.4-DB	%	79			70-130	Pass	
2.4.5-T	%	91			70-130	Pass	
2.4.5-TP	%	91			70-130	Pass	
Actril (Ioxynil)	%	101			70-130	Pass	
Dicamba	%	94			70-130	Pass	
Dichlorprop	%	87			70-130	Pass	
Dinitro-o-cresol	%	89			70-130	Pass	
Dinoseb	%	95			70-130	Pass	
MCPA	%	94			70-130	Pass	
MCPB	%	83			70-130	Pass	

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Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mecoprop			%	90			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	97			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	89			70-130	Pass	
Cadmium			%	87			70-130	Pass	
Chromium			%	93			70-130	Pass	
Copper			%	117			70-130	Pass	
Lead			%	92			70-130	Pass	
Mercury			%	89			70-130	Pass	
Nickel			%	92			70-130	Pass	
Zinc			%	95			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn13829	CP	%	95			70-130	Pass	
TRH C10-C14	S14-Jn13829	CP	%	85			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn13829	CP	%	93			70-130	Pass	
Toluene	S14-Jn13829	CP	%	93			70-130	Pass	
Ethylbenzene	S14-Jn13829	CP	%	90			70-130	Pass	
m&p-Xylenes	S14-Jn13829	CP	%	95			70-130	Pass	
o-Xylene	S14-Jn13829	CP	%	95			70-130	Pass	
Xylenes - Total	S14-Jn13829	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn13829	CP	%	103			70-130	Pass	
TRH C6-C10	S14-Jn13829	CP	%	92			70-130	Pass	
TRH >C10-C16	S14-Jn13829	CP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn13829	CP	%	102			70-130	Pass	
Acenaphthylene	S14-Jn13829	CP	%	99			70-130	Pass	
Anthracene	S14-Jn13829	CP	%	99			70-130	Pass	
Benz(a)anthracene	S14-Jn13829	CP	%	89			70-130	Pass	
Benzo(a)pyrene	S14-Jn13829	CP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn13829	CP	%	119			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn13829	CP	%	96			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn13829	CP	%	99			70-130	Pass	
Chrysene	S14-Jn13829	CP	%	115			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn13829	CP	%	97			70-130	Pass	
Fluoranthene	S14-Jn13829	CP	%	98			70-130	Pass	
Fluorene	S14-Jn13829	CP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn13829	CP	%	97			70-130	Pass	
Naphthalene	S14-Jn13829	CP	%	100			70-130	Pass	
Phenanthrene	S14-Jn13829	CP	%	94			70-130	Pass	
Pyrene	S14-Jn13829	CP	%	94			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn13829	CP	%	109			70-130	Pass	
4.4'-DDD	S14-Jn13829	CP	%	110			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	S14-Jn13829	CP	%	120			70-130	Pass	
4.4'-DDT	S14-Jn13829	CP	%	107			70-130	Pass	
a-BHC	S14-Jn13829	CP	%	113			70-130	Pass	
Aldrin	S14-Jn13829	CP	%	118			70-130	Pass	
b-BHC	S14-Jn13829	CP	%	105			70-130	Pass	
d-BHC	S14-Jn13829	CP	%	105			70-130	Pass	
Dieldrin	S14-Jn13829	CP	%	111			70-130	Pass	
Endosulfan I	S14-Jn13829	CP	%	104			70-130	Pass	
Endosulfan II	S14-Jn13829	CP	%	106			70-130	Pass	
Endosulfan sulphate	S14-Jn13829	CP	%	105			70-130	Pass	
Endrin	S14-Jn13829	CP	%	111			70-130	Pass	
Endrin aldehyde	S14-Jn13829	CP	%	114			70-130	Pass	
Endrin ketone	S14-Jn13829	CP	%	107			70-130	Pass	
g-BHC (Lindane)	S14-Jn13829	CP	%	103			70-130	Pass	
Heptachlor	S14-Jn13829	CP	%	110			70-130	Pass	
Heptachlor epoxide	S14-Jn13829	CP	%	115			70-130	Pass	
Hexachlorobenzene	S14-Jn13829	CP	%	128			70-130	Pass	
Methoxychlor	S14-Jn13829	CP	%	123			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn13829	CP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn13829	CP	%	105			70-130	Pass	
Cadmium	S14-Jn13829	CP	%	102			70-130	Pass	
Chromium	S14-Jn13829	CP	%	119			70-130	Pass	
Copper	S14-Jn13829	CP	%	155			70-130	Fail	
Lead	S14-Jn13829	CP	%	99			70-130	Pass	
Mercury	S14-Jn13829	CP	%	87			70-130	Pass	
Nickel	S14-Jn13829	CP	%	117			70-130	Pass	
Zinc	S14-Jn13829	CP	%	194			70-130	Fail	Q08
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jn15011	NCP	%	81			75-125	Pass	
1.1-Dichloroethene	S14-Jn15011	NCP	%	82			70-130	Pass	
1.1.1-Trichloroethane	S14-Jn15011	NCP	%	74			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn15011	NCP	%	83			70-130	Pass	
1.1.2-Trichloroethane	S14-Jn15011	NCP	%	78			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn15011	NCP	%	89			70-130	Pass	
1.2-Dibromoethane	S14-Jn15011	NCP	%	90			70-130	Pass	
1.2-Dichlorobenzene	S14-Jn15011	NCP	%	91			70-130	Pass	
1.2-Dichloroethane	S14-Jn15011	NCP	%	94			70-130	Pass	
1.2-Dichloropropane	S14-Jn15011	NCP	%	79			70-130	Pass	
1.2.3-Trichloropropane	S14-Jn15011	NCP	%	89			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jn15011	NCP	%	93			70-130	Pass	
1.3-Dichlorobenzene	S14-Jn15011	NCP	%	93			70-130	Pass	
1.3-Dichloropropane	S14-Jn15011	NCP	%	74			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jn15011	NCP	%	95			70-130	Pass	
1.4-Dichlorobenzene	S14-Jn15011	NCP	%	92			70-130	Pass	
2-Butanone (MEK)	S14-Jn15011	NCP	%	87			70-130	Pass	
4-Chlorotoluene	S14-Jn15011	NCP	%	94			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn15011	NCP	%	83			70-130	Pass	
Bromobenzene	S14-Jn15011	NCP	%	89			70-130	Pass	
Bromochloromethane	S14-Jn15011	NCP	%	86			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Bromodichloromethane	S14-Jn15011	NCP	%	80			70-130	Pass	
Bromoform	S14-Jn15011	NCP	%	77			70-130	Pass	
Bromomethane	S14-Jn15011	NCP	%	104			70-130	Pass	
Carbon disulfide	S14-Jn15011	NCP	%	87			70-130	Pass	
Carbon Tetrachloride	S14-Jn15011	NCP	%	89			70-130	Pass	
Chlorobenzene	S14-Jn15011	NCP	%	87			70-130	Pass	
Chloroethane	S14-Jn15011	NCP	%	91			70-130	Pass	
Chloroform	S14-Jn15011	NCP	%	85			70-130	Pass	
Chloromethane	S14-Jn15011	NCP	%	78			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jn15011	NCP	%	88			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jn15011	NCP	%	98			70-130	Pass	
Dibromochloromethane	S14-Jn15011	NCP	%	73			70-130	Pass	
Dibromomethane	S14-Jn15011	NCP	%	112			70-130	Pass	
Dichlorodifluoromethane	S14-Jn15011	NCP	%	102			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jn15011	NCP	%	90			70-130	Pass	
Methylene Chloride	S14-Jn15011	NCP	%	80			70-130	Pass	
Styrene	S14-Jn15011	NCP	%	82			70-130	Pass	
Tetrachloroethene	S14-Jn15011	NCP	%	92			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jn15011	NCP	%	82			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jn15011	NCP	%	98			70-130	Pass	
Trichloroethene	S14-Jn15011	NCP	%	92			70-130	Pass	
Trichlorofluoromethane	S14-Jn15011	NCP	%	82			70-130	Pass	
Vinyl chloride	S14-Jn15011	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn13852	CP	%	91			70-130	Pass	
4.4'-DDD	S14-Jn13852	CP	%	125			70-130	Pass	
4.4'-DDE	S14-Jn13852	CP	%	91			70-130	Pass	
4.4'-DDT	S14-Jn13852	CP	%	73			70-130	Pass	
a-BHC	S14-Jn13852	CP	%	100			70-130	Pass	
Aldrin	S14-Jn13852	CP	%	92			70-130	Pass	
b-BHC	S14-Jn13852	CP	%	99			70-130	Pass	
d-BHC	S14-Jn13852	CP	%	89			70-130	Pass	
Dieldrin	S14-Jn13852	CP	%	105			70-130	Pass	
Endosulfan I	S14-Jn13852	CP	%	105			70-130	Pass	
Endosulfan II	S14-Jn13852	CP	%	120			70-130	Pass	
Endosulfan sulphate	S14-Jn13852	CP	%	91			70-130	Pass	
Endrin	S14-Jn13852	CP	%	101			70-130	Pass	
Endrin aldehyde	S14-Jn13852	CP	%	90			70-130	Pass	
Endrin ketone	S14-Jn13852	CP	%	80			70-130	Pass	
g-BHC (Lindane)	S14-Jn13852	CP	%	95			70-130	Pass	
Heptachlor	S14-Jn13852	CP	%	82			70-130	Pass	
Heptachlor epoxide	S14-Jn13852	CP	%	75			70-130	Pass	
Hexachlorobenzene	S14-Jn13852	CP	%	118			70-130	Pass	
Methoxychlor	S14-Jn13852	CP	%	75			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn13852	CP	%	103			70-130	Pass	
Cadmium	S14-Jn13852	CP	%	96			70-130	Pass	
Chromium	S14-Jn13852	CP	%	111			70-130	Pass	
Lead	S14-Jn13852	CP	%	104			70-130	Pass	
Mercury	S14-Jn13852	CP	%	90			70-130	Pass	
Nickel	S14-Jn13852	CP	%	106			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acid Herbicides				Result 1					
2.4-D	S14-Jn13855	CP	%	78			70-130	Pass	
Actril (Ioxynil)	S14-Jn13855	CP	%	86			70-130	Pass	
Dichlorprop	S14-Jn13855	CP	%	84			70-130	Pass	
MCPA	S14-Jn13855	CP	%	89			70-130	Pass	
MCPB	S14-Jn13855	CP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn13857	CP	%	94			70-130	Pass	
TRH C10-C14	S14-Jn13857	CP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn13857	CP	%	90			70-130	Pass	
Toluene	S14-Jn13857	CP	%	90			70-130	Pass	
Ethylbenzene	S14-Jn13857	CP	%	87			70-130	Pass	
m&p-Xylenes	S14-Jn13857	CP	%	94			70-130	Pass	
o-Xylene	S14-Jn13857	CP	%	94			70-130	Pass	
Xylenes - Total	S14-Jn13857	CP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn13857	CP	%	98			70-130	Pass	
TRH C6-C10	S14-Jn13857	CP	%	91			70-130	Pass	
TRH >C10-C16	S14-Jn13857	CP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn13857	CP	%	102			70-130	Pass	
Acenaphthylene	S14-Jn13857	CP	%	100			70-130	Pass	
Anthracene	S14-Jn13857	CP	%	107			70-130	Pass	
Benz(a)anthracene	S14-Jn13857	CP	%	95			70-130	Pass	
Benzo(a)pyrene	S14-Jn13857	CP	%	106			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn13857	CP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn13857	CP	%	99			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn13857	CP	%	106			70-130	Pass	
Chrysene	S14-Jn13857	CP	%	118			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn13857	CP	%	100			70-130	Pass	
Fluoranthene	S14-Jn13857	CP	%	99			70-130	Pass	
Fluorene	S14-Jn13857	CP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn13857	CP	%	100			70-130	Pass	
Naphthalene	S14-Jn13857	CP	%	100			70-130	Pass	
Phenanthrene	S14-Jn13857	CP	%	95			70-130	Pass	
Pyrene	S14-Jn13857	CP	%	99			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn13857	CP	%	97			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn13829	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn13829	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn13829	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn13829	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn13829	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn13829	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn13829	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn13829	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn13829	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn13829	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn13829	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn13829	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn13829	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn13829	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn13829	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn13829	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn13829	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn13829	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn13829	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn13829	CP	mg/kg	9.4	8.9	6.0	30%	Pass	
Cadmium	S14-Jn13829	CP	mg/kg	0.6	0.7	16	30%	Pass	
Chromium	S14-Jn13829	CP	mg/kg	21	21	<1	30%	Pass	
Copper	S14-Jn13829	CP	mg/kg	22	22	<1	30%	Pass	
Lead	S14-Jn13829	CP	mg/kg	22	21	7.0	30%	Pass	
Mercury	S14-Jn13829	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn13829	CP	mg/kg	10	11	7.0	30%	Pass	
Zinc	S14-Jn13829	CP	mg/kg	52	58	9.0	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jn13829	CP	units	5.3	5.2	<1	30%	Pass	
pH-OX	S14-Jn13829	CP	units	5.8	5.8	1.0	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jn13829	CP	mol H+/t	14	15	2.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jn13829	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jn13829	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jn13829	CP	% pyrite S	0.02	0.02	2.0	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jn13829	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jn13829	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - KCl Extractable	S14-Jn13829	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jn13829	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jn13829	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jn13829	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jn13829	CP	% Ca	0.12	0.12	<1	30%	Pass	
Calcium - Peroxide	S14-Jn13829	CP	% Ca	0.13	0.13	2.0	30%	Pass	
Acid Reacted Calcium	S14-Jn13829	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jn13829	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jn13829	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jn13829	CP	% Mg	0.04	0.04	<1	30%	Pass	
Magnesium - Peroxide	S14-Jn13829	CP	% Mg	0.04	0.04	<1	30%	Pass	
Acid Reacted Magnesium	S14-Jn13829	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jn13829	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jn13829	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jn13829	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jn13829	CP	% S	0.02	0.02	2.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jn13829	CP	mol H+/t	14	15	2.0	30%	Pass	
Liming rate - SPOCAS	S14-Jn13829	CP	kg CaCO3/t	1.0	1.0	2.0	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jn15011	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn13852	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Dieldrin	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn13852	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn13852	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn13852	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn13852	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn13852	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn13852	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn13852	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn13852	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn13852	CP	mg/kg	4.4	5.9	30	30%	Pass	
Cadmium	S14-Jn13852	CP	mg/kg	0.4	< 0.4	12	30%	Pass	
Chromium	S14-Jn13852	CP	mg/kg	12	12	6.0	30%	Pass	
Copper	S14-Jn13852	CP	mg/kg	20	21	4.0	30%	Pass	
Lead	S14-Jn13852	CP	mg/kg	14	13	8.0	30%	Pass	
Mercury	S14-Jn13852	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn13852	CP	mg/kg	9.2	8.9	4.0	30%	Pass	
Zinc	S14-Jn13852	CP	mg/kg	67	61	9.0	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (Ioxynil)	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jn13855	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn13857	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn13857	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn13857	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn13857	CP	mg/kg	< 50	< 50	<1	30%	Pass	

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Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn13857	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn13857	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn13857	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn13857	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn13857	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn13857	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn13857	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn13857	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn13857	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn13857	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn13857	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn13857	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn13857	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn13857	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn13857	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn13857	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Asbestos analysed by: ASET, NATA accreditation no. 14484, report reference:ASET39855/43035/1-13

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref : ASET39855/ 43035 / 1 - 13
Your ref: 422131
NATA Accreditation No: 14484

24 June 2014

Eurofins | MGT
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of thirteen samples, forwarded by Eurofins | MGT on 19 June 2014, for analysis for asbestos.

1.Introduction: Thirteen samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1 and Australian Guidelines AS 4964 - 2004 and WA/ NEPM Guidelines**)

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia/ NEPM Guidelines for the Assessment Remediation and Management of Asbestos in contaminated sites.

3. Results :

Sample No. 1. ASET39855 / 43035 / 1. #30- D - TP01 (0.1 - 0.2) - Jn13829
Approx dimensions 8.6 cm x 8.4 cm x 7.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET39855 / 43035 / 2. #30- SP - TP03 (0.1 - 0.2) - Jn13835
Approx dimensions 8.6 cm x 8.5 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET39855 / 43035 / 3. #30- SP - TP04 (0.1 - 0.2) - Jn13838
Approx dimensions 9.2 cm x 8.6 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of bitumen and shale.
No asbestos detected.

Sample No. 4. ASET39855 / 43035 / 4. #30- SP - HA01 (0.1 - 0.2) - Jn13840
Approx dimensions 8.7 cm x 8.5 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635
PHONE: (02) 99872183 FAX: (02)99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

Sample No. 5. ASET39855 / 43035 / 5. #30- F - SS01 (0 - 0.1) - Jn13842
Approx dimensions 8.6 cm x 8.4 cm x 7.7 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, brick, corroded metal, glass and debris.
No asbestos detected.

Sample No. 6. ASET39855 / 43035 / 6. #31- TP01 (0 - 0.1) - Jn13843
Approx dimensions 8.8 cm x 8.6 cm x 7.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET39855 / 43035 / 7. #31 - TP02 (0.3 - 0.4) - Jn13846
Approx dimensions 8.7 cm x 8.5 cm x 8.1 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 8. ASET39855 / 43035 / 8. #31 - TP03 (0 - 0.1) - Jn13847
Approx dimensions 8.9 cm x 8.5 cm x 7.6 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 9. ASET39855 / 43035 / 9. #31- S - SS02 - Jn13853
Approx dimensions 8.7 cm x 8.5 cm x 7.4 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 10. ASET39855 / 43035 / 10. #31- SD - SS03 - Jn13854
Approx dimensions 8.8 cm x 8.6 cm x 8.5 cm
The sample consisted of a mixture of soil, stones and plant matter.
No asbestos detected.

Sample No. 11. ASET39855 / 43035 / 11. #31 - TP04 (0 - 0.1) - Jn13856
Approx dimensions 8.6 cm x 8.4 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 12. ASET39855 / 43035 / 12. QC01 - Jn13859
Approx dimensions 8.7 cm x 8.4 cm x 7.6 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 13. ASET39855 / 43035 / 13. QC02 - Jn13860
Approx dimensions 9.2 cm x 8.5 cm x 7.7 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Analysed and reported by,

Laxman Dias. BSc
Analyst / Approved Identifier.
Approved Signatory

WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos detected in Soil/ Dust.

***denotes fibres in bonded form in fragments**

All samples indicating " No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Tyler Creese**

Report **422131-W**
Client Reference BOX HILL 43376
Received Date Jun 18, 2014

Client Sample ID			**TRIP SPIKE**	**TRIP BLANK**
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**S14-Jn13862**	**S14-Jn13863**
Date Sampled			**Jun 16, 2014**	**Jun 16, 2014**
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.001	mg/L	99%	< 0.001
Toluene	0.001	mg/L	97%	< 0.001
Ethylbenzene	0.001	mg/L	94%	< 0.001
m&p-Xylenes	0.002	mg/L	99%	< 0.002
o-Xylene	0.001	mg/L	100%	< 0.001
Xylenes - Total	0.003	mg/L	99%	< 0.003
4-Bromofluorobenzene (surr.)	1	%	102	73

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
BTEX	Sydney	Jun 18, 2014	14 Day
- Method: E029/E016 BTEX			

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 18, 2014 9:43 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422131	**Due:**	Jun 25, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
#30-D-TP01 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13829	X	X						X	X		X
#30-D-TP01 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13830			X								
#30-D-TP01 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13831			X								
#30-G-TP02 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13832	X			X		X					
#30-G-TP02 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13833			X								
#30-G-TP02 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13834			X								

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 18, 2014 9:43 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422131	**Due:**	Jun 25, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
#30-SP-TP03 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13835	X	X						X	X		
#30-SP-TP03 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13836			X								
#30-SP-TP03 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13837			X								
#30-SP-TP04 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13838	X	X						X	X		
#30-SP-TP04 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13839			X								
#30-SP-HA01 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13840	X	X						X	X		
#30-SP-HA01 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13841			X								

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 422131
Phone: 02 8245 0300
Fax:

Received: Jun 18, 2014 9:43 AM
Due: Jun 25, 2014
Priority: 5 Day
Contact Name: Tyler Creese

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
#30-F-SS01 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13842	X	X						X	X	X	
#31-TP01 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13843	X	X						X	X		X
#31-TP01 (0.4-0.5)	Jun 17, 2014		Soil	S14-Jn13844			X								
#31-TP02 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13845			X								
#31-TP02 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13846	X	X						X	X		
#31-TP03 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13847	X	X						X	X		
#31-TP03 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13848			X								

Company Name: JBS & G (NSW & WA) Pty Ltd
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Contact Name: Tyler Creese

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Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
#30-TP05 (0.1-0.2)	Jun 17, 2014		Soil	S14-Jn13849	X			X		X					
#30-TP05 (0.3-0.4)	Jun 17, 2014		Soil	S14-Jn13850			X								
#30-TP05 (0.5-0.6)	Jun 17, 2014		Soil	S14-Jn13851			X								
#31-G-SS01	Jun 17, 2014		Soil	S14-Jn13852	X			X		X					
#31-S-SS02	Jun 17, 2014		Soil	S14-Jn13853	X	X						X	X		
#31-SD-SS03	Jun 17, 2014		Soil	S14-Jn13854	X	X						X	X		
#31-H-SS04	Jun 17, 2014		Soil	S14-Jn13855	X			X	X	X					
#31-TP04 (0-0.1)	Jun 17, 2014		Soil	S14-Jn13856		X									
#31-TP04 (0.3-	Jun 17, 2014		Soil	S14-Jn13857	X							X	X		

Company Name: JBS & G (NSW & WA) Pty Ltd
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Contact Name: Tyler Creese

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X						
Sydney Laboratory - NATA Site # 18217					X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X
External Laboratory						X									
0.4)															
#31-SED01	Jun 17, 2014		Soil	S14-Jn13858	X							X	X		
QC01	Jun 17, 2014		Soil	S14-Jn13859	X	X						X	X		
QC02	Jun 17, 2014		Soil	S14-Jn13860	X	X						X	X		
RINSATE	Jun 17, 2014		Water	S14-Jn13861			X								
TRIP SPIKE	Jun 17, 2014		Water	S14-Jn13862							X				
TRIP BLANK	Jun 17, 2014		Water	S14-Jn13863							X				

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
BTEX									
Benzene			mg/L	< 0.001			0.001	Pass	
Toluene			mg/L	< 0.001			0.001	Pass	
Ethylbenzene			mg/L	< 0.001			0.001	Pass	
m&p-Xylenes			mg/L	< 0.002			0.002	Pass	
o-Xylene			mg/L	< 0.001			0.001	Pass	
Xylenes - Total			mg/L	< 0.003			0.003	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	101			70-130	Pass	
Toluene			%	100			70-130	Pass	
Ethylbenzene			%	99			70-130	Pass	
m&p-Xylenes			%	103			70-130	Pass	
o-Xylene			%	103			70-130	Pass	
Xylenes - Total			%	103			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn09684	NCP	%	91			70-130	Pass	
Toluene	S14-Jn09684	NCP	%	88			70-130	Pass	
Ethylbenzene	S14-Jn09684	NCP	%	81			70-130	Pass	
m&p-Xylenes	S14-Jn09684	NCP	%	86			70-130	Pass	
o-Xylene	S14-Jn09684	NCP	%	88			70-130	Pass	
Xylenes - Total	S14-Jn09684	NCP	%	87			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn09683	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jn09683	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jn09683	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jn09683	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jn09683	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jn09683	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Authorised By

Jean Heng	Client Services
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Tyler Creese
Client job number:	BOX HILL 43376
COC number:	02207-08
Turn around time:	5 Day
Date/Time received:	Jun 18, 2014 9:43 AM
Eurofins | mgt reference:	**422131**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 18.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☑ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

SPOCAS conducted at Eurofins | mgt Brisbane | Asbestos conducted at ASET | Acid Herbicides conducted at Eurofins | mgt Melbourne

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Tyler Creese - TCreese@jbsg.com.au.

Eurofins | mgt Sample Receipt

#422131

02207

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: T Creese K Henderson SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreese@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:	

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	NOTES:
#30-D-TP01 (0.1-0.2)	Soil	17/6/14		Bag + Jar x 2		X	X	X				X		B7 =
#30-D-TP01 (0.3-0.4)	↓	↓		"										8 metals
#30-D-TP01 (0.5-0.6)				"										TRH / BTEX
#30-G-TP02 (0.1-0.2)				Jar					X	X				PAHs
#30-G-TP02 (0.3-0.4)				"										
#30-G-TP02 (0.5-0.6)				"										
#30-SP-TP03 (0.1-0.2)				B + J		X	X	X						B13
#30-SP-TP03 (0.3-0.4)				"										= OCP/PCBs
#30-SP-TP03 (0.5-0.6)				"										
#30-TP04 (0.1-0.2)				B + (J x 2)		X	X	X						Asbestos
#30-TP04 (0.3-0.4)				"										= NEPC 2013 (WA)
#30-HA01 (0-0.1)				B + (J x 2)		X	X	X						
#30-HA01 (0.3-0.4)				"										
#30-F-SS01 (0-0.1)				B + J		X	X	X					X	
#31-TP01 (0-0.1)				B + (J x 2)		X	X	X				X		
#31-TP01 (0.4-0.5)				"										
#31-TP02 (0-0.1)				"										
#31-TP02 (0.3-0.4)				B + (J x 2)		X	X	X						
#31-TP03 (0-0.1)	↓	↓		B + (J x 2)		X	X	X						

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Creese DATE: 17/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 18/6/14 9.43am OF:	COOLER SEAL – Yes...... No ...... Intact .... Broken .... COOLER TEMP ...... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes...... No ...... Intact .... Broken .... COOLER TEMP ...... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO Forms013 – Chain of Custody - Generic

#422131

02208

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Bon Hill	SAMPLERS: TC, EP
SEND REPORT TO: T Creek, K.H SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreek@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Hydrocarbons	SPOCAS	BTEX	NOTES:
TL31-TP03 (0.3-0.4)	Soil	17/6/14		B+(Jx2)										~~Bags~~ Extra hold
#30-TP05 (0.1-0.2)				Jar					X	X				
#30-TP05 (0.3-0.4)				"										
#30-TP05 (0.5-0.6)				"										Asbestos = NEPC 2013 (WA)
#31-G-SS01				"					X	X				
#31-S-SS02				B+J		X	X	X						
#31-SD-SS03				"		X	X	X						
#31-H-SS04				"					X	X	X			
#31-TP04 (0-0.1)				"				X						
#31-TP04 (0.3-0.4)				"		X	X							
#31-SED01				Jar		X	X							
QC01				Bag + Jar		X	X	X						
QC02				"		X	X	X						
Rinsate	Water			vials (+ amber)										
Trip spike													X	
Trip blank													X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: TCreek DATE: 17/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 18/6/14 9.43am OF:	COOLER SEAL – Yes...... No ...... Intact .... Broken .... COOLER TEMP ...... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes...... No ...... Intact .... Broken .... COOLER TEMP ...... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **422457-S**
Client Reference BOX HILL 43376
Received Date Jun 19, 2014

Client Sample ID			**29-TP02 (0.3-0.4)**	**29-TP04 (0-0.1)**	**29-TP04 (0.3-0.4)**	**28-SP-TP01 (1.0)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn16871**	**S14-Jn16872**	**S14-Jn16873**	**S14-Jn16874**
Date Sampled			**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	88	89	-	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5

Client Sample ID			29-TP02 (0.3-0.4)	29-TP04 (0-0.1)	29-TP04 (0.3-0.4)	28-SP-TP01 (1.0)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn16871**	**S14-Jn16872**	**S14-Jn16873**	**S14-Jn16874**
Date Sampled			**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	86	94	-	99
p-Terphenyl-d14 (surr.)	1	%	98	108	-	114
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	0.06
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	-	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	-	103	-	95
Tetrachloro-m-xylene (surr.)	1	%	-	97	-	86
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	103	-	95
Heavy Metals						
Arsenic	2	mg/kg	9.4	6.2	-	< 2
Cadmium	0.4	mg/kg	0.5	0.6	-	< 0.4
Chromium	5	mg/kg	24	31	-	7.5
Copper	5	mg/kg	19	9.0	-	16
Lead	5	mg/kg	15	21	-	72
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Nickel	5	mg/kg	5.6	5.7	-	< 5
Zinc	5	mg/kg	26	7.9	-	77

Client Sample ID			29-TP02 (0.3-0.4)	29-TP04 (0-0.1)	29-TP04 (0.3-0.4)	28-SP-TP01 (1.0)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16871	S14-Jn16872	S14-Jn16873	S14-Jn16874
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
SPOCAS Suite						
pH-KCL	0.1	units	-	-	4.7	-
pH-OX	0.1	units	-	-	4.8	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	14	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	< 2	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	< 2	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.02	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	< 0.02	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	< 0.02	-
Sulfur - KCl Extractable	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	< 0.02	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	< 10	-
HCl Extractable Sulfur	0.02	% S	-	-	n/a	-
Net Acid soluble sulfur	0.02	% S	-	-	n/a	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	n/a	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	n/a	-
Calcium - KCl Extractable	0.02	% Ca	-	-	< 0.02	-
Calcium - Peroxide	0.02	% Ca	-	-	< 0.02	-
Acid Reacted Calcium	0.02	% Ca	-	-	< 0.02	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Magnesium - KCl Extractable	0.02	% Mg	-	-	0.08	-
Magnesium - Peroxide	0.02	% Mg	-	-	0.08	-
Acid Reacted Magnesium	0.02	% Mg	-	-	< 0.02	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Acid Neutralising Capacity	0.02	%CaCO3	-	-	n/a	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	n/a	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	n/a	-
ANC Fineness Factor			-	-	1.5	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	0.02	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	14	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	1.0	-
Extraneous Material						
<2mm Fraction	0.005	g	-	-	n/a	-
>2mm Fraction	0.005		-	-	n/a	-
Analysed Material	0.1	%	-	-	100	-
Extraneous Material	0.1	%	-	-	< 0.1	-
% Moisture	0.1	%	18	14	11	9.1
Asbestos (% weight as per WA Guidelines)			see attached	see attached	-	see attached

Client Sample ID			28-SP-TP01 (0.5-0.6)	28-SED01 (0-0.1)	28-SED02	29-H-SS01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16877	S14-Jn16880	S14-Jn16882	S14-Jn16883
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	< 50	-
TRH C29-C36	50	mg/kg	< 50	-	52	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	52	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	87	-	78	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	90	-	87	-
p-Terphenyl-d14 (surr.)	1	%	104	-	124	-

Client Sample ID			28-SP-TP01 (0.5-0.6)	28-SED01 (0-0.1)	28-SED02	29-H-SS01
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn16877**	**S14-Jn16880**	**S14-Jn16882**	**S14-Jn16883**
Date Sampled			**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	107	80	107
Tetrachloro-m-xylene (surr.)	1	%	-	101	75	103
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	-	< 0.5
2.4-DB	0.5	mg/kg	-	-	-	< 0.5
2.4.5-T	0.5	mg/kg	-	-	-	< 0.5
2.4.5-TP	0.5	mg/kg	-	-	-	< 0.5
Actril (Ioxynil)	0.5	mg/kg	-	-	-	< 0.5
Dicamba	0.5	mg/kg	-	-	-	< 0.5
Dichlorprop	0.5	mg/kg	-	-	-	< 0.5
Dinitro-o-cresol	0.5	mg/kg	-	-	-	< 0.5
Dinoseb	0.5	mg/kg	-	-	-	< 0.5
MCPA	0.5	mg/kg	-	-	-	< 0.5
MCPB	0.5	mg/kg	-	-	-	< 0.5
Mecoprop	0.5	mg/kg	-	-	-	< 0.5
Warfarin (surr.)	1	%	-	-	-	76
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	80	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	28-SP-TP01 (0.5-0.6) Soil S14-Jn16877 Jun 18, 2014	28-SED01 (0-0.1) Soil S14-Jn16880 Jun 18, 2014	28-SED02 Soil S14-Jn16882 Jun 18, 2014	29-H-SS01 Soil S14-Jn16883 Jun 18, 2014
Heavy Metals						
Arsenic	2	mg/kg	6.5	14	22	9.2
Cadmium	0.4	mg/kg	0.7	1.5	1.6	0.8
Chromium	5	mg/kg	25	58	66	43
Copper	5	mg/kg	17	12	83	15
Lead	5	mg/kg	24	30	48	25
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	7.9	8.8	32	6.0
Zinc	5	mg/kg	24	30	150	32
SPOCAS Suite						
pH-KCL	0.1	units	-	-	4.0	-
pH-OX	0.1	units	-	-	3.1	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	40	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	150	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	110	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.06	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.23	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.17	-
Sulfur - KCl Extractable	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide	0.02	% S	-	-	0.04	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	0.04	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	27	-
HCl Extractable Sulfur	0.02	% S	-	-	< 0.02	-
Net Acid soluble sulfur	0.02	% S	-	-	< 0.02	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	< 10	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	< 0.02	-
Calcium - KCl Extractable	0.02	% Ca	-	-	0.03	-
Calcium - Peroxide	0.02	% Ca	-	-	0.03	-
Acid Reacted Calcium	0.02	% Ca	-	-	< 0.02	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Magnesium - KCl Extractable	0.02	% Mg	-	-	0.04	-
Magnesium - Peroxide	0.02	% Mg	-	-	0.04	-
Acid Reacted Magnesium	0.02	% Mg	-	-	< 0.02	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Acid Neutralising Capacity	0.02	%CaCO3	-	-	n/a	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	n/a	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	n/a	-
ANC Fineness Factor			-	-	1.5	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	0.11	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	68	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	5.0	-
Extraneous Material						
<2mm Fraction	0.005	g	-	-	n/a	-
>2mm Fraction	0.005		-	-	n/a	-
Analysed Material	0.1	%	-	-	100	-
Extraneous Material	0.1	%	-	-	< 0.1	-

Client Sample ID			28-SP-TP01 (0.5-0.6)	28-SED01 (0-0.1)	28-SED02	29-H-SS01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16877	S14-Jn16880	S14-Jn16882	S14-Jn16883
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
% Moisture	0.1	%	16	20	66	27

Client Sample ID			29-S-SS02	28-TP02 (0.1-0.2)	28-TP02 (0.3-0.4)	QC03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16884	S14-Jn16885	S14-Jn16886	S14-Jn16887
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	99	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	99	< 50	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	88	-	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			29-S-SS02	28-TP02 (0.1-0.2)	28-TP02 (0.3-0.4)	QC03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16884	S14-Jn16885	S14-Jn16886	S14-Jn16887
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
Volatile Organics						
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
Fluorobenzene (surr.)	1	%	88	-	-	-
4-Bromofluorobenzene (surr.)	1	%	84	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5

Client Sample ID			29-S-SS02	28-TP02 (0.1-0.2)	28-TP02 (0.3-0.4)	QC03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16884	S14-Jn16885	S14-Jn16886	S14-Jn16887
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	95	92	-	88
p-Terphenyl-d14 (surr.)	1	%	104	105	-	103
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	115	118	-	92
Tetrachloro-m-xylene (surr.)	1	%	95	105	-	87
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	115	118	-	92
Heavy Metals						
Arsenic	2	mg/kg	2.6	11	-	7.0
Cadmium	0.4	mg/kg	0.6	1.0	-	0.6
Chromium	5	mg/kg	25	39	-	27
Copper	5	mg/kg	28	17	-	8.2
Lead	5	mg/kg	20	25	-	22
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05

Client Sample ID			29-S-SS02	28-TP02 (0.1-0.2)	28-TP02 (0.3-0.4)	QC03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16884	S14-Jn16885	S14-Jn16886	S14-Jn16887
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	15	11	-	< 5
Zinc	5	mg/kg	55	38	-	8.8
SPOCAS Suite						
pH-KCL	0.1	units	-	-	4.0	-
pH-OX	0.1	units	-	-	4.3	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	35	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	27	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	< 2	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.06	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.04	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	< 0.02	-
Sulfur - KCl Extractable	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	< 0.02	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	< 10	-
HCl Extractable Sulfur	0.02	% S	-	-	< 0.02	-
Net Acid soluble sulfur	0.02	% S	-	-	< 0.02	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	< 10	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	< 0.02	-
Calcium - KCl Extractable	0.02	% Ca	-	-	< 0.02	-
Calcium - Peroxide	0.02	% Ca	-	-	< 0.02	-
Acid Reacted Calcium	0.02	% Ca	-	-	< 0.02	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Magnesium - KCl Extractable	0.02	% Mg	-	-	0.04	-
Magnesium - Peroxide	0.02	% Mg	-	-	0.04	-
Acid Reacted Magnesium	0.02	% Mg	-	-	< 0.02	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Acid Neutralising Capacity	0.02	%CaCO3	-	-	n/a	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	n/a	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	n/a	-
ANC Fineness Factor			-	-	1.5	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	0.06	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	35	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	3.0	-
Extraneous Material						
<2mm Fraction	0.005	g	-	-	n/a	-
>2mm Fraction	0.005		-	-	n/a	-
Analysed Material	0.1	%	-	-	100	-
Extraneous Material	0.1	%	-	-	< 0.1	-
% Moisture	0.1	%	24	19	14	15
Asbestos (% weight as per WA Guidelines)			-	see attached	-	see attached

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	28-SP-TP03 (0.9-0.8) Soil S14-Jn16888 Jun 18, 2014	28-SP-TP03 (0.4-0.3) Soil S14-Jn16889 Jun 18, 2014	27-SS01 Soil S14-Jn16892 Jun 18, 2014	27-SS2 Soil S14-Jn16893 Jun 18, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	78	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	-	-
2-Fluorobiphenyl (surr.)	1	%	-	91	-	-
p-Terphenyl-d14 (surr.)	1	%	-	108	-	-

eurofins | mgt

Client Sample ID			28-SP-TP03 (0.9-0.8)	28-SP-TP03 (0.4-0.3)	27-SS01	27-SS2
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn16888**	**S14-Jn16889**	**S14-Jn16892**	**S14-Jn16893**
Date Sampled			**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**	**Jun 18, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Dibutylchlorendate (surr.)	1	%	-	100	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	91	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	-
Total PCB	0.5	mg/kg	-	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	-	100	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	14	-	-
Cadmium	0.4	mg/kg	-	0.5	-	-
Chromium	5	mg/kg	-	12	-	-
Copper	5	mg/kg	-	28	-	-
Lead	5	mg/kg	-	120	-	-
Mercury	0.05	mg/kg	-	< 0.05	-	-
Nickel	5	mg/kg	-	5.9	-	-
Zinc	5	mg/kg	-	54	-	-
% Moisture	0.1	%	-	20	-	-
Asbestos (% weight as per WA Guidelines)			see attached	-	see attached	see attached

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	27-SS03 Soil S14-Jn16894 Jun 18, 2014	27-SS04 Soil S14-Jn16895 Jun 18, 2014	27-SS05 Soil S14-Jn16896 Jun 18, 2014	27-SS06 Soil S14-Jn16897 Jun 18, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	88	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5	-
Benzene	0.1	mg/kg	-	-	< 0.1	-
Bromobenzene	0.5	mg/kg	-	-	< 0.5	-
Bromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromoform	0.5	mg/kg	-	-	< 0.5	-
Bromomethane	0.5	mg/kg	-	-	< 0.5	-
Carbon disulfide	0.5	mg/kg	-	-	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	27-SS03 Soil S14-Jn16894 Jun 18, 2014	27-SS04 Soil S14-Jn16895 Jun 18, 2014	27-SS05 Soil S14-Jn16896 Jun 18, 2014	27-SS06 Soil S14-Jn16897 Jun 18, 2014
Volatile Organics						
Chlorobenzene	0.5	mg/kg	-	-	< 0.5	-
Chloroethane	0.5	mg/kg	-	-	< 0.5	-
Chloroform	0.5	mg/kg	-	-	< 0.5	-
Chloromethane	0.5	mg/kg	-	-	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Dibromomethane	0.5	mg/kg	-	-	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
Methylene Chloride	0.5	mg/kg	-	-	< 0.5	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Styrene	0.5	mg/kg	-	-	< 0.5	-
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Trichloroethene	0.5	mg/kg	-	-	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5	-
Vinyl chloride	0.5	mg/kg	-	-	< 0.5	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
Fluorobenzene (surr.)	1	%	-	-	90	-
4-Bromofluorobenzene (surr.)	1	%	-	-	88	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	-	90	-
p-Terphenyl-d14 (surr.)	1	%	-	-	103	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	27-SS03 Soil S14-Jn16894 Jun 18, 2014	27-SS04 Soil S14-Jn16895 Jun 18, 2014	27-SS05 Soil S14-Jn16896 Jun 18, 2014	27-SS06 Soil S14-Jn16897 Jun 18, 2014
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Dibutylchlorendate (surr.)	1	%	-	-	100	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	98	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	100	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	< 2	-
Cadmium	0.4	mg/kg	-	-	< 0.4	-
Chromium	5	mg/kg	-	-	17	-
Copper	5	mg/kg	-	-	18	-
Lead	5	mg/kg	-	-	11	-
Mercury	0.05	mg/kg	-	-	< 0.05	-
Nickel	5	mg/kg	-	-	18	-
Zinc	5	mg/kg	-	-	170	-
% Moisture	0.1	%	-	-	19	-
Asbestos (% weight as per WA Guidelines)			see attached	see attached	see attached	see attached

Client Sample ID			27-SS07	27-SS08	27-SS09	27-SS10
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn16898	S14-Jn16899	S14-Jn16900	S14-Jn16901
Date Sampled			Jun 18, 2014	Jun 18, 2014	Jun 18, 2014	Jun 18, 2014
Test/Reference	LOR	Unit				
Asbestos (% weight as per WA Guidelines)			see attached	see attached	see attached	see attached

Client Sample ID			QC04
Sample Matrix			Soil
Eurofins | mgt Sample No.			S14-Jn16902
Date Sampled			Jun 18, 2014
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5

Client Sample ID			QC04
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**S14-Jn16902**
Date Sampled			**Jun 18, 2014**
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2
2-Fluorobiphenyl (surr.)	1	%	93
p-Terphenyl-d14 (surr.)	1	%	110
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2
Toxaphene	1	mg/kg	< 1
Dibutylchlorendate (surr.)	1	%	94
Tetrachloro-m-xylene (surr.)	1	%	92
Polychlorinated Biphenyls (PCB)			
Aroclor-1016	0.5	mg/kg	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5
Total PCB	0.5	mg/kg	< 0.5
Dibutylchlorendate (surr.)	1	%	94
Heavy Metals			
Arsenic	2	mg/kg	6.9
Cadmium	0.4	mg/kg	0.7
Chromium	5	mg/kg	21
Copper	5	mg/kg	38
Lead	5	mg/kg	21
Mercury	0.05	mg/kg	< 0.05
Nickel	5	mg/kg	16
Zinc	5	mg/kg	55
% Moisture	0.1	%	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 23, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 20, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 23, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 23, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 20, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jun 20, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jun 23, 2014	14 Day
- Method: MGT 530			
% Moisture	Brisbane	Jun 25, 2014	14 Day
- Method: Method 102 - ANZECC - % Moisture			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 23, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 23, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jun 25, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jun 25, 2014	0 Day

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 19, 2014 4:30 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422457	**Due:**	Jun 27, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
29-TP02 (0.15-0.2)	Jun 18, 2014		Soil	S14-Jn16870					X							
29-TP02 (0.3-0.4)	Jun 18, 2014		Soil	S14-Jn16871		X	X							X		
29-TP04 (0-0.1)	Jun 18, 2014		Soil	S14-Jn16872		X	X						X	X		
29-TP04 (0.3-0.4)	Jun 18, 2014		Soil	S14-Jn16873	X											X
28-SP-TP01 (1.0)	Jun 18, 2014		Soil	S14-Jn16874		X	X						X	X		
28-SP-TP01 (0.5)	Jun 18, 2014		Soil	S14-Jn16875					X							

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NATA # 1261
Site # 1254 & 14271

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
28-SP-TP01 (0.0-0.1)	Jun 18, 2014		Soil	S14-Jn16876					X							
28-SP-TP01 (0.5-0.6)	Jun 18, 2014		Soil	S14-Jn16877		X								X		
28-SP-TP01 (0.6-0.7)	Jun 18, 2014		Soil	S14-Jn16878					X							
28-SP-TP01 (0.9-1.0)	Jun 18, 2014		Soil	S14-Jn16879					X							
28-SED01 (0-0.1)	Jun 18, 2014		Soil	S14-Jn16880		X				X		X				
28-SED01 (0.4-0.5)	Jun 18, 2014		Soil	S14-Jn16881					X							
28-SED02	Jun 18, 2014		Soil	S14-Jn16882		X							X	X		X

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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
29-H-SS01	Jun 18, 2014		Soil	S14-Jn16883		X				X	X	X				
29-S-SS02	Jun 18, 2014		Soil	S14-Jn16884		X							X	X	X	
28-TP02 (0.1-0.2)	Jun 18, 2014		Soil	S14-Jn16885		X	X						X	X		
28-TP02 (0.3-0.4)	Jun 18, 2014		Soil	S14-Jn16886	X											X
QC03	Jun 18, 2014		Soil	S14-Jn16887		X	X						X	X		
28-SP-TP03 (0.9-0.8)	Jun 18, 2014		Soil	S14-Jn16888			X									
28-SP-TP03 (0.4-0.3)	Jun 18, 2014		Soil	S14-Jn16889		X							X	X		
28-SP-TP03 (0-0.1)	Jun 18, 2014		Soil	S14-Jn16890					X							

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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
28-SP-TP03 (0.5-0.6)	Jun 18, 2014		Soil	S14-Jn16891					X							
27-SS01	Jun 18, 2014		Soil	S14-Jn16892			X									
27-SS2	Jun 18, 2014		Soil	S14-Jn16893			X									
27-SS03	Jun 18, 2014		Soil	S14-Jn16894			X									
27-SS04	Jun 18, 2014		Soil	S14-Jn16895			X									
27-SS05	Jun 18, 2014		Soil	S14-Jn16896		X	X						X	X	X	
27-SS06	Jun 18, 2014		Soil	S14-Jn16897			X									
27-SS07	Jun 18, 2014		Soil	S14-Jn16898			X									
27-SS08	Jun 18, 2014		Soil	S14-Jn16899			X									
27-SS09	Jun 18, 2014		Soil	S14-Jn16900			X									
27-SS10	Jun 18, 2014		Soil	S14-Jn16901			X									

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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
QC04	Jun 18, 2014		Soil	S14-Jn16902		X							X	X		
TRIP SPIKE	Jun 18, 2014		Water	S14-Jn16903				X								
TRIP BLANK	Jun 18, 2014		Water	S14-Jn16904				X								
RINSATE	Jun 18, 2014		Water	S14-Jn16905									X	X		
29- TP04	Jun 18, 2014		Soil	S14-Jn17304					X							
28- TP01 FRAG 1	Jun 18, 2014		Other	S14-Jn17305					X							

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram
ug/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	89			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	96			70-130	Pass	
Toluene	%	95			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	94			70-130	Pass	
Xylenes - Total	%	95			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	125			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	79			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Volatile Organics							
1.1-Dichloroethane	%	91			75-125	Pass	
1.1-Dichloroethene	%	98			70-130	Pass	
1.1.1-Trichloroethane	%	97			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	102			70-130	Pass	
1.1.2-Trichloroethane	%	98			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	100			70-130	Pass	
1.2-Dibromoethane	%	109			70-130	Pass	
1.2-Dichlorobenzene	%	100			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
1.2-Dichloropropane	%	98			70-130	Pass	
1.2.3-Trichloropropane	%	100			70-130	Pass	
1.2.4-Trimethylbenzene	%	99			70-130	Pass	
1.3-Dichlorobenzene	%	102			70-130	Pass	
1.3-Dichloropropane	%	97			70-130	Pass	
1.3.5-Trimethylbenzene	%	102			70-130	Pass	
1.4-Dichlorobenzene	%	100			70-130	Pass	
2-Butanone (MEK)	%	96			70-130	Pass	
4-Chlorotoluene	%	102			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	84			70-130	Pass	
Bromobenzene	%	97			70-130	Pass	
Bromochloromethane	%	100			70-130	Pass	
Bromodichloromethane	%	97			70-130	Pass	
Bromoform	%	100			70-130	Pass	
Bromomethane	%	96			70-130	Pass	
Carbon disulfide	%	104			70-130	Pass	
Carbon Tetrachloride	%	113			70-130	Pass	
Chlorobenzene	%	105			70-130	Pass	
Chloroethane	%	105			70-130	Pass	
Chloroform	%	101			70-130	Pass	
Chloromethane	%	97			70-130	Pass	
cis-1.2-Dichloroethene	%	101			70-130	Pass	
cis-1.3-Dichloropropene	%	89			70-130	Pass	
Dibromochloromethane	%	94			70-130	Pass	
Dibromomethane	%	93			70-130	Pass	
Dichlorodifluoromethane	%	110			70-130	Pass	
Isopropyl benzene (Cumene)	%	109			70-130	Pass	
Methylene Chloride	%	98			70-130	Pass	
Styrene	%	100			70-130	Pass	
Tetrachloroethene	%	111			70-130	Pass	
trans-1.2-Dichloroethene	%	96			70-130	Pass	
trans-1.3-Dichloropropene	%	89			70-130	Pass	
Trichloroethene	%	107			70-130	Pass	
Trichlorofluoromethane	%	100			70-130	Pass	
Vinyl chloride	%	118			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	86			70-130	Pass	
Acenaphthylene	%	80			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	81			70-130	Pass	
Benzo(a)pyrene	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	%	95			70-130	Pass	
Benzo(g.h.i)perylene	%	88			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	%	85			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a.h)anthracene	%	88			70-130	Pass	
Fluoranthene	%	89			70-130	Pass	
Fluorene	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	88			70-130	Pass	
Phenanthrene	%	78			70-130	Pass	
Pyrene	%	86			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	97			70-130	Pass	
4.4'-DDD	%	103			70-130	Pass	
4.4'-DDE	%	98			70-130	Pass	
4.4'-DDT	%	103			70-130	Pass	
a-BHC	%	103			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	104			70-130	Pass	
d-BHC	%	96			70-130	Pass	
Dieldrin	%	101			70-130	Pass	
Endosulfan I	%	99			70-130	Pass	
Endosulfan II	%	97			70-130	Pass	
Endosulfan sulphate	%	98			70-130	Pass	
Endrin	%	103			70-130	Pass	
Endrin aldehyde	%	94			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-BHC (Lindane)	%	104			70-130	Pass	
Heptachlor	%	99			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	116			70-130	Pass	
Methoxychlor	%	98			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	85			70-130	Pass	
2.4-DB	%	80			70-130	Pass	
2.4.5-T	%	90			70-130	Pass	
2.4.5-TP	%	104			70-130	Pass	
Actril (Ioxynil)	%	94			70-130	Pass	
Dicamba	%	95			70-130	Pass	
Dichlorprop	%	93			70-130	Pass	
Dinitro-o-cresol	%	87			70-130	Pass	
Dinoseb	%	89			70-130	Pass	
MCPA	%	98			70-130	Pass	
MCPB	%	83			70-130	Pass	
Mecoprop	%	95			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	118			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	93			70-130	Pass	
Cadmium	%	99			70-130	Pass	
Chromium	%	103			70-130	Pass	
Copper	%	115			70-130	Pass	

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Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead			%	93			70-130	Pass	
Mercury			%	77			70-130	Pass	
Nickel			%	101			70-130	Pass	
Zinc			%	87			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn16871	CP	%	84			70-130	Pass	
TRH C10-C14	S14-Jn16871	CP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn16871	CP	%	93			70-130	Pass	
Toluene	S14-Jn16871	CP	%	92			70-130	Pass	
Ethylbenzene	S14-Jn16871	CP	%	90			70-130	Pass	
m&p-Xylenes	S14-Jn16871	CP	%	90			70-130	Pass	
o-Xylene	S14-Jn16871	CP	%	89			70-130	Pass	
Xylenes - Total	S14-Jn16871	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn16871	CP	%	129			70-130	Pass	
TRH C6-C10	S14-Jn16871	CP	%	88			70-130	Pass	
TRH >C10-C16	S14-Jn16871	CP	%	78			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn16871	CP	%	87			70-130	Pass	
Acenaphthylene	S14-Jn16871	CP	%	79			70-130	Pass	
Anthracene	S14-Jn16871	CP	%	97			70-130	Pass	
Benz(a)anthracene	S14-Jn16871	CP	%	91			70-130	Pass	
Benzo(a)pyrene	S14-Jn16871	CP	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn16871	CP	%	95			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn16871	CP	%	75			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn16871	CP	%	86			70-130	Pass	
Chrysene	S14-Jn16871	CP	%	86			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn16871	CP	%	84			70-130	Pass	
Fluoranthene	S14-Jn16871	CP	%	90			70-130	Pass	
Fluorene	S14-Jn16871	CP	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn16871	CP	%	83			70-130	Pass	
Naphthalene	S14-Jn16871	CP	%	84			70-130	Pass	
Phenanthrene	S14-Jn16871	CP	%	82			70-130	Pass	
Pyrene	S14-Jn16871	CP	%	90			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn16871	CP	%	84			70-130	Pass	
Cadmium	S14-Jn16871	CP	%	108			70-130	Pass	
Chromium	S14-Jn16871	CP	%	112			70-130	Pass	
Copper	S14-Jn16871	CP	%	128			70-130	Pass	
Lead	S14-Jn16871	CP	%	109			70-130	Pass	
Mercury	S14-Jn16871	CP	%	80			70-130	Pass	
Nickel	S14-Jn16871	CP	%	103			70-130	Pass	
Zinc	S14-Jn16871	CP	%	98			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn16872	CP	%	96			70-130	Pass	
4.4'-DDD	S14-Jn16872	CP	%	106			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	S14-Jn16872	CP	%	107			70-130	Pass	
4.4'-DDT	S14-Jn16872	CP	%	102			70-130	Pass	
a-BHC	S14-Jn16872	CP	%	100			70-130	Pass	
Aldrin	S14-Jn16872	CP	%	99			70-130	Pass	
b-BHC	S14-Jn16872	CP	%	97			70-130	Pass	
d-BHC	S14-Jn16872	CP	%	96			70-130	Pass	
Dieldrin	S14-Jn16872	CP	%	99			70-130	Pass	
Endosulfan I	S14-Jn16872	CP	%	92			70-130	Pass	
Endosulfan II	S14-Jn16872	CP	%	96			70-130	Pass	
Endosulfan sulphate	S14-Jn16872	CP	%	95			70-130	Pass	
Endrin	S14-Jn16872	CP	%	102			70-130	Pass	
Endrin aldehyde	S14-Jn16872	CP	%	97			70-130	Pass	
Endrin ketone	S14-Jn16872	CP	%	103			70-130	Pass	
g-BHC (Lindane)	S14-Jn16872	CP	%	102			70-130	Pass	
Heptachlor	S14-Jn16872	CP	%	96			70-130	Pass	
Heptachlor epoxide	S14-Jn16872	CP	%	100			70-130	Pass	
Hexachlorobenzene	S14-Jn16872	CP	%	122			70-130	Pass	
Methoxychlor	S14-Jn16872	CP	%	104			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	S14-Jn16883	CP	%	64			70-130	Fail	Q08
Actril (Ioxynil)	S14-Jn16883	CP	%	77			70-130	Pass	
Dichlorprop	S14-Jn16883	CP	%	74			70-130	Pass	
MCPA	S14-Jn16883	CP	%	76			70-130	Pass	
MCPB	S14-Jn16883	CP	%	68			70-130	Fail	Q08
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jn16399	NCP	%	90			75-125	Pass	
1.1-Dichloroethene	S14-Jn16399	NCP	%	101			70-130	Pass	
1.1.1-Trichloroethane	S14-Jn16399	NCP	%	89			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn16399	NCP	%	101			70-130	Pass	
1.1.2-Trichloroethane	S14-Jn16399	NCP	%	104			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn16399	NCP	%	103			70-130	Pass	
1.2-Dibromoethane	S14-Jn16399	NCP	%	123			70-130	Pass	
1.2-Dichlorobenzene	S14-Jn16399	NCP	%	102			70-130	Pass	
1.2-Dichloroethane	S14-Jn16399	NCP	%	126			70-130	Pass	
1.2-Dichloropropane	S14-Jn16399	NCP	%	103			70-130	Pass	
1.2.3-Trichloropropane	S14-Jn16399	NCP	%	105			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jn16399	NCP	%	101			70-130	Pass	
1.3-Dichlorobenzene	S14-Jn16399	NCP	%	104			70-130	Pass	
1.3-Dichloropropane	S14-Jn16399	NCP	%	103			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jn16399	NCP	%	102			70-130	Pass	
1.4-Dichlorobenzene	S14-Jn16399	NCP	%	103			70-130	Pass	
2-Butanone (MEK)	S14-Jn16399	NCP	%	123			70-130	Pass	
4-Chlorotoluene	S14-Jn16399	NCP	%	104			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn16399	NCP	%	90			70-130	Pass	
Bromobenzene	S14-Jn16399	NCP	%	100			70-130	Pass	
Bromochloromethane	S14-Jn16399	NCP	%	110			70-130	Pass	
Bromodichloromethane	S14-Jn16399	NCP	%	105			70-130	Pass	
Bromoform	S14-Jn16399	NCP	%	99			70-130	Pass	
Bromomethane	S14-Jn16399	NCP	%	123			70-130	Pass	
Carbon disulfide	S14-Jn16399	NCP	%	106			70-130	Pass	
Carbon Tetrachloride	S14-Jn16399	NCP	%	122			70-130	Pass	
Chlorobenzene	S14-Jn16399	NCP	%	105			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	S14-Jn16399	NCP	%	114			70-130	Pass	
Chloroform	S14-Jn16399	NCP	%	107			70-130	Pass	
Chloromethane	S14-Jn16399	NCP	%	107			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jn16399	NCP	%	112			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jn16399	NCP	%	116			70-130	Pass	
Dibromochloromethane	S14-Jn16399	NCP	%	98			70-130	Pass	
Dibromomethane	S14-Jn16399	NCP	%	105			70-130	Pass	
Dichlorodifluoromethane	S14-Jn16399	NCP	%	126			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jn16399	NCP	%	105			70-130	Pass	
Methylene Chloride	S14-Jn16399	NCP	%	101			70-130	Pass	
Styrene	S14-Jn16399	NCP	%	98			70-130	Pass	
Tetrachloroethene	S14-Jn16399	NCP	%	123			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jn16399	NCP	%	102			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jn16399	NCP	%	116			70-130	Pass	
Trichloroethene	S14-Jn16399	NCP	%	121			70-130	Pass	
Trichlorofluoromethane	S14-Jn16399	NCP	%	101			70-130	Pass	
Vinyl chloride	S14-Jn16399	NCP	%	128			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn16889	CP	%	79			70-130	Pass	
Cadmium	S14-Jn16889	CP	%	118			70-130	Pass	
Chromium	S14-Jn16889	CP	%	129			70-130	Pass	
Copper	S14-Jn16889	CP	%	109			70-130	Pass	
Lead	S14-Jn16889	CP	%	68			70-130	Fail	Q08
Mercury	S14-Jn16889	CP	%	87			70-130	Pass	
Nickel	S14-Jn16889	CP	%	105			70-130	Pass	
Zinc	S14-Jn16889	CP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn16902	CP	%	91			70-130	Pass	
TRH C10-C14	S14-Jn16902	CP	%	77			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn16902	CP	%	92			70-130	Pass	
Toluene	S14-Jn16902	CP	%	91			70-130	Pass	
Ethylbenzene	S14-Jn16902	CP	%	89			70-130	Pass	
m&p-Xylenes	S14-Jn16902	CP	%	91			70-130	Pass	
o-Xylene	S14-Jn16902	CP	%	91			70-130	Pass	
Xylenes - Total	S14-Jn16902	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn16902	CP	%	127			70-130	Pass	
TRH C6-C10	S14-Jn16902	CP	%	84			70-130	Pass	
TRH >C10-C16	S14-Jn16902	CP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn16902	CP	%	87			70-130	Pass	
Acenaphthylene	S14-Jn16902	CP	%	79			70-130	Pass	
Anthracene	S14-Jn16902	CP	%	94			70-130	Pass	
Benz(a)anthracene	S14-Jn16902	CP	%	83			70-130	Pass	
Benzo(a)pyrene	S14-Jn16902	CP	%	77			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn16902	CP	%	92			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn16902	CP	%	78			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn16902	CP	%	86			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	S14-Jn16902	CP	%	87			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn16902	CP	%	84			70-130	Pass	
Fluoranthene	S14-Jn16902	CP	%	85			70-130	Pass	
Fluorene	S14-Jn16902	CP	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn16902	CP	%	78			70-130	Pass	
Naphthalene	S14-Jn16902	CP	%	84			70-130	Pass	
Phenanthrene	S14-Jn16902	CP	%	77			70-130	Pass	
Pyrene	S14-Jn16902	CP	%	85			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn16902	CP	%	95			70-130	Pass	
4.4'-DDD	S14-Jn16902	CP	%	105			70-130	Pass	
4.4'-DDE	S14-Jn16902	CP	%	110			70-130	Pass	
4.4'-DDT	S14-Jn16902	CP	%	103			70-130	Pass	
a-BHC	S14-Jn16902	CP	%	100			70-130	Pass	
Aldrin	S14-Jn16902	CP	%	100			70-130	Pass	
b-BHC	S14-Jn16902	CP	%	97			70-130	Pass	
d-BHC	S14-Jn16902	CP	%	98			70-130	Pass	
Dieldrin	S14-Jn16902	CP	%	99			70-130	Pass	
Endosulfan I	S14-Jn16902	CP	%	90			70-130	Pass	
Endosulfan II	S14-Jn16902	CP	%	96			70-130	Pass	
Endosulfan sulphate	S14-Jn16902	CP	%	98			70-130	Pass	
Endrin	S14-Jn16902	CP	%	103			70-130	Pass	
Endrin aldehyde	S14-Jn16902	CP	%	99			70-130	Pass	
Endrin ketone	S14-Jn16902	CP	%	103			70-130	Pass	
g-BHC (Lindane)	S14-Jn16902	CP	%	105			70-130	Pass	
Heptachlor	S14-Jn16902	CP	%	96			70-130	Pass	
Heptachlor epoxide	S14-Jn16902	CP	%	101			70-130	Pass	
Hexachlorobenzene	S14-Jn16902	CP	%	126			70-130	Pass	
Methoxychlor	S14-Jn16902	CP	%	102			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn16902	CP	%	120			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn16871	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn16871	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn16871	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn16871	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn16871	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn16871	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn16871	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn16871	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn16871	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn16871	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn16871	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn16871	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn16871	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C16-C34	S14-Jn16871	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn16871	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn16871	CP	mg/kg	9.4	7.3	25	30%	Pass	
Cadmium	S14-Jn16871	CP	mg/kg	0.5	0.4	19	30%	Pass	
Chromium	S14-Jn16871	CP	mg/kg	24	20	16	30%	Pass	
Copper	S14-Jn16871	CP	mg/kg	19	15	21	30%	Pass	
Lead	S14-Jn16871	CP	mg/kg	15	14	11	30%	Pass	
Mercury	S14-Jn16871	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn16871	CP	mg/kg	5.6	< 5	20	30%	Pass	
Zinc	S14-Jn16871	CP	mg/kg	26	20	22	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn16872	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn16872	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn16872	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn16872	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn16872	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn16872	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn16872	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn16872	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn16872	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn16872	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	M14-Jn15552	NCP	units	9.2	9.2	<1	30%	Pass	
pH-OX	M14-Jn15552	NCP	units	7.0	6.9	2.0	30%	Pass	
Acid trail - Titratable Actual Acidity	M14-Jn15552	NCP	mol H+/t	< 2	< 2	<1	30%	Pass	
Acid trail - Titratable Peroxide Acidity	M14-Jn15552	NCP	mol H+/t	< 2	< 2	<1	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	M14-Jn15552	NCP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	M14-Jn15552	NCP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	M14-Jn15552	NCP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	M14-Jn15552	NCP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - KCl Extractable	M14-Jn15552	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	M14-Jn15552	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	M14-Jn15552	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	M14-Jn15552	NCP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	M14-Jn15552	NCP	% Ca	0.10	0.10	<1	30%	Pass	
Calcium - Peroxide	M14-Jn15552	NCP	% Ca	0.080	0.080	3.0	30%	Pass	
Acid Reacted Calcium	M14-Jn15552	NCP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	M14-Jn15552	NCP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	M14-Jn15552	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	M14-Jn15552	NCP	% Mg	0.020	0.020	<1	30%	Pass	
Magnesium - Peroxide	M14-Jn15552	NCP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
Acid Reacted Magnesium	M14-Jn15552	NCP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	M14-Jn15552	NCP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	M14-Jn15552	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
Acid Neutralising Capacity	M14-Jn15552	NCP	%CaCO3	0.32	0.32	<1	30%	Pass	
Acid Neutralising Capacity - Acidity units	M14-Jn15552	NCP	mol H+/t	64	64	<1	30%	Pass	
ANC Fineness Factor	M14-Jn15552	NCP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	M14-Jn15552	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acidity (acidity units) - SPOCAS	M14-Jn15552	NCP	mol H+/t	< 10	< 10	<1	30%	Pass	
Liming rate - SPOCAS	M14-Jn15552	NCP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (Ioxynil)	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jn16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jn15434	NCP	mg/kg	8.5	10	19	30%	Pass	
1.3-Dichlorobenzene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jn15434	NCP	mg/kg	2.5	3.1	19	30%	Pass	
1.4-Dichlorobenzene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jn15434	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn16889	CP	mg/kg	14	9.4	40	30%	Fail	Q15
Cadmium	S14-Jn16889	CP	mg/kg	0.5	0.7	42	30%	Fail	Q15
Chromium	S14-Jn16889	CP	mg/kg	12	16	27	30%	Pass	
Copper	S14-Jn16889	CP	mg/kg	28	25	11	30%	Pass	
Lead	S14-Jn16889	CP	mg/kg	120	47	46	30%	Fail	Q15
Mercury	S14-Jn16889	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn16889	CP	mg/kg	5.9	7.4	23	30%	Pass	
Zinc	S14-Jn16889	CP	mg/kg	54	56	4.0	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn16902	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn16902	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn16902	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn16902	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn16902	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn16902	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn16902	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn16902	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn16902	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn16902	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn16902	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn16902	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn16902	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn16902	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn16902	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn16902	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin ketone	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn16902	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn16902	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn16902	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn16902	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Asbestos: ASET Pty Ltd, NATA accreditation number 14484, report number : ASET39926/ 43106 / 1 - 16

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref : ASET39926/ 43106 / 1 - 16
Your ref : 422457
NATA Accreditation No: 14484

WORLD RECOGNISED
ACCREDITATION

25 June 2014

Eurofins MGT
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of sixteen samples, forwarded by Eurofins MGT on 25 June 2014, for analysis for asbestos.

1.Introduction: Sixteen samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1 and Australian Guidelines AS 4964 - 2004 and WA/ NEPM Guidelines**)

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia/ NEPM Guidelines for the Assessment Remediation and Management of Asbestos in contaminated sites.

3. Results : **Sample No. 1. ASET39926 / 43106 / 1. 29 - TP02 - 0.3 - 0.4 - Jn16871.**
Approx dimensions 9.4 cm x 8.7 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 2. ASET39926 / 43106 / 2. 29 - TP04 - 0 - 0.1 - Jn16872.
Approx dimensions 9.6 cm x 8.5 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones, sandstones and plant matter,
No asbestos detected.

Sample No. 3. ASET39926 / 43106 / 3. 28 - TP01 - 1.0 - Jn16874.
Approx dimensions 9.5 cm x 8.7 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones, sandstones, plant matter, fragments of plaster, glass and coal like material.
No asbestos detected.

Sample No. 4. ASET39926 / 43106 / 4. 28 - TP02 - 0.1 - 0.2 - Jn16885.
Approx dimensions 9.1 cm x 8.8 cm x 8.6 cm
The sample consisted of a mixture of clayish soil, stones, sandstones, plant matter and fragments of shale.
No asbestos detected.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635
PHONE: (02) 99872183 FAX: (02)99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

Sample No. 5. ASET39926 / 43106 / 5. QC03 - Jn16887.
Approx dimensions 9.7 cm x 8.6 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 6. ASET39926 / 43106 / 6. 28 - SP - TP03 - 0.9 - 0.8 - Jn16888.
Approx dimensions 9.4 cm x 8.6 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of glass and shale.
No asbestos detected.

Sample No. 7. ASET39926 / 43106 / 7. 27 - SS01 - Jn16892.
Approx dimensions 9.6 cm x 8.7 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 8. ASET39926 / 43106 / 8. 27 - SS02 - Jn16893.
Approx dimensions 9.3 cm x 8.8 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 9. ASET39926 / 43106 / 9. 27 - SS03 - Jn16894.
Approx dimensions 9.1 cm x 8.7 cm x 8.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 10. ASET39926 / 43106 / 10. 27 - SS04 - Jn16895.
Approx dimensions 9.4 cm x 8.6 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of corroded metal and debris.
No asbestos detected.

Sample No. 11. ASET39926 / 43106 / 11. 27 - SS05 - Jn16896.
Approx dimensions 9.1 cm x 8.7 cm x 8.4 cm
The sample consisted of a mixture of sandy clayish soil, stones, plant matter, synthetic mineral fibres, fragments of plaster, cement and corroded metal.
No asbestos detected.

Sample No. 12. ASET39926 / 43106 / 12. 27 - SS06 - Jn16897.
Approx dimensions 9.5 cm x 8.6 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 13. ASET39926 / 43106 / 13. 27 - SS07 - Jn16898.
Approx dimensions 9.1 cm x 8.7 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 14. ASET39926 / 43106 / 14. 27 - SS08 - Jn16899.
Approx dimensions 9.2 cm x 8.8 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 15. ASET39926 / 43106 / 15. 27 - SS09 - Jn16900.
Approx dimensions 8.9 cm x 8.7 cm x 8.6 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster and brick.
No asbestos detected.

Sample No. 16. ASET39926 / 43106 / 16. 27 - SS10 - Jn16901.
Approx dimensions 9.2 cm x 8.7 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of corroded metal.
No asbestos detected.

Analysed and reported by,

Laxman Dias. BSc
Analyst / Approved Identifier
Approved Signatory

WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos detected in Soil/ Dust.

***denotes fibres in bonded form in fragments**

All samples indicating " No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **422457-W**
Client Reference BOX HILL 43376
Received Date Jun 19, 2014

Client Sample ID			**RINSATE**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S14-Jn16905**
Date Sampled			**Jun 18, 2014**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	99
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.02	mg/L	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	RINSATE Water S14-Jn16905 Jun 18, 2014
Polycyclic Aromatic Hydrocarbons			
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	108
p-Terphenyl-d14 (surr.)	1	%	111
Organochlorine Pesticides			
Chlordanes - Total	0.001	mg/L	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001
Endrin	0.0001	mg/L	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001
Toxaphene	0.01	mg/L	< 0.01
Dibutylchlorendate (surr.)	1	%	88
Tetrachloro-m-xylene (surr.)	1	%	100
Polychlorinated Biphenyls (PCB)			
Aroclor-1016	0.005	mg/L	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005
Total PCB	0.005	mg/L	< 0.005
Dibutylchlorendate (surr.)	1	%	88
Heavy Metals			
Arsenic	0.005	mg/L	< 0.005
Cadmium	0.0005	mg/L	< 0.0005
Chromium	0.005	mg/L	< 0.005
Copper	0.005	mg/L	< 0.005
Lead	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.005	mg/L	< 0.005
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 20, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 20, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 20, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 20, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 20, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 20, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 20, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

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NATA # 1261
Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 422457
Phone: 02 8245 0300
Fax:

Received: Jun 19, 2014 4:30 PM
Due: Jun 27, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
29-TP02 (0.15-0.2)	Jun 18, 2014		Soil	S14-Jn16870					X							
29-TP02 (0.3-0.4)	Jun 18, 2014		Soil	S14-Jn16871		X	X							X		
29-TP04 (0-0.1)	Jun 18, 2014		Soil	S14-Jn16872		X	X						X	X		
29-TP04 (0.3-0.4)	Jun 18, 2014		Soil	S14-Jn16873	X											X
28-SP-TP01 (1.0)	Jun 18, 2014		Soil	S14-Jn16874		X	X						X	X		
28-SP-TP01 (0.5)	Jun 18, 2014		Soil	S14-Jn16875					X							

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 19, 2014 4:30 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422457	**Due:**	Jun 27, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
28-SP-TP01 (0.0-0.1)	Jun 18, 2014		Soil	S14-Jn16876					X							
28-SP-TP01 (0.5-0.6)	Jun 18, 2014		Soil	S14-Jn16877		X								X		
28-SP-TP01 (0.6-0.7)	Jun 18, 2014		Soil	S14-Jn16878					X							
28-SP-TP01 (0.9-1.0)	Jun 18, 2014		Soil	S14-Jn16879					X							
28-SED01 (0-0.1)	Jun 18, 2014		Soil	S14-Jn16880		X				X		X				
28-SED01 (0.4-0.5)	Jun 18, 2014		Soil	S14-Jn16881					X							
28-SED02	Jun 18, 2014		Soil	S14-Jn16882		X							X	X		X

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Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**	
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Received:	Jun 19, 2014 4:30 PM
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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
29-H-SS01	Jun 18, 2014		Soil	S14-Jn16883		X				X	X	X				
29-S-SS02	Jun 18, 2014		Soil	S14-Jn16884		X							X	X	X	
28-TP02 (0.1-0.2)	Jun 18, 2014		Soil	S14-Jn16885		X	X						X	X		
28-TP02 (0.3-0.4)	Jun 18, 2014		Soil	S14-Jn16886	X											X
QC03	Jun 18, 2014		Soil	S14-Jn16887		X	X						X	X		
28-SP-TP03 (0.9-0.8)	Jun 18, 2014		Soil	S14-Jn16888			X									
28-SP-TP03 (0.4-0.3)	Jun 18, 2014		Soil	S14-Jn16889		X							X	X		
28-SP-TP03 (0-0.1)	Jun 18, 2014		Soil	S14-Jn16890					X							

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 19, 2014 4:30 PM
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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
28-SP-TP03 (0.5-0.6)	Jun 18, 2014		Soil	S14-Jn16891					X							
27-SS01	Jun 18, 2014		Soil	S14-Jn16892			X									
27-SS2	Jun 18, 2014		Soil	S14-Jn16893			X									
27-SS03	Jun 18, 2014		Soil	S14-Jn16894			X									
27-SS04	Jun 18, 2014		Soil	S14-Jn16895			X									
27-SS05	Jun 18, 2014		Soil	S14-Jn16896		X	X						X	X	X	
27-SS06	Jun 18, 2014		Soil	S14-Jn16897			X									
27-SS07	Jun 18, 2014		Soil	S14-Jn16898			X									
27-SS08	Jun 18, 2014		Soil	S14-Jn16899			X									
27-SS09	Jun 18, 2014		Soil	S14-Jn16900			X									
27-SS10	Jun 18, 2014		Soil	S14-Jn16901			X									

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 19, 2014 4:30 PM
Address:	Level 1, 50 Margaret St	**Report #:**	422457	**Due:**	Jun 27, 2014
	Sydney	**Phone:**	02 8245 0300	**Priority:**	5 Day
	NSW 2000	**Fax:**		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	CANCELLED	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271											X					
Sydney Laboratory - NATA Site # 18217						X		X	X	X		X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
QC04	Jun 18, 2014		Soil	S14-Jn16902		X							X	X		
TRIP SPIKE	Jun 18, 2014		Water	S14-Jn16903				X								
TRIP BLANK	Jun 18, 2014		Water	S14-Jn16904				X								
RINSATE	Jun 18, 2014		Water	S14-Jn16905									X	X		
29- TP04	Jun 18, 2014		Soil	S14-Jn17304					X							
28- TP01 FRAG 1	Jun 18, 2014		Other	S14-Jn17305					X							

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	73			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	78			70-130	Pass	
Toluene	%	96			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	83			70-130	Pass	
o-Xylene	%	82			70-130	Pass	
Xylenes - Total	%	82			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	80			70-130	Pass	
TRH C6-C10	%	80			70-130	Pass	
TRH >C10-C16	%	83			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	107			70-130	Pass	
Acenaphthylene	%	89			70-130	Pass	
Anthracene	%	109			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	
Benzo(a)pyrene	%	83			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene			%	72			70-130	Pass	
Benzo(g.h.i)perylene			%	82			70-130	Pass	
Benzo(k)fluoranthene			%	90			70-130	Pass	
Chrysene			%	101			70-130	Pass	
Dibenz(a.h)anthracene			%	74			70-130	Pass	
Fluoranthene			%	90			70-130	Pass	
Fluorene			%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	80			70-130	Pass	
Naphthalene			%	115			70-130	Pass	
Phenanthrene			%	109			70-130	Pass	
Pyrene			%	97			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	80			70-130	Pass	
4.4'-DDD			%	80			70-130	Pass	
4.4'-DDE			%	80			70-130	Pass	
4.4'-DDT			%	80			70-130	Pass	
Aldrin			%	80			70-130	Pass	
b-BHC			%	80			70-130	Pass	
d-BHC			%	80			70-130	Pass	
Dieldrin			%	80			70-130	Pass	
Endosulfan I			%	80			70-130	Pass	
Endosulfan II			%	80			70-130	Pass	
Endosulfan sulphate			%	80			70-130	Pass	
Endrin			%	80			70-130	Pass	
Endrin aldehyde			%	80			70-130	Pass	
Endrin ketone			%	80			70-130	Pass	
g-BHC (Lindane)			%	80			70-130	Pass	
Heptachlor			%	80			70-130	Pass	
Heptachlor epoxide			%	80			70-130	Pass	
Hexachlorobenzene			%	120			70-130	Pass	
Methoxychlor			%	80			70-130	Pass	
Toxaphene			%	80			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	82			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	92			70-130	Pass	
Cadmium			%	93			70-130	Pass	
Chromium			%	95			70-130	Pass	
Copper			%	98			70-130	Pass	
Lead			%	96			70-130	Pass	
Mercury			%	94			70-130	Pass	
Nickel			%	98			70-130	Pass	
Zinc			%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn14289	NCP	%	79			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn14289	NCP	%	94			70-130	Pass	
Toluene	S14-Jn14289	NCP	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S14-Jn14289	NCP	%	98			70-130	Pass	
m&p-Xylenes	S14-Jn14289	NCP	%	98			70-130	Pass	
o-Xylene	S14-Jn14289	NCP	%	98			70-130	Pass	
Xylenes - Total	S14-Jn14289	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn14289	NCP	%	119			70-130	Pass	
TRH C6-C10	S14-Jn14289	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn15606	NCP	%	123			70-130	Pass	
Acenaphthylene	S14-Jn15606	NCP	%	103			70-130	Pass	
Anthracene	S14-Jn15606	NCP	%	103			70-130	Pass	
Benz(a)anthracene	S14-Jn15606	NCP	%	115			70-130	Pass	
Benzo(a)pyrene	S14-Jn15606	NCP	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn15606	NCP	%	128			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn15606	NCP	%	117			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn15606	NCP	%	115			70-130	Pass	
Chrysene	S14-Jn15606	NCP	%	110			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn15606	NCP	%	117			70-130	Pass	
Fluoranthene	S14-Jn15606	NCP	%	106			70-130	Pass	
Fluorene	S14-Jn15606	NCP	%	129			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn15606	NCP	%	120			70-130	Pass	
Naphthalene	S14-Jn15606	NCP	%	127			70-130	Pass	
Phenanthrene	S14-Jn15606	NCP	%	126			70-130	Pass	
Pyrene	S14-Jn15606	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn17928	NCP	%	94			70-130	Pass	
Cadmium	S14-Jn17928	NCP	%	96			70-130	Pass	
Chromium	S14-Jn17928	NCP	%	96			70-130	Pass	
Copper	S14-Jn17928	NCP	%	104			70-130	Pass	
Lead	S14-Jn17928	NCP	%	99			70-130	Pass	
Mercury	S14-Jn17928	NCP	%	99			70-130	Pass	
Nickel	S14-Jn17928	NCP	%	99			70-130	Pass	
Zinc	S14-Jn17928	NCP	%	100			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn14288	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jn18253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-Jn18253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jn18253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn14288	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jn14288	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jn14288	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jn14288	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jn14288	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jn14288	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn14288	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jn14288	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn14288	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jn18253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jn18253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jn18253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jn18253	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn17927	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jn17927	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jn17927	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jn17927	NCP	mg/L	0.029	0.029	1.0	30%	Pass	
Lead	S14-Jn17927	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jn17927	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jn17927	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jn17927	NCP	mg/L	0.013	0.013	3.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name: **JBS & G (NSW & WA) Pty Ltd**

Contact name: Ken Henderson
Client job number: BOX HILL 43376
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Jun 19, 2014 4:30 PM
Eurofins | mgt reference: **422457**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11.5 degrees Celsius.

☒ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☒ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☑ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

SPOCAS bags not received for 28-T02-0.3-0.4 and 29-TP04 0.3-0.4. Subsampled from Asbestos bag |Labelling discrepancy COC-28-TP02 0.1-0.2 , Bag-28-TP01 0.1-0.2.We have labelled as per the COC| Extra bags received for 29-TP04 and 28 TP01 Frag 1. Samples have been placed on hold| SPOCAS conducted at Eurofins mgt Brisbane| Acid Herbicide conducted at Eurofins mgt Melbourne| Asbestos conducted at ASET| Trip blank and Spike not received.

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

02210

CHAIN OF CUSTODY

#422457

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, EP, ML — Khenderson@jbsg.com.au
SEND REPORT TO: K.Henderson, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL:
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) + ccreese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	NOTES:
#29 ~~-~~ TP02 (0.15-0.2)	Soil	18/6/14		Bag/Jar BD										B7
#29 – TP02 (0.3–0.4)						X		X						= 8 metals
#29 – TP04 (0–0.1)						X	X	X						TRH/BTEX
#29 – TP04 (0.3–0.4)												X		PAHs
#28 – SP – TP01 (+1.0)						X	X	X						
#28 – SP – TP01 (+0.5)														B13
#28 – SP – TP01 (0.0–0.1)					16 →	~~X~~								= OCP/PCBs
#28 – SP – TP01 (0.5–0.6)						X								
#28 – SP – TP01 (0.6–0.7)														@ Asbestos
#28 – SP – TP01 (0.9–1.0)														= NEPM 2013
#28 – SED01 (0–0.1)									X	X				
#28 – SED01 (0.4–0.5)														
#28 – ~~SE~~ SED02						X	X			~~X~~		X		
#29 – H – SS01									X	X	X			
#29 – S – SS02						X	X						X	
#28 – TP02 (0.1–0.2)						X	X	X						
#28 – TP02 (0.3–0.4)												X		
QC03						X	X	X						
#28 – SP – TP03 (+0.9–0.0)								X						

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Creese DATE: 18/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 19/6/14 4.30pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02211

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, ED, MC
SEND REPORT TO: K.Henderson, TC SEND INVOICE TO: G. NG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	BTEX	NOTES:
#28-SP-TP03 (0.4-0.3)	Soil			B+J		X	X								
#28-SP-TP03 (0-0.1)															
#28-SP-TP03 (0.5-0.6)															
~~#28-SP-TP03~~															
#27-SS01				Bag				X							
#27-SS02								X							
#27-SS03								X							
#27-SS04								X							
#27-SS05				Bag + Jar		X	X	X					X		
#27-SS06				Bag				X							
#27-SS07								X							
#27-SS08								X							
#27-SS09								X							
#27-SS10								X							
QC04				J		X	X								
Trip spike				Vial										X	
Trip blank				Vial										X	
Rinsate				Vial/[illegible]		X	X								

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Creese DATE: 19/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 19/6/14 4.30pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **422618-S**
Client Reference BOX HILL 43376
Received Date Jun 20, 2014

Client Sample ID			**#27-G-TP01 (0.1-0.2)**	**#27-G-TP02 (0-0.1)**	**#27-G-TP02 (1.9-2.0)**	**#27-G-TP03 (0-0.1)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18234**	**S14-Jn18236**	**S14-Jn18239**	**S14-Jn18240**
Date Sampled			**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	96	95	-	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5

Client Sample ID			#27-G-TP01 (0.1-0.2)	#27-G-TP02 (0-0.1)	#27-G-TP02 (1.9-2.0)	#27-G-TP03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18234**	**S14-Jn18236**	**S14-Jn18239**	**S14-Jn18240**
Date Sampled			**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	82	94	-	96
p-Terphenyl-d14 (surr.)	1	%	89	101	-	100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	107	117	-	79
Tetrachloro-m-xylene (surr.)	1	%	99	97	-	102
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	107	117	-	79
Heavy Metals						
Arsenic	2	mg/kg	7.8	5.5	-	5.8
Cadmium	0.4	mg/kg	0.6	< 0.4	-	< 0.4
Chromium	5	mg/kg	26	11	-	9.8
Copper	5	mg/kg	18	12	-	11
Lead	5	mg/kg	28	15	-	15
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Nickel	5	mg/kg	13	< 5	-	< 5
Zinc	5	mg/kg	27	13	-	17

Client Sample ID			#27-G-TP01 (0.1-0.2)	#27-G-TP02 (0-0.1)	#27-G-TP02 (1.9-2.0)	#27-G-TP03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18234**	**S14-Jn18236**	**S14-Jn18239**	**S14-Jn18240**
Date Sampled			**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**
Test/Reference	LOR	Unit				
SPOCAS Suite						
pH-KCL	0.1	units	-	-	6.7	-
pH-OX	0.1	units	-	-	7.0	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	< 2	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	< 2	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	< 2	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	< 0.02	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	< 0.02	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	< 0.02	-
Sulfur - KCl Extractable	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	< 0.02	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	< 10	-
HCl Extractable Sulfur	0.02	% S	-	-	n/a	-
Net Acid soluble sulfur	0.02	% S	-	-	n/a	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	n/a	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	n/a	-
Calcium - KCl Extractable	0.02	% Ca	-	-	< 0.02	-
Calcium - Peroxide	0.02	% Ca	-	-	< 0.02	-
Acid Reacted Calcium	0.02	% Ca	-	-	< 0.02	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Magnesium - KCl Extractable	0.02	% Mg	-	-	0.07	-
Magnesium - Peroxide	0.02	% Mg	-	-	0.08	-
Acid Reacted Magnesium	0.02	% Mg	-	-	< 0.02	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Acid Neutralising Capacity	0.02	%CaCO3	-	-	0.10	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	20	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	0.03	-
ANC Fineness Factor			-	-	1.5	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	< 0.02	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	< 10	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	< 1	-
Extraneous Material						
<2mm Fraction	0.005	g	-	-	n/a	-
>2mm Fraction	0.005		-	-	n/a	-
Analysed Material	0.1	%	-	-	100	-
Extraneous Material	0.1	%	-	-	< 0.1	-
% Moisture	0.1	%	13	16	17	23
Asbestos (% weight as per WA Guidelines)			-	see attached	-	see attached

Client Sample ID			#27-G-TP04 (0-0.1)	#27-G-TP05 (0-0.1)	#27-G-TP06 (1.0-1.1)	#25-G-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18243**	**S14-Jn18245**	**S14-Jn18249**	**S14-Jn18252**
Date Sampled			**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	87	117	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	95	87	92
p-Terphenyl-d14 (surr.)	1	%	-	100	98	97

Client Sample ID			#27-G-TP04 (0-0.1)	#27-G-TP05 (0-0.1)	#27-G-TP06 (1.0-1.1)	#25-G-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18243**	**S14-Jn18245**	**S14-Jn18249**	**S14-Jn18252**
Date Sampled			**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**	**Jun 19, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.14	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	101	130	104	122
Tetrachloro-m-xylene (surr.)	1	%	91	130	97	120
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	130	104	122
Heavy Metals						
Arsenic	2	mg/kg	9.7	3.2	5.1	11
Cadmium	0.4	mg/kg	0.4	0.4	< 0.4	1.0
Chromium	5	mg/kg	21	19	9.9	33
Copper	5	mg/kg	19	25	5.7	24
Lead	5	mg/kg	22	< 5	11	21
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.07
Nickel	5	mg/kg	6.1	33	< 5	14
Zinc	5	mg/kg	30	22	< 5	28
% Moisture	0.1	%	18	18	11	21
Asbestos (% weight as per WA Guidelines)			-	see attached	see attached	see attached

Client Sample ID			#27-TP07 (0-0.1)	QC05	#26-TP03 (0-0.1)	#26-TP03 (0.5-0.6)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn18257	S14-Jn18259	S14-Jn18260	S14-Jn18261
Date Sampled			Jun 20, 2014	Jun 20, 2014	Jun 20, 2014	Jun 20, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	63	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	63	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	94	97	86	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	87	93	91	-
p-Terphenyl-d14 (surr.)	1	%	97	101	99	-

Client Sample ID			#27-TP07 (0-0.1)	QC05	#26-TP03 (0-0.1)	#26-TP03 (0.5-0.6)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn18257	S14-Jn18259	S14-Jn18260	S14-Jn18261
Date Sampled			Jun 20, 2014	Jun 20, 2014	Jun 20, 2014	Jun 20, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	97	92	112	-
Tetrachloro-m-xylene (surr.)	1	%	88	85	103	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	97	92	112	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	8.1	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.7	-
Chromium	5	mg/kg	< 5	< 5	19	-
Copper	5	mg/kg	< 5	< 5	22	-
Lead	5	mg/kg	< 5	6.0	19	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Nickel	5	mg/kg	< 5	< 5	6.6	-
Zinc	5	mg/kg	< 5	< 5	52	-
SPOCAS Suite						
pH-KCL	0.1	units	5.1	-	-	-
pH-OX	0.1	units	3.7	-	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	8.0	-	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	< 2	-	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	< 2	-	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-

Client Sample ID			#27-TP07 (0-0.1)	QC05	#26-TP03 (0-0.1)	#26-TP03 (0.5-0.6)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18257**	**S14-Jn18259**	**S14-Jn18260**	**S14-Jn18261**
Date Sampled			**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**
Test/Reference	LOR	Unit				
SPOCAS Suite						
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
Sulfur - KCl Extractable	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02	-	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10	-	-	-
HCl Extractable Sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	-	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	-	-	-
Calcium - KCl Extractable	0.02	% Ca	0.03	-	-	-
Calcium - Peroxide	0.02	% Ca	0.03	-	-	-
Acid Reacted Calcium	0.02	% Ca	< 0.02	-	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Magnesium - KCl Extractable	0.02	% Mg	< 0.02	-	-	-
Magnesium - Peroxide	0.02	% Mg	< 0.02	-	-	-
Acid Reacted Magnesium	0.02	% Mg	< 0.02	-	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Acid Neutralising Capacity	0.02	%CaCO3	n/a	-	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	n/a	-	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	n/a	-	-	-
ANC Fineness Factor			1.5	-	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	< 0.02	-	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	< 10	-	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	1.0	-	-	-
Extraneous Material						
<2mm Fraction	0.005	g	n/a	-	-	-
>2mm Fraction	0.005		n/a	-	-	-
Analysed Material	0.1	%	100	-	-	-
Extraneous Material	0.1	%	< 0.1	-	-	-
% Moisture	0.1	%	9.5	9.1	21	-
Asbestos (% weight as per WA Guidelines)			see attached	see attached	-	see attached

Client Sample ID			#26-TP04 (0.0-0.1)	#26-TP05 (0.0-0.1)	#26-TP06 (0.5-0.6)	#26-HA01 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn18262	S14-Jn18265	S14-Jn18269	S14-Jn18271
Date Sampled			Jun 20, 2014	Jun 20, 2014	Jun 20, 2014	Jun 20, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	94	94	91	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	99	94	93	-
p-Terphenyl-d14 (surr.)	1	%	108	100	104	-

Client Sample ID			#26-TP04 (0.0-0.1)	#26-TP05 (0.0-0.1)	#26-TP06 (0.5-0.6)	#26-HA01 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18262**	**S14-Jn18265**	**S14-Jn18269**	**S14-Jn18271**
Date Sampled			**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	122	118	111	117
Tetrachloro-m-xylene (surr.)	1	%	95	94	106	107
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	122	118	111	-
Heavy Metals						
Arsenic	2	mg/kg	3.3	7.0	16	3.4
Cadmium	0.4	mg/kg	< 0.4	0.7	1.0	< 0.4
Chromium	5	mg/kg	< 5	21	33	16
Copper	5	mg/kg	< 5	7.4	27	25
Lead	5	mg/kg	< 5	13	22	13
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	5.3	8.5	6.8
Zinc	5	mg/kg	< 5	22	44	55
% Moisture	0.1	%	2.4	13	10.0	40
Asbestos (% weight as per WA Guidelines)			see attached	see attached	see attached	-

Client Sample ID			#26-HA02 (0.0-0.1)	#26-SED01 (0.0-0.1)	#26-SS01 (0.0-0.1)	#26-SS02 (0.0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18273**	**S14-Jn18279**	**S14-Jn18280**	**S14-Jn18281**
Date Sampled			**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	50
TRH C15-C28	50	mg/kg	< 50	63	300	380
TRH C29-C36	50	mg/kg	96	120	360	530
TRH C10-36 (Total)	50	mg/kg	96	180	660	960
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	86	82	94	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	79
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	79
TRH >C16-C34	100	mg/kg	< 100	140	580	740
TRH >C34-C40	100	mg/kg	< 100	< 100	140	180
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromoform	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	-	-	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5	< 0.5

Client Sample ID			#26-HA02 (0.0-0.1)	#26-SED01 (0.0-0.1)	#26-SS01 (0.0-0.1)	#26-SS02 (0.0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18273**	**S14-Jn18279**	**S14-Jn18280**	**S14-Jn18281**
Date Sampled			**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**
Test/Reference	LOR	Unit				
Volatile Organics						
Chlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Chloroform	0.5	mg/kg	-	-	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	-	-	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Styrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	-	-	< 0.5	< 0.5
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
Fluorobenzene (surr.)	1	%	-	-	95	93
4-Bromofluorobenzene (surr.)	1	%	-	-	94	93
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.0
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.0
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	102	99	97	78
p-Terphenyl-d14 (surr.)	1	%	107	102	96	97

eurofins | mgt

Client Sample ID			#26-HA02 (0.0-0.1)	#26-SED01 (0.0-0.1)	#26-SS01 (0.0-0.1)	#26-SS02 (0.0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn18273	S14-Jn18279	S14-Jn18280	S14-Jn18281
Date Sampled			Jun 20, 2014	Jun 20, 2014	Jun 20, 2014	Jun 20, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	113	80	62	75
Tetrachloro-m-xylene (surr.)	1	%	107	109	80	107
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	113	80	62	75
Heavy Metals						
Arsenic	2	mg/kg	7.6	11	3.7	4.4
Cadmium	0.4	mg/kg	0.8	0.9	0.7	0.6
Chromium	5	mg/kg	27	34	14	13
Copper	5	mg/kg	36	42	37	33
Lead	5	mg/kg	26	28	14	14
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	12	16	18	15
Zinc	5	mg/kg	57	76	84	260
SPOCAS Suite						
pH-KCL	0.1	units	-	4.3	-	-
pH-OX	0.1	units	-	3.8	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	27	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	46	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	19	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.04	-	-

Client Sample ID			#26-HA02 (0.0-0.1)	#26-SED01 (0.0-0.1)	#26-SS01 (0.0-0.1)	#26-SS02 (0.0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn18273	S14-Jn18279	S14-Jn18280	S14-Jn18281
Date Sampled			Jun 20, 2014	Jun 20, 2014	Jun 20, 2014	Jun 20, 2014
Test/Reference	LOR	Unit				
SPOCAS Suite						
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.07	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.03	-	-
Sulfur - KCl Extractable	0.02	% S	-	< 0.02	-	-
Sulfur - Peroxide	0.02	% S	-	0.03	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	0.03	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	19	-	-
HCl Extractable Sulfur	0.02	% S	-	< 0.02	-	-
Net Acid soluble sulfur	0.02	% S	-	< 0.02	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	< 10	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	< 0.02	-	-
Calcium - KCl Extractable	0.02	% Ca	-	0.03	-	-
Calcium - Peroxide	0.02	% Ca	-	0.03	-	-
Acid Reacted Calcium	0.02	% Ca	-	< 0.02	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	< 10	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	< 0.02	-	-
Magnesium - KCl Extractable	0.02	% Mg	-	0.03	-	-
Magnesium - Peroxide	0.02	% Mg	-	0.03	-	-
Acid Reacted Magnesium	0.02	% Mg	-	< 0.02	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	< 10	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	< 0.02	-	-
Acid Neutralising Capacity	0.02	%CaCO3	-	n/a	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	n/a	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	n/a	-	-
ANC Fineness Factor			-	1.5	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	0.07	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	46	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	3.0	-	-
Extraneous Material						
<2mm Fraction	0.005	g	-	n/a	-	-
>2mm Fraction	0.005		-	n/a	-	-
Analysed Material	0.1	%	-	100	-	-
Extraneous Material	0.1	%	-	< 0.1	-	-
% Moisture	0.1	%	5.5	43	7.8	18
Asbestos (% weight as per WA Guidelines)			see attached	-	see attached	see attached

Client Sample ID			#17-SP-TP01 (0.0-0.1)	#17-SP-TP02 (0.0-0.1)	#17H-SS01 (0-0.1)
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn18282	S14-Jn18284	S14-Jn18286
Date Sampled			Jun 20, 2014	Jun 20, 2014	Jun 20, 2014
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	87	86	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	101	93	-
p-Terphenyl-d14 (surr.)	1	%	104	100	-

Client Sample ID			#17-SP-TP01 (0.0-0.1)	#17-SP-TP02 (0.0-0.1)	#17H-SS01 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn18282**	**S14-Jn18284**	**S14-Jn18286**
Date Sampled			**Jun 20, 2014**	**Jun 20, 2014**	**Jun 20, 2014**
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	98	106	97
Tetrachloro-m-xylene (surr.)	1	%	85	92	80
Acid Herbicides					
2.4-D	0.5	mg/kg	-	-	< 0.5
2.4-DB	0.5	mg/kg	-	-	< 0.5
2.4.5-T	0.5	mg/kg	-	-	< 0.5
2.4.5-TP	0.5	mg/kg	-	-	< 0.5
Actril (Ioxynil)	0.5	mg/kg	-	-	< 0.5
Dicamba	0.5	mg/kg	-	-	< 0.5
Dichlorprop	0.5	mg/kg	-	-	< 0.5
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5
Dinoseb	0.5	mg/kg	-	-	< 0.5
MCPA	0.5	mg/kg	-	-	< 0.5
MCPB	0.5	mg/kg	-	-	< 0.5
Mecoprop	0.5	mg/kg	-	-	< 0.5
Warfarin (surr.)	1	%	-	-	77
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	98	106	-

Client Sample ID			#17-SP-TP01 (0.0-0.1)	#17-SP-TP02 (0.0-0.1)	#17H-SS01 (0-0.1)
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn18282	S14-Jn18284	S14-Jn18286
Date Sampled			Jun 20, 2014	Jun 20, 2014	Jun 20, 2014
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	2	mg/kg	8.5	17	5.2
Cadmium	0.4	mg/kg	0.8	1.0	< 0.4
Chromium	5	mg/kg	32	48	19
Copper	5	mg/kg	5.1	9.2	< 5
Lead	5	mg/kg	16	21	11
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5
Zinc	5	mg/kg	8.4	9.8	6.3
% Moisture	0.1	%	14	15	5.7
Asbestos (% weight as per WA Guidelines)			see attached	see attached	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 24, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 23, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 24, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 24, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 23, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jun 26, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jun 24, 2014	14 Day
- Method: MGT 530			
% Moisture	Brisbane	Jun 25, 2014	14 Day
- Method: Method 102 - ANZECC - % Moisture			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 24, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 24, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jun 25, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jun 25, 2014	0 Day

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
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NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 422618
Phone: 02 8245 0300
Fax:

Received: Jun 20, 2014 3:50 PM
Due: Jun 27, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
#27-G-TP01 (0.1-0.2)	Jun 19, 2014		Soil	S14-Jn18234		X							X	X		
#27-G-TP01 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18235				X								
#27-G-TP02 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18236		X	X						X	X		
#27-G-TP02 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18237				X								
#27-G-TP02 (0.75-0.85)	Jun 19, 2014		Soil	S14-Jn18238				X								
#27-G-TP02 (1.9-2.0)	Jun 19, 2014		Soil	S14-Jn18239	X											X

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Brisbane
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NATA # 1261 Site # 20794

Company Name: JBS & G (NSW & WA) Pty Ltd
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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#27-G-TP03 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18240		X	X						X	X		
#27-G-TP03 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18241				X								
#27-G-TP03 (0.8-0.9)	Jun 19, 2014		Soil	S14-Jn18242				X								
#27-G-TP04 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18243		X			X		X					
#27-G-TP04 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18244				X								
#27-G-TP05 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18245		X	X						X	X		
#27-G-TP05 (0.9-1.0)	Jun 19, 2014		Soil	S14-Jn18246				X								

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Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422618	**Due:**	Jun 27, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#27-G-TP05 (1.2-1.3)	Jun 19, 2014		Soil	S14-Jn18247				X								
#27-G-TP06 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18248				X								
#27-G-TP06 (1.0-1.1)	Jun 19, 2014		Soil	S14-Jn18249		X	X						X	X		
#26-G-TP01 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18250				X								
#26-G-TP01 (0.4-0.5)	Jun 19, 2014		Soil	S14-Jn18251				X								
#25-G-TP02 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18252		X	X						X	X		
RINSATE	Jun 19, 2014		Water	S14-Jn18253									X	X		

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		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
TRIP SPIKE	Jun 19, 2014		Water	S14-Jn18254								X				
TRIP BLANK	Jun 19, 2014		Water	S14-Jn18255								X				
RINSATE	Jun 20, 2014		Water	S14-Jn18256									X	X		
#27-TP07 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18257		X	X						X	X		X
#27-TP07 (0.4-0.5)	Jun 20, 2014		Soil	S14-Jn18258				X								
QC05	Jun 20, 2014		Soil	S14-Jn18259		X	X						X	X		
#26-TP03 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18260		X							X	X		
#26-TP03 (0.5-0.6)	Jun 20, 2014		Soil	S14-Jn18261			X									
#26-TP04 (0.0-	Jun 20, 2014		Soil	S14-Jn18262		X	X						X	X		

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 20, 2014 3:50 PM
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		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
0.1)																
#26-TP04 (0.5-0.6)	Jun 20, 2014		Soil	S14-Jn18263				X								
#26-TP04 (0.7-0.8)	Jun 20, 2014		Soil	S14-Jn18264				X								
#26-TP05 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18265		X	X						X	X		
#26-TP05 (0.2-0.3)	Jun 20, 2014		Soil	S14-Jn18266				X								
#26-TP05 (0.6-0.7)	Jun 20, 2014		Soil	S14-Jn18267				X								
#26-TP06 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18268				X								

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#26-TP06 (0.5-0.6)	Jun 20, 2014		Soil	S14-Jn18269		X	X						X	X		
#26-TP06 (2.0-2.1)	Jun 20, 2014		Soil	S14-Jn18270				X								
#26-HA01 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18271		X			X		X					
#26-HA01 (0.3-0.4)	Jun 20, 2014		Soil	S14-Jn18272				X								
#26-HA02 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18273		X	X						X	X		
#26-SED01 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18279		X							X	X		X
#26-SS01 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18280		X	X						X	X	X	

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 20, 2014 3:50 PM
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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#26-SS02 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18281		X	X						X	X	X	
#17-SP-TP01 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18282		X	X						X	X		
#17-SP-TP01 (0.3-0.4)	Jun 20, 2014		Soil	S14-Jn18283				X								
#17-SP-TP02 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18284		X	X						X	X		
#17-SP-TP02 (0.3-0.4)	Jun 20, 2014		Soil	S14-Jn18285				X								
#17H-SS01 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18286		X			X	X	X					

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	99			70-130	Pass	
TRH C10-C14	%	75			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	97			70-130	Pass	
o-Xylene	%	97			70-130	Pass	
Xylenes - Total	%	97			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	94			70-130	Pass	
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	77			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	96			75-125	Pass	
1.1-Dichloroethene	%	103			70-130	Pass	
1.1.1-Trichloroethane	%	96			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	105			70-130	Pass	
1.1.2-Trichloroethane	%	119			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	106			70-130	Pass	
1.2-Dibromoethane	%	113			70-130	Pass	
1.2-Dichlorobenzene	%	119			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
1.2-Dichloropropane	%	112			70-130	Pass	
1.2.3-Trichloropropane	%	115			70-130	Pass	
1.2.4-Trimethylbenzene	%	110			70-130	Pass	
1.3-Dichlorobenzene	%	109			70-130	Pass	
1.3-Dichloropropane	%	120			70-130	Pass	
1.3.5-Trimethylbenzene	%	109			70-130	Pass	
1.4-Dichlorobenzene	%	115			70-130	Pass	
2-Butanone (MEK)	%	118			70-130	Pass	
4-Chlorotoluene	%	116			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	115			70-130	Pass	
Benzene	%	113			70-130	Pass	
Bromobenzene	%	119			70-130	Pass	
Bromochloromethane	%	101			70-130	Pass	
Bromodichloromethane	%	117			70-130	Pass	
Bromoform	%	99			70-130	Pass	
Bromomethane	%	95			70-130	Pass	
Carbon disulfide	%	110			70-130	Pass	
Carbon Tetrachloride	%	107			70-130	Pass	
Chlorobenzene	%	110			70-130	Pass	
Chloroethane	%	113			70-130	Pass	
Chloroform	%	115			70-130	Pass	
Chloromethane	%	109			70-130	Pass	
cis-1.2-Dichloroethene	%	101			70-130	Pass	
cis-1.3-Dichloropropene	%	116			70-130	Pass	
Dibromochloromethane	%	115			70-130	Pass	
Dibromomethane	%	101			70-130	Pass	
Dichlorodifluoromethane	%	105			70-130	Pass	
Ethylbenzene	%	112			70-130	Pass	
Isopropyl benzene (Cumene)	%	112			70-130	Pass	
m&p-Xylenes	%	112			70-130	Pass	
Methylene Chloride	%	105			70-130	Pass	
o-Xylene	%	111			70-130	Pass	
Styrene	%	108			70-130	Pass	
Tetrachloroethene	%	113			70-130	Pass	
Toluene	%	119			70-130	Pass	
trans-1.2-Dichloroethene	%	116			70-130	Pass	
trans-1.3-Dichloropropene	%	116			70-130	Pass	
Trichloroethene	%	113			70-130	Pass	
Trichlorofluoromethane	%	102			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Vinyl chloride	%	102			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	86			70-130	Pass	
Acenaphthylene	%	80			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	81			70-130	Pass	
Benzo(a)pyrene	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	%	95			70-130	Pass	
Benzo(g.h.i)perylene	%	88			70-130	Pass	
Benzo(k)fluoranthene	%	89			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a.h)anthracene	%	88			70-130	Pass	
Fluoranthene	%	89			70-130	Pass	
Fluorene	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	88			70-130	Pass	
Phenanthrene	%	78			70-130	Pass	
Pyrene	%	86			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	97			70-130	Pass	
4.4'-DDD	%	99			70-130	Pass	
4.4'-DDE	%	102			70-130	Pass	
4.4'-DDT	%	101			70-130	Pass	
a-BHC	%	100			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	94			70-130	Pass	
d-BHC	%	97			70-130	Pass	
Dieldrin	%	99			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	96			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	97			70-130	Pass	
Endrin ketone	%	98			70-130	Pass	
g-BHC (Lindane)	%	102			70-130	Pass	
Heptachlor	%	98			70-130	Pass	
Heptachlor epoxide	%	101			70-130	Pass	
Hexachlorobenzene	%	127			70-130	Pass	
Methoxychlor	%	108			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	80			70-130	Pass	
2.4-DB	%	72			70-130	Pass	
2.4.5-T	%	85			70-130	Pass	
2.4.5-TP	%	97			70-130	Pass	
Actril (Ioxynil)	%	94			70-130	Pass	
Dicamba	%	89			70-130	Pass	
Dichlorprop	%	86			70-130	Pass	
Dinitro-o-cresol	%	88			70-130	Pass	
Dinoseb	%	87			70-130	Pass	
MCPA	%	92			70-130	Pass	
MCPB	%	74			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mecoprop			%	88			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	103			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	94			70-130	Pass	
Cadmium			%	104			70-130	Pass	
Chromium			%	103			70-130	Pass	
Copper			%	126			70-130	Pass	
Lead			%	92			70-130	Pass	
Mercury			%	77			70-130	Pass	
Nickel			%	100			70-130	Pass	
Zinc			%	105			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn18234	CP	%	92			70-130	Pass	
TRH C10-C14	S14-Jn18234	CP	%	82			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn18234	CP	%	90			70-130	Pass	
Toluene	S14-Jn18234	CP	%	90			70-130	Pass	
Ethylbenzene	S14-Jn18234	CP	%	91			70-130	Pass	
m&p-Xylenes	S14-Jn18234	CP	%	91			70-130	Pass	
o-Xylene	S14-Jn18234	CP	%	90			70-130	Pass	
Xylenes - Total	S14-Jn18234	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn18234	CP	%	81			70-130	Pass	
TRH C6-C10	S14-Jn18234	CP	%	86			70-130	Pass	
TRH >C10-C16	S14-Jn18234	CP	%	85			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn18234	CP	%	88			70-130	Pass	
Acenaphthylene	S14-Jn18234	CP	%	81			70-130	Pass	
Anthracene	S14-Jn18234	CP	%	89			70-130	Pass	
Benz(a)anthracene	S14-Jn18234	CP	%	88			70-130	Pass	
Benzo(a)pyrene	S14-Jn18234	CP	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn18234	CP	%	95			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn18234	CP	%	80			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn18234	CP	%	80			70-130	Pass	
Chrysene	S14-Jn18234	CP	%	85			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn18234	CP	%	80			70-130	Pass	
Fluoranthene	S14-Jn18234	CP	%	88			70-130	Pass	
Fluorene	S14-Jn18234	CP	%	86			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn18234	CP	%	79			70-130	Pass	
Naphthalene	S14-Jn18234	CP	%	85			70-130	Pass	
Phenanthrene	S14-Jn18234	CP	%	81			70-130	Pass	
Pyrene	S14-Jn18234	CP	%	81			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn18234	CP	%	95			70-130	Pass	
4.4'-DDD	S14-Jn18234	CP	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	S14-Jn18234	CP	%	107			70-130	Pass	
4.4'-DDT	S14-Jn18234	CP	%	100			70-130	Pass	
a-BHC	S14-Jn18234	CP	%	98			70-130	Pass	
Aldrin	S14-Jn18234	CP	%	99			70-130	Pass	
b-BHC	S14-Jn18234	CP	%	89			70-130	Pass	
d-BHC	S14-Jn18234	CP	%	94			70-130	Pass	
Dieldrin	S14-Jn18234	CP	%	97			70-130	Pass	
Endosulfan I	S14-Jn18234	CP	%	95			70-130	Pass	
Endosulfan II	S14-Jn18234	CP	%	96			70-130	Pass	
Endosulfan sulphate	S14-Jn18234	CP	%	92			70-130	Pass	
Endrin	S14-Jn18234	CP	%	100			70-130	Pass	
Endrin aldehyde	S14-Jn18234	CP	%	102			70-130	Pass	
Endrin ketone	S14-Jn18234	CP	%	94			70-130	Pass	
g-BHC (Lindane)	S14-Jn18234	CP	%	91			70-130	Pass	
Heptachlor	S14-Jn18234	CP	%	97			70-130	Pass	
Heptachlor epoxide	S14-Jn18234	CP	%	104			70-130	Pass	
Hexachlorobenzene	S14-Jn18234	CP	%	129			70-130	Pass	
Methoxychlor	S14-Jn18234	CP	%	111			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn18234	CP	%	120			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn18234	CP	%	92			70-130	Pass	
Cadmium	S14-Jn18234	CP	%	101			70-130	Pass	
Chromium	S14-Jn18234	CP	%	88			70-130	Pass	
Copper	S14-Jn18234	CP	%	111			70-130	Pass	
Lead	S14-Jn18234	CP	%	89			70-130	Pass	
Mercury	S14-Jn18234	CP	%	86			70-130	Pass	
Nickel	S14-Jn18234	CP	%	98			70-130	Pass	
Zinc	S14-Jn18234	CP	%	86			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Toxaphene	S14-Jn22963	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn18262	CP	%	91			70-130	Pass	
Cadmium	S14-Jn18262	CP	%	95			70-130	Pass	
Chromium	S14-Jn18262	CP	%	98			70-130	Pass	
Copper	S14-Jn18262	CP	%	129			70-130	Pass	
Lead	S14-Jn18262	CP	%	88			70-130	Pass	
Mercury	S14-Jn18262	CP	%	91			70-130	Pass	
Nickel	S14-Jn18262	CP	%	98			70-130	Pass	
Zinc	S14-Jn18262	CP	%	98			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn18265	CP	%	91			70-130	Pass	
TRH C10-C14	S14-Jn18265	CP	%	79			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn18265	CP	%	93			70-130	Pass	
Toluene	S14-Jn18265	CP	%	92			70-130	Pass	
Ethylbenzene	S14-Jn18265	CP	%	93			70-130	Pass	
m&p-Xylenes	S14-Jn18265	CP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	S14-Jn18265	CP	%	93			70-130	Pass	
Xylenes - Total	S14-Jn18265	CP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn18265	CP	%	81			70-130	Pass	
TRH C6-C10	S14-Jn18265	CP	%	85			70-130	Pass	
TRH >C10-C16	S14-Jn18265	CP	%	82			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn18265	CP	%	86			70-130	Pass	
Acenaphthylene	S14-Jn18265	CP	%	77			70-130	Pass	
Anthracene	S14-Jn18265	CP	%	90			70-130	Pass	
Benz(a)anthracene	S14-Jn18265	CP	%	82			70-130	Pass	
Benzo(a)pyrene	S14-Jn18265	CP	%	79			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn18265	CP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn18265	CP	%	82			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn18265	CP	%	86			70-130	Pass	
Chrysene	S14-Jn18265	CP	%	87			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn18265	CP	%	79			70-130	Pass	
Fluoranthene	S14-Jn18265	CP	%	84			70-130	Pass	
Fluorene	S14-Jn18265	CP	%	86			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn18265	CP	%	80			70-130	Pass	
Naphthalene	S14-Jn18265	CP	%	84			70-130	Pass	
Phenanthrene	S14-Jn18265	CP	%	76			70-130	Pass	
Pyrene	S14-Jn18265	CP	%	80			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jn18732	NCP	%	115			75-125	Pass	
1.1-Dichloroethene	S14-Jn18732	NCP	%	126			70-130	Pass	
1.1.1-Trichloroethane	S14-Jn18732	NCP	%	106			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn18732	NCP	%	111			70-130	Pass	
1.1.2-Trichloroethane	S14-Jn18732	NCP	%	116			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn18732	NCP	%	116			70-130	Pass	
1.2-Dibromoethane	S14-Jn18732	NCP	%	114			70-130	Pass	
1.2-Dichlorobenzene	S14-Jn18732	NCP	%	116			70-130	Pass	
1.2-Dichloroethane	S14-Jn18732	NCP	%	123			70-130	Pass	
1.2-Dichloropropane	S14-Jn18732	NCP	%	113			70-130	Pass	
1.2.3-Trichloropropane	S14-Jn18732	NCP	%	118			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jn18732	NCP	%	118			70-130	Pass	
1.3-Dichlorobenzene	S14-Jn18732	NCP	%	117			70-130	Pass	
1.3-Dichloropropane	S14-Jn18732	NCP	%	110			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jn18732	NCP	%	119			70-130	Pass	
1.4-Dichlorobenzene	S14-Jn18732	NCP	%	117			70-130	Pass	
2-Butanone (MEK)	S14-Jn18732	NCP	%	118			70-130	Pass	
4-Chlorotoluene	S14-Jn18732	NCP	%	118			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn18732	NCP	%	114			70-130	Pass	
Bromobenzene	S14-Jn18732	NCP	%	117			70-130	Pass	
Bromochloromethane	S14-Jn18732	NCP	%	122			70-130	Pass	
Bromodichloromethane	S14-Jn18732	NCP	%	111			70-130	Pass	
Bromoform	S14-Jn18732	NCP	%	106			70-130	Pass	
Bromomethane	S14-Jn18732	NCP	%	122			70-130	Pass	
Carbon disulfide	S14-Jn18732	NCP	%	116			70-130	Pass	
Carbon Tetrachloride	S14-Jn18732	NCP	%	103			70-130	Pass	
Chlorobenzene	S14-Jn18732	NCP	%	118			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	S14-Jn18732	NCP	%	123			70-130	Pass	
Chloroform	S14-Jn18732	NCP	%	119			70-130	Pass	
Chloromethane	S14-Jn18732	NCP	%	114			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jn18732	NCP	%	119			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jn18732	NCP	%	96			70-130	Pass	
Dibromochloromethane	S14-Jn18732	NCP	%	108			70-130	Pass	
Dibromomethane	S14-Jn18732	NCP	%	130			70-130	Pass	
Dichlorodifluoromethane	S14-Jn18732	NCP	%	107			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jn18732	NCP	%	121			70-130	Pass	
Methylene Chloride	S14-Jn18732	NCP	%	117			70-130	Pass	
Styrene	S14-Jn18732	NCP	%	117			70-130	Pass	
Tetrachloroethene	S14-Jn18732	NCP	%	119			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jn18732	NCP	%	121			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jn18732	NCP	%	96			70-130	Pass	
Trichloroethene	S14-Jn18732	NCP	%	119			70-130	Pass	
Trichlorofluoromethane	S14-Jn18732	NCP	%	123			70-130	Pass	
Vinyl chloride	S14-Jn18732	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M14-Jn14043	NCP	%	73			70-130	Pass	
Actril (loxynil)	M14-Jn14043	NCP	%	85			70-130	Pass	
Dichlorprop	M14-Jn14043	NCP	%	85			70-130	Pass	
MCPA	M14-Jn14043	NCP	%	86			70-130	Pass	
MCPB	M14-Jn14043	NCP	%	62			70-130	Fail	Q08
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn18286	CP	%	93			70-130	Pass	
Cadmium	S14-Jn18286	CP	%	95			70-130	Pass	
Chromium	S14-Jn18286	CP	%	92			70-130	Pass	
Copper	S14-Jn18286	CP	%	123			70-130	Pass	
Lead	S14-Jn18286	CP	%	80			70-130	Pass	
Mercury	S14-Jn18286	CP	%	90			70-130	Pass	
Nickel	S14-Jn18286	CP	%	91			70-130	Pass	
Zinc	S14-Jn18286	CP	%	89			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn18234	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn18234	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn18234	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn18234	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn18234	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn18234	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn18234	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn18234	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn18234	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn18234	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn18234	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn18234	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn18234	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn18234	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn18234	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn18234	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn18234	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn18234	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn18234	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn18234	CP	mg/kg	7.8	7.1	10	30%	Pass	
Cadmium	S14-Jn18234	CP	mg/kg	0.6	0.6	2.0	30%	Pass	
Chromium	S14-Jn18234	CP	mg/kg	26	28	7.0	30%	Pass	
Copper	S14-Jn18234	CP	mg/kg	18	20	8.0	30%	Pass	
Lead	S14-Jn18234	CP	mg/kg	28	27	3.0	30%	Pass	
Mercury	S14-Jn18234	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn18234	CP	mg/kg	13	12	8.0	30%	Pass	
Zinc	S14-Jn18234	CP	mg/kg	27	26	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn18262	CP	mg/kg	3.3	2.6	24	30%	Pass	
Cadmium	S14-Jn18262	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn18262	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Jn18262	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jn18262	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Jn18262	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn18262	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jn18262	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn18265	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn18265	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn18265	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn18265	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn18265	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn18265	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn18265	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn18265	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn18265	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn18265	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn18265	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn18265	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn18265	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn18265	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn18265	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Indeno(1.2.3-cd)pyrene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn18265	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jn18279	CP	units	4.3	4.2	1.0	30%	Pass	
pH-OX	S14-Jn18279	CP	units	3.8	3.8	1.0	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jn18279	CP	mol H+/t	27	27	<1	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jn18279	CP	mol H+/t	46	49	6.0	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jn18279	CP	mol H+/t	19	22	13	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jn18279	CP	% pyrite S	0.04	0.04	<1	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jn18279	CP	% pyrite S	0.07	0.08	6.0	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jn18279	CP	% pyrite S	0.03	0.04	13	30%	Pass	
Sulfur - KCl Extractable	S14-Jn18279	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jn18279	CP	% S	0.03	0.03	7.0	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jn18279	CP	% S	0.03	0.03	7.0	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jn18279	CP	mol H+/t	19	17	7.0	30%	Pass	
HCl Extractable Sulfur	S14-Jn18279	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acid soluble sulfur	S14-Jn18279	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acid soluble sulfur - acidity units	S14-Jn18279	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	S14-Jn18279	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jn18279	CP	% Ca	0.03	0.03	<1	30%	Pass	
Calcium - Peroxide	S14-Jn18279	CP	% Ca	0.03	0.03	<1	30%	Pass	
Acid Reacted Calcium	S14-Jn18279	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jn18279	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jn18279	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jn18279	CP	% Mg	0.03	0.03	<1	30%	Pass	
Magnesium - Peroxide	S14-Jn18279	CP	% Mg	0.03	0.03	<1	30%	Pass	
Acid Reacted Magnesium	S14-Jn18279	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jn18279	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jn18279	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jn18279	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jn18279	CP	% S	0.07	0.07	3.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jn18279	CP	mol H+/t	46	44	3.0	30%	Pass	
Liming rate - SPOCAS	S14-Jn18279	CP	kg CaCO3/t	3.0	3.0	3.0	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2.3-Trichloropropane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jn18732	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn18286	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn18286	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn18286	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	M14-Jn14043	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn18286	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn18286	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn18286	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn18286	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn18286	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn18286	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn18286	CP	mg/kg	5.2	5.5	1.0	30%	Pass	
Cadmium	S14-Jn18286	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn18286	CP	mg/kg	19	18	13	30%	Pass	
Copper	S14-Jn18286	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jn18286	CP	mg/kg	11	12	18	30%	Pass	
Mercury	S14-Jn18286	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn18286	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jn18286	CP	mg/kg	6.3	7.0	1.0	30%	Pass	

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Comments

Asbestos analysed by: ASET, NATA accreditation no. 14484, report reference:ASET39956/43136/1-16

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref : ASET39956/ 43136 / 1 - 16
Your ref : 422618
NATA Accreditation No: 14484

30 June 2014

Eurofins | MGT
Unit F3, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of sixteen samples forwarded by Eurofins | MGT on 24 June 2014, for analysis for asbestos.

1.Introduction: Sixteen samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1 and Australian Guidelines AS 4964 - 2004 and WA/ NEPM Guidelines)**

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia/ NEPM Guidelines for the Assessment Remediation and Management of Asbestos in contaminated sites.

3. Results : **Sample No. 1. ASET39956 / 43136 / 1. #27-TP02 (0-0.1) - Jn18236.**
Approx dimensions 10.0 cm x 10.0 cm x 5.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET39956 / 43136 / 2. #27-G-TP03 (0-0.1) - Jn18240.
Approx dimensions 12.0 cm x 11.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET39956 / 43136 / 3. #27-G-TP05 (0-0.1) - Jn18245.
Approx dimensions 11.0 cm x 11.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 4. ASET39956 / 43136 / 4. #27-G-TP06 (1.0-1.1) - Jn18249.
Approx dimensions 11.0 cm x 10.5 cm x 5.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 5. ASET39956 / 43136 / 5. #25-G-TP02 (0.3-0.4) - Jn18252.
Approx dimensions 10.5 cm x 10.5 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 6. ASET39956 / 43136 / 6. #27-TP07 (0-0.1) - Jn18257.
Approx dimensions 12.0 cm x 11.0 cm x 5.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET39956 / 43136 / 7. QC05 - Jn18259.
Approx dimensions 12.0 cm x 12.0 cm x 5.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 8. ASET39956 / 43136 / 8. #26-TP03 (0.5-0.6) - Jn18261.
Approx dimensions 12.0 cm x 12.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 9. ASET39956 / 43136 / 9. #26-TP04 (0.0-0.1) - Jn18262.
Approx dimensions 10.0 cm x 10.0 cm x 6.0 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 10. ASET39956 / 43136 / 10. #26-TP05(0.0-0.1) - Jn18265.
Approx dimensions 11.0 cm x 10.0 cm x 5.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 11. ASET39956 / 43136 / 11. #26-TP06 (0.5-0.6) - Jn18269.
Approx dimensions 12.0 cm x 12.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 12. ASET39956 / 43136 / 12. #26-HA02 (0.0-0.1) - Jn18273.
Approx dimensions 10.5 cm x 10.5 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 13. ASET39956 / 43136 / 13. #26-SS01 (0.0-0.1) - Jn18280.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 14. ASET39956 / 43136 / 14. #26-SS02 (0.0-0.1) - Jn18281.
Approx dimensions 10.0 cm x 9.0 cm x 5.2 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, cement and brick.
No asbestos detected.

Sample No. 15. ASET39956 / 43136 / 15. #17-SP-TP01 (0-0.1) - Jn18282.
Approx dimensions 12.0 cm x 10.0 cm x 5.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 16. ASET39956 / 43136 / 16. #17-SP-TP02 (0-0.1) - Jn18284.
Approx dimensions 11.0 cm x 11.0 cm x 5.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Analysed and reported by,

Nisansala Maddage. BSc(Hons)
Environmental Scientist/Approved Identifier
Approved Signatory

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos detected in Soil/ Dust.

***denotes fibres in bonded form in fragments**

All samples indicating " No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **422618-W**
Client Reference BOX HILL 43376
Received Date Jun 20, 2014

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**RINSATE** **Water** **S14-Jn18253** **Jun 19, 2014**	**TRIP SPIKE** **Water** **S14-Jn18254** **Jun 19, 2014**	**TRIP BLANK** **Water** **S14-Jn18255** **Jun 19, 2014**	**RINSATE** **Water** **S14-Jn18256** **Jun 20, 2014**
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-	-	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	104%	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	104%	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	103%	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	104%	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	105%	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	105%	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	89	98	88	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	< 0.1
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	-	-	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	-	-	< 0.001
Anthracene	0.001	mg/L	< 0.001	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-	< 0.001
Chrysene	0.001	mg/L	< 0.001	-	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	-	-	< 0.001
Fluorene	0.001	mg/L	< 0.001	-	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-	< 0.001
Naphthalene	0.001	mg/L	< 0.001	-	-	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	RINSATE Water S14-Jn18253 Jun 19, 2014	TRIP SPIKE Water S14-Jn18254 Jun 19, 2014	TRIP BLANK Water S14-Jn18255 Jun 19, 2014	RINSATE Water S14-Jn18256 Jun 20, 2014
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	-	-	< 0.001
Pyrene	0.001	mg/L	< 0.001	-	-	< 0.001
Total PAH	0.001	mg/L	< 0.001	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	112	-	-	114
p-Terphenyl-d14 (surr.)	1	%	123	-	-	129
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	-	-	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	-	-	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	-	-	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	102	-	-	98
Tetrachloro-m-xylene (surr.)	1	%	100	-	-	100
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	-	-	< 0.005
Total PCB	0.005	mg/L	< 0.005	-	-	< 0.005
Dibutylchlorendate (surr.)	1	%	102	-	-	98
Heavy Metals						
Arsenic	0.005	mg/L	< 0.005	-	-	< 0.005
Cadmium	0.0005	mg/L	< 0.0005	-	-	< 0.0005
Chromium	0.005	mg/L	< 0.005	-	-	< 0.005
Copper	0.005	mg/L	< 0.005	-	-	< 0.005
Lead	0.005	mg/L	< 0.005	-	-	< 0.005
Mercury	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Nickel	0.005	mg/L	< 0.005	-	-	< 0.005
Zinc	0.005	mg/L	< 0.005	-	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 26, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 26, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 26, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 23, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 23, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 23, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 23, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 20, 2014 3:50 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422618	**Due:**	Jun 27, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
#27-G-TP01 (0.1-0.2)	Jun 19, 2014		Soil	S14-Jn18234		X							X	X		
#27-G-TP01 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18235				X								
#27-G-TP02 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18236		X	X						X	X		
#27-G-TP02 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18237				X								
#27-G-TP02 (0.75-0.85)	Jun 19, 2014		Soil	S14-Jn18238				X								
#27-G-TP02 (1.9-2.0)	Jun 19, 2014		Soil	S14-Jn18239	X											X

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#27-G-TP03 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18240		X	X						X	X		
#27-G-TP03 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18241				X								
#27-G-TP03 (0.8-0.9)	Jun 19, 2014		Soil	S14-Jn18242				X								
#27-G-TP04 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18243		X			X		X					
#27-G-TP04 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18244				X								
#27-G-TP05 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18245		X	X						X	X		
#27-G-TP05 (0.9-1.0)	Jun 19, 2014		Soil	S14-Jn18246				X								

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#27-G-TP05 (1.2-1.3)	Jun 19, 2014		Soil	S14-Jn18247				X								
#27-G-TP06 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18248				X								
#27-G-TP06 (1.0-1.1)	Jun 19, 2014		Soil	S14-Jn18249		X	X						X	X		
#26-G-TP01 (0-0.1)	Jun 19, 2014		Soil	S14-Jn18250				X								
#26-G-TP01 (0.4-0.5)	Jun 19, 2014		Soil	S14-Jn18251				X								
#25-G-TP02 (0.3-0.4)	Jun 19, 2014		Soil	S14-Jn18252		X	X						X	X		
RINSATE	Jun 19, 2014		Water	S14-Jn18253									X	X		

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
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Client Job No.: BOX HILL 43376

Order No.:
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Phone: 02 8245 0300
Fax:

Received: Jun 20, 2014 3:50 PM
Due: Jun 27, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
TRIP SPIKE	Jun 19, 2014		Water	S14-Jn18254								X				
TRIP BLANK	Jun 19, 2014		Water	S14-Jn18255								X				
RINSATE	Jun 20, 2014		Water	S14-Jn18256									X	X		
#27-TP07 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18257		X	X						X	X		X
#27-TP07 (0.4-0.5)	Jun 20, 2014		Soil	S14-Jn18258				X								
QC05	Jun 20, 2014		Soil	S14-Jn18259		X	X						X	X		
#26-TP03 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18260		X							X	X		
#26-TP03 (0.5-0.6)	Jun 20, 2014		Soil	S14-Jn18261			X									
#26-TP04 (0.0-	Jun 20, 2014		Soil	S14-Jn18262		X	X						X	X		

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		Phone:	02 8245 0300	**Priority:** 5 Day
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Client Job No.:	BOX HILL 43376			

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
0.1)																
#26-TP04 (0.5-0.6)	Jun 20, 2014		Soil	S14-Jn18263				X								
#26-TP04 (0.7-0.8)	Jun 20, 2014		Soil	S14-Jn18264				X								
#26-TP05 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18265		X	X						X	X		
#26-TP05 (0.2-0.3)	Jun 20, 2014		Soil	S14-Jn18266				X								
#26-TP05 (0.6-0.7)	Jun 20, 2014		Soil	S14-Jn18267				X								
#26-TP06 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18268				X								

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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#26-TP06 (0.5-0.6)	Jun 20, 2014		Soil	S14-Jn18269		X	X						X	X		
#26-TP06 (2.0-2.1)	Jun 20, 2014		Soil	S14-Jn18270				X								
#26-HA01 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18271		X			X		X					
#26-HA01 (0.3-0.4)	Jun 20, 2014		Soil	S14-Jn18272				X								
#26-HA02 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18273		X	X						X	X		
#26-SED01 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18279		X							X	X		X
#26-SS01 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18280		X	X						X	X	X	

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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X		X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory							X									
#26-SS02 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18281		X	X						X	X	X	
#17-SP-TP01 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18282		X	X						X	X		
#17-SP-TP01 (0.3-0.4)	Jun 20, 2014		Soil	S14-Jn18283				X								
#17-SP-TP02 (0.0-0.1)	Jun 20, 2014		Soil	S14-Jn18284		X	X						X	X		
#17-SP-TP02 (0.3-0.4)	Jun 20, 2014		Soil	S14-Jn18285				X								
#17H-SS01 (0-0.1)	Jun 20, 2014		Soil	S14-Jn18286		X			X	X	X					

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	80			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	97			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	100			70-130	Pass	
o-Xylene	%	101			70-130	Pass	
Xylenes - Total	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	82			70-130	Pass	
TRH C6-C10	%	88			70-130	Pass	
TRH >C10-C16	%	83			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	107			70-130	Pass	
Acenaphthylene	%	89			70-130	Pass	
Anthracene	%	109			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	
Benzo(a)pyrene	%	83			70-130	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	%	72			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	90			70-130	Pass	
Chrysene	%	101			70-130	Pass	
Dibenz(a.h)anthracene	%	74			70-130	Pass	
Fluoranthene	%	90			70-130	Pass	
Fluorene	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	115			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	97			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	80			70-130	Pass	
4.4'-DDD	%	80			70-130	Pass	
4.4'-DDE	%	80			70-130	Pass	
4.4'-DDT	%	80			70-130	Pass	
Aldrin	%	80			70-130	Pass	
b-BHC	%	80			70-130	Pass	
d-BHC	%	80			70-130	Pass	
Dieldrin	%	80			70-130	Pass	
Endosulfan I	%	80			70-130	Pass	
Endosulfan II	%	80			70-130	Pass	
Endosulfan sulphate	%	80			70-130	Pass	
Endrin	%	80			70-130	Pass	
Endrin aldehyde	%	80			70-130	Pass	
Endrin ketone	%	80			70-130	Pass	
g-BHC (Lindane)	%	80			70-130	Pass	
Heptachlor	%	80			70-130	Pass	
Heptachlor epoxide	%	80			70-130	Pass	
Hexachlorobenzene	%	120			70-130	Pass	
Methoxychlor	%	80			70-130	Pass	
Toxaphene	%	80			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	82			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	93			70-130	Pass	
Cadmium	%	94			70-130	Pass	
Chromium	%	97			70-130	Pass	
Copper	%	101			70-130	Pass	
Lead	%	100			70-130	Pass	
Mercury	%	94			70-130	Pass	
Nickel	%	100			70-130	Pass	
Zinc	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn18766	NCP	%	73			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn18766	NCP	%	86			70-130	Pass	
Toluene	S14-Jn18766	NCP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S14-Jn18766	NCP	%	87			70-130	Pass	
m&p-Xylenes	S14-Jn18766	NCP	%	89			70-130	Pass	
o-Xylene	S14-Jn18766	NCP	%	89			70-130	Pass	
Xylenes - Total	S14-Jn18766	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn18766	NCP	%	78			70-130	Pass	
TRH C6-C10	S14-Jn18766	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn15606	NCP	%	123			70-130	Pass	
Acenaphthylene	S14-Jn15606	NCP	%	103			70-130	Pass	
Anthracene	S14-Jn15606	NCP	%	103			70-130	Pass	
Benz(a)anthracene	S14-Jn15606	NCP	%	115			70-130	Pass	
Benzo(a)pyrene	S14-Jn15606	NCP	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn15606	NCP	%	128			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn15606	NCP	%	117			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn15606	NCP	%	115			70-130	Pass	
Chrysene	S14-Jn15606	NCP	%	110			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn15606	NCP	%	117			70-130	Pass	
Fluoranthene	S14-Jn15606	NCP	%	106			70-130	Pass	
Fluorene	S14-Jn15606	NCP	%	129			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn15606	NCP	%	120			70-130	Pass	
Naphthalene	S14-Jn15606	NCP	%	127			70-130	Pass	
Phenanthrene	S14-Jn15606	NCP	%	126			70-130	Pass	
Pyrene	S14-Jn15606	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn17170	NCP	%	90			70-130	Pass	
Cadmium	S14-Jn17170	NCP	%	89			70-130	Pass	
Chromium	S14-Jn17170	NCP	%	94			70-130	Pass	
Copper	S14-Jn17170	NCP	%	99			70-130	Pass	
Lead	S14-Jn17170	NCP	%	95			70-130	Pass	
Mercury	S14-Jn17170	NCP	%	102			70-130	Pass	
Nickel	S14-Jn17170	NCP	%	97			70-130	Pass	
Zinc	S14-Jn17170	NCP	%	99			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn18764	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jn18253	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-Jn18253	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jn18253	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn18764	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jn18764	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jn18764	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jn18764	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jn18764	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jn18764	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn18764	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jn18764	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn18764	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jn18253	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jn18253	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jn18253	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jn18253	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn17169	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jn17169	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jn17169	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jn17169	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jn17169	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jn17169	NCP	mg/L	0.00010	0.00010	16	30%	Pass	
Nickel	S14-Jn17169	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jn17169	NCP	mg/L	0.0055	0.0055	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	02213-15
Turn around time:	5 Day
Date/Time received:	Jun 20, 2014 3:50 PM
Eurofins | mgt reference:	**422618**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 16.5 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Organic samples had Teflon liners.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☑ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

SPCOAS conducted at Eurofins | mgt Brisbane | Acid Herbicides conducted at Eurofins | mgt Melbourne | Asbestos conducted at ASET | Asbestos bags not received for 27-G-TP06 (0-0.1), 27-G-TP06 (1.0-1.1), 26-HA01 (0-0.1) and 26-HA01 (0.3-0.4) | Labelling discrepancy: #26-TP03 (0.1-0.2) labelled as #26-TP03 (0-0.1) as per COC

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

02213

CHAIN OF CUSTODY

JBS&G

#420618

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, EP, LB
SEND REPORT TO: K Henderson, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCBs	[illegible]	[illegible]	VOCs	NOTES:
#27-G-TP01 (0.1-0.2)	Soil	19/6/14		B + J		X	X		~~X~~	~~X~~				B7
#27-G-TP01 (0.3-0.4)	↓	↓		↓										= 8 metals
#27 – TP02 (0-0.1)				+ B		X	X	X						TRH/BTEX
#27 – TP02 (0.3-0.4)				↓										PAHs
#27 – TP02 (0.75-0.85)														
#27 – TP02 (1.9-2.0)												X		B13
#27 – TP03 (0-0.1)						X	X	X						= OCP/PCBs
#27 – TP03 (0.3-0.4)														
#27 – TP03 (0.8-0.9)														Asbestos
#27 – TP04 (0-0.1)					No →	~~X~~			X	X				= NEPM 2013
#27 – TP04 (0.3-0.4)														
#27 – TP05 (0-0.1)						X	X	X						
#27 – TP05 (0.9-1.0)														* Please
#27 – TP05 (1.2-1.3)														contact Tyler
#27 – TP06 (0-0.1)														for sample
#27 – TP06 (1.0-1.1)						X	X	X						discrepancies
#26 – TP01 (0-0.1)														0413183356
#26 – TP01 (0.4-0.5)														
#25 – TP02 (0.3-0.4)	↓	↓		↓		X	X	X						

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Creese DATE: 20/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 20/6/14 3.50pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02214

CHAIN OF CUSTODY

JBS&G

#422618

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: K.Henderson, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: tcole@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) khenderson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	BTEX	NOTES:
Rinsate	Water	19/6/14		Vials (etc.)		X	X								B7
Trip spike														X	= 8 metals
Trip blank														X	TRH/BTEX
Rinsate		20/6/14				X	X								PAH's
#27-TP07 (0-0.1)	Soil			B+J (+Bag)		X	X	X				X			
#27-TP07 (0.4-0.5)				"											B13
QC05				B+J		X	X	X							= OCP/PCBs
#26-TP03 (0-0.1)				B+J+B		X	X								
#26-TP03 (0.5-0.6)				"				X							Asbestos
#26-TP04 (0.0-0.1)						X	X	X							= NEPM 2013
#26-TP04 (0.5-0.6)															
#26-TP04 (0.7-0.8)															
#26-TP05 (0.0-0.1)						X	X	X							
#26-TP05 (0.2-0.3)															
#26-TP05 (0.6-0.7)															
#26-TP06 (0.0-0.1)															
#26-TP06 (0.5-0.6)						X	X	X							
#26-TP06 (2.0-2.1)															
#26-HA01 (0-0.1)									X	X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Cole DATE: 20/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 20/6/14 3.50pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

02215

CHAIN OF COUSTODY

JBS&G

#422618

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB
SEND REPORT TO: K Henderson, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tgreer@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	NOTES:
~~[illegible]~~	Soil	20/06/14												
#26-HA01-(0.3-0.4)														
#26-HA02 (0.0-0.1)						X	X	X						
#26 SED01 (0.0-0.1)						X	X					X		
#26 SS01 (0.0-0.1)						X	X	X					X	
#26 SS02 (0.0-0.1)						X	X	X					X	
#17-SP-TP01 (0-0.1)						X	X	X						
#17-SP-TP01 (0.3-0.4)														
#17-SP-TP02 (0.0-0.1)						X	X	X						
#17-SP-TP02 (0.3-0.4)														
#17 SS01 (0-0.1)									X	X	X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Greer DATE: 20/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 20/6/14 3.50pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **422956-S**
Client Reference BOX HILL 43376
Received Date Jun 24, 2014

Client Sample ID			**QC06**	**17-TP03 0.2-0.3**	**17-TP03 1.9-2.0**	**17-TP04 0-0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21222**	**S14-Jn21227**	**S14-Jn21230**	**S14-Jn21231**
Date Sampled			**Jun 23, 2014**	**Jun 23, 2014**	**Jun 23, 2014**	**Jun 23, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90	82	-	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5

Client Sample ID			QC06	17-TP03 0.2-0.3	17-TP03 1.9-2.0	17-TP04 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21222	S14-Jn21227	S14-Jn21230	S14-Jn21231
Date Sampled			Jun 23, 2014	Jun 23, 2014	Jun 23, 2014	Jun 23, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	96	95	-	100
p-Terphenyl-d14 (surr.)	1	%	105	107	-	113
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	95	104	-	113
Tetrachloro-m-xylene (surr.)	1	%	102	102	-	103
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	95	104	-	113
Heavy Metals						
Arsenic	2	mg/kg	4.1	5.0	-	3.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	8.5	11	-	6.6
Copper	5	mg/kg	< 5	< 5	-	< 5
Lead	5	mg/kg	8.1	9.3	-	6.8
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Nickel	5	mg/kg	< 5	< 5	-	< 5
Zinc	5	mg/kg	9.5	8.6	-	8.3

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	QC06 Soil S14-Jn21222 Jun 23, 2014	17-TP03 0.2-0.3 Soil S14-Jn21227 Jun 23, 2014	17-TP03 1.9-2.0 Soil S14-Jn21230 Jun 23, 2014	17-TP04 0-0.1 Soil S14-Jn21231 Jun 23, 2014
SPOCAS Suite						
pH-KCL	0.1	units	-	-	4.2	-
pH-OX	0.1	units	-	-	3.9	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	42	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	80	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	38	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.07	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.13	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	0.06	-
Sulfur - KCl Extractable	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide	0.02	% S	-	-	< 0.02	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	< 0.02	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	< 10	-
HCl Extractable Sulfur	0.02	% S	-	-	< 0.02	-
Net Acid soluble sulfur	0.02	% S	-	-	< 0.02	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	< 10	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	< 0.02	-
Calcium - KCl Extractable	0.02	% Ca	-	-	< 0.02	-
Calcium - Peroxide	0.02	% Ca	-	-	< 0.02	-
Acid Reacted Calcium	0.02	% Ca	-	-	< 0.02	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Magnesium - KCl Extractable	0.02	% Mg	-	-	0.04	-
Magnesium - Peroxide	0.02	% Mg	-	-	0.04	-
Acid Reacted Magnesium	0.02	% Mg	-	-	< 0.02	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	< 10	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	< 0.02	-
Acid Neutralising Capacity	0.02	%CaCO3	-	-	n/a	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	n/a	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	n/a	-
ANC Fineness Factor			-	-	1.5	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	0.07	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	42	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	3.0	-
Extraneous Material						
<2mm Fraction	0.005	g	-	-	n/a	-
>2mm Fraction	0.005		-	-	n/a	-
Analysed Material	0.1	%	-	-	100	-
Extraneous Material	0.1	%	-	-	< 0.1	-
% Moisture	0.1	%	9.7	12	16	12
Asbestos (% weight as per WA Guidelines)			see attached	see attached	-	see attached

Client Sample ID			17-TP05 0-0.1	09-G-TP01 0-0.1	09-TP02 0-0.1	09-TP04 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21233	S14-Jn21235	S14-Jn21238	S14-Jn21241
Date Sampled			Jun 23, 2014	Jun 23, 2014	Jun 23, 2014	Jun 23, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	83	-	75	80
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	95	-	97	97
p-Terphenyl-d14 (surr.)	1	%	105	-	109	109

Client Sample ID			17-TP05 0-0.1	09-G-TP01 0-0.1	09-TP02 0-0.1	09-TP04 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21233	S14-Jn21235	S14-Jn21238	S14-Jn21241
Date Sampled			Jun 23, 2014	Jun 23, 2014	Jun 23, 2014	Jun 23, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	107	116	108	108
Tetrachloro-m-xylene (surr.)	1	%	103	114	109	107
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	107	-	108	108
Heavy Metals						
Arsenic	2	mg/kg	7.7	7.9	10	5.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	23	21	12
Copper	5	mg/kg	< 5	22	15	12
Lead	5	mg/kg	13	23	19	11
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	14	6.3	< 5
Zinc	5	mg/kg	9.8	78	36	31
% Moisture	0.1	%	9.8	14	13	12
Asbestos (% weight as per WA Guidelines)			see attached	-	see attached	see attached

Client Sample ID			09-TP05 0-0.1	09-A-TP06 0-0.1	09-A-TP06 0.4-0.5	09-TP07 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21243**	**S14-Jn21246**	**S14-Jn21247**	**S14-Jn21249**
Date Sampled			**Jun 23, 2014**	**Jun 23, 2014**	**Jun 23, 2014**	**Jun 23, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	73	-	77	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	100	-	100	96
p-Terphenyl-d14 (surr.)	1	%	111	-	109	114

Client Sample ID			09-TP05 0-0.1	09-A-TP06 0-0.1	09-A-TP06 0.4-0.5	09-TP07 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21243	S14-Jn21246	S14-Jn21247	S14-Jn21249
Date Sampled			Jun 23, 2014	Jun 23, 2014	Jun 23, 2014	Jun 23, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	107	122	-	105
Tetrachloro-m-xylene (surr.)	1	%	107	114	-	106
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	107	122	-	105
Heavy Metals						
Arsenic	2	mg/kg	5.1	-	4.2	9.7
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	12	-	12	33
Copper	5	mg/kg	12	-	8.9	20
Lead	5	mg/kg	11	-	9.9	18
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	0.64
Nickel	5	mg/kg	< 5	-	< 5	75
Zinc	5	mg/kg	31	-	10	530
% Moisture	0.1	%	11	14	16	17
Asbestos (% weight as per WA Guidelines)			see attached	see attached	-	see attached

Client Sample ID			09-TP08 0-0.1	09-TP08 1.4-1.5	16-TP01 0-0.1	16-TP01 2.1-2.2
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21251**	**S14-Jn21254**	**S14-Jn21255**	**S14-Jn21258**
Date Sampled			**Jun 23, 2014**	**Jun 23, 2014**	**Jun 23, 2014**	**Jun 23, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	< 50	-
TRH C29-C36	50	mg/kg	< 50	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	76	-	81	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	93	-	95	-
p-Terphenyl-d14 (surr.)	1	%	111	-	112	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	09-TP08 0-0.1 Soil S14-Jn21251 Jun 23, 2014	09-TP08 1.4-1.5 Soil S14-Jn21254 Jun 23, 2014	16-TP01 0-0.1 Soil S14-Jn21255 Jun 23, 2014	16-TP01 2.1-2.2 Soil S14-Jn21258 Jun 23, 2014
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Dibutylchlorendate (surr.)	1	%	111	-	100	-
Tetrachloro-m-xylene (surr.)	1	%	104	-	100	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	111	-	100	-
Heavy Metals						
Arsenic	2	mg/kg	7.5	-	5.6	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	15	-	16	-
Copper	5	mg/kg	14	-	< 5	-
Lead	5	mg/kg	13	-	7.2	-
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	-
Nickel	5	mg/kg	6.6	-	< 5	-
Zinc	5	mg/kg	27	-	6.1	-
SPOCAS Suite						
pH-KCL	0.1	units	-	4.8	-	4.5
pH-OX	0.1	units	-	4.7	-	4.0
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	15	-	23
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	33	-	63
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	18	-	40
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.02	-	0.04
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.05	-	0.10
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.03	-	0.06
Sulfur - KCl Extractable	0.02	% S	-	< 0.02	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	< 0.02	-	< 0.02

Client Sample ID			09-TP08 0-0.1	09-TP08 1.4-1.5	16-TP01 0-0.1	16-TP01 2.1-2.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21251	S14-Jn21254	S14-Jn21255	S14-Jn21258
Date Sampled			Jun 23, 2014	Jun 23, 2014	Jun 23, 2014	Jun 23, 2014
Test/Reference	LOR	Unit				
SPOCAS Suite						
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	< 0.02	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	< 10	-	< 10
HCl Extractable Sulfur	0.02	% S	-	n/a	-	n/a
Net Acid soluble sulfur	0.02	% S	-	n/a	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	n/a	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	n/a	-	n/a
Calcium - KCl Extractable	0.02	% Ca	-	< 0.02	-	< 0.02
Calcium - Peroxide	0.02	% Ca	-	< 0.02	-	< 0.02
Acid Reacted Calcium	0.02	% Ca	-	< 0.02	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	< 10	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	< 0.02	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	0.09	-	< 0.02
Magnesium - Peroxide	0.02	% Mg	-	0.08	-	< 0.02
Acid Reacted Magnesium	0.02	% Mg	-	< 0.02	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	< 10	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	< 0.02	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	n/a	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	n/a	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	n/a	-	n/a
ANC Fineness Factor			-	1.5	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	0.02	-	0.04
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	15	-	23
Liming rate - SPOCAS	1	kg CaCO3/t	-	1.0	-	2.0
Extraneous Material						
<2mm Fraction	0.005	g	-	n/a	-	n/a
>2mm Fraction	0.005		-	n/a	-	n/a
Analysed Material	0.1	%	-	100	-	100
Extraneous Material	0.1	%	-	< 0.1	-	< 0.1
% Moisture	0.1	%	12	14	7.9	8.7
Asbestos (% weight as per WA Guidelines)			see attached	-	see attached	-

Client Sample ID			16-TP02 0-0.1	16-TP03 0-0.1	16-TP04 0-0.1	16-SEDO1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21259	S14-Jn21262	S14-Jn21264	S14-Jn21266
Date Sampled			Jun 23, 2014	Jun 23, 2014	Jun 23, 2014	Jun 23, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	69	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	86	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	160	< 50

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	16-TP02 0-0.1 Soil S14-Jn21259 Jun 23, 2014	16-TP03 0-0.1 Soil S14-Jn21262 Jun 23, 2014	16-TP04 0-0.1 Soil S14-Jn21264 Jun 23, 2014	16-SEDO1 Soil S14-Jn21266 Jun 23, 2014
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	77	78	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	110	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	99	97	96	94
p-Terphenyl-d14 (surr.)	1	%	110	108	101	112
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

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Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	16-TP02 0-0.1 Soil S14-Jn21259 Jun 23, 2014	16-TP03 0-0.1 Soil S14-Jn21262 Jun 23, 2014	16-TP04 0-0.1 Soil S14-Jn21264 Jun 23, 2014	16-SEDO1 Soil S14-Jn21266 Jun 23, 2014
Organochlorine Pesticides						
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	110	102	114	120
Tetrachloro-m-xylene (surr.)	1	%	106	96	90	123
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	110	102	114	120
Heavy Metals						
Arsenic	2	mg/kg	4.1	5.9	3.1	7.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	10	12	6.9	27
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	8.9	8.1	11	8.6
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	6.8	10	17	< 5
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	5.6
pH-OX	0.1	units	-	-	-	4.7
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	8.0
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	34
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	26
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	< 0.02
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.05
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.04
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	n/a

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	16-TP02 0-0.1 Soil S14-Jn21259 Jun 23, 2014	16-TP03 0-0.1 Soil S14-Jn21262 Jun 23, 2014	16-TP04 0-0.1 Soil S14-Jn21264 Jun 23, 2014	16-SEDO1 Soil S14-Jn21266 Jun 23, 2014
SPOCAS Suite						
Calcium - KCl Extractable	0.02	% Ca	-	-	-	0.02
Calcium - Peroxide	0.02	% Ca	-	-	-	0.02
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	0.04
Magnesium - Peroxide	0.02	% Mg	-	-	-	0.04
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	< 0.02
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	< 10
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	1.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1
% Moisture	0.1	%	8.6	7.4	7.1	26
Asbestos (% weight as per WA Guidelines)			see attached	see attached	see attached	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 26, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 26, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 26, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 26, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 26, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 26, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 26, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jun 25, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jun 25, 2014	0 Day
% Moisture	Sydney	Jun 26, 2014	28 Day
- Method: E005 Moisture Content			

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 24, 2014 4:30 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422956	**Due:**	Jul 2, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
QC06	Jun 23, 2014		Soil	S14-Jn21222		X	X					X	X	
TRIP SPIKE	Jun 23, 2014		Water	S14-Jn21223							X			
TRIP BLANK	Jun 23, 2014		Water	S14-Jn21224							X			
RINSATE	Jun 23, 2014		Water	S14-Jn21225								X	X	
17-TP03 0-0.1	Jun 23, 2014		Soil	S14-Jn21226				X						
17-TP03 0.2-0.3	Jun 23, 2014		Soil	S14-Jn21227		X	X					X	X	
17-TP03 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21228				X						
17-TP03 0.9-1.0	Jun 23, 2014		Soil	S14-Jn21229				X						

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Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
17-TP03 1.9-2.0	Jun 23, 2014		Soil	S14-Jn21230	X									X
17-TP04 0-0.1	Jun 23, 2014		Soil	S14-Jn21231		X	X					X	X	
17-TP04 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21232				X						
17-TP05 0-0.1	Jun 23, 2014		Soil	S14-Jn21233		X	X					X	X	
17-TP05 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21234				X						
09-G-TP01 0-0.1	Jun 23, 2014		Soil	S14-Jn21235		X			X	X				
09-G-TP01 0.2-0.3	Jun 23, 2014		Soil	S14-Jn21236				X						
09-G-TP01 0.3-	Jun 23, 2014		Soil	S14-Jn21237				X						

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	Sydney	**Phone:**	02 8245 0300	**Priority:**	5 Day
	NSW 2000	**Fax:**		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
0.4														
09-TP02 0-0.1	Jun 23, 2014		Soil	S14-Jn21238		X	X					X	X	
09-TP02 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21239				X						
09-TP02 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21240				X						
09-TP04 0-0.1	Jun 23, 2014		Soil	S14-Jn21241		X	X					X	X	
09-TP04 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21242				X						
09-TP05 0-0.1	Jun 23, 2014		Soil	S14-Jn21243		X	X					X	X	
09-TP05 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21244				X						
09-TP05 0.7-	Jun 23, 2014		Soil	S14-Jn21245				X						

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
0.8														
09-A-TP06 0-0.1	Jun 23, 2014		Soil	S14-Jn21246		X	X					X		
09-A-TP06 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21247		X							X	
09-A-TP06 0.8-0.9	Jun 23, 2014		Soil	S14-Jn21248				X						
09-TP07 0-0.1	Jun 23, 2014		Soil	S14-Jn21249		X	X					X	X	
09-TP07 0.9-1.0	Jun 23, 2014		Soil	S14-Jn21250				X						
09-TP08 0-0.1	Jun 23, 2014		Soil	S14-Jn21251		X	X					X	X	
09-TP08 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21252				X						

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
09-TP08 0.9-1.0	Jun 23, 2014		Soil	S14-Jn21253				X						
09-TP08 1.4-1.5	Jun 23, 2014		Soil	S14-Jn21254	X									X
16-TP01 0-0.1	Jun 23, 2014		Soil	S14-Jn21255		X	X					X	X	
16-TP01 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21256				X						
16-TP01 1.9-2.0	Jun 23, 2014		Soil	S14-Jn21257				X						
16-TP01 2.1-2.2	Jun 23, 2014		Soil	S14-Jn21258	X									X
16-TP02 0-0.1	Jun 23, 2014		Soil	S14-Jn21259		X	X					X	X	
16-TP02 0.9-	Jun 23, 2014		Soil	S14-Jn21260				X						

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Site # 1254 & 14271

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 422956
Phone: 02 8245 0300
Fax:

Received: Jun 24, 2014 4:30 PM
Due: Jul 2, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
1.0														
16-TP02 1.4-1.5	Jun 23, 2014		Soil	S14-Jn21261				X						
16-TP03 0-0.1	Jun 23, 2014		Soil	S14-Jn21262		X	X					X	X	
16-TP03 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21263				X						
16-TP04 0-0.1	Jun 23, 2014		Soil	S14-Jn21264		X	X					X	X	
16-TP04 0.2-0.3	Jun 23, 2014		Soil	S14-Jn21265				X						
16-SEDO1	Jun 23, 2014		Soil	S14-Jn21266		X						X	X	X
16-TP01-1.4-1.5	Jun 23, 2014		Soil	S14-Jn21473				X						

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	90			70-130	Pass	
TRH C10-C14	%	82			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	93			70-130	Pass	
Ethylbenzene	%	89			70-130	Pass	
m&p-Xylenes	%	89			70-130	Pass	
o-Xylene	%	89			70-130	Pass	
Xylenes - Total	%	89			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	127			70-130	Pass	
TRH C6-C10	%	84			70-130	Pass	
TRH >C10-C16	%	87			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	74			70-130	Pass	
Anthracene	%	101			70-130	Pass	
Benz(a)anthracene	%	83			70-130	Pass	
Benzo(a)pyrene	%	78			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene			%	75			70-130	Pass	
Benzo(g.h.i)perylene			%	78			70-130	Pass	
Benzo(k)fluoranthene			%	93			70-130	Pass	
Chrysene			%	100			70-130	Pass	
Dibenz(a.h)anthracene			%	82			70-130	Pass	
Fluoranthene			%	87			70-130	Pass	
Fluorene			%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	84			70-130	Pass	
Naphthalene			%	84			70-130	Pass	
Phenanthrene			%	71			70-130	Pass	
Pyrene			%	85			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	94			70-130	Pass	
4.4'-DDD			%	101			70-130	Pass	
4.4'-DDE			%	103			70-130	Pass	
4.4'-DDT			%	102			70-130	Pass	
a-BHC			%	102			70-130	Pass	
Aldrin			%	98			70-130	Pass	
b-BHC			%	101			70-130	Pass	
d-BHC			%	93			70-130	Pass	
Dieldrin			%	97			70-130	Pass	
Endosulfan I			%	92			70-130	Pass	
Endosulfan II			%	96			70-130	Pass	
Endosulfan sulphate			%	95			70-130	Pass	
Endrin			%	99			70-130	Pass	
Endrin aldehyde			%	98			70-130	Pass	
Endrin ketone			%	98			70-130	Pass	
g-BHC (Lindane)			%	103			70-130	Pass	
Heptachlor			%	102			70-130	Pass	
Heptachlor epoxide			%	98			70-130	Pass	
Hexachlorobenzene			%	128			70-130	Pass	
Methoxychlor			%	108			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	85			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	98			70-130	Pass	
Cadmium			%	99			70-130	Pass	
Chromium			%	99			70-130	Pass	
Copper			%	98			70-130	Pass	
Lead			%	91			70-130	Pass	
Mercury			%	98			70-130	Pass	
Nickel			%	101			70-130	Pass	
Zinc			%	100			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn21222	CP	%	96			70-130	Pass	
TRH C10-C14	S14-Jn21222	CP	%	71			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn21222	CP	%	92			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S14-Jn21222	CP	%	92			70-130	Pass	
Ethylbenzene	S14-Jn21222	CP	%	91			70-130	Pass	
m&p-Xylenes	S14-Jn21222	CP	%	93			70-130	Pass	
o-Xylene	S14-Jn21222	CP	%	91			70-130	Pass	
Xylenes - Total	S14-Jn21222	CP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn21222	CP	%	121			70-130	Pass	
TRH C6-C10	S14-Jn21222	CP	%	89			70-130	Pass	
TRH >C10-C16	S14-Jn21222	CP	%	72			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn21222	CP	%	94			70-130	Pass	
Acenaphthylene	S14-Jn21222	CP	%	95			70-130	Pass	
Anthracene	S14-Jn21222	CP	%	99			70-130	Pass	
Benz(a)anthracene	S14-Jn21222	CP	%	93			70-130	Pass	
Benzo(a)pyrene	S14-Jn21222	CP	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn21222	CP	%	122			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn21222	CP	%	80			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn21222	CP	%	109			70-130	Pass	
Chrysene	S14-Jn21222	CP	%	109			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn21222	CP	%	81			70-130	Pass	
Fluoranthene	S14-Jn21222	CP	%	97			70-130	Pass	
Fluorene	S14-Jn21222	CP	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21222	CP	%	82			70-130	Pass	
Naphthalene	S14-Jn21222	CP	%	97			70-130	Pass	
Phenanthrene	S14-Jn21222	CP	%	88			70-130	Pass	
Pyrene	S14-Jn21222	CP	%	96			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn21222	CP	%	88			70-130	Pass	
4.4'-DDD	S14-Jn21222	CP	%	104			70-130	Pass	
4.4'-DDE	S14-Jn21222	CP	%	96			70-130	Pass	
4.4'-DDT	S14-Jn21222	CP	%	70			70-130	Pass	
a-BHC	S14-Jn21222	CP	%	92			70-130	Pass	
Aldrin	S14-Jn21222	CP	%	89			70-130	Pass	
b-BHC	S14-Jn21222	CP	%	86			70-130	Pass	
d-BHC	S14-Jn21222	CP	%	87			70-130	Pass	
Dieldrin	S14-Jn21222	CP	%	89			70-130	Pass	
Endosulfan I	S14-Jn21222	CP	%	84			70-130	Pass	
Endosulfan II	S14-Jn21222	CP	%	91			70-130	Pass	
Endosulfan sulphate	S14-Jn21222	CP	%	86			70-130	Pass	
Endrin	S14-Jn21222	CP	%	88			70-130	Pass	
Endrin aldehyde	S14-Jn21222	CP	%	87			70-130	Pass	
Endrin ketone	S14-Jn21222	CP	%	83			70-130	Pass	
g-BHC (Lindane)	S14-Jn21222	CP	%	89			70-130	Pass	
Heptachlor	S14-Jn21222	CP	%	84			70-130	Pass	
Heptachlor epoxide	S14-Jn21222	CP	%	92			70-130	Pass	
Hexachlorobenzene	S14-Jn21222	CP	%	122			70-130	Pass	
Methoxychlor	S14-Jn21222	CP	%	72			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn21222	CP	%	82			70-130	Pass	
Spike - % Recovery									

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1					
Arsenic	S14-Jn21222	CP	%	98			70-130	Pass	
Cadmium	S14-Jn21222	CP	%	99			70-130	Pass	
Chromium	S14-Jn21222	CP	%	110			70-130	Pass	
Copper	S14-Jn21222	CP	%	99			70-130	Pass	
Lead	S14-Jn21222	CP	%	93			70-130	Pass	
Mercury	S14-Jn21222	CP	%	98			70-130	Pass	
Nickel	S14-Jn21222	CP	%	88			70-130	Pass	
Zinc	S14-Jn21222	CP	%	115			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jn21251	CP	%	74			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jn21251	CP	%	77			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn21251	CP	%	96			70-130	Pass	
Acenaphthylene	S14-Jn21251	CP	%	82			70-130	Pass	
Anthracene	S14-Jn21251	CP	%	108			70-130	Pass	
Benz(a)anthracene	S14-Jn21251	CP	%	74			70-130	Pass	
Benzo(a)pyrene	S14-Jn21251	CP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn21251	CP	%	85			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn21251	CP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn21251	CP	%	97			70-130	Pass	
Chrysene	S14-Jn21251	CP	%	108			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn21251	CP	%	93			70-130	Pass	
Fluoranthene	S14-Jn21251	CP	%	92			70-130	Pass	
Fluorene	S14-Jn21251	CP	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21251	CP	%	97			70-130	Pass	
Naphthalene	S14-Jn21251	CP	%	95			70-130	Pass	
Phenanthrene	S14-Jn21251	CP	%	78			70-130	Pass	
Pyrene	S14-Jn21251	CP	%	92			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn21251	CP	%	87			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn21251	CP	%	90			70-130	Pass	
Cadmium	S14-Jn21251	CP	%	96			70-130	Pass	
Chromium	S14-Jn21251	CP	%	87			70-130	Pass	
Copper	S14-Jn21251	CP	%	89			70-130	Pass	
Lead	S14-Jn21251	CP	%	84			70-130	Pass	
Mercury	S14-Jn21251	CP	%	94			70-130	Pass	
Nickel	S14-Jn21251	CP	%	93			70-130	Pass	
Zinc	S14-Jn21251	CP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn21255	CP	%	94			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn21255	CP	%	90			70-130	Pass	
Toluene	S14-Jn21255	CP	%	89			70-130	Pass	
Ethylbenzene	S14-Jn21255	CP	%	88			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	S14-Jn21255	CP	%	92			70-130	Pass	
o-Xylene	S14-Jn21255	CP	%	90			70-130	Pass	
Xylenes - Total	S14-Jn21255	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn21255	CP	%	118			70-130	Pass	
TRH C6-C10	S14-Jn21255	CP	%	87			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn21222	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn21222	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn21222	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn21222	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn21222	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn21222	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn21222	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn21222	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn21222	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn21222	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn21222	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn21222	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn21222	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn21222	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn21222	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn21222	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
a-BHC	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn21222	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn21222	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn21222	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn21222	CP	mg/kg	4.1	4.4	7.0	30%	Pass	
Cadmium	S14-Jn21222	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn21222	CP	mg/kg	8.5	8.8	3.0	30%	Pass	
Copper	S14-Jn21222	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jn21222	CP	mg/kg	8.1	7.3	10	30%	Pass	
Mercury	S14-Jn21222	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn21222	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jn21222	CP	mg/kg	9.5	27	96	30%	Fail	Q15
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jn21230	CP	units	4.2	4.2	<1	30%	Pass	
pH-OX	S14-Jn21230	CP	units	3.9	4.1	3.0	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jn21230	CP	mol H+/t	42	41	2.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jn21230	CP	mol H+/t	80	83	4.0	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jn21230	CP	mol H+/t	38	42	10	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jn21230	CP	% pyrite S	0.07	0.07	2.0	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jn21230	CP	% pyrite S	0.13	0.13	4.0	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jn21230	CP	% pyrite S	0.06	0.07	10	30%	Pass	
Sulfur - KCl Extractable	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jn21230	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
HCl Extractable Sulfur	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acid soluble sulfur	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	

Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
Net Acid soluble sulfur - acidity units	S14-Jn21230	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jn21230	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Calcium - Peroxide	S14-Jn21230	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Acid Reacted Calcium	S14-Jn21230	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jn21230	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jn21230	CP	% Mg	0.04	0.04	<1	30%	Pass	
Magnesium - Peroxide	S14-Jn21230	CP	% Mg	0.04	0.04	2.0	30%	Pass	
Acid Reacted Magnesium	S14-Jn21230	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jn21230	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jn21230	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jn21230	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jn21230	CP	% S	0.07	0.07	2.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jn21230	CP	mol H+/t	42	41	2.0	30%	Pass	
Liming rate - SPOCAS	S14-Jn21230	CP	kg CaCO3/t	3.0	3.0	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jn21251	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn21251	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn21251	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Jn21251	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn21251	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn21251	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn21251	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn21251	CP	mg/kg	7.5	8.0	6.0	30%	Pass	
Cadmium	S14-Jn21251	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn21251	CP	mg/kg	15	16	10	30%	Pass	
Copper	S14-Jn21251	CP	mg/kg	14	13	7.0	30%	Pass	
Lead	S14-Jn21251	CP	mg/kg	13	18	31	30%	Fail	Q15
Mercury	S14-Jn21251	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn21251	CP	mg/kg	6.6	7.4	11	30%	Pass	
Zinc	S14-Jn21251	CP	mg/kg	27	23	19	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn21255	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn21255	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn21255	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn21255	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn21255	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn21255	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn21255	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn21255	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn21255	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn21255	CP	mg/kg	< 20	< 20	<1	30%	Pass	

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Comments

Asbestos analysed by: ASET, NATA accreditation no. 14484, report reference:ASET40033/43213/1-12

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Our ref : ASET40033/ 43213 / 1 - 12
Your ref : 422956
NATA Accreditation No: 14484

27 June 2014

Eurofins | MGT
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of twelve samples, forwarded by Eurofins | MGT on 27 June 2014, for analysis for asbestos.

1.Introduction: Twelve samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1 and Australian Guidelines AS 4964 - 2004 and WA/ NEPM Guidelines**)

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia/ NEPM Guidelines for the Assessment Remediation and Management of Asbestos in contaminated sites.

3. Results : **Sample No. 1. ASET40033 / 43213 / 1. QC06 - Jn21222.**
Approx dimensions 9.4 cm x 9.1 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET40033 / 43213 / 2. 17 - TP03 - 0.2 - 0.3 - Jn21227.
Approx dimensions 9.7 cm x 8.6 cm x 8.4 cm
The sample consisted of a mixture of sandy clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET40033 / 43213 / 3. 17 - TP04 - 0 - 0.1 - Jn21231.
Approx dimensions 8.8 cm x 8.7 cm x 8.3 cm
The sample consisted of a mixture of sandy clayish soil, stones, sandstones and plant matter.
No asbestos detected.

Sample No. 4. ASET40033 / 43213 / 4. 17 - TP05 - 0 - 0.1 - Jn21233.
Approx dimensions 8.7 cm x 8.5 cm x 8.1 cm
The sample consisted of a mixture of sandy clayish soil, stones, sandstones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 5. ASET40033 / 43213 / 5. 09 - TP02 - 0 - 0.1 - Jn21238.
Approx dimensions 8.9 cm x 8.6 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 6. ASET40033 / 43213 / 6. 09 - TP04 - 0 - 0.1 - Jn21241.
Approx dimensions 9.2 cm x 8.6 cm x 7.7 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET40033 / 43213 / 7. 09 - TP05 - 0 - 0.1 - Jn21243.
Approx dimensions 8.7 cm x 8.5 cm x 7.9 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 8. ASET40033 / 43213 / 8. 09 - A - TP06 - 0 - 0.1 - Jn21246.
Approx dimensions 8.8 cm x 8.6 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 9. ASET40033 / 43213 / 9. 09 - A - TP07 - 0 - 0.1 - Jn21249.
Approx dimensions 9.1 cm x 8.6 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 10. ASET40033 / 43213 / 10. 09 - A - TP08 - 0 - 0.1 - Jn21251.
Approx dimensions 9.3 cm x 8.5 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 11. ASET40033 / 43213 / 11. 16 - TP01 - 0 - 0.1 - Jn21255.
Approx dimensions 8.8 cm x 8.7 cm x 8.3 cm
The sample consisted of a mixture of sandy clayish soil, stones, sandstones and plant matter.
No asbestos detected.

Sample No. 12. ASET40033 / 43213 / 12. 16 - TP02 - 0 - 0.1 - Jn21259.
Approx dimensions 9.2 cm x 8.8 cm x 8.6 cm
The sample consisted of a mixture of sandy clayish soil, stones, sandstones and plant matter.
No asbestos detected.

Analysed and reported by,

Laxman Dias. BSc
Analyst / Approved Identifier.
Approved Signatory

WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos detected in Soil/ Dust.

***denotes fibres in bonded form in fragments**

All samples indicating " No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **422956-W**
Client Reference BOX HILL 43376
Received Date Jun 24, 2014

Client Sample ID			**TRIP SPIKE**	**TRIP BLANK**	**RINSATE**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-Jn21223**	**S14-Jn21224**	**S14-Jn21225**
Date Sampled			**Jun 23, 2014**	**Jun 23, 2014**	**Jun 23, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1
BTEX					
Benzene	0.001	mg/L	101%	< 0.001	< 0.001
Toluene	0.001	mg/L	100%	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	97%	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	100%	< 0.002	< 0.002
o-Xylene	0.001	mg/L	101%	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	100%	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	99	86	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	-	-	< 0.02
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	-	-	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TRIP SPIKE Water S14-Jn21223 Jun 23, 2014	TRIP BLANK Water S14-Jn21224 Jun 23, 2014	RINSATE Water S14-Jn21225 Jun 23, 2014
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.001	mg/L	-	-	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001
Total PAH	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	124
p-Terphenyl-d14 (surr.)	1	%	-	-	118
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	-	-	104
Tetrachloro-m-xylene (surr.)	1	%	-	-	100
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	-	-	< 0.005
Aroclor-1232	0.005	mg/L	-	-	< 0.005
Aroclor-1242	0.005	mg/L	-	-	< 0.005
Aroclor-1248	0.005	mg/L	-	-	< 0.005
Aroclor-1254	0.005	mg/L	-	-	< 0.005
Aroclor-1260	0.005	mg/L	-	-	< 0.005
Total PCB	0.005	mg/L	-	-	< 0.005
Dibutylchlorendate (surr.)	1	%	-	-	104
Heavy Metals					
Arsenic	0.005	mg/L	-	-	< 0.005
Cadmium	0.0005	mg/L	-	-	< 0.0005
Chromium	0.005	mg/L	-	-	< 0.005
Copper	0.005	mg/L	-	-	< 0.005
Lead	0.005	mg/L	-	-	< 0.005
Mercury	0.0001	mg/L	-	-	< 0.0001
Nickel	0.005	mg/L	-	-	< 0.005
Zinc	0.005	mg/L	-	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 26, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 30, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 26, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 26, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 25, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 26, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 26, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 24, 2014 4:30 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	422956	**Due:**	Jul 2, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
QC06	Jun 23, 2014		Soil	S14-Jn21222		X	X					X	X	
TRIP SPIKE	Jun 23, 2014		Water	S14-Jn21223							X			
TRIP BLANK	Jun 23, 2014		Water	S14-Jn21224							X			
RINSATE	Jun 23, 2014		Water	S14-Jn21225								X	X	
17-TP03 0-0.1	Jun 23, 2014		Soil	S14-Jn21226				X						
17-TP03 0.2-0.3	Jun 23, 2014		Soil	S14-Jn21227		X	X					X	X	
17-TP03 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21228				X						
17-TP03 0.9-1.0	Jun 23, 2014		Soil	S14-Jn21229				X						

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Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
17-TP03 1.9-2.0	Jun 23, 2014		Soil	S14-Jn21230	X									X
17-TP04 0-0.1	Jun 23, 2014		Soil	S14-Jn21231		X	X					X	X	
17-TP04 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21232				X						
17-TP05 0-0.1	Jun 23, 2014		Soil	S14-Jn21233		X	X					X	X	
17-TP05 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21234				X						
09-G-TP01 0-0.1	Jun 23, 2014		Soil	S14-Jn21235		X			X	X				
09-G-TP01 0.2-0.3	Jun 23, 2014		Soil	S14-Jn21236				X						
09-G-TP01 0.3-	Jun 23, 2014		Soil	S14-Jn21237				X						

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
0.4														
09-TP02 0-0.1	Jun 23, 2014		Soil	S14-Jn21238		X	X					X	X	
09-TP02 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21239				X						
09-TP02 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21240				X						
09-TP04 0-0.1	Jun 23, 2014		Soil	S14-Jn21241		X	X					X	X	
09-TP04 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21242				X						
09-TP05 0-0.1	Jun 23, 2014		Soil	S14-Jn21243		X	X					X	X	
09-TP05 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21244				X						
09-TP05 0.7-	Jun 23, 2014		Soil	S14-Jn21245				X						

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
0.8														
09-A-TP06 0-0.1	Jun 23, 2014		Soil	S14-Jn21246		X	X					X		
09-A-TP06 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21247		X							X	
09-A-TP06 0.8-0.9	Jun 23, 2014		Soil	S14-Jn21248				X						
09-TP07 0-0.1	Jun 23, 2014		Soil	S14-Jn21249		X	X					X	X	
09-TP07 0.9-1.0	Jun 23, 2014		Soil	S14-Jn21250				X						
09-TP08 0-0.1	Jun 23, 2014		Soil	S14-Jn21251		X	X					X	X	
09-TP08 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21252				X						

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
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NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 422956
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Fax:

Received: Jun 24, 2014 4:30 PM
Due: Jul 2, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
09-TP08 0.9-1.0	Jun 23, 2014		Soil	S14-Jn21253				X						
09-TP08 1.4-1.5	Jun 23, 2014		Soil	S14-Jn21254	X									X
16-TP01 0-0.1	Jun 23, 2014		Soil	S14-Jn21255		X	X					X	X	
16-TP01 0.4-0.5	Jun 23, 2014		Soil	S14-Jn21256				X						
16-TP01 1.9-2.0	Jun 23, 2014		Soil	S14-Jn21257				X						
16-TP01 2.1-2.2	Jun 23, 2014		Soil	S14-Jn21258	X									X
16-TP02 0-0.1	Jun 23, 2014		Soil	S14-Jn21259		X	X					X	X	
16-TP02 0.9-	Jun 23, 2014		Soil	S14-Jn21260				X						

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos (% weight as per WA Guidelines)	HOLD	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X									X
External Laboratory							X							
1.0														
16-TP02 1.4-1.5	Jun 23, 2014		Soil	S14-Jn21261				X						
16-TP03 0-0.1	Jun 23, 2014		Soil	S14-Jn21262		X	X					X	X	
16-TP03 0.3-0.4	Jun 23, 2014		Soil	S14-Jn21263				X						
16-TP04 0-0.1	Jun 23, 2014		Soil	S14-Jn21264		X	X					X	X	
16-TP04 0.2-0.3	Jun 23, 2014		Soil	S14-Jn21265				X						
16-SEDO1	Jun 23, 2014		Soil	S14-Jn21266		X						X	X	X
16-TP01-1.4-1.5	Jun 23, 2014		Soil	S14-Jn21473				X						

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram
ug/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	82			70-130	Pass	
TRH C10-C14	%	73			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	95			70-130	Pass	
Ethylbenzene	%	97			70-130	Pass	
m&p-Xylenes	%	100			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	86			70-130	Pass	
TRH C6-C10	%	90			70-130	Pass	
TRH >C10-C16	%	77			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	124			70-130	Pass	
Acenaphthylene	%	118			70-130	Pass	
Anthracene	%	98			70-130	Pass	
Benz(a)anthracene	%	130			70-130	Pass	
Benzo(a)pyrene	%	117			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	%	127			70-130	Pass	
Benzo(g.h.i)perylene	%	126			70-130	Pass	
Benzo(k)fluoranthene	%	125			70-130	Pass	
Chrysene	%	118			70-130	Pass	
Dibenz(a.h)anthracene	%	114			70-130	Pass	
Fluoranthene	%	106			70-130	Pass	
Fluorene	%	120			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	121			70-130	Pass	
Naphthalene	%	127			70-130	Pass	
Phenanthrene	%	103			70-130	Pass	
Pyrene	%	105			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	75			70-130	Pass	
4.4'-DDD	%	100			70-130	Pass	
4.4'-DDE	%	100			70-130	Pass	
4.4'-DDT	%	75			70-130	Pass	
a-BHC	%	75			70-130	Pass	
Aldrin	%	75			70-130	Pass	
b-BHC	%	75			70-130	Pass	
d-BHC	%	75			70-130	Pass	
Dieldrin	%	75			70-130	Pass	
Endosulfan I	%	75			70-130	Pass	
Endosulfan II	%	75			70-130	Pass	
Endosulfan sulphate	%	75			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	75			70-130	Pass	
Endrin ketone	%	75			70-130	Pass	
g-BHC (Lindane)	%	75			70-130	Pass	
Heptachlor	%	75			70-130	Pass	
Heptachlor epoxide	%	75			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
Toxaphene	%	75			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	101			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	99			70-130	Pass	
Cadmium	%	88			70-130	Pass	
Chromium	%	94			70-130	Pass	
Copper	%	85			70-130	Pass	
Lead	%	95			70-130	Pass	
Mercury	%	94			70-130	Pass	
Nickel	%	88			70-130	Pass	
Zinc	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn20722	NCP	%	88			70-130	Pass	
Toluene	S14-Jn20722	NCP	%	93			70-130	Pass	
Ethylbenzene	S14-Jn20722	NCP	%	88			70-130	Pass	
m&p-Xylenes	S14-Jn20722	NCP	%	92			70-130	Pass	
o-Xylene	S14-Jn20722	NCP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total	S14-Jn20722	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn20722	NCP	%	70			70-130	Pass	
TRH C10-C14	S14-Jn19086	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn20722	NCP	%	117			70-130	Pass	
TRH C6-C10	S14-Jn20722	NCP	%	79			70-130	Pass	
TRH >C10-C16	S14-Jn19086	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn19274	NCP	%	105			70-130	Pass	
Acenaphthylene	S14-Jn19274	NCP	%	129			70-130	Pass	
Anthracene	S14-Jn19274	NCP	%	105			70-130	Pass	
Benz(a)anthracene	S14-Jn19274	NCP	%	125			70-130	Pass	
Benzo(a)pyrene	S14-Jn19274	NCP	%	124			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn19274	NCP	%	126			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn19274	NCP	%	130			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn19274	NCP	%	119			70-130	Pass	
Chrysene	S14-Jn19274	NCP	%	126			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn19274	NCP	%	119			70-130	Pass	
Fluoranthene	S14-Jn19274	NCP	%	116			70-130	Pass	
Fluorene	S14-Jn19274	NCP	%	130			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn19274	NCP	%	126			70-130	Pass	
Naphthalene	S14-Jn19274	NCP	%	126			70-130	Pass	
Phenanthrene	S14-Jn19274	NCP	%	113			70-130	Pass	
Pyrene	S14-Jn19274	NCP	%	116			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn21225	CP	%	101			70-130	Pass	
Cadmium	S14-Jn21225	CP	%	88			70-130	Pass	
Chromium	S14-Jn21225	CP	%	95			70-130	Pass	
Copper	S14-Jn21225	CP	%	87			70-130	Pass	
Lead	S14-Jn21225	CP	%	99			70-130	Pass	
Mercury	S14-Jn21225	CP	%	88			70-130	Pass	
Nickel	S14-Jn21225	CP	%	89			70-130	Pass	
Zinc	S14-Jn21225	CP	%	90			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn20721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jn20721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jn20721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jn20721	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jn20721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jn20721	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn20721	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jn19152	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-Jn19152	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jn19152	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn20721	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jn20721	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn20721	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jn19152	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jn19152	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jn19152	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M14-Jn18988	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	M14-Jn18988	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	M14-Jn18988	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	M14-Jn18988	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	M14-Jn18988	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	M14-Jn18988	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M14-Jn18988	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	M14-Jn18988	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Jun 24, 2014 4:30 PM
Eurofins | mgt reference:	**422956**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 16.5 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Organic samples had Teflon liners.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☑ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

SPOCAS conducted at Eurofins mgt Brisbane| Asbestos conducted at ASET| Extra bag received, 16-TP01 1.4-1.5 has been placed on hold.

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

Eurofins | mgt Sample Receipt

02216

CHAIN OF CUSTODY

#422956 JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: Khenderson, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcrappe@jbsg.com

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Hardness	Sulfates	VOCs	BTEX	NOTES:
QC05	Soil	23/5/14				X	X	X							B7
Trip spike	Water													X	= 8 metals
Trip blank														X	BTEX, TRH,
Rinsate						X	X								PAHs
#17-TP03 (0-0.1)	Soil														
#17-TP03 (0.2-0.3)						X	X	X							B13
#17-TP03 (0.4-0.5)															= OCP/PCBs
#17-TP03 (0.9-1.0)															
#17-TP03 (1.9-2.0)												X			Asbestos
#17-TP04 (0-0.1)						X	X	X							= NEPM 2013
#17-TP04 (0.3-0.4)															
#17-TP05 (0-0.1)						X	X	X							
#17-TP05 (0.3-0.4)															② Contact
#09-G-TP01 (0-0.1)									X	X					TC for
#09-G-TP01 (0.2-0.3)															sample
#09-G-TP01 (0.3-0.4)															issues
#09-TP02 (0-0.1)						X	X	X							
#09-TP02 (0.3-0.4)															
#09-TP02 (0.4-0.5)															

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Crappe DATE: 24/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 24/6/14 4 30pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

422956

02217

CHAIN OF CUSTODY

422956

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: Khenderson, TC SEND INVOICE TO: GNB	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@jbsg.com.au + tcreese@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	NOTES:
#09-TP04 (0-0.1)	Soil	23/6/14				X	X	X						
#09-TP04 (0.4-0.5)														
#09-TP05 (0-0.1)						X	X	X						
#09-TP05 (0.4-0.5)														
#09-TP05 (0.7-0.8)														
#09-A-TP06 (0-0.1)							X	X						
#09-A-TP06 (0.4-0.5)						X								
#09-A-TP06 (0.9-1.0)														
#09-TP07 (0-0.1)						X	X	X						
#09-TP07 (0.9-1.0)														
#09-TP08 (0-0.1)						X	X	X						
#09-TP08 (0.4-0.5)														
#09-TP08 (0.9-1.0)														
#09-TP08 (1.4-1.5)												X		
#16-TP01 (0-0.1)						X	X	X						
#16-TP01 (0.4-0.5)														
#16-TP01 (1.9-2.0)														
#16-TP01 (2.1-2.2)												X		
#16-TP02 (0-0.1)						X	X	X						

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Creese DATE: 24/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 24/6/14 4:30pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02218

CHAIN OF CUSTODY

422956

JBS&G

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: K.Lenderton, TC SEND INVOICE TO: CNG
DATE NEEDED BY: Standard
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: TC
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: klenderton@jbsg.com.au tfreese@jbsg.com.au
QC LEVEL: NEPM (2013)

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	SPOCAS	NOTES:
#16-TP02 (0.9-1.0)	Soil	23/6/14								
#16-TP02 (1.4-1.5)										
#16-TP03 (0-0.1)						X	X	X		
#16-TP03 (0.3-0.4)										
#16-TP04 (0-0.1)						X	X	X		
#16-TP04 (0.2-0.3)										
#16-SED01						X	X		X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Clarke DATE: 24/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 24/6/14 430pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **422958-S**
Client Reference BOX HILL 43376
Received Date Jun 25, 2014

Client Sample ID			**#20-TP01 (0-0.1)**	**#20-TP02 (0-0.1)**	**#20-TP02 (0.5-0.6)**	**#20-TP03 (0-0.1)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21267**	**S14-Jn21270**	**S14-Jn21271**	**S14-Jn21272**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	< 50	-
TRH C29-C36	50	mg/kg	< 50	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	85	-	82	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-

Client Sample ID			#20-TP01 (0-0.1)	#20-TP02 (0-0.1)	#20-TP02 (0.5-0.6)	#20-TP03 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21267	S14-Jn21270	S14-Jn21271	S14-Jn21272
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	106	-	90	-
p-Terphenyl-d14 (surr.)	1	%	130	-	118	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	119	-	111	94
Tetrachloro-m-xylene (surr.)	1	%	114	-	112	95
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	119	-	111	94
% Moisture	0.1	%	15	-	13	14
Asbestos (% weight as per WA Guidelines)			see attached	see attached	-	see attached

Client Sample ID			#20-TP01 (0-0.1)	#20-TP02 (0-0.1)	#20-TP02 (0.5-0.6)	#20-TP03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21267**	**S14-Jn21270**	**S14-Jn21271**	**S14-Jn21272**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	14	-	2.2	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	29	-	8.3	-
Copper	5	mg/kg	48	-	8.9	-
Lead	5	mg/kg	21	-	< 5	-
Mercury	0.05	mg/kg	0.06	-	< 0.05	-
Nickel	5	mg/kg	8.7	-	8.4	-
Zinc	5	mg/kg	100	-	52	-

Client Sample ID			#20-TP03 (0.4-0.5)	#20-TP04 (0-0.1)	#20-TP05 (0.4-0.5)	#20-TP05 (0.9-1.0)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21273**	**S14-Jn21276**	**S14-Jn21280**	**S14-Jn21281**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	220
TRH C29-C36	50	mg/kg	< 50	< 50	-	1000
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	1200
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	87	87	-	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	960
TRH >C34-C40	100	mg/kg	< 100	< 100	-	340
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5

Client Sample ID			#20-TP03 (0.4-0.5)	#20-TP04 (0-0.1)	#20-TP05 (0.4-0.5)	#20-TP05 (0.9-1.0)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21273	S14-Jn21276	S14-Jn21280	S14-Jn21281
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	95	91	-	99
p-Terphenyl-d14 (surr.)	1	%	122	111	-	115
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	-	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	-	117	-	125
Tetrachloro-m-xylene (surr.)	1	%	-	118	-	123
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	117	-	125

Client Sample ID			#20-TP03 (0.4-0.5)	#20-TP04 (0-0.1)	#20-TP05 (0.4-0.5)	#20-TP05 (0.9-1.0)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21273**	**S14-Jn21276**	**S14-Jn21280**	**S14-Jn21281**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Ammonia (as N)	0.1	mg/kg	-	-	-	800
Nitrate (as N)	0.1	mg/kg	-	-	-	83
pH (1:5 Aqueous extract)	0.1	units	-	-	-	8.7
Total Organic Carbon	50	mg/kg	-	-	-	240000
Phosphorus	10	mg/kg	-	-	-	32000
Thermotolerant Coliforms	1	MPN/g	-	-	-	M10<10
% Moisture	0.1	%	13	20	-	53
Asbestos (% weight as per WA Guidelines)			-	see attached	see attached	-
Heavy Metals						
Arsenic	2	mg/kg	7.3	11	-	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	18	23	-	9.8
Copper	5	mg/kg	22	31	-	110
Lead	5	mg/kg	16	19	-	6.9
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	0.07
Nickel	5	mg/kg	9.1	9.5	-	11
Zinc	5	mg/kg	68	99	-	680
Eurofins | mgt Micro Suite 3						
E.coli	1	MPN/g	-	-	-	<10
Total Coliforms	-	MPN/g	-	-	-	160

Client Sample ID			#20-TP06 (0-0.1)	#20-TP07 (0-0.1)	#20-TP09 (0.8-0.9)	#20-TP08 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21282**	**S14-Jn21284**	**S14-Jn21287**	**S14-Jn21288**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	140	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	140	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	87	78	80	80
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	150	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#20-TP06 (0-0.1) Soil S14-Jn21282 Jun 24, 2014	#20-TP07 (0-0.1) Soil S14-Jn21284 Jun 24, 2014	#20-TP09 (0.8-0.9) Soil S14-Jn21287 Jun 24, 2014	#20-TP08 (0-0.1) Soil S14-Jn21288 Jun 24, 2014
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	95	99	97	94
p-Terphenyl-d14 (surr.)	1	%	115	119	122	120
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	0.10	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	76	101	96	110
Tetrachloro-m-xylene (surr.)	1	%	80	102	91	97

Client Sample ID			#20-TP06 (0-0.1)	#20-TP07 (0-0.1)	#20-TP09 (0.8-0.9)	#20-TP08 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21282**	**S14-Jn21284**	**S14-Jn21287**	**S14-Jn21288**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	76	101	96	110
% Moisture	0.1	%	11	20	12	16
Asbestos (% weight as per WA Guidelines)			see attached	see attached	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	12	10.0	< 2	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	28	9.0	34
Copper	5	mg/kg	33	41	19	50
Lead	5	mg/kg	20	25	5.0	32
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	13	15	37	17
Zinc	5	mg/kg	100	150	54	99

Client Sample ID			#20-TP08 (0.4-0.5)	#23-SED01	#19-SED01	#20-TP11 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21289**	**S14-Jn21290**	**S14-Jn21291**	**S14-Jn21292**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	82	81	79	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-

Client Sample ID			#20-TP08 (0.4-0.5)	#23-SED01	#19-SED01	#20-TP11 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21289	S14-Jn21290	S14-Jn21291	S14-Jn21292
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	94	98	94	-
p-Terphenyl-d14 (surr.)	1	%	116	111	102	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	0.07	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	0.08	< 0.05	< 0.05	0.08
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	129	103	100	104
Tetrachloro-m-xylene (surr.)	1	%	111	103	99	94

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#20-TP08 (0.4-0.5) Soil S14-Jn21289 Jun 24, 2014	#23-SED01 Soil S14-Jn21290 Jun 24, 2014	#19-SED01 Soil S14-Jn21291 Jun 24, 2014	#20-TP11 (0-0.1) Soil S14-Jn21292 Jun 24, 2014
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (Ioxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	58	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	129	103	100	104
% Moisture	0.1	%	18	28	8.9	9.4
Asbestos (% weight as per WA Guidelines)			see attached	-	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	8.6	9.4	8.7	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	17	28	29	-
Copper	5	mg/kg	36	34	37	-
Lead	5	mg/kg	18	28	26	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Nickel	5	mg/kg	11	18	13	-
Zinc	5	mg/kg	120	74	86	-
SPOCAS Suite						
pH-KCL	0.1	units	-	6.2	7.2	-
pH-OX	0.1	units	-	5.5	6.2	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	5.0	< 2	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	10	< 2	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	< 2	< 2	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	< 0.02	< 0.02	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.02	< 0.02	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	< 0.02	< 0.02	-
Sulfur - KCl Extractable	0.02	% S	-	< 0.02	< 0.02	-
Sulfur - Peroxide	0.02	% S	-	< 0.02	0.03	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	< 0.02	0.03	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	< 10	20	-

Client Sample ID			#20-TP08 (0.4-0.5)	#23-SED01	#19-SED01	#20-TP11 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21289	S14-Jn21290	S14-Jn21291	S14-Jn21292
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
SPOCAS Suite						
HCl Extractable Sulfur	0.02	% S	-	n/a	n/a	-
Net Acid soluble sulfur	0.02	% S	-	n/a	n/a	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	n/a	n/a	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	n/a	n/a	-
Calcium - KCl Extractable	0.02	% Ca	-	0.08	0.26	-
Calcium - Peroxide	0.02	% Ca	-	0.09	0.31	-
Acid Reacted Calcium	0.02	% Ca	-	< 0.02	0.05	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	< 10	25	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	< 0.02	0.04	-
Magnesium - KCl Extractable	0.02	% Mg	-	0.07	0.06	-
Magnesium - Peroxide	0.02	% Mg	-	0.08	0.08	-
Acid Reacted Magnesium	0.02	% Mg	-	< 0.02	0.02	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	11	16	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	0.02	0.02	-
Acid Neutralising Capacity	0.02	%CaCO3	-	n/a	n/a	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	n/a	n/a	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	n/a	n/a	-
ANC Fineness Factor			-	1.5	1.5	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	< 0.02	< 0.02	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	< 10	< 10	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	< 1	1.0	-
Extraneous Material						
<2mm Fraction	0.005	g	-	n/a	n/a	-
>2mm Fraction	0.005		-	n/a	n/a	-
Analysed Material	0.1	%	-	100	100	-
Extraneous Material	0.1	%	-	< 0.1	< 0.1	-

Client Sample ID			#20-TP11 (0.9-1.0)	#20-TP12 (0-0.1)	#20-TP12 (0.6-0.7)	#19-TP01 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21293	S14-Jn21294	S14-Jn21295	S14-Jn21296
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	70	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	70	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	85	-	79	83

eurofins | mgt

Client Sample ID			#20-TP11 (0.9-1.0)	#20-TP12 (0-0.1)	#20-TP12 (0.6-0.7)	#19-TP01 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21293	S14-Jn21294	S14-Jn21295	S14-Jn21296
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	97	-	98	98
p-Terphenyl-d14 (surr.)	1	%	101	-	103	107
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	0.12
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	0.26
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05

Client Sample ID			#20-TP11 (0.9-1.0)	#20-TP12 (0-0.1)	#20-TP12 (0.6-0.7)	#19-TP01 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21293**	**S14-Jn21294**	**S14-Jn21295**	**S14-Jn21296**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	-	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	-	105	-	104
Tetrachloro-m-xylene (surr.)	1	%	-	105	-	103
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	105	-	104
% Moisture	0.1	%	31	17	30	17
Asbestos (% weight as per WA Guidelines)			-	see attached	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	4.7	-	5.1	6.6
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	13	-	< 5	21
Copper	5	mg/kg	31	-	6.6	33
Lead	5	mg/kg	16	-	5.4	22
Mercury	0.05	mg/kg	0.09	-	0.12	< 0.05
Nickel	5	mg/kg	9.1	-	< 5	11
Zinc	5	mg/kg	130	-	25	72

Client Sample ID			#19-TP02 (0-0.1)	#19-TP04 (0-0.1)	#19-TP05 (0-0.1)	#19-TP06 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21299**	**S14-Jn21300**	**S14-Jn21302**	**S14-Jn21303**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	51
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	67
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	120
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	86	86	80

Client Sample ID			#19-TP02 (0-0.1)	#19-TP04 (0-0.1)	#19-TP05 (0-0.1)	#19-TP06 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21299	S14-Jn21300	S14-Jn21302	S14-Jn21303
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene N02	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) N04	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) N01	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene N07	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	101	94	94	99
p-Terphenyl-d14 (surr.)	1	%	108	108	106	98
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	0.06	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			#19-TP02 (0-0.1)	#19-TP04 (0-0.1)	#19-TP05 (0-0.1)	#19-TP06 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21299	S14-Jn21300	S14-Jn21302	S14-Jn21303
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	101	110	108	110
Tetrachloro-m-xylene (surr.)	1	%	85	98	98	108
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	-	< 0.5
2.4-DB	0.5	mg/kg	-	-	-	< 0.5
2.4.5-T	0.5	mg/kg	-	-	-	< 0.5
2.4.5-TP	0.5	mg/kg	-	-	-	< 0.5
Actril (Ioxynil)	0.5	mg/kg	-	-	-	< 0.5
Dicamba	0.5	mg/kg	-	-	-	< 0.5
Dichlorprop	0.5	mg/kg	-	-	-	< 0.5
Dinitro-o-cresol	0.5	mg/kg	-	-	-	< 0.5
Dinoseb	0.5	mg/kg	-	-	-	< 0.5
MCPA	0.5	mg/kg	-	-	-	< 0.5
MCPB	0.5	mg/kg	-	-	-	< 0.5
Mecoprop	0.5	mg/kg	-	-	-	< 0.5
Warfarin (surr.)	1	%	-	-	-	75
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	101	110	108	110
% Moisture	0.1	%	5.6	10	12	21
Asbestos (% weight as per WA Guidelines)			see attached	see attached	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	6.4	11	15	9.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	24	32	31	29
Copper	5	mg/kg	41	48	52	34
Lead	5	mg/kg	19	31	25	21
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	15	19	19	12
Zinc	5	mg/kg	72	110	110	69

Client Sample ID			#19-TP06 (0.3-0.4)	QC07	QC08	#19-TP03 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn21304	S14-Jn21305	S14-Jn21306	S14-Jn21307
Date Sampled			Jun 24, 2014	Jun 24, 2014	Jun 24, 2014	Jun 24, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	72
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	72
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	81	83	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	100	103	99
p-Terphenyl-d14 (surr.)	1	%	-	101	105	98

Client Sample ID			#19-TP06 (0.3-0.4)	QC07	QC08	#19-TP03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21304**	**S14-Jn21305**	**S14-Jn21306**	**S14-Jn21307**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	0.08	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	0.19	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	109	113	96
Tetrachloro-m-xylene (surr.)	1	%	-	97	109	84
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	109	113	96
% Moisture	0.1	%	12	14	18	8.1
Asbestos (% weight as per WA Guidelines)			-	see attached	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	-	15	7.7	7.4
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	29	20	20
Copper	5	mg/kg	-	47	33	47
Lead	5	mg/kg	-	20	25	21
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	-	7.8	9.7	8.9
Zinc	5	mg/kg	-	93	66	79

Client Sample ID			#19-TP06 (0.3-0.4)	QC07	QC08	#19-TP03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn21304**	**S14-Jn21305**	**S14-Jn21306**	**S14-Jn21307**
Date Sampled			**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**	**Jun 24, 2014**
Test/Reference	LOR	Unit				
SPOCAS Suite						
pH-KCL	0.1	units	6.8	-	-	-
pH-OX	0.1	units	5.4	-	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	-	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	< 2	-	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	< 2	-	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
Sulfur - KCl Extractable	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02	-	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10	-	-	-
HCl Extractable Sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	-	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	-	-	-
Calcium - KCl Extractable	0.02	% Ca	0.15	-	-	-
Calcium - Peroxide	0.02	% Ca	0.16	-	-	-
Acid Reacted Calcium	0.02	% Ca	< 0.02	-	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Magnesium - KCl Extractable	0.02	% Mg	0.03	-	-	-
Magnesium - Peroxide	0.02	% Mg	0.03	-	-	-
Acid Reacted Magnesium	0.02	% Mg	< 0.02	-	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Acid Neutralising Capacity	0.02	%CaCO3	n/a	-	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	n/a	-	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	n/a	-	-	-
ANC Fineness Factor			1.5	-	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	< 0.02	-	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	< 10	-	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	< 1	-	-	-
Extraneous Material						
<2mm Fraction	0.005	g	n/a	-	-	-
>2mm Fraction	0.005		n/a	-	-	-
Analysed Material	0.1	%	100	-	-	-
Extraneous Material	0.1	%	< 0.1	-	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 27, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 26, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 27, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 27, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 26, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 27, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 27, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
Acid Herbicides	Melbourne	Jun 26, 2014	14 Day
- Method: MGT 530			
Ammonia (as N)	Sydney	Jun 26, 2014	28 Day
- Method: E036/E050 Ammonia as N			
Nitrate (as N)	Sydney	Jun 27, 2014	28 Day
- Method: E037 /E051 Nitrate as N			
pH (1:5 Aqueous extract)	Sydney	Jun 27, 2014	7 Day
- Method: E018.2 pH			
Total Organic Carbon	Melbourne	Jun 30, 2014	28 Day
- Method: APHA 5310B Total Organic Carbon			
Phosphorus	Sydney	Jun 26, 2014	180 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Thermotolerant Coliforms	Melbourne	Jun 26, 2014	72 Hour
- Method: Inhouse: Thermotolerant Coliforms in Soil by MPN*			
% Moisture	Sydney	Jun 26, 2014	28 Day
- Method: E005 Moisture Content			
Eurofins | mgt Micro Suite 3	Melbourne	Jun 26, 2014	72 Hour
- Method: Total Coliforms by MPN * / E.coli by MPN*			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jun 25, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jun 25, 2014	0 Day

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 422958
Phone: 02 8245 0300
Fax:

Received: Jun 25, 2014 4:30 PM
Due: Jul 3, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Ammonia (as N)	Asbestos (% weight as per WA Guidelines)	HOLD	Nitrate (as N)	pH (1:5 Aqueous extract)	Phosphorus	Thermotolerant Coliforms	Total Organic Carbon	Acid Herbicides	Eurofins | mgt Micro Suite 3	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																			
Melbourne Laboratory - NATA Site # 1254 & 14271													X	X	X	X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X					X	X	
Brisbane Laboratory - NATA Site # 20794					X														X
External Laboratory								X											
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**															
#20-TP01 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21267		X		X									X	X	
#20-TP01 (0.3-0.4)	Jun 24, 2014		Soil	S14-Jn21268					X										
#20-TP01 (1.0-1.1)	Jun 24, 2014		Soil	S14-Jn21269					X										
#20-TP02 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21270				X											
#20-TP02 (0.5-0.6)	Jun 24, 2014		Soil	S14-Jn21271		X											X	X	
#20-TP03 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21272		X		X									X		

Melbourne
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NATA # 1261
Site # 1254 & 14271

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 25, 2014 4:30 PM
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Laboratory where analysis is conducted																			
Melbourne Laboratory - NATA Site # 1254 & 14271													X	X	X	X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X					X	X	
Brisbane Laboratory - NATA Site # 20794					X														X
External Laboratory								X											
#20-TP03 (0.4-0.5)	Jun 24, 2014		Soil	S14-Jn21273		X												X	
#20-TP03 (0.8-0.9)	Jun 24, 2014		Soil	S14-Jn21274					X										
#20-TP03 (1.2-1.3)	Jun 24, 2014		Soil	S14-Jn21275					X										
#20-TP04 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21276		X		X									X	X	
#20-TP04 (0.2-0.3)	Jun 24, 2014		Soil	S14-Jn21277					X										
#20-TP04 (0.3-0.4)	Jun 24, 2014		Soil	S14-Jn21278					X										
#20-TP05 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21279					X										

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Laboratory where analysis is conducted																			
Melbourne Laboratory - NATA Site # 1254 & 14271													X	X	X	X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X					X	X	
Brisbane Laboratory - NATA Site # 20794					X														X
External Laboratory								X											
#20-TP05 (0.4-0.5)	Jun 24, 2014		Soil	S14-Jn21280				X											
#20-TP05 (0.9-1.0)	Jun 24, 2014		Soil	S14-Jn21281		X	X			X	X	X	X	X		X	X	X	
#20-TP06 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21282		X		X									X	X	
#20-TP06 (0.3-0.4)	Jun 24, 2014		Soil	S14-Jn21283					X										
#20-TP07 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21284		X		X									X	X	
#20-TP07 (0.3-0.4)	Jun 24, 2014		Soil	S14-Jn21285					X										
#20-TP09 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21286					X										

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		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Ammonia (as N)	Asbestos (% weight as per WA Guidelines)	HOLD	Nitrate (as N)	pH (1:5 Aqueous extract)	Phosphorus	Thermotolerant Coliforms	Total Organic Carbon	Acid Herbicides	Eurofins | mgt Micro Suite 3	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																			
Melbourne Laboratory - NATA Site # 1254 & 14271													X	X	X	X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X					X	X	
Brisbane Laboratory - NATA Site # 20794					X														X
External Laboratory								X											
#20-TP09 (0.8-0.9)	Jun 24, 2014		Soil	S14-Jn21287		X		X									X	X	
#20-TP08 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21288		X		X									X	X	
#20-TP08 (0.4-0.5)	Jun 24, 2014		Soil	S14-Jn21289		X		X									X	X	
#23-SED01	Jun 24, 2014		Soil	S14-Jn21290		X											X	X	X
#19-SED01	Jun 24, 2014		Soil	S14-Jn21291		X									X		X	X	X
#20-TP11 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21292		X		X									X		
#20-TP11 (0.9-1.0)	Jun 24, 2014		Soil	S14-Jn21293		X												X	
#20-TP12 (0-	Jun 24, 2014		Soil	S14-Jn21294		X		X									X		

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Ammonia (as N)	Asbestos (% weight as per WA Guidelines)	HOLD	Nitrate (as N)	pH (1:5 Aqueous extract)	Phosphorus	Thermotolerant Coliforms	Total Organic Carbon	Acid Herbicides	Eurofins | mgt Micro Suite 3	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																			
Melbourne Laboratory - NATA Site # 1254 & 14271													X	X	X	X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X					X	X	
Brisbane Laboratory - NATA Site # 20794					X														X
External Laboratory								X											
0.1)																			
#20-TP12 (0.6-0.7)	Jun 24, 2014		Soil	S14-Jn21295		X												X	
#19-TP01 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21296		X		X									X	X	
#19-TP01 (0.4-0.5)	Jun 24, 2014		Soil	S14-Jn21297					X										
#19-TP01 (0.7-0.8)	Jun 24, 2014		Soil	S14-Jn21298					X										
#19-TP02 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21299		X		X									X	X	
#19-TP04 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21300		X		X									X	X	

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Laboratory where analysis is conducted																			
Melbourne Laboratory - NATA Site # 1254 & 14271													X	X	X	X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X					X	X	
Brisbane Laboratory - NATA Site # 20794					X														X
External Laboratory								X											
#19-TP04 (0.3-0.4)	Jun 24, 2014		Soil	S14-Jn21301					X										
#19-TP05 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21302		X		X									X	X	
#19-TP06 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21303		X		X							X		X	X	
#19-TP06 (0.3-0.4)	Jun 24, 2014		Soil	S14-Jn21304	X														X
QC07	Jun 24, 2014		Soil	S14-Jn21305		X		X									X	X	
QC08	Jun 24, 2014		Soil	S14-Jn21306		X		X									X	X	
#19-TP03 (0-0.1)	Jun 24, 2014		Soil	S14-Jn21307		X		X									X	X	
#19-TP03(0.4-	Jun 24, 2014		Soil	S14-Jn21437					X										

Company Name: JBS & G (NSW & WA) Pty Ltd
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Laboratory where analysis is conducted															
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X			
Sydney Laboratory - NATA Site # 18217		X	X		X	X	X	X					X	X	
Brisbane Laboratory - NATA Site # 20794	X														X
External Laboratory				X											
0.5)															

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Ammonia (as N)	mg/kg	< 0.1			0.1	Pass	
Nitrate (as N)	mg/kg	< 0.1			0.1	Pass	
Total Organic Carbon	mg/kg	< 50			50	Pass	
Phosphorus	mg/kg	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	98			70-130	Pass	
TRH C10-C14	%	82			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	93			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	95			70-130	Pass	
Xylenes - Total	%	96			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	126			70-130	Pass	
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	86			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	74			70-130	Pass	
Anthracene	%	101			70-130	Pass	
Benz(a)anthracene	%	84			70-130	Pass	
Benzo(a)pyrene	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	%	75			70-130	Pass	
Benzo(g.h.i)perylene	%	78			70-130	Pass	
Benzo(k)fluoranthene	%	93			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	82			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	
Fluorene	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	84			70-130	Pass	
Naphthalene	%	84			70-130	Pass	
Phenanthrene	%	71			70-130	Pass	
Pyrene	%	85			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	94			70-130	Pass	
4.4'-DDD	%	101			70-130	Pass	
4.4'-DDE	%	103			70-130	Pass	
4.4'-DDT	%	102			70-130	Pass	
a-BHC	%	102			70-130	Pass	
Aldrin	%	98			70-130	Pass	
b-BHC	%	101			70-130	Pass	
d-BHC	%	93			70-130	Pass	
Dieldrin	%	97			70-130	Pass	
Endosulfan I	%	92			70-130	Pass	
Endosulfan II	%	96			70-130	Pass	
Endosulfan sulphate	%	95			70-130	Pass	
Endrin	%	99			70-130	Pass	
Endrin aldehyde	%	98			70-130	Pass	
Endrin ketone	%	98			70-130	Pass	
g-BHC (Lindane)	%	103			70-130	Pass	
Heptachlor	%	102			70-130	Pass	
Heptachlor epoxide	%	98			70-130	Pass	
Hexachlorobenzene	%	128			70-130	Pass	
Methoxychlor	%	108			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							

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Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-D			%	76			70-130	Pass	
2.4-DB			%	73			70-130	Pass	
2.4.5-T			%	77			70-130	Pass	
2.4.5-TP			%	83			70-130	Pass	
Actril (Ioxynil)			%	76			70-130	Pass	
Dicamba			%	85			70-130	Pass	
Dichlorprop			%	77			70-130	Pass	
Dinitro-o-cresol			%	72			70-130	Pass	
Dinoseb			%	77			70-130	Pass	
MCPA			%	85			70-130	Pass	
MCPB			%	72			70-130	Pass	
Mecoprop			%	82			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	85			70-130	Pass	
LCS - % Recovery									
Ammonia (as N)			%	103			70-130	Pass	
Nitrate (as N)			%	125			70-130	Pass	
Total Organic Carbon			%	115			70-130	Pass	
Phosphorus			%	88			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	97			70-130	Pass	
Cadmium			%	93			70-130	Pass	
Chromium			%	97			70-130	Pass	
Copper			%	97			70-130	Pass	
Lead			%	90			70-130	Pass	
Mercury			%	97			70-130	Pass	
Nickel			%	97			70-130	Pass	
Zinc			%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn21267	CP	%	96			70-130	Pass	
TRH C10-C14	S14-Jn21267	CP	%	91			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn21267	CP	%	92			70-130	Pass	
Toluene	S14-Jn21267	CP	%	92			70-130	Pass	
Ethylbenzene	S14-Jn21267	CP	%	92			70-130	Pass	
m&p-Xylenes	S14-Jn21267	CP	%	96			70-130	Pass	
o-Xylene	S14-Jn21267	CP	%	94			70-130	Pass	
Xylenes - Total	S14-Jn21267	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn21267	CP	%	123			70-130	Pass	
TRH C6-C10	S14-Jn21267	CP	%	89			70-130	Pass	
TRH >C10-C16	S14-Jn21267	CP	%	95			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn21267	CP	%	92			70-130	Pass	
Acenaphthylene	S14-Jn21267	CP	%	82			70-130	Pass	
Anthracene	S14-Jn21267	CP	%	115			70-130	Pass	
Benz(a)anthracene	S14-Jn21267	CP	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	S14-Jn21267	CP	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn21267	CP	%	91			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn21267	CP	%	95			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn21267	CP	%	92			70-130	Pass	
Chrysene	S14-Jn21267	CP	%	97			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn21267	CP	%	96			70-130	Pass	
Fluoranthene	S14-Jn21267	CP	%	107			70-130	Pass	
Fluorene	S14-Jn21267	CP	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21267	CP	%	91			70-130	Pass	
Naphthalene	S14-Jn21267	CP	%	92			70-130	Pass	
Phenanthrene	S14-Jn21267	CP	%	93			70-130	Pass	
Pyrene	S14-Jn21267	CP	%	105			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn21267	CP	%	100			70-130	Pass	
4.4'-DDD	S14-Jn21267	CP	%	106			70-130	Pass	
4.4'-DDE	S14-Jn21267	CP	%	117			70-130	Pass	
4.4'-DDT	S14-Jn21267	CP	%	104			70-130	Pass	
a-BHC	S14-Jn21267	CP	%	102			70-130	Pass	
Aldrin	S14-Jn21267	CP	%	97			70-130	Pass	
b-BHC	S14-Jn21267	CP	%	97			70-130	Pass	
d-BHC	S14-Jn21267	CP	%	95			70-130	Pass	
Dieldrin	S14-Jn21267	CP	%	110			70-130	Pass	
Endosulfan I	S14-Jn21267	CP	%	95			70-130	Pass	
Endosulfan II	S14-Jn21267	CP	%	103			70-130	Pass	
Endosulfan sulphate	S14-Jn21267	CP	%	100			70-130	Pass	
Endrin	S14-Jn21267	CP	%	104			70-130	Pass	
Endrin aldehyde	S14-Jn21267	CP	%	107			70-130	Pass	
Endrin ketone	S14-Jn21267	CP	%	101			70-130	Pass	
g-BHC (Lindane)	S14-Jn21267	CP	%	103			70-130	Pass	
Heptachlor	S14-Jn21267	CP	%	101			70-130	Pass	
Heptachlor epoxide	S14-Jn21267	CP	%	106			70-130	Pass	
Hexachlorobenzene	S14-Jn21267	CP	%	130			70-130	Pass	
Methoxychlor	S14-Jn21267	CP	%	114			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn21267	CP	%	83			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn21267	CP	%	102			70-130	Pass	
Cadmium	S14-Jn21267	CP	%	88			70-130	Pass	
Chromium	S14-Jn21267	CP	%	86			70-130	Pass	
Copper	S14-Jn21267	CP	%	89			70-130	Pass	
Lead	S14-Jn21267	CP	%	99			70-130	Pass	
Mercury	S14-Jn21267	CP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jn21289	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jn21289	CP	%	95			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn21289	CP	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	S14-Jn21289	CP	%	87			70-130	Pass	
Anthracene	S14-Jn21289	CP	%	106			70-130	Pass	
Benz(a)anthracene	S14-Jn21289	CP	%	82			70-130	Pass	
Benzo(a)pyrene	S14-Jn21289	CP	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn21289	CP	%	92			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn21289	CP	%	102			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn21289	CP	%	102			70-130	Pass	
Chrysene	S14-Jn21289	CP	%	107			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn21289	CP	%	102			70-130	Pass	
Fluoranthene	S14-Jn21289	CP	%	98			70-130	Pass	
Fluorene	S14-Jn21289	CP	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21289	CP	%	98			70-130	Pass	
Naphthalene	S14-Jn21289	CP	%	97			70-130	Pass	
Phenanthrene	S14-Jn21289	CP	%	84			70-130	Pass	
Pyrene	S14-Jn21289	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn21290	CP	%	88			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn21290	CP	%	86			70-130	Pass	
Toluene	S14-Jn21290	CP	%	83			70-130	Pass	
Ethylbenzene	S14-Jn21290	CP	%	82			70-130	Pass	
m&p-Xylenes	S14-Jn21290	CP	%	86			70-130	Pass	
o-Xylene	S14-Jn21290	CP	%	84			70-130	Pass	
Xylenes - Total	S14-Jn21290	CP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn21290	CP	%	109			70-130	Pass	
TRH C6-C10	S14-Jn21290	CP	%	80			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn21290	CP	%	99			70-130	Pass	
4.4'-DDD	S14-Jn21290	CP	%	105			70-130	Pass	
4.4'-DDE	S14-Jn21290	CP	%	107			70-130	Pass	
4.4'-DDT	S14-Jn21290	CP	%	100			70-130	Pass	
a-BHC	S14-Jn21290	CP	%	101			70-130	Pass	
Aldrin	S14-Jn21290	CP	%	101			70-130	Pass	
b-BHC	S14-Jn21290	CP	%	96			70-130	Pass	
d-BHC	S14-Jn21290	CP	%	100			70-130	Pass	
Dieldrin	S14-Jn21290	CP	%	101			70-130	Pass	
Endosulfan I	S14-Jn21290	CP	%	95			70-130	Pass	
Endosulfan II	S14-Jn21290	CP	%	99			70-130	Pass	
Endosulfan sulphate	S14-Jn21290	CP	%	98			70-130	Pass	
Endrin	S14-Jn21290	CP	%	104			70-130	Pass	
Endrin aldehyde	S14-Jn21290	CP	%	101			70-130	Pass	
Endrin ketone	S14-Jn21290	CP	%	103			70-130	Pass	
g-BHC (Lindane)	S14-Jn21290	CP	%	101			70-130	Pass	
Heptachlor	S14-Jn21290	CP	%	106			70-130	Pass	
Heptachlor epoxide	S14-Jn21290	CP	%	103			70-130	Pass	
Hexachlorobenzene	S14-Jn21290	CP	%	125			70-130	Pass	
Methoxychlor	S14-Jn21290	CP	%	111			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic	S14-Jn21290	CP	%	96			70-130	Pass	
Cadmium	S14-Jn21290	CP	%	95			70-130	Pass	
Chromium	S14-Jn21290	CP	%	99			70-130	Pass	
Copper	S14-Jn21290	CP	%	99			70-130	Pass	
Lead	S14-Jn21290	CP	%	117			70-130	Pass	
Mercury	S14-Jn21290	CP	%	110			70-130	Pass	
Nickel	S14-Jn21290	CP	%	107			70-130	Pass	
Zinc	S14-Jn21290	CP	%	108			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M14-Jn22826	NCP	%	76			70-130	Pass	
Actril (loxynil)	M14-Jn22826	NCP	%	76			70-130	Pass	
Dichlorprop	M14-Jn22826	NCP	%	75			70-130	Pass	
MCPA	M14-Jn22826	NCP	%	83			70-130	Pass	
MCPB	M14-Jn22826	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jn21302	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jn21302	CP	%	92			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn21302	CP	%	93			70-130	Pass	
Acenaphthylene	S14-Jn21302	CP	%	80			70-130	Pass	
Anthracene	S14-Jn21302	CP	%	102			70-130	Pass	
Benz(a)anthracene	S14-Jn21302	CP	%	77			70-130	Pass	
Benzo(a)pyrene	S14-Jn21302	CP	%	74			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn21302	CP	%	88			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn21302	CP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn21302	CP	%	89			70-130	Pass	
Chrysene	S14-Jn21302	CP	%	97			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn21302	CP	%	98			70-130	Pass	
Fluoranthene	S14-Jn21302	CP	%	90			70-130	Pass	
Fluorene	S14-Jn21302	CP	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21302	CP	%	98			70-130	Pass	
Naphthalene	S14-Jn21302	CP	%	92			70-130	Pass	
Phenanthrene	S14-Jn21302	CP	%	76			70-130	Pass	
Pyrene	S14-Jn21302	CP	%	88			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn21302	CP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn21306	CP	%	94			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn21306	CP	%	91			70-130	Pass	
Toluene	S14-Jn21306	CP	%	90			70-130	Pass	
Ethylbenzene	S14-Jn21306	CP	%	90			70-130	Pass	
m&p-Xylenes	S14-Jn21306	CP	%	95			70-130	Pass	
o-Xylene	S14-Jn21306	CP	%	93			70-130	Pass	
Xylenes - Total	S14-Jn21306	CP	%	94			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn21306	CP	%	113			70-130	Pass	
TRH C6-C10	S14-Jn21306	CP	%	87			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn21306	CP	%	106			70-130	Pass	
4.4'-DDD	S14-Jn21306	CP	%	113			70-130	Pass	
4.4'-DDE	S14-Jn21306	CP	%	125			70-130	Pass	
4.4'-DDT	S14-Jn21306	CP	%	106			70-130	Pass	
a-BHC	S14-Jn21306	CP	%	107			70-130	Pass	
Aldrin	S14-Jn21306	CP	%	107			70-130	Pass	
b-BHC	S14-Jn21306	CP	%	100			70-130	Pass	
d-BHC	S14-Jn21306	CP	%	102			70-130	Pass	
Dieldrin	S14-Jn21306	CP	%	124			70-130	Pass	
Endosulfan I	S14-Jn21306	CP	%	100			70-130	Pass	
Endosulfan II	S14-Jn21306	CP	%	106			70-130	Pass	
Endosulfan sulphate	S14-Jn21306	CP	%	102			70-130	Pass	
Endrin	S14-Jn21306	CP	%	106			70-130	Pass	
Endrin aldehyde	S14-Jn21306	CP	%	107			70-130	Pass	
Endrin ketone	S14-Jn21306	CP	%	105			70-130	Pass	
g-BHC (Lindane)	S14-Jn21306	CP	%	106			70-130	Pass	
Heptachlor	S14-Jn21306	CP	%	104			70-130	Pass	
Heptachlor epoxide	S14-Jn21306	CP	%	112			70-130	Pass	
Hexachlorobenzene	S14-Jn21306	CP	%	129			70-130	Pass	
Methoxychlor	S14-Jn21306	CP	%	109			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn21306	CP	%	96			70-130	Pass	
Cadmium	S14-Jn21306	CP	%	94			70-130	Pass	
Chromium	S14-Jn21306	CP	%	96			70-130	Pass	
Copper	S14-Jn21306	CP	%	87			70-130	Pass	
Lead	S14-Jn21306	CP	%	80			70-130	Pass	
Mercury	S14-Jn21306	CP	%	92			70-130	Pass	
Nickel	S14-Jn21306	CP	%	95			70-130	Pass	
Zinc	S14-Jn21306	CP	%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn21267	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn21267	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn21267	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn21267	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn21267	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn21267	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn21267	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn21267	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn21267	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn21267	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn21267	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn21267	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn21267	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn21267	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn21267	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn21267	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn21267	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn21267	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn21267	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn21267	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn21267	CP	mg/kg	14	13	10	30%	Pass	
Cadmium	S14-Jn21267	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn21267	CP	mg/kg	29	43	38	30%	Fail	Q15
Copper	S14-Jn21267	CP	mg/kg	48	49	3.0	30%	Pass	
Lead	S14-Jn21267	CP	mg/kg	21	20	8.0	30%	Pass	
Mercury	S14-Jn21267	CP	mg/kg	0.06	0.06	<1	30%	Pass	
Nickel	S14-Jn21267	CP	mg/kg	8.7	8.4	4.0	30%	Pass	
Zinc	S14-Jn21267	CP	mg/kg	100	97	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S14-Jn00439	NCP	mg/kg	0.10	**	<1	30%	Pass	
Nitrate (as N)	S14-Jn21281	CP	mg/kg	83	82	2.0	30%	Pass	
Total Organic Carbon	B14-Jn22101	NCP	mg/kg	9500	9300	1.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jn21289	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn21289	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn21289	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Jn21289	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn21289	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn21289	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn21289	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn21289	CP	mg/kg	0.08	0.08	1.0	30%	Pass	
Endosulfan I	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan sulphate	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn21289	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn21289	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn21289	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn21289	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn21290	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn21290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn21290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn21290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn21290	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn21290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn21290	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn21290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn21290	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn21290	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn21290	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

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Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn21290	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn21290	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn21290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn21290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn21290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn21290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn21290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn21290	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn21290	CP	mg/kg	9.4	8.9	5.0	30%	Pass	
Cadmium	S14-Jn21290	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn21290	CP	mg/kg	28	26	9.0	30%	Pass	
Copper	S14-Jn21290	CP	mg/kg	34	32	5.0	30%	Pass	
Lead	S14-Jn21290	CP	mg/kg	28	27	1.0	30%	Pass	
Mercury	S14-Jn21290	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn21290	CP	mg/kg	18	17	5.0	30%	Pass	
Zinc	S14-Jn21290	CP	mg/kg	74	68	9.0	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jn21290	CP	units	6.2	6.2	<1	30%	Pass	
pH-OX	S14-Jn21290	CP	units	5.5	5.5	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jn21290	CP	mol H+/t	5.0	5.0	2.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jn21290	CP	mol H+/t	10	9.0	6.0	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jn21290	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jn21290	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jn21290	CP	% pyrite S	0.02	0.02	6.0	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jn21290	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - KCl Extractable	S14-Jn21290	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jn21290	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jn21290	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jn21290	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jn21290	CP	% Ca	0.08	0.07	5.0	30%	Pass	
Calcium - Peroxide	S14-Jn21290	CP	% Ca	0.09	0.08	8.0	30%	Pass	
Acid Reacted Calcium	S14-Jn21290	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jn21290	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jn21290	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jn21290	CP	% Mg	0.07	0.07	<1	30%	Pass	
Magnesium - Peroxide	S14-Jn21290	CP	% Mg	0.08	0.07	10	30%	Pass	
Acid Reacted Magnesium	S14-Jn21290	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jn21290	CP	mol H+/t	11	< 10	89	30%	Fail	Q15
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jn21290	CP	% S	0.02	< 0.02	89	30%	Fail	Q15
ANC Fineness Factor	S14-Jn21290	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jn21290	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jn21290	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Liming rate - SPOCAS	S14-Jn21290	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	

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Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jn21291	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jn21302	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn21302	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn21302	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Jn21302	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn21302	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn21302	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn21302	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Endrin	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S14-Jn21302	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S14-Jn21302	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Toxaphene	S14-Jn21302	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD		
Aroclor-1016	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1232	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1242	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1248	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1254	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1260	S14-Jn21302	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S14-Jn21306	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S14-Jn21306	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S14-Jn21306	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S14-Jn21306	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S14-Jn21306	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S14-Jn21306	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S14-Jn21306	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S14-Jn21306	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S14-Jn21306	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C6-C10 less BTEX (F1)	S14-Jn21306	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S14-Jn21306	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4.4'-DDD	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDE	S14-Jn21306	CP	mg/kg	0.08	0.11	26	30%	Pass
4.4'-DDT	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S14-Jn21306	CP	mg/kg	0.19	0.23	18	30%	Pass
Endosulfan I	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Methoxychlor	S14-Jn21306	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn21306	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn21306	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn21306	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn21306	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn21306	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn21306	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn21306	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn21306	CP	mg/kg	7.7	8.8	13	30%	Pass	
Cadmium	S14-Jn21306	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn21306	CP	mg/kg	20	26	27	30%	Pass	
Copper	S14-Jn21306	CP	mg/kg	33	36	9.0	30%	Pass	
Lead	S14-Jn21306	CP	mg/kg	25	25	<1	30%	Pass	
Mercury	S14-Jn21306	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn21306	CP	mg/kg	9.7	12	17	30%	Pass	
Zinc	S14-Jn21306	CP	mg/kg	66	77	15	30%	Pass	

Comments

Asbestos: ASET Pty Ltd, NATA accreditation number 14484, report number : ASET40034/ 43214 / 1 - 20

Sample Integrity

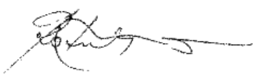
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
M10	NATA accreditation does not cover the performance of this service in soil matrices
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Huong Le	Senior Analyst-Inorganic (VIC)
James Norford	Senior Analyst-Metal (NSW)
Niloufer Lobo	Senior Analyst-Microbiology (VIC)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)



Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref : ASET40034/ 43214 / 1 - 20
Your ref: 422958
NATA Accreditation No: 14484

1 July 2014

Eurofins | MGT
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of twenty samples, forwarded by Eurofins | MGT on 27 June 2014, for analysis for asbestos. This report supersedes the report issued earlier today.

1.Introduction: Twenty samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1 and Australian Guidelines AS 4964 - 2004 and WA/ NEPM Guidelines**)

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia/ NEPM Guidelines for the Assessment Remediation and Management of Asbestos in contaminated sites.

3. Results : **Sample No. 1. ASET40034 / 43214 / 1. #20 - TP01(0 - 0.1) - Jn21267.**
Approx dimensions 8.7 cm x 8.6 cm x 84 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET40034 / 43214 / 2. #20 - TP02(0 - 0.1) - Jn21270.
Approx dimensions 8.5 cm x 8.3 cm x 7.6 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of cement and debris.
No asbestos detected.

Sample No. 3. ASET40034 / 43214 / 3. #20 - TP03(0 - 0.1) - Jn21272.
Approx dimensions 8.8 cm x 8.6 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 4. ASET40034 / 43214 / 4. #20 – TP04(0 - 0.1) - Jn21276.
Approx dimensions 9.1 cm x 8.5 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 5. ASET40034 / 43214 / 5. #20 - TP05(0.4 - 0.5) - Jn21280.
Approx dimensions 8.4 cm x 8.2 cm x 7.5 cm
The sample consisted of a mixture of soil, plant matter and wood chips.
No asbestos detected.

Sample No. 6. ASET40034 / 43214 / 6. #20 - TP06(0 - 0.1) - Jn21282.
Approx dimensions 8.7 cm x 8.5 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET40034 / 43214 / 7. #20 - TP07(0 - 0.1) - Jn21284.
Approx dimensions 8.6 cm x 8.3 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plastic.
No asbestos detected.

Sample No. 8. ASET40034 / 43214 / 8. #20 - TP09(0.8 - 0.9) - Jn21287.
Approx dimensions 8.5 cm x 8.2 cm x 7.5 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, cement and brick.
No asbestos detected.

Sample No. 9. ASET40034 / 43214 / 9. #20 - TP08(0 - 0.1) - Jn21288.
Approx dimensions 8.6 cm x 8.5 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 10. ASET40034 / 43214 / 10. #20 - TP08(0.4 - 0.5) - Jn21289.
Approx dimensions 8.7 cm x 8.4 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 11. ASET40034 / 43214 / 11. #20 - TP11(0 - 0.1) - Jn21292.
Approx dimensions 8.4 cm x 8.3 cm x 7.6 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of bitumen, corroded metal and shale.
No asbestos detected.

Sample No. 12. ASET40034 / 43214 / 12. #20 - TP12(0 - 0.1) - Jn21294.
Approx dimensions 8.5 cm x 8.1 cm x 7.9 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, plastic, corroded metal and shale.
No asbestos detected.

Sample No. 13. ASET40034 / 43214 / 13. #19 - TP01(0 - 0.1) - Jn21296.
Approx dimensions 8.7 cm x .6 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 14. ASET40034 / 43214 / 14. #19 - TP02(0 - 0.1) - Jn21299.
Approx dimensions 8.4 cm x 8.7 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plastic and debris.
No asbestos detected.

Sample No. 15. ASET40034 / 43214 / 15. #19 - TP04(0 - 0.1) - Jn21300.
Approx dimensions 8.5 cm x 8.4 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 16. ASET40034 / 43214 / 16. #19 - TP05(0 - 0.1) - Jn21302.
Approx dimensions 8.9 cm x 8.7 cm x 8.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 17. ASET40034 / 43214 / 17. #19 - TP06(0 - 0.1) - Jn21303.
Approx dimensions 8.7 cm x 8.6 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 18. ASET40034 / 43214 / 18. QC07 - Jn21305.
Approx dimensions 8.8 cm x 8.5 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 19. ASET40034 / 43214 / 19. QC08 - Jn21306.
Approx dimensions 8.6 cm x 8.5 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

Sample No. 20. ASET40034 / 43214 / 20. #19 - TP03(0 - 0.1) - Jn21307.
Approx dimensions 8.4 cm x 8.3 cm x 7.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Analysed and reported by,

Laxman Dias. BSc
Analyst / Approved Identifier
Approved Signatory

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos detected in Soil/ Dust.

*denotes fibres in bonded form in fragments

All samples indicating " No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	02219-02221
Turn around time:	5 Day
Date/Time received:	Jun 25, 2014 4:30 PM
Eurofins | mgt reference:	**422958**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 16.5 degrees Celsius.
- ☒ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Organic samples had Teflon liners.
- ☑ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Microbiological analysis, TOC and Acid Herb conducted at Eurofins | mgt Melbourne | Asbestos conducted at ASET | SPOCAS conducted at Eurofins | mgt Brisbane | Extra sample received, #19-TP03 (0.4-0.5), placed on hold

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

02219

CHAIN OF CUSTODY

JBS&G

422955

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: K.Henderson, TC SEND INVOICE TO: G&G	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tfreeze@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8-metals	OCPs	Nitrate	Phenols	pH	Total organic Carbon	Nutrients	Microbiological	NOTES:
#20 – TP01 (0-0.1)	Soil	24/6/14				X	X	X									B7 = TRH
#20 – TP01 (0.3-0.4)	↓	↓															BTEX, PAHs
#20 – TP01 (1.0-1.1)																	8 metals
#20 – TP02 (0-0.1)								X									
#20 – TP02 (0.5-0.6)						X	X										B13 = OCP/PCBs
#20 – TP03 (0-0.1)							X	X									
#20 – TP03 (0.4-0.5)						X											Asbestos
#20 – TP03 (0.8-0.9)																	= NEPC 2013
#20 – TP03 (1.2-1.3)																	
#20 – TP04 (0-0.1)						X	X	X									
#20 – TP04 (0.2-0.3)																	
#20 – TP04 (0.5-0.6)																	(*) Contact
#20 – TP05 (0-0.1)																	TC for
#20 – TP05 (0.4-0.5)								X									
#20 – TP05 (0.9-1.0)						X	X						X	X	X	X	Sample
#20 – TP06 (0-0.1)						X	X	X									issues.
#20 – TP06 (0.3-0.4)																	
#20 – TP07 (0-0.1)						X	X	X									
#20 – TP07 (0.3-0.4)	↓	↓															

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Freeze DATE: 24/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 24/6/14 4.30pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

(*) Microbiological = Total coliforms, Faecal coliforms, E. Coli

(*) Nutrients = Ammonia, phosphorus, Nitrate

02220

CHAIN OF COUSTODY

JBS&G

#422958

PROJECT NO.: 43576	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC khenderson@jbsg.com.au
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL:
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	Bradels	OCPs	Herbicides	sPOCAS	NOTES:
#20-TP09 (0-0.1)	Soil	24/6											
#20-TP09 (0.8-0.9)	↓	↓				X	X	X					
#20-TP08 (0-0.1)						X	X	X					
#20-TP10 (0.4-0.5)						X	X	X					
#23-SED01						X	X					X	
#19-SED01						X	X				X	X	
#20-TP11 (0-0.1)							X	X					
#20-TP11 (0.9-1.0)						X							
#20-TP12 (0-0.1)							X	X					
#20-TP12 (0.6-0.7)						X							
#19-TP01 (0-0.1)						X	X	X					
#19-TP01 (0.4-0.5)													
#19-TP01 (0.7-0.8)													
#19-TP02 (0-0.1)						X	X	X					
#19-TP04 (0-0.1)						X	X	X					
#19-TP04 (0.3-0.4)													
#19-TP05 (0-0.1)						X	X	X					
#19-TP06 (0-0.1)						X	X	X			X		
#19-TP06 (0.3-0.4)	↓	↓										X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Creese DATE: 24/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 24/6/14 430pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02221

CHAIN OF CUSTODY

JBS&G

#422958

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: Klendon, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@Jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreece@Jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	NOTES:
QC07	Soil	24/6				X	X	X	
QC08	"	"				X	X	X	
~~[illegible]~~	~~[illegible]~~	~~"~~				~~X~~	~~X~~		
#19-TP03 (0-0.1)	Soil	"				X	X	X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Clear DATE: 24/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 24/6/14 4:30pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Tyler Creese**

Report **423116-S**
Client Reference BOX HILL 43376
Received Date Jun 25, 2014

Client Sample ID			**#1-TP01 (0-0.1)**	**#1-TP01 (0.4-0.5)**	**#1-TP02 (0-0.1)**	**#1-TP03 (0-0.1)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22406**	**S14-Jn22407**	**S14-Jn22409**	**S14-Jn22411**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	91	86	84
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5

Client Sample ID			#1-TP01 (0-0.1)	#1-TP01 (0.4-0.5)	#1-TP02 (0-0.1)	#1-TP03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22406**	**S14-Jn22407**	**S14-Jn22409**	**S14-Jn22411**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	88	92	89
p-Terphenyl-d14 (surr.)	1	%	-	95	98	95
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	84	-	111	102
Tetrachloro-m-xylene (surr.)	1	%	108	-	124	128
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	84	-	111	102
% Moisture	0.1	%	3.5	17	18	17
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	see attached

Client Sample ID			#1-TP01 (0-0.1)	#1-TP01 (0.4-0.5)	#1-TP02 (0-0.1)	#1-TP03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22406**	**S14-Jn22407**	**S14-Jn22409**	**S14-Jn22411**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	-	5.4	10	13
Cadmium	0.4	mg/kg	-	< 0.4	0.4	< 0.4
Chromium	5	mg/kg	-	17	28	23
Copper	5	mg/kg	-	20	22	17
Lead	5	mg/kg	-	13	29	28
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	-	20	15	11
Zinc	5	mg/kg	-	47	690	70

Client Sample ID			QC09	#1-TP04 (0-0.1)	#1-SD-TP05	#1-SD-TP06 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22413**	**S14-Jn22414**	**S14-Jn22416**	**S14-Jn22417**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	60	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	60	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	89	84	94	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	QC09 Soil S14-Jn22413 Jun 25, 2014	#1-TP04 (0-0.1) Soil S14-Jn22414 Jun 25, 2014	#1-SD-TP05 Soil S14-Jn22416 Jun 25, 2014	#1-SD-TP06 (0-0.1) Soil S14-Jn22417 Jun 25, 2014
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	88	93	97	-
p-Terphenyl-d14 (surr.)	1	%	95	100	102	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	90	93	89	73
Tetrachloro-m-xylene (surr.)	1	%	116	106	95	90
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	90	93	89	73
pH (1:5 Aqueous extract)	0.1	units	-	-	6.1	-
% Moisture	0.1	%	19	14	10	2.0
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	see attached

Client Sample ID			QC09	#1-TP04 (0-0.1)	#1-SD-TP05	#1-SD-TP06 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22413	S14-Jn22414	S14-Jn22416	S14-Jn22417
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit				
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	-	12	-
Heavy Metals						
Arsenic	2	mg/kg	15	8.6	12	-
Cadmium	0.4	mg/kg	< 0.4	0.5	< 0.4	-
Chromium	5	mg/kg	28	21	21	-
Copper	5	mg/kg	20	17	17	-
Lead	5	mg/kg	29	43	26	-
Mercury	0.05	mg/kg	1.3	0.07	< 0.05	-
Nickel	5	mg/kg	18	11	8.0	-
Zinc	5	mg/kg	250	370	44	-

Client Sample ID			#1-SD-TP06 (0.4-0.5)	#1-SS01	#1-SS02	#1-SS03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22418	S14-Jn22420	S14-Jn22421	S14-Jn22422
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	21	-	< 20	-
TRH C15-C28	50	mg/kg	110	-	190	-
TRH C29-C36	50	mg/kg	390	-	400	-
TRH C10-36 (Total)	50	mg/kg	520	-	590	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	96	-	92	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	390	-	520	-
TRH >C34-C40	100	mg/kg	240	-	140	-
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			#1-SD-TP06 (0.4-0.5)	#1-SS01	#1-SS02	#1-SS03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22418	S14-Jn22420	S14-Jn22421	S14-Jn22422
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit				
Volatile Organics						
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5	-
Benzene	0.1	mg/kg	-	-	< 0.1	-
Bromobenzene	0.5	mg/kg	-	-	< 0.5	-
Bromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromoform	0.5	mg/kg	-	-	< 0.5	-
Bromomethane	0.5	mg/kg	-	-	< 0.5	-
Carbon disulfide	0.5	mg/kg	-	-	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5	-
Chlorobenzene	0.5	mg/kg	-	-	< 0.5	-
Chloroethane	0.5	mg/kg	-	-	< 0.5	-
Chloroform	0.5	mg/kg	-	-	< 0.5	-
Chloromethane	0.5	mg/kg	-	-	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Dibromomethane	0.5	mg/kg	-	-	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
Methylene Chloride	0.5	mg/kg	-	-	< 0.5	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Styrene	0.5	mg/kg	-	-	< 0.5	-
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Trichloroethene	0.5	mg/kg	-	-	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5	-
Vinyl chloride	0.5	mg/kg	-	-	< 0.5	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
Fluorobenzene (surr.)	1	%	-	-	87	-
4-Bromofluorobenzene (surr.)	1	%	-	-	92	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-

Client Sample ID			#1-SD-TP06 (0.4-0.5)	#1-SS01	#1-SS02	#1-SS03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22418	S14-Jn22420	S14-Jn22421	S14-Jn22422
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluorantheneN07	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	92	-	93	-
p-Terphenyl-d14 (surr.)	1	%	98	-	97	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Dibutylchlorendate (surr.)	1	%	-	-	91	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	112	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			#1-SD-TP06 (0.4-0.5)	#1-SS01	#1-SS02	#1-SS03
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22418**	**S14-Jn22420**	**S14-Jn22421**	**S14-Jn22422**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	91	-
% Moisture	0.1	%	2.6	-	20	-
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	4.9	-	10	-
Cadmium	0.4	mg/kg	< 0.4	-	0.6	-
Chromium	5	mg/kg	20	-	120	-
Copper	5	mg/kg	51	-	410	-
Lead	5	mg/kg	12	-	77	-
Mercury	0.05	mg/kg	0.15	-	0.19	-
Nickel	5	mg/kg	52	-	63	-
Zinc	5	mg/kg	150	-	1100	-

Client Sample ID			#1-S-SS04	#1-O-SS05	#1-O-SS06	#1-O-SS07
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22423**	**S14-Jn22424**	**S14-Jn22425**	**S14-Jn22426**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	94	76	87	85
Tetrachloro-m-xylene (surr.)	1	%	100	101	112	112

eurofins | mgt

Client Sample ID			#1-S-SS04	#1-O-SS05	#1-O-SS06	#1-O-SS07
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22423	S14-Jn22424	S14-Jn22425	S14-Jn22426
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	-	53	72	73
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	-	< 1	< 1	< 1
Diazinon	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	-	< 10	< 10	< 10
Parathion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	-	84	81	84
% Moisture	0.1	%	16	15	13	10
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	23	15	22	14
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	41	25	27	20
Copper	5	mg/kg	62	16	16	16
Lead	5	mg/kg	50	26	25	18
Mercury	0.05	mg/kg	0.08	< 0.05	< 0.05	0.10
Nickel	5	mg/kg	15	9.2	7.4	20
Zinc	5	mg/kg	260	34	35	180

Client Sample ID			#1-O-SS08	#4-TP01 (0-0.1)	#4-TP01 (0.7-0.8)	#4-TP02 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22427	S14-Jn22428	S14-Jn22429	S14-Jn22430
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	87	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	88	93
p-Terphenyl-d14 (surr.)	1	%	-	-	94	98

Client Sample ID			#1-O-SS08	#4-TP01 (0-0.1)	#4-TP01 (0.7-0.8)	#4-TP02 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22427**	**S14-Jn22428**	**S14-Jn22429**	**S14-Jn22430**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	81	84	-	85
Tetrachloro-m-xylene (surr.)	1	%	106	95	-	105
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	-	-
2.4-DB	0.5	mg/kg	< 0.5	-	-	-
2.4.5-T	0.5	mg/kg	< 0.5	-	-	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (Ioxynil)	0.5	mg/kg	< 0.5	-	-	-
Dicamba	0.5	mg/kg	< 0.5	-	-	-
Dichlorprop	0.5	mg/kg	< 0.5	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	-
Dinoseb	0.5	mg/kg	< 0.5	-	-	-
MCPA	0.5	mg/kg	< 0.5	-	-	-
MCPB	0.5	mg/kg	< 0.5	-	-	-
Mecoprop	0.5	mg/kg	< 0.5	-	-	-
Warfarin (surr.)	1	%	75	-	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	84	-	85

eurofins | mgt

Client Sample ID			#1-O-SS08	#4-TP01 (0-0.1)	#4-TP01 (0.7-0.8)	#4-TP02 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22427	S14-Jn22428	S14-Jn22429	S14-Jn22430
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-	-
Coumaphos	0.5	mg/kg	< 0.5	-	-	-
Demeton (total)	1	mg/kg	< 1	-	-	-
Diazinon	0.5	mg/kg	< 0.5	-	-	-
Dichlorvos	0.5	mg/kg	< 0.5	-	-	-
Dimethoate	0.5	mg/kg	< 0.5	-	-	-
Disulfoton	0.5	mg/kg	< 0.5	-	-	-
Ethoprop	0.5	mg/kg	< 0.5	-	-	-
Fenitrothion	0.5	mg/kg	< 0.5	-	-	-
Fensulfothion	0.5	mg/kg	< 0.5	-	-	-
Fenthion	0.5	mg/kg	< 0.5	-	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	-	-
Malathion	0.5	mg/kg	< 0.5	-	-	-
Methyl parathion	0.5	mg/kg	< 0.5	-	-	-
Mevinphos	0.5	mg/kg	< 0.5	-	-	-
Monocrotophos	10	mg/kg	< 10	-	-	-
Parathion	0.5	mg/kg	< 0.5	-	-	-
Phorate	0.5	mg/kg	< 0.5	-	-	-
Profenofos	0.5	mg/kg	< 0.5	-	-	-
Prothiofos	0.5	mg/kg	< 0.5	-	-	-
Ronnel	0.5	mg/kg	< 0.5	-	-	-
Stirophos	0.5	mg/kg	< 0.5	-	-	-
Trichloronate	0.5	mg/kg	< 0.5	-	-	-
Triphenylphosphate (surr.)	1	%	82	-	-	-
% Moisture	0.1	%	12	9.5	7.0	9.5
Asbestos - WA guidelines	0.001	% w/w	-	see attached	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	8.3	-	5.9	7.1
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	16	-	17	26
Copper	5	mg/kg	19	-	< 5	< 5
Lead	5	mg/kg	22	-	17	15
Mercury	0.05	mg/kg	0.07	-	< 0.05	< 0.05
Nickel	5	mg/kg	8.5	-	< 5	< 5
Zinc	5	mg/kg	46	-	16	11

Client Sample ID			#4-SP-TP05 (0-0.1)	#4-SP-TP05 (0.5-0.6)	#4-SP-TP06 (0-0.1)	#4-SP-TP06 (0.2-0.3)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22431**	**S14-Jn22432**	**S14-Jn22433**	**S14-Jn22434**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	97	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	-	-
2-Fluorobiphenyl (surr.)	1	%	-	82	-	-
p-Terphenyl-d14 (surr.)	1	%	-	88	-	-

Client Sample ID			#4-SP-TP05 (0-0.1)	#4-SP-TP05 (0.5-0.6)	#4-SP-TP06 (0-0.1)	#4-SP-TP06 (0.2-0.3)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22431**	**S14-Jn22432**	**S14-Jn22433**	**S14-Jn22434**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Dibutylchlorendate (surr.)	1	%	84	-	82	-
Tetrachloro-m-xylene (surr.)	1	%	101	-	104	-
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (loxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	66	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	-
Total PCB	0.5	mg/kg	< 0.5	-	-	-
Dibutylchlorendate (surr.)	1	%	84	-	-	-
pH (1:5 Aqueous extract)	0.1	units	-	-	-	5.6
% Moisture	0.1	%	11	5.6	20	19
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	-

Client Sample ID			#4-SP-TP05 (0-0.1)	#4-SP-TP05 (0.5-0.6)	#4-SP-TP06 (0-0.1)	#4-SP-TP06 (0.2-0.3)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22431**	**S14-Jn22432**	**S14-Jn22433**	**S14-Jn22434**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	9.8
Heavy Metals						
Arsenic	2	mg/kg	-	3.3	11	-
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	-
Chromium	5	mg/kg	-	8.0	25	-
Copper	5	mg/kg	-	< 5	8.7	-
Lead	5	mg/kg	-	10	23	-
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	-
Nickel	5	mg/kg	-	< 5	< 5	-
Zinc	5	mg/kg	-	86	18	-
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	4.5
pH-OX	0.1	units	-	-	-	4.0
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	34
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	72
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	38
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.05
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.12
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.06
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	n/a
Calcium - KCl Extractable	0.02	% Ca	-	-	-	0.07
Calcium - Peroxide	0.02	% Ca	-	-	-	0.07
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	0.06
Magnesium - Peroxide	0.02	% Mg	-	-	-	0.06
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	0.05
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	34
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	3.0

Client Sample ID			#4-SP-TP05 (0-0.1)	#4-SP-TP05 (0.5-0.6)	#4-SP-TP06 (0-0.1)	#4-SP-TP06 (0.2-0.3)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22431**	**S14-Jn22432**	**S14-Jn22433**	**S14-Jn22434**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

Client Sample ID			#4-SED01	#4-SD-TP07 (0-0.1)	#4-SD-TP08 (0.2-0.3)
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn22435**	**S14-Jn22436**	**S14-Jn22438**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	89	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5

Client Sample ID			#4-SED01	#4-SD-TP07 (0-0.1)	#4-SD-TP08 (0.2-0.3)
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22435	S14-Jn22436	S14-Jn22438
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	109	94
p-Terphenyl-d14 (surr.)	1	%	-	113	101
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	88	97	78
Tetrachloro-m-xylene (surr.)	1	%	113	129	109
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	97	78
% Moisture	0.1	%	18	26	7.2
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached

Client Sample ID			#4-SED01	#4-SD-TP07 (0-0.1)	#4-SD-TP08 (0.2-0.3)
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn22435	S14-Jn22436	S14-Jn22438
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	2	mg/kg	9.9	9.3	5.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	22	13
Copper	5	mg/kg	6.7	9.1	17
Lead	5	mg/kg	16	34	22
Mercury	0.05	mg/kg	< 0.05	0.07	< 0.05
Nickel	5	mg/kg	< 5	< 5	13
Zinc	5	mg/kg	19	230	47

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 02, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 02, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 02, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 30, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 30, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jun 30, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jun 30, 2014	14 Day
- Method: MGT 530			
Organophosphorus Pesticides (OP)	Sydney	Jun 30, 2014	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
pH (1:5 Aqueous extract)	Sydney	Jul 01, 2014	7 Day
- Method: E018.2 pH			
% Moisture	Sydney	Jun 30, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos - WA guidelines	Sydney	Jun 30, 2014	0 Day
Ion Exchange Properties	Melbourne	Jun 30, 2014	
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 30, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 30, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jul 03, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jul 03, 2014	0 Day

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 25, 2014 5:00 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423116	**Due:**	Jul 3, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**														
#1-TP01 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22406	X	X									X			
#1-TP01 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22407	X											X		
#1-TP01 (0.6-0.7)	Jun 25, 2014		Soil	S14-Jn22408				X										
#1-TP02 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22409	X	X									X	X		
#1-TP02 (0.7-0.8)	Jun 25, 2014		Soil	S14-Jn22410				X										
#1-TP03 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22411	X	X									X	X		

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		Fax:		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
#1-TP03 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22412				X										
QC09	Jun 25, 2014		Soil	S14-Jn22413	X	X									X	X		
#1-TP04 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22414	X	X									X	X		
#1-TP04 (0.3-0.4)	Jun 25, 2014		Soil	S14-Jn22415				X										
#1-SD-TP05	Jun 25, 2014		Soil	S14-Jn22416	X	X	X		X						X	X		
#1-SD-TP06 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22417	X	X									X			
#1-SD-TP06 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22418	X											X		
#1-SD-TP06	Jun 25, 2014		Soil	S14-Jn22419				X										

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
(0.7-0.8)																		
#1-SS01	Jun 25, 2014		Soil	S14-Jn22420		X												
#1-SS02	Jun 25, 2014		Soil	S14-Jn22421	X	X									X	X	X	
#1-SS03	Jun 25, 2014		Soil	S14-Jn22422		X												
#1-S-SS04	Jun 25, 2014		Soil	S14-Jn22423	X	X				X		X						
#1-O-SS05	Jun 25, 2014		Soil	S14-Jn22424	X					X	X	X		X				
#1-O-SS06	Jun 25, 2014		Soil	S14-Jn22425	X					X	X	X		X				
#1-O-SS07	Jun 25, 2014		Soil	S14-Jn22426	X					X	X	X		X				
#1-O-SS08	Jun 25, 2014		Soil	S14-Jn22427	X					X	X	X		X				
#4-TP01 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22428	X	X									X			
#4-TP01 (0.7-	Jun 25, 2014		Soil	S14-Jn22429	X											X		

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**			**Received:**	Jun 25, 2014 5:00 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423116		**Due:**	Jul 3, 2014
		Phone:	02 8245 0300		**Priority:**	5 Day
		Fax:			**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376					

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
0.8)																		
#4-TP02 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22430	X	X									X	X		
#4-SP-TP05 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22431	X	X									X			
#4-SP-TP05 (0.5-0.6)	Jun 25, 2014		Soil	S14-Jn22432	X											X		
#4-SP-TP06 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22433	X					X	X	X						
#4-SP-TP06 (0.2-0.3)	Jun 25, 2014		Soil	S14-Jn22434	X		X		X									X
#4-SED01	Jun 25, 2014		Soil	S14-Jn22435	X					X		X						
#4-SD-TP07	Jun 25, 2014		Soil	S14-Jn22436	X	X									X	X		

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 25, 2014 5:00 PM
Address:	Level 1, 50 Margaret St	**Report #:**	423116	**Due:**	Jul 3, 2014
	Sydney	**Phone:**	02 8245 0300	**Priority:**	5 Day
	NSW 2000	**Fax:**		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
(0-0.1)																		
#4-SD-TP07 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22437				X										
#4-SD-TP08 (0.2-0.3)	Jun 25, 2014		Soil	S14-Jn22438	X	X									X	X		
RINSATE	Jun 25, 2014		Water	S14-Jn22439											X	X		
TRIP SPIKE	Jun 25, 2014		Water	S14-Jn22440									X					
TRIP BLANK	Jun 25, 2014		Water	S14-Jn22441									X					
#1-TP04 (FRAG 1)	Jun 25, 2014		Soil	S14-Jn22442				X										

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene TEQ (medium bound)*	mg/kg	-			0.5	N/A	
Benzo(a)pyrene TEQ (upper bound)*	mg/kg	-			0.5	N/A	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	108			70-130	Pass	
TRH C10-C14	%	74			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	104			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
o-Xylene	%	103			70-130	Pass	
Xylenes - Total	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	101			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH >C10-C16	%	76			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	98			75-125	Pass	
1.1-Dichloroethene	%	106			70-130	Pass	
1.1.1-Trichloroethane	%	93			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	95			70-130	Pass	
1.1.2-Trichloroethane	%	91			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	92			70-130	Pass	
1.2-Dibromoethane	%	87			70-130	Pass	
1.2-Dichlorobenzene	%	102			70-130	Pass	
1.2-Dichloroethane	%	85			70-130	Pass	
1.2-Dichloropropane	%	92			70-130	Pass	
1.2.3-Trichloropropane	%	97			70-130	Pass	
1.2.4-Trimethylbenzene	%	106			70-130	Pass	
1.3-Dichlorobenzene	%	105			70-130	Pass	
1.3-Dichloropropane	%	89			70-130	Pass	
1.3.5-Trimethylbenzene	%	106			70-130	Pass	
1.4-Dichlorobenzene	%	104			70-130	Pass	
2-Butanone (MEK)	%	97			70-130	Pass	
4-Chlorotoluene	%	106			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	82			70-130	Pass	
Benzene	%	97			70-130	Pass	
Bromobenzene	%	102			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Bromochloromethane	%	98			70-130	Pass	
Bromodichloromethane	%	91			70-130	Pass	
Bromoform	%	92			70-130	Pass	
Bromomethane	%	97			70-130	Pass	
Carbon disulfide	%	103			70-130	Pass	
Carbon Tetrachloride	%	85			70-130	Pass	
Chlorobenzene	%	100			70-130	Pass	
Chloroethane	%	108			70-130	Pass	
Chloroform	%	101			70-130	Pass	
Chloromethane	%	117			70-130	Pass	
cis-1.2-Dichloroethene	%	100			70-130	Pass	
cis-1.3-Dichloropropene	%	86			70-130	Pass	
Dibromochloromethane	%	91			70-130	Pass	
Dibromomethane	%	91			70-130	Pass	
Dichlorodifluoromethane	%	104			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
Isopropyl benzene (Cumene)	%	103			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	
Methylene Chloride	%	101			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Styrene	%	98			70-130	Pass	
Tetrachloroethene	%	100			70-130	Pass	
Toluene	%	98			70-130	Pass	
trans-1.2-Dichloroethene	%	94			70-130	Pass	
trans-1.3-Dichloropropene	%	86			70-130	Pass	
Trichloroethene	%	98			70-130	Pass	
Trichlorofluoromethane	%	104			70-130	Pass	
Vinyl chloride	%	96			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	89			70-130	Pass	
Acenaphthylene	%	73			70-130	Pass	
Anthracene	%	111			70-130	Pass	
Benz(a)anthracene	%	81			70-130	Pass	
Benzo(a)pyrene	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	%	79			70-130	Pass	
Benzo(g.h.i)perylene	%	84			70-130	Pass	
Benzo(k)fluoranthene	%	89			70-130	Pass	
Chrysene	%	99			70-130	Pass	
Dibenz(a.h)anthracene	%	74			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	90			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	117			70-130	Pass	
4.4'-DDD	%	107			70-130	Pass	
4.4'-DDE	%	113			70-130	Pass	
4.4'-DDT	%	106			70-130	Pass	
a-BHC	%	114			70-130	Pass	
Aldrin	%	119			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
b-BHC	%	104			70-130	Pass	
d-BHC	%	113			70-130	Pass	
Dieldrin	%	105			70-130	Pass	
Endosulfan I	%	105			70-130	Pass	
Endosulfan II	%	119			70-130	Pass	
Endosulfan sulphate	%	114			70-130	Pass	
Endrin	%	110			70-130	Pass	
Endrin aldehyde	%	98			70-130	Pass	
Endrin ketone	%	121			70-130	Pass	
g-BHC (Lindane)	%	121			70-130	Pass	
Heptachlor	%	113			70-130	Pass	
Heptachlor epoxide	%	121			70-130	Pass	
Hexachlorobenzene	%	108			70-130	Pass	
Methoxychlor	%	106			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	78			70-130	Pass	
2.4-DB	%	76			70-130	Pass	
2.4.5-T	%	78			70-130	Pass	
2.4.5-TP	%	83			70-130	Pass	
Actril (Ioxynil)	%	82			70-130	Pass	
Dicamba	%	87			70-130	Pass	
Dichlorprop	%	78			70-130	Pass	
Dinitro-o-cresol	%	75			70-130	Pass	
Dinoseb	%	79			70-130	Pass	
MCPA	%	86			70-130	Pass	
MCPB	%	74			70-130	Pass	
Mecoprop	%	82			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	91			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	116			70-130	Pass	
Coumaphos	%	98			70-130	Pass	
Dichlorvos	%	75			70-130	Pass	
Dimethoate	%	96			70-130	Pass	
Disulfoton	%	116			70-130	Pass	
Ethoprop	%	118			70-130	Pass	
Fensulfothion	%	128			70-130	Pass	
Fenthion	%	118			70-130	Pass	
Methyl azinphos	%	91			70-130	Pass	
Malathion	%	89			70-130	Pass	
Methyl parathion	%	107			70-130	Pass	
Mevinphos	%	98			70-130	Pass	
Monocrotophos	%	97			70-130	Pass	
Parathion	%	81			70-130	Pass	
Phorate	%	117			70-130	Pass	
Prothiofos	%	128			70-130	Pass	
Ronnel	%	116			70-130	Pass	
Stirophos	%	128			70-130	Pass	
Trichloronate	%	84			70-130	Pass	
LCS - % Recovery							
Heavy Metals							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic			%	93			70-130	Pass	
Cadmium			%	98			70-130	Pass	
Chromium			%	95			70-130	Pass	
Copper			%	94			70-130	Pass	
Lead			%	94			70-130	Pass	
Mercury			%	97			70-130	Pass	
Nickel			%	95			70-130	Pass	
Zinc			%	103			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Zinc	S14-Jn23429	NCP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn22409	CP	%	101			70-130	Pass	
TRH C10-C14	S14-Jn22409	CP	%	85			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn22409	CP	%	99			70-130	Pass	
Toluene	S14-Jn22409	CP	%	95			70-130	Pass	
Ethylbenzene	S14-Jn22409	CP	%	94			70-130	Pass	
m&p-Xylenes	S14-Jn22409	CP	%	98			70-130	Pass	
o-Xylene	S14-Jn22409	CP	%	97			70-130	Pass	
Xylenes - Total	S14-Jn22409	CP	%	98			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn22409	CP	%	94			70-130	Pass	
TRH C6-C10	S14-Jn22409	CP	%	96			70-130	Pass	
TRH >C10-C16	S14-Jn22409	CP	%	88			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn22409	CP	%	91			70-130	Pass	
Acenaphthylene	S14-Jn22409	CP	%	89			70-130	Pass	
Anthracene	S14-Jn22409	CP	%	89			70-130	Pass	
Benz(a)anthracene	S14-Jn22409	CP	%	88			70-130	Pass	
Benzo(a)pyrene	S14-Jn22409	CP	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn22409	CP	%	82			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn22409	CP	%	91			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn22409	CP	%	96			70-130	Pass	
Chrysene	S14-Jn22409	CP	%	97			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn22409	CP	%	92			70-130	Pass	
Fluoranthene	S14-Jn22409	CP	%	94			70-130	Pass	
Fluorene	S14-Jn22409	CP	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn22409	CP	%	93			70-130	Pass	
Naphthalene	S14-Jn22409	CP	%	90			70-130	Pass	
Phenanthrene	S14-Jn22409	CP	%	95			70-130	Pass	
Pyrene	S14-Jn22409	CP	%	91			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn22409	CP	%	120			70-130	Pass	
4.4'-DDD	S14-Jn22409	CP	%	127			70-130	Pass	
4.4'-DDE	S14-Jn22409	CP	%	130			70-130	Pass	
4.4'-DDT	S14-Jn22409	CP	%	124			70-130	Pass	
a-BHC	S14-Jn22409	CP	%	123			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	S14-Jn22409	CP	%	127			70-130	Pass	
b-BHC	S14-Jn22409	CP	%	105			70-130	Pass	
d-BHC	S14-Jn22409	CP	%	121			70-130	Pass	
Dieldrin	S14-Jn22409	CP	%	122			70-130	Pass	
Endosulfan I	S14-Jn22409	CP	%	113			70-130	Pass	
Endosulfan II	S14-Jn22409	CP	%	121			70-130	Pass	
Endosulfan sulphate	S14-Jn22409	CP	%	115			70-130	Pass	
Endrin	S14-Jn22409	CP	%	130			70-130	Pass	
Endrin aldehyde	S14-Jn22409	CP	%	111			70-130	Pass	
Endrin ketone	S14-Jn22409	CP	%	117			70-130	Pass	
g-BHC (Lindane)	S14-Jn22409	CP	%	125			70-130	Pass	
Heptachlor	S14-Jn22409	CP	%	122			70-130	Pass	
Heptachlor epoxide	S14-Jn22409	CP	%	125			70-130	Pass	
Methoxychlor	S14-Jn22409	CP	%	127			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn22409	CP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn22409	CP	%	92			70-130	Pass	
Cadmium	S14-Jn22409	CP	%	98			70-130	Pass	
Chromium	S14-Jn22409	CP	%	84			70-130	Pass	
Copper	S14-Jn22409	CP	%	104			70-130	Pass	
Lead	S14-Jn22409	CP	%	111			70-130	Pass	
Mercury	S14-Jn22409	CP	%	98			70-130	Pass	
Nickel	S14-Jn22409	CP	%	105			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn22421	CP	%	92			70-130	Pass	
Toluene	S14-Jn22421	CP	%	91			70-130	Pass	
Ethylbenzene	S14-Jn22421	CP	%	94			70-130	Pass	
m&p-Xylenes	S14-Jn22421	CP	%	95			70-130	Pass	
o-Xylene	S14-Jn22421	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn22421	CP	%	73			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jn22421	CP	%	88			75-125	Pass	
1.1-Dichloroethene	S14-Jn22421	CP	%	96			70-130	Pass	
1.1.1-Trichloroethane	S14-Jn22421	CP	%	79			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn22421	CP	%	90			70-130	Pass	
1.1.2-Trichloroethane	S14-Jn22421	CP	%	91			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn22421	CP	%	93			70-130	Pass	
1.2-Dibromoethane	S14-Jn22421	CP	%	89			70-130	Pass	
1.2-Dichlorobenzene	S14-Jn22421	CP	%	92			70-130	Pass	
1.2-Dichloroethane	S14-Jn22421	CP	%	89			70-130	Pass	
1.2-Dichloropropane	S14-Jn22421	CP	%	88			70-130	Pass	
1.2.3-Trichloropropane	S14-Jn22421	CP	%	94			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jn22421	CP	%	92			70-130	Pass	
1.3-Dichlorobenzene	S14-Jn22421	CP	%	93			70-130	Pass	
1.3-Dichloropropane	S14-Jn22421	CP	%	88			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jn22421	CP	%	92			70-130	Pass	
1.4-Dichlorobenzene	S14-Jn22421	CP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Butanone (MEK)	S14-Jn22421	CP	%	101			70-130	Pass	
4-Chlorotoluene	S14-Jn22421	CP	%	94			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn22421	CP	%	86			70-130	Pass	
Bromobenzene	S14-Jn22421	CP	%	92			70-130	Pass	
Bromochloromethane	S14-Jn22421	CP	%	95			70-130	Pass	
Bromodichloromethane	S14-Jn22421	CP	%	90			70-130	Pass	
Bromoform	S14-Jn22421	CP	%	86			70-130	Pass	
Bromomethane	S14-Jn22421	CP	%	99			70-130	Pass	
Carbon disulfide	S14-Jn22421	CP	%	85			70-130	Pass	
Carbon Tetrachloride	S14-Jn22421	CP	%	76			70-130	Pass	
Chlorobenzene	S14-Jn22421	CP	%	94			70-130	Pass	
Chloroethane	S14-Jn22421	CP	%	96			70-130	Pass	
Chloroform	S14-Jn22421	CP	%	95			70-130	Pass	
Chloromethane	S14-Jn22421	CP	%	94			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jn22421	CP	%	91			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jn22421	CP	%	76			70-130	Pass	
Dibromochloromethane	S14-Jn22421	CP	%	85			70-130	Pass	
Dibromomethane	S14-Jn22421	CP	%	107			70-130	Pass	
Dichlorodifluoromethane	S14-Jn22421	CP	%	98			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jn22421	CP	%	94			70-130	Pass	
Methylene Chloride	S14-Jn22421	CP	%	93			70-130	Pass	
Styrene	S14-Jn22421	CP	%	90			70-130	Pass	
Tetrachloroethene	S14-Jn22421	CP	%	92			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jn22421	CP	%	92			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jn22421	CP	%	76			70-130	Pass	
Trichloroethene	S14-Jn22421	CP	%	92			70-130	Pass	
Trichlorofluoromethane	S14-Jn22421	CP	%	96			70-130	Pass	
Vinyl chloride	S14-Jn22421	CP	%	89			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M14-Jn22826	NCP	%	76			70-130	Pass	
Actril (Ioxynil)	M14-Jn22826	NCP	%	76			70-130	Pass	
Dichlorprop	M14-Jn22826	NCP	%	75			70-130	Pass	
MCPA	M14-Jn22826	NCP	%	83			70-130	Pass	
MCPB	M14-Jn22826	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Dimethoate	S14-Jn22425	CP	%	101			70-130	Pass	
Malathion	S14-Jn22425	CP	%	96			70-130	Pass	
Monocrotophos	S14-Jn22425	CP	%	91			70-130	Pass	
Parathion	S14-Jn22425	CP	%	78			70-130	Pass	
Trichloronate	S14-Jn22425	CP	%	90			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn22430	CP	%	118			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn22432	CP	%	90			70-130	Pass	
Cadmium	S14-Jn22432	CP	%	89			70-130	Pass	
Chromium	S14-Jn22432	CP	%	97			70-130	Pass	
Copper	S14-Jn22432	CP	%	96			70-130	Pass	
Lead	S14-Jn22432	CP	%	92			70-130	Pass	
Mercury	S14-Jn22432	CP	%	97			70-130	Pass	
Nickel	S14-Jn22432	CP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn22409	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn22409	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn22409	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn22409	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn22409	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn22409	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn22409	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn22409	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn22409	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn22409	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn22409	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn22409	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn22409	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn22409	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn22409	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn22409	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

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Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Endrin	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S14-Jn22409	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Toxaphene	S14-Jn22409	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD		
Aroclor-1016	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1232	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1242	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1248	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1254	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1260	S14-Jn22409	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S14-Jn22409	CP	mg/kg	10	11	8.0	30%	Pass
Cadmium	S14-Jn22409	CP	mg/kg	0.4	0.4	1.0	30%	Pass
Chromium	S14-Jn22409	CP	mg/kg	28	31	10	30%	Pass
Copper	S14-Jn22409	CP	mg/kg	22	26	17	30%	Pass
Lead	S14-Jn22409	CP	mg/kg	29	31	6.0	30%	Pass
Mercury	S14-Jn22409	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Nickel	S14-Jn22409	CP	mg/kg	15	15	<1	30%	Pass
Zinc	S14-Jn22409	CP	mg/kg	690	710	3.0	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S14-Jn22421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S14-Jn22421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S14-Jn22421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S14-Jn22421	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S14-Jn22421	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.1-Dichloroethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1-Dichloroethene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1-Trichloroethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.1.2-Tetrachloroethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2-Trichloroethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.1.2.2-Tetrachloroethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dibromoethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichlorobenzene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloroethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2-Dichloropropane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.3-Trichloropropane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.2.4-Trimethylbenzene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichlorobenzene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3-Dichloropropane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
1.3.5-Trimethylbenzene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.4-Dichlorobenzene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jn22421	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (Ioxynil)	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jn22424	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Fenthion	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-Jn22425	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-Jn22425	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn22430	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn22430	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn22430	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn22430	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn22430	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn22430	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn22430	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn22430	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn22430	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn22430	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn22432	CP	mg/kg	3.3	2.9	14	30%	Pass	Q15
Cadmium	S14-Jn22432	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn22432	CP	mg/kg	8.0	8.4	6.0	30%	Pass	
Copper	S14-Jn22432	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jn22432	CP	mg/kg	10	6.8	39	30%	Fail	Q15
Mercury	S14-Jn22432	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn22432	CP	mg/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jn22434	CP	units	4.5	4.5	<1	30%	Pass	
pH-OX	S14-Jn22434	CP	units	4.0	4.0	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jn22434	CP	mol H+/t	34	34	1.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jn22434	CP	mol H+/t	72	71	3.0	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jn22434	CP	mol H+/t	38	37	4.0	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jn22434	CP	% pyrite S	0.05	0.05	1.0	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jn22434	CP	% pyrite S	0.12	0.11	3.0	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jn22434	CP	% pyrite S	0.06	0.06	4.0	30%	Pass	
Sulfur - KCl Extractable	S14-Jn22434	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jn22434	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jn22434	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jn22434	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jn22434	CP	% Ca	0.07	0.07	3.0	30%	Pass	
Calcium - Peroxide	S14-Jn22434	CP	% Ca	0.07	0.07	<1	30%	Pass	
Acid Reacted Calcium	S14-Jn22434	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jn22434	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jn22434	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jn22434	CP	% Mg	0.06	0.06	1.0	30%	Pass	
Magnesium - Peroxide	S14-Jn22434	CP	% Mg	0.06	0.06	1.0	30%	Pass	
Acid Reacted Magnesium	S14-Jn22434	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jn22434	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jn22434	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jn22434	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jn22434	CP	% S	0.05	0.05	1.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jn22434	CP	mol H+/t	34	34	1.0	30%	Pass	
Liming rate - SPOCAS	S14-Jn22434	CP	kg CaCO3/t	3.0	3.0	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
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NSW 2000

Attention:	Tyler Creese
Report:	423116-S
Client Reference:	**BOX HILL 43376**
Received Date:	25 June 2014
Date Reported:	4 July 2014

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, "Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise" therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Site Reference: **BOX HILL 43376**
Date Sampled: **25 June 2014**
Report: **423116**

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
#1-TP01 (0-0.1)	14-Jn22406	25 June 2014	Approximate Sample Mass: 1185g Sample consisted of: Dark brown coarse-grained soil and rocks	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#1-TP02 (0-0.1)	14-Jn22409	25 June 2014	Approximate Sample Mass: 795g Sample consisted of: Dark brown coarse-grained soil and rocks	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#1-TP03 (0-0.1)	14-Jn22411	25 June 2014	Approximate Sample Mass: 743g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
QC09	14-Jn22413	25 June 2014	Approximate Sample Mass: 570g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#1-TP04 (0-0.1)	14-Jn22414	25 June 2014	Approximate Sample Mass: 801g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w

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#1-SD-TP05	14-Jn22416	25 June 2014	Approximate Sample Mass: 705g Sample consisted of: Brown clayey soil, rocks and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#1-SD-TP06 (0-0.1)	14-Jn22417	25 June 2014	Approximate Sample Mass: 890g Sample consisted of: Dark brown coarse-grained soil, rocks and debris	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#1-SS01	14-Jn22420	25 June 2014	Total Sample Mass: 524.6g Sample consisted of: Dark brown fine-grained soil, rocks and plant matter	Chrysotile and Amosite detected, organic fibres Total Asbestos ACM weight: 0.0104g Total Asbestos w/w%: 0.002g% w/w*
#1-SS02	14-Jn22421	25 June 2014	Approximate Sample Mass: 380g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#1-SS03	14-Jn22422	25 June 2014	Approximate Sample Mass: 610g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#1-S-SS04	14-Jn22423	25 June 2014	Approximate Sample Mass: 350g Sample consisted of: Dark brown clayey soil and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w

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Newcastle

#4-TP01 (0-0.1)	14-Jn22428	25 June 2014	Approximate Sample Mass: 620g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#4-TP02 (0-0.1)	14-Jn22430	25 June 2014	Approximate Sample Mass: 940g Sample consisted of: Brown fine-grained soil	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#4-SP-TP05 (0-0.1)	14-Jn22431	25 June 2014	Approximate Sample Mass: 670g Sample consisted of: Brown fine-grained soil	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#4-SD-TP07	14-Jn22436	25 June 2014	Approximate Sample Mass: 470g Sample consisted of: Brown fine-grained soil	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w
#4-SD-TP08 (0.2-0.3)	14-Jn22438	25 June 2014	Approximate Sample Mass: 810g Sample consisted of: Brown fine-grained soil and rocks	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w

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Sample History
Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos – LTM-ASB-8020	Sydney	30 June 2014	Indefinite

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General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters is performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis.
7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).
For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.
Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.
**NOTE: pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per kilogram
µg/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Nephelometric Turbidity Units

TERMS

Dry	Where moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the client's batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed on fireproofing, troweled on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).

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PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios)

QC - ACCEPTANCE CRITERIA

RPD Duplicates:	Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%
Surrogate Recoveries:	Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and its Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time.
7. Analysis will begin as soon as possible after sample receipt.
8. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
9. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS's.
10. For Matrix Spikes and LCS results a dash “-" in the report means that the specific analyte was not added to the QC sample.
11. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Organic samples had Teflon liners	N/A
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within Holding Time	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by

Jean Heng	Client Services
Nibha Vaidya	Approved Counter/Identifier
Alex Tam	Approved Counter/Identifier

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report.

- Indicates Not Requested
* Indicates NATA accreditation does not cover the performance of this service
Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Tyler Creese**

Report **423116-W**
Client Reference BOX HILL 43376
Received Date Jun 25, 2014

Client Sample ID			**RINSATE**	**TRIP SPIKE**	**TRIP BLANK**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-Jn22439**	**S14-Jn22440**	**S14-Jn22441**
Date Sampled			**Jun 25, 2014**	**Jun 25, 2014**	**Jun 25, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	-	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-
BTEX					
Benzene	0.001	mg/L	< 0.001	98%	< 0.001
Toluene	0.001	mg/L	< 0.001	97%	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	96%	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	99%	< 0.002
o-Xylene	0.001	mg/L	< 0.001	99%	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	99%	< 0.003
4-Bromofluorobenzene (surr.)	1	%	82	98	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	< 0.02	-	-
TRH C6-C10	0.02	mg/L	< 0.02	-	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-

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Client Sample ID			RINSATE	TRIP SPIKE	TRIP BLANK
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S14-Jn22439	S14-Jn22440	S14-Jn22441
Date Sampled			Jun 25, 2014	Jun 25, 2014	Jun 25, 2014
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.001	mg/L	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	-	-
Total PAH	0.001	mg/L	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	129	-	-
p-Terphenyl-d14 (surr.)	1	%	107	-	-
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	< 0.001	-	-
4.4'-DDD	0.0001	mg/L	< 0.0001	-	-
4.4'-DDE	0.0001	mg/L	< 0.0001	-	-
4.4'-DDT	0.0001	mg/L	< 0.0001	-	-
a-BHC	0.0001	mg/L	< 0.0001	-	-
Aldrin	0.0001	mg/L	< 0.0001	-	-
b-BHC	0.0001	mg/L	< 0.0001	-	-
d-BHC	0.0001	mg/L	< 0.0001	-	-
Dieldrin	0.0001	mg/L	< 0.0001	-	-
Endosulfan I	0.0001	mg/L	< 0.0001	-	-
Endosulfan II	0.0001	mg/L	< 0.0001	-	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	-	-
Endrin	0.0001	mg/L	< 0.0001	-	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	-	-
Endrin ketone	0.0001	mg/L	< 0.0001	-	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	-	-
Heptachlor	0.0001	mg/L	< 0.0001	-	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	-	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	-	-
Methoxychlor	0.0001	mg/L	< 0.0001	-	-
Toxaphene	0.01	mg/L	< 0.01	-	-
Dibutylchlorendate (surr.)	1	%	91	-	-
Tetrachloro-m-xylene (surr.)	1	%	100	-	-
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	< 0.005	-	-
Aroclor-1232	0.005	mg/L	< 0.005	-	-
Aroclor-1242	0.005	mg/L	< 0.005	-	-
Aroclor-1248	0.005	mg/L	< 0.005	-	-
Aroclor-1254	0.005	mg/L	< 0.005	-	-
Aroclor-1260	0.005	mg/L	< 0.005	-	-
Total PCB	0.005	mg/L	< 0.005	-	-
Dibutylchlorendate (surr.)	1	%	91	-	-
Heavy Metals					
Arsenic	0.005	mg/L	< 0.005	-	-
Cadmium	0.0005	mg/L	< 0.0005	-	-
Chromium	0.005	mg/L	< 0.005	-	-
Copper	0.005	mg/L	< 0.005	-	-
Lead	0.005	mg/L	< 0.005	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-
Nickel	0.005	mg/L	< 0.005	-	-
Zinc	0.005	mg/L	< 0.005	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jun 27, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 26, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 27, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jun 27, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 26, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jun 27, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jun 27, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 25, 2014 5:00 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423116	**Due:**	Jul 3, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Tyler Creese
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**														
#1-TP01 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22406	X	X									X			
#1-TP01 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22407	X											X		
#1-TP01 (0.6-0.7)	Jun 25, 2014		Soil	S14-Jn22408				X										
#1-TP02 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22409	X	X									X	X		
#1-TP02 (0.7-0.8)	Jun 25, 2014		Soil	S14-Jn22410				X										
#1-TP03 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22411	X	X									X	X		

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Contact Name: Tyler Creese

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
#1-TP03 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22412				X										
QC09	Jun 25, 2014		Soil	S14-Jn22413	X	X									X	X		
#1-TP04 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22414	X	X									X	X		
#1-TP04 (0.3-0.4)	Jun 25, 2014		Soil	S14-Jn22415				X										
#1-SD-TP05	Jun 25, 2014		Soil	S14-Jn22416	X	X	X		X						X	X		
#1-SD-TP06 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22417	X	X									X			
#1-SD-TP06 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22418	X											X		
#1-SD-TP06	Jun 25, 2014		Soil	S14-Jn22419				X										

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NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 423116
Phone: 02 8245 0300
Fax:

Received: Jun 25, 2014 5:00 PM
Due: Jul 3, 2014
Priority: 5 Day
Contact Name: Tyler Creese

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
(0.7-0.8)																		
#1-SS01	Jun 25, 2014		Soil	S14-Jn22420		X												
#1-SS02	Jun 25, 2014		Soil	S14-Jn22421	X	X									X	X	X	
#1-SS03	Jun 25, 2014		Soil	S14-Jn22422		X												
#1-S-SS04	Jun 25, 2014		Soil	S14-Jn22423	X	X				X		X						
#1-O-SS05	Jun 25, 2014		Soil	S14-Jn22424	X					X	X	X		X				
#1-O-SS06	Jun 25, 2014		Soil	S14-Jn22425	X					X	X	X		X				
#1-O-SS07	Jun 25, 2014		Soil	S14-Jn22426	X					X	X	X		X				
#1-O-SS08	Jun 25, 2014		Soil	S14-Jn22427	X					X	X	X		X				
#4-TP01 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22428	X	X									X			
#4-TP01 (0.7-	Jun 25, 2014		Soil	S14-Jn22429	X											X		

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NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 423116
Phone: 02 8245 0300
Fax:

Received: Jun 25, 2014 5:00 PM
Due: Jul 3, 2014
Priority: 5 Day
Contact Name: Tyler Creese

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
0.8)																		
#4-TP02 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22430	X	X									X	X		
#4-SP-TP05 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22431	X	X									X			
#4-SP-TP05 (0.5-0.6)	Jun 25, 2014		Soil	S14-Jn22432	X											X		
#4-SP-TP06 (0-0.1)	Jun 25, 2014		Soil	S14-Jn22433	X					X	X	X						
#4-SP-TP06 (0.2-0.3)	Jun 25, 2014		Soil	S14-Jn22434	X		X		X									X
#4-SED01	Jun 25, 2014		Soil	S14-Jn22435	X					X		X						
#4-SD-TP07	Jun 25, 2014		Soil	S14-Jn22436	X	X									X	X		

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 25, 2014 5:00 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423116	**Due:**	Jul 3, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Tyler Creese
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Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																		X
External Laboratory																		
(0-0.1)																		
#4-SD-TP07 (0.4-0.5)	Jun 25, 2014		Soil	S14-Jn22437				X										
#4-SD-TP08 (0.2-0.3)	Jun 25, 2014		Soil	S14-Jn22438	X	X									X	X		
RINSATE	Jun 25, 2014		Water	S14-Jn22439											X	X		
TRIP SPIKE	Jun 25, 2014		Water	S14-Jn22440									X					
TRIP BLANK	Jun 25, 2014		Water	S14-Jn22441									X					
#1-TP04 (FRAG 1)	Jun 25, 2014		Soil	S14-Jn22442				X										

Eurofins | mgt Internal Quality Control Review and Glossary

General
1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times
Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS
mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA
RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS
1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	76			70-130	Pass	
TRH C10-C14	%	73			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	86			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	86			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
o-Xylene	%	88			70-130	Pass	
Xylenes - Total	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	75			70-130	Pass	
TRH C6-C10	%	83			70-130	Pass	
TRH >C10-C16	%	78			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	117			70-130	Pass	
Acenaphthylene	%	106			70-130	Pass	
Anthracene	%	90			70-130	Pass	
Benz(a)anthracene	%	124			70-130	Pass	
Benzo(a)pyrene	%	103			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene			%	129			70-130	Pass	
Benzo(g.h.i)perylene			%	124			70-130	Pass	
Benzo(k)fluoranthene			%	98			70-130	Pass	
Chrysene			%	94			70-130	Pass	
Dibenz(a.h)anthracene			%	117			70-130	Pass	
Fluoranthene			%	102			70-130	Pass	
Fluorene			%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	121			70-130	Pass	
Naphthalene			%	126			70-130	Pass	
Phenanthrene			%	97			70-130	Pass	
Pyrene			%	101			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	99			70-130	Pass	
4.4'-DDD			%	83			70-130	Pass	
4.4'-DDE			%	70			70-130	Pass	
4.4'-DDT			%	88			70-130	Pass	
a-BHC			%	110			70-130	Pass	
Aldrin			%	90			70-130	Pass	
b-BHC			%	113			70-130	Pass	
d-BHC			%	88			70-130	Pass	
Dieldrin			%	100			70-130	Pass	
Endosulfan I			%	110			70-130	Pass	
Endosulfan II			%	95			70-130	Pass	
Endosulfan sulphate			%	95			70-130	Pass	
Endrin			%	88			70-130	Pass	
Endrin aldehyde			%	93			70-130	Pass	
Endrin ketone			%	100			70-130	Pass	
g-BHC (Lindane)			%	83			70-130	Pass	
Heptachlor			%	98			70-130	Pass	
Heptachlor epoxide			%	103			70-130	Pass	
Methoxychlor			%	80			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	70			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	90			70-130	Pass	
Cadmium			%	88			70-130	Pass	
Chromium			%	97			70-130	Pass	
Copper			%	89			70-130	Pass	
Lead			%	98			70-130	Pass	
Mercury			%	91			70-130	Pass	
Nickel			%	93			70-130	Pass	
Zinc			%	101			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn22391	NCP	%	85			70-130	Pass	
TRH C10-C14	S14-Jn22389	NCP	%	81			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn22391	NCP	%	96			70-130	Pass	
Toluene	S14-Jn22391	NCP	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S14-Jn22391	NCP	%	96			70-130	Pass	
m&p-Xylenes	S14-Jn22391	NCP	%	103			70-130	Pass	
o-Xylene	S14-Jn22391	NCP	%	102			70-130	Pass	
Xylenes - Total	S14-Jn22391	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn22391	NCP	%	79			70-130	Pass	
TRH C6-C10	S14-Jn22391	NCP	%	92			70-130	Pass	
TRH >C10-C16	S14-Jn22389	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn19274	NCP	%	105			70-130	Pass	
Acenaphthylene	S14-Jn19274	NCP	%	129			70-130	Pass	
Anthracene	S14-Jn19274	NCP	%	105			70-130	Pass	
Benz(a)anthracene	S14-Jn19274	NCP	%	125			70-130	Pass	
Benzo(a)pyrene	S14-Jn19274	NCP	%	124			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn19274	NCP	%	126			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn19274	NCP	%	130			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn19274	NCP	%	119			70-130	Pass	
Chrysene	S14-Jn19274	NCP	%	126			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn19274	NCP	%	119			70-130	Pass	
Fluoranthene	S14-Jn19274	NCP	%	116			70-130	Pass	
Fluorene	S14-Jn19274	NCP	%	130			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn19274	NCP	%	126			70-130	Pass	
Naphthalene	S14-Jn19274	NCP	%	126			70-130	Pass	
Phenanthrene	S14-Jn19274	NCP	%	113			70-130	Pass	
Pyrene	S14-Jn19274	NCP	%	116			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn22439	CP	%	97			70-130	Pass	
Cadmium	S14-Jn22439	CP	%	105			70-130	Pass	
Chromium	S14-Jn22439	CP	%	93			70-130	Pass	
Copper	S14-Jn22439	CP	%	79			70-130	Pass	
Lead	S14-Jn22439	CP	%	93			70-130	Pass	
Mercury	S14-Jn22439	CP	%	84			70-130	Pass	
Nickel	S14-Jn22439	CP	%	81			70-130	Pass	
Zinc	S14-Jn22439	CP	%	98			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn22390	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jn22388	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-Jn22388	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jn22388	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn22390	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jn22390	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jn22390	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jn22390	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jn22390	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jn22390	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn22390	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jn22390	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn22390	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jn22388	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jn22388	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jn22388	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jn19152	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn22758	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jn22758	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jn22758	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jn22758	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jn22758	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jn22758	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jn22758	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jn22758	NCP	mg/L	0.12	0.12	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
James Norford	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Tyler Creese
Client job number:	BOX HILL 43376
COC number:	02222-022223
Turn around time:	5 Day
Date/Time received:	Jun 25, 2014 5:00 PM
Eurofins | mgt reference:	**423116**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Acid Herbicide and CEC conducted at Eurofins | mgt Melbourne | SPOCAS conducted at Eurofins | mgt Brisbane

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Tyler Creese - TCreese@jbsg.com.au.

Eurofins | mgt Sample Receipt

02222

CHAIN OF CUSTODY

JBS&G

#423116

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box hill	SAMPLERS: TC, LB
SEND REPORT TO: TC, KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	BTEX	CEC	pH	OPPs	NOTES:
#1-TP01 (0-0.1)	Soil	25/6/14		B+J			X	X										B7 =
#1-TP01 (0.4-0.5)						X												TRH, BTEX
#1-TP01 (0.6-0.7)																		8 metals, PAHs
#1-TP02 (0-0.1)						X	X	X										
#1-TP02 (0.7-0.8)																		B17 = OCP, PCBs
#1-TP03 (0-0.1)						X	X	X										
#1-TP03 (0.4-0.5)																		Asbestos
QC09						X	X	X										= NEPC 2013
#1-TP04 (0-0.1)						X	X	X										
#1-TP04 (0.3-0.4)																		
#1-~~TP05~~ SD-TP05				B+J+J		X	X	X							X	X		
#1-SD-~~TP~~TP06 (0-0.1)				B+J			X	X										
#1-SD-TP06 (0.4-0.5)						X												
#1-SD-TP06 (0.7-0.8)																		
#1-SS01								X										
#1-SS02						X	X	X					X					
#1-SS03								X										
#1-S-SS04								X	X	X								
#1-O-SS05				J					X	X	X						X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: 25/6/14 DATE: T.Creese OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: Jasmine DATE: OF: 25/6/14 3pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP ...... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02223

CHAIN OF CUSTODY

JBS&G

#423116

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS:
SEND REPORT TO: KN TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: standard	QC LEVEL: NEPM (2013) tcraese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Herbicides	SPOCAS	VOCs	BTEX	CEC	pH	OPP	NOTES:
#1-0-SS06				B + J					X	X	X						X	
#1-0-SS07									X	X	X						X	
#1-0-SS08									X	X	X						X	
#4-TP01 (0-0.1)							X	X										
#4-TP01 (0.7-0.8)						X												
#4-TP02 (0-0.1)						X	X	X										
#4-SP-TP05 (0-0.1)							X	X										
#4-SP-TP05 (0.5-0.6)						X												
#4-TP06 (0-0.1)									X	X	X							
#4-TP06 (0.2-0.3)				B + J + J								X			X	X		
#4-SED01				B + J					X	X								
#4-SD-TP07 (0-0.1)						X	X	X										
#4-SD-TP08 (0.4-0.5)																		
#4-TP08 (0.2-0.3)						X	X	X										
Rinsate						X	X											
Trip spike														X				
Trip blank														X				
#1-TP04 (Frag 1)																		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Cleeke DATE: 25/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 25/06/14 5pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **423382-S**
Client Reference BOX HILL 43367
Received Date Jun 27, 2014

Client Sample ID			**#18-TP01 (0-0.1)**	**#18-TP01 (0.8-0.9)**	**#18-TP02 (0-0.1)**	**#18-TP03 (0.3-0.4)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24646**	**S14-Jn24647**	**S14-Jn24648**	**S14-Jn24650**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	83	-	84	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			#18-TP01 (0-0.1)	#18-TP01 (0.8-0.9)	#18-TP02 (0-0.1)	#18-TP03 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24646**	**S14-Jn24647**	**S14-Jn24648**	**S14-Jn24650**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	96	-	97	100
p-Terphenyl-d14 (surr.)	1	%	101	-	101	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	65	-	83	74
Tetrachloro-m-xylene (surr.)	1	%	88	-	110	105
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	65	-	83	74
pH (1:5 Aqueous extract)	0.1	units	-	-	-	7.4
% Moisture	0.1	%	8.4	6.2	18	14
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	-
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	14

Client Sample ID			#18-TP01 (0-0.1)	#18-TP01 (0.8-0.9)	#18-TP02 (0-0.1)	#18-TP03 (0.3-0.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24646	S14-Jn24647	S14-Jn24648	S14-Jn24650
Date Sampled			Jun 26, 2014	Jun 26, 2014	Jun 26, 2014	Jun 26, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.2	-	3.7	4.5
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	10	-	6.6	15
Copper	5	mg/kg	43	-	8.4	23
Lead	5	mg/kg	22	-	6.9	17
Mercury	0.05	mg/kg	< 0.05	-	0.15	< 0.05
Nickel	5	mg/kg	23	-	< 5	6.2
Zinc	5	mg/kg	81	-	22	28
SPOCAS Suite						
pH-KCL	0.1	units	-	8.7	-	-
pH-OX	0.1	units	-	7.6	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	< 2	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	< 2	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	< 2	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	< 0.02	-	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	< 0.02	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	< 0.02	-	-
Sulfur - KCl Extractable	0.02	% S	-	< 0.02	-	-
Sulfur - Peroxide	0.02	% S	-	< 0.02	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	< 0.02	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	< 10	-	-
HCl Extractable Sulfur	0.02	% S	-	n/a	-	-
Net Acid soluble sulfur	0.02	% S	-	n/a	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	n/a	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	n/a	-	-
Calcium - KCl Extractable	0.02	% Ca	-	0.07	-	-
Calcium - Peroxide	0.02	% Ca	-	0.20	-	-
Acid Reacted Calcium	0.02	% Ca	-	0.13	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	66	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	0.11	-	-
Magnesium - KCl Extractable	0.02	% Mg	-	0.11	-	-
Magnesium - Peroxide	0.02	% Mg	-	0.15	-	-
Acid Reacted Magnesium	0.02	% Mg	-	0.05	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	37	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	0.06	-	-
Acid Neutralising Capacity	0.02	%CaCO3	-	1.6	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	320	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	0.51	-	-
ANC Fineness Factor			-	1.5	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	< 0.02	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	< 10	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	< 1	-	-
Extraneous Material						
<2mm Fraction	0.005	g	-	49	-	-
>2mm Fraction	0.005		-	81	-	-
Analysed Material	0.1	%	-	38	-	-
Extraneous Material	0.1	%	-	62	-	-

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Client Sample ID			#24-SP-TP01 (0-0.1)	#24-SP-TP01 (0.3-0.4)	#24-TP02 (0-0.1)	#24-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24651**	**S14-Jn24652**	**S14-Jn24653**	**S14-Jn24654**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	< 50	-
TRH C29-C36	50	mg/kg	< 50	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	82	-	85	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	99	-	91	-
p-Terphenyl-d14 (surr.)	1	%	104	-	99	-

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Client Sample ID			#24-SP-TP01 (0-0.1)	#24-SP-TP01 (0.3-0.4)	#24-TP02 (0-0.1)	#24-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24651**	**S14-Jn24652**	**S14-Jn24653**	**S14-Jn24654**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Dibutylchlorendate (surr.)	1	%	99	-	83	-
Tetrachloro-m-xylene (surr.)	1	%	114	-	111	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	99	-	83	-
pH (1:5 Aqueous extract)	0.1	units	-	7.2	-	-
% Moisture	0.1	%	15	10	12	17
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	-
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	6.6	-	-
Heavy Metals						
Arsenic	2	mg/kg	11	-	15	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	28	-	24	-
Copper	5	mg/kg	30	-	13	-
Lead	5	mg/kg	27	-	23	-
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	-
Nickel	5	mg/kg	12	-	6.5	-
Zinc	5	mg/kg	180	-	37	-

Client Sample ID			#24-SP-TP01 (0-0.1)	#24-SP-TP01 (0.3-0.4)	#24-TP02 (0-0.1)	#24-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24651**	**S14-Jn24652**	**S14-Jn24653**	**S14-Jn24654**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	4.7
pH-OX	0.1	units	-	-	-	3.9
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	22
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	90
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	68
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.04
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.14
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.11
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	14
HCl Extractable Sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	n/a
Calcium - KCl Extractable	0.02	% Ca	-	-	-	0.08
Calcium - Peroxide	0.02	% Ca	-	-	-	0.08
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	0.07
Magnesium - Peroxide	0.02	% Mg	-	-	-	0.08
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	0.06
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	36
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	3.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

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Client Sample ID			#24-TP03 (0-0.1)	#18-SED01	#18-SED02	#20-SD-SS01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24655	S14-Jn24656	S14-Jn24657	S14-Jn24658
Date Sampled			Jun 26, 2014	Jun 26, 2014	Jun 26, 2014	Jun 26, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	180
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	8000
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	16000
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	24000
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	1.2	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	86	101	80	118
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	310
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	310
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	19000
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	14000
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	97	98	100	93
p-Terphenyl-d14 (surr.)	1	%	105	104	105	97

Client Sample ID			#24-TP03 (0-0.1)	#18-SED01	#18-SED02	#20-SD-SS01
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24655**	**S14-Jn24656**	**S14-Jn24657**	**S14-Jn24658**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	83	81	114	164
Tetrachloro-m-xylene (surr.)	1	%	111	110	146	265
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	83	81	114	164
% Moisture	0.1	%	17	14	34	13
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	12	4.8	5.7	14
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	0.5
Chromium	5	mg/kg	19	11	18	36
Copper	5	mg/kg	11	34	21	41
Lead	5	mg/kg	13	19	18	26
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	5.5	21	11	12
Zinc	5	mg/kg	29	74	47	110

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#20-AST-SS02 Soil S14-Jn24659 Jun 26, 2014	#20-AST-SS03 Soil S14-Jn24660 Jun 26, 2014	#20-SD-SS04 Soil S14-Jn24661 Jun 26, 2014	#20-SD-SS05 Soil S14-Jn24662 Jun 26, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	3700	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	33000	69	74	120
TRH C29-C36	50	mg/kg	240	< 50	280	210
TRH C10-36 (Total)	50	mg/kg	37000	69	350	330
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	82	85	83	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	70	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	70	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	12000	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	12000	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	26000	< 100	280	260
TRH >C34-C40	100	mg/kg	< 100	< 100	260	160
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	1.9	-	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	1.9	-	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Bromobenzene	0.5	mg/kg	< 0.5	-	< 0.5	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Bromoform	0.5	mg/kg	< 0.5	-	< 0.5	-
Bromomethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#20-AST-SS02 Soil S14-Jn24659 Jun 26, 2014	#20-AST-SS03 Soil S14-Jn24660 Jun 26, 2014	#20-SD-SS04 Soil S14-Jn24661 Jun 26, 2014	#20-SD-SS05 Soil S14-Jn24662 Jun 26, 2014
Volatile Organics						
Chlorobenzene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chloroethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Chloroform	0.5	mg/kg	< 0.5	-	< 0.5	-
Chloromethane	0.5	mg/kg	< 0.5	-	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibromomethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	< 0.5	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	< 0.5	-
o-Xylene	0.1	mg/kg	0.1	-	< 0.1	-
Styrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	< 0.5	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	< 0.5	-
Trichloroethene	0.5	mg/kg	< 0.5	-	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	< 0.5	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	< 0.5	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	-
Fluorobenzene (surr.)	1	%	138	-	130	-
4-Bromofluorobenzene (surr.)	1	%	82	-	83	-
Polycyclic Aromatic Hydrocarbons						
Comments			R16			
Acenaphthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	12	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	103	87	91	93
p-Terphenyl-d14 (surr.)	1	%	113	92	95	93

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#20-AST-SS02 Soil S14-Jn24659 Jun 26, 2014	#20-AST-SS03 Soil S14-Jn24660 Jun 26, 2014	#20-SD-SS04 Soil S14-Jn24661 Jun 26, 2014	#20-SD-SS05 Soil S14-Jn24662 Jun 26, 2014
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	0.16	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Dibutylchlorendate (surr.)	1	%	-	-	91	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	118	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	91	-
% Moisture	0.1	%	11	16	16	18
Heavy Metals						
Arsenic	2	mg/kg	8.5	3.4	6.6	7.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	36	11	20	21
Copper	5	mg/kg	26	17	33	32
Lead	5	mg/kg	20	8.3	20	24
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	16	12	16	14
Zinc	5	mg/kg	99	56	170	140

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled			#20-AST-SS06 Soil S14-Jn24663 Jun 26, 2014	#20-SD-SS07 Soil S14-Jn24664 Jun 26, 2014	#20-SD-SS08 Soil S14-Jn24665 Jun 26, 2014	#20-SD-SS09 Soil S14-Jn24666 Jun 26, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	3900	< 50	80
TRH C29-C36	50	mg/kg	230	8300	94	100
TRH C10-36 (Total)	50	mg/kg	230	12000	94	180
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	103	112	97	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	200	11000	< 100	140
TRH >C34-C40	100	mg/kg	190	2500	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Comments				R16		
Acenaphthene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	12	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	94	89	87	92
p-Terphenyl-d14 (surr.)	1	%	96	95	93	99

Client Sample ID			#20-AST-SS06	#20-SD-SS07	#20-SD-SS08	#20-SD-SS09
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24663**	**S14-Jn24664**	**S14-Jn24665**	**S14-Jn24666**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	0.11	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Dibutylchlorendate (surr.)	1	%	-	-	113	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	130	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	113	-
% Moisture	0.1	%	12	2.8	41	44
Asbestos - WA guidelines	0.001	% w/w	-	-	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	6.2	7.6	7.3	< 2
Cadmium	0.4	mg/kg	< 0.4	0.6	< 0.4	< 0.4
Chromium	5	mg/kg	19	96	75	11
Copper	5	mg/kg	37	48	53	39
Lead	5	mg/kg	19	650	21	9.2
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	13	62	41	8.8
Zinc	5	mg/kg	87	1800	210	100

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#20-SD-SS10 Soil S14-Jn24667 Jun 26, 2014	#20-SS11 Soil S14-Jn24668 Jun 26, 2014	#20-SD-SS12 Soil S14-Jn24669 Jun 26, 2014	QC11 Soil S14-Jn24673 Jun 26, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	42	< 20
TRH C15-C28	50	mg/kg	120	890	590	< 50
TRH C29-C36	50	mg/kg	190	790	500	< 50
TRH C10-36 (Total)	50	mg/kg	310	1700	1100	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	90	93	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	250	1400	940	< 100
TRH >C34-C40	100	mg/kg	130	640	380	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	0.7	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	89	93	84	94
p-Terphenyl-d14 (surr.)	1	%	95	97	87	88
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05

Client Sample ID			#20-SD-SS10	#20-SS11	#20-SD-SS12	QC11
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24667	S14-Jn24668	S14-Jn24669	S14-Jn24673
Date Sampled			Jun 26, 2014	Jun 26, 2014	Jun 26, 2014	Jun 26, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	0.13	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	-	< 0.2
Toxaphene	1	mg/kg	< 1	-	-	< 1
Dibutylchlorendate (surr.)	1	%	77	-	-	128
Tetrachloro-m-xylene (surr.)	1	%	104	-	-	93
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	77	-	-	128
% Moisture	0.1	%	27	24	26	13
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	7.0	9.0	5.0	7.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	5.2	< 0.4
Chromium	5	mg/kg	21	27	31	17
Copper	5	mg/kg	45	100	72	27
Lead	5	mg/kg	24	24	270	19
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	16	14	18	7.3
Zinc	5	mg/kg	170	220	240	64

eurofins | mgt

Client Sample ID			#2-TP01 (0-0.1)	#2-TP02 (0-0.1)	#2-TP03 (0-0.1)	#3-TP01 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24674	S14-Jn24676	S14-Jn24677	S14-Jn24679
Date Sampled			Jun 26, 2014	Jun 26, 2014	Jun 26, 2014	Jun 26, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	87	71	-	< 50
TRH C29-C36	50	mg/kg	73	< 50	-	56
TRH C10-36 (Total)	50	mg/kg	160	71	-	56
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	95	89	-	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	120	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	85	92	-	93
p-Terphenyl-d14 (surr.)	1	%	97	100	-	107
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

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Client Sample ID			#2-TP01 (0-0.1)	#2-TP02 (0-0.1)	#2-TP03 (0-0.1)	#3-TP01 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24674**	**S14-Jn24676**	**S14-Jn24677**	**S14-Jn24679**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	71	78	121	129
Tetrachloro-m-xylene (surr.)	1	%	82	89	89	105
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	71	78	-	129
% Moisture	0.1	%	10	13	7.4	13
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	4.4	4.5	10	10.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	14	24	16
Copper	5	mg/kg	9.7	9.6	11	25
Lead	5	mg/kg	14	13	23	21
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	7.1	6.7	6.5	5.5
Zinc	5	mg/kg	32	31	16	120

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Client Sample ID			#3-TP01 (0.3-0.4)	#3-TP02 (0-0.1)	#3-TP03 (0-0.1)	#6-TP01 (0.5-0.6)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24680**	**S14-Jn24681**	**S14-Jn24682**	**S14-Jn24684**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	72	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	72	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	90	91	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	88	94	-
p-Terphenyl-d14 (surr.)	1	%	-	92	95	-

Client Sample ID			#3-TP01 (0.3-0.4)	#3-TP02 (0-0.1)	#3-TP03 (0-0.1)	#6-TP01 (0.5-0.6)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24680**	**S14-Jn24681**	**S14-Jn24682**	**S14-Jn24684**
Date Sampled			**Jun 26, 2014**	**Jun 26, 2014**	**Jun 26, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	-	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	-	71	112	-
Tetrachloro-m-xylene (surr.)	1	%	-	100	114	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	71	112	-
pH (1:5 Aqueous extract)	0.1	units	6.0	-	-	-
% Moisture	0.1	%	13	15	19	12
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	-
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	10	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	7.2	9.0	-
Cadmium	0.4	mg/kg	-	< 0.4	0.8	-
Chromium	5	mg/kg	-	15	14	-
Copper	5	mg/kg	-	30	55	-
Lead	5	mg/kg	-	19	30	-
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	-
Nickel	5	mg/kg	-	7.3	8.5	-
Zinc	5	mg/kg	-	70	380	-

Client Sample ID			#3-TP01 (0.3-0.4)	#3-TP02 (0-0.1)	#3-TP03 (0-0.1)	#6-TP01 (0.5-0.6)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24680	S14-Jn24681	S14-Jn24682	S14-Jn24684
Date Sampled			Jun 26, 2014	Jun 26, 2014	Jun 26, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	5.5
pH-OX	0.1	units	-	-	-	4.1
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	6.0
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	16
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	10
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	< 0.02
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.03
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.02
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	n/a
Calcium - KCl Extractable	0.02	% Ca	-	-	-	< 0.02
Calcium - Peroxide	0.02	% Ca	-	-	-	< 0.02
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	< 0.02
Magnesium - Peroxide	0.02	% Mg	-	-	-	< 0.02
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	< 0.02
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	< 10
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	< 1
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

Client Sample ID			#6-TP02 (0-0.1)	#6-TP06 (0-0.1)	#6-IF-SS01	#6-O-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24685	S14-Jn24687	S14-Jn24688	S14-Jn24689
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	61	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	61	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	124	88	80	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	95	98	99	-
p-Terphenyl-d14 (surr.)	1	%	108	109	111	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.15
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			#6-TP02 (0-0.1)	#6-TP06 (0-0.1)	#6-IF-SS01	#6-O-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24685	S14-Jn24687	S14-Jn24688	S14-Jn24689
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	98	91	103	108
Tetrachloro-m-xylene (surr.)	1	%	105	101	98	116
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	98	91	103	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	-	< 0.5
Coumaphos	0.5	mg/kg	-	-	-	< 0.5
Demeton (total)	1	mg/kg	-	-	-	< 1
Diazinon	0.5	mg/kg	-	-	-	< 0.5
Dichlorvos	0.5	mg/kg	-	-	-	< 0.5
Dimethoate	0.5	mg/kg	-	-	-	< 0.5
Disulfoton	0.5	mg/kg	-	-	-	< 0.5
Ethoprop	0.5	mg/kg	-	-	-	< 0.5
Fenitrothion	0.5	mg/kg	-	-	-	< 0.5
Fensulfothion	0.5	mg/kg	-	-	-	< 0.5
Fenthion	0.5	mg/kg	-	-	-	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	-	< 0.5
Malathion	0.5	mg/kg	-	-	-	< 0.5
Methyl parathion	0.5	mg/kg	-	-	-	< 0.5
Mevinphos	0.5	mg/kg	-	-	-	< 0.5
Monocrotophos	10	mg/kg	-	-	-	< 10
Parathion	0.5	mg/kg	-	-	-	< 0.5
Phorate	0.5	mg/kg	-	-	-	< 0.5
Profenofos	0.5	mg/kg	-	-	-	< 0.5
Prothiofos	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			#6-TP02 (0-0.1)	#6-TP06 (0-0.1)	#6-IF-SS01	#6-O-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24685	S14-Jn24687	S14-Jn24688	S14-Jn24689
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Ronnel	0.5	mg/kg	-	-	-	< 0.5
Stirophos	0.5	mg/kg	-	-	-	< 0.5
Trichloronate	0.5	mg/kg	-	-	-	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	-	107
% Moisture	0.1	%	14	5.5	6.4	16
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	< 5	5.1	5.5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	< 5	< 5	< 5	< 5
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	8.5	34	20	21

Client Sample ID			#6-O-SS05	#6-O-SS03	#6-O-SS07	#6-O-SS06
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24690	S14-Jn24691	S14-Jn24692	S14-Jn24693
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.24	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	90	88	94	103
Tetrachloro-m-xylene (surr.)	1	%	97	96	100	92

Client Sample ID			#6-O-SS05	#6-O-SS03	#6-O-SS07	#6-O-SS06
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24690	S14-Jn24691	S14-Jn24692	S14-Jn24693
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	-	< 0.5	-	-
2.4-DB	0.5	mg/kg	-	< 0.5	-	-
2.4.5-T	0.5	mg/kg	-	< 0.5	-	-
2.4.5-TP	0.5	mg/kg	-	< 0.5	-	-
Actril (Ioxynil)	0.5	mg/kg	-	< 0.5	-	-
Dicamba	0.5	mg/kg	-	< 0.5	-	-
Dichlorprop	0.5	mg/kg	-	< 0.5	-	-
Dinitro-o-cresol	0.5	mg/kg	-	< 0.5	-	-
Dinoseb	0.5	mg/kg	-	< 0.5	-	-
MCPA	0.5	mg/kg	-	< 0.5	-	-
MCPB	0.5	mg/kg	-	< 0.5	-	-
Mecoprop	0.5	mg/kg	-	< 0.5	-	-
Warfarin (surr.)	1	%	-	103	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	112	101	101	106
% Moisture	0.1	%	12	8.2	8.3	7.6
Heavy Metals						
Arsenic	2	mg/kg	7.0	7.3	6.2	5.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	14	14	13	12
Copper	5	mg/kg	17	< 5	< 5	< 5
Lead	5	mg/kg	11	10.0	7.8	6.3
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	16	20	16	9.3

eurofins | mgt

Client Sample ID			#6-O-SS08	#6-O-SS12	#6-O-SS11	#6-O-SS02
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24694**	**S14-Jn24695**	**S14-Jn24696**	**S14-Jn24697**
Date Sampled			**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	94	85	93	103
Tetrachloro-m-xylene (surr.)	1	%	102	96	104	108
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	98	107	101	98
% Moisture	0.1	%	5.2	4.0	11	5.4

Client Sample ID			#6-O-SS08	#6-O-SS12	#6-O-SS11	#6-O-SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24694	S14-Jn24695	S14-Jn24696	S14-Jn24697
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	5.1	8.4	2.8	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	12	7.4	21
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	8.7	10	7.9	10
Mercury	0.05	mg/kg	< 0.05	0.21	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	12	< 5	< 5
Zinc	5	mg/kg	25	260	34	9.6

Client Sample ID			#6-O-SS10	#6-O-SS09	#6-O-SS13	#6-O-SS14
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24698	S14-Jn24699	S14-Jn24700	S14-Jn24701
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	76
TRH C10-36 (Total)	50	mg/kg	-	-	-	76
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dibromoethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#6-O-SS10 Soil S14-Jn24698 Jun 27, 2014	#6-O-SS09 Soil S14-Jn24699 Jun 27, 2014	#6-O-SS13 Soil S14-Jn24700 Jun 27, 2014	#6-O-SS14 Soil S14-Jn24701 Jun 27, 2014
Volatile Organics						
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	-	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
1.3-Dichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	-	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
2-Butanone (MEK)	0.5	mg/kg	-	-	-	< 0.5
4-Chlorotoluene	0.5	mg/kg	-	-	-	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	-	< 0.5
Benzene	0.1	mg/kg	-	-	-	< 0.1
Bromobenzene	0.5	mg/kg	-	-	-	< 0.5
Bromochloromethane	0.5	mg/kg	-	-	-	< 0.5
Bromodichloromethane	0.5	mg/kg	-	-	-	< 0.5
Bromoform	0.5	mg/kg	-	-	-	< 0.5
Bromomethane	0.5	mg/kg	-	-	-	< 0.5
Carbon disulfide	0.5	mg/kg	-	-	-	< 0.5
Carbon Tetrachloride	0.5	mg/kg	-	-	-	< 0.5
Chlorobenzene	0.5	mg/kg	-	-	-	< 0.5
Chloroethane	0.5	mg/kg	-	-	-	< 0.5
Chloroform	0.5	mg/kg	-	-	-	< 0.5
Chloromethane	0.5	mg/kg	-	-	-	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	-	< 0.5
Dibromochloromethane	0.5	mg/kg	-	-	-	< 0.5
Dibromomethane	0.5	mg/kg	-	-	-	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	-	-	-	< 0.5
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	-	< 0.5
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
Methylene Chloride	0.5	mg/kg	-	-	-	< 0.5
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Styrene	0.5	mg/kg	-	-	-	< 0.5
Tetrachloroethene	0.5	mg/kg	-	-	-	< 0.5
Toluene	0.1	mg/kg	-	-	-	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	-	< 0.5
Trichloroethene	0.5	mg/kg	-	-	-	< 0.5
Trichlorofluoromethane	0.5	mg/kg	-	-	-	< 0.5
Vinyl chloride	0.5	mg/kg	-	-	-	< 0.5
Xylenes - Total	0.3	mg/kg	-	-	-	< 0.3
Fluorobenzene (surr.)	1	%	-	-	-	128
4-Bromofluorobenzene (surr.)	1	%	-	-	-	83
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#6-O-SS10 Soil S14-Jn24698 Jun 27, 2014	#6-O-SS09 Soil S14-Jn24699 Jun 27, 2014	#6-O-SS13 Soil S14-Jn24700 Jun 27, 2014	#6-O-SS14 Soil S14-Jn24701 Jun 27, 2014
Polycyclic Aromatic Hydrocarbons						
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	-	84
p-Terphenyl-d14 (surr.)	1	%	-	-	-	108
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.08
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	88	86	88	101
Tetrachloro-m-xylene (surr.)	1	%	94	93	97	122
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	-	-
2.4-DB	0.5	mg/kg	< 0.5	-	-	-
2.4.5-T	0.5	mg/kg	< 0.5	-	-	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (loxynil)	0.5	mg/kg	< 0.5	-	-	-
Dicamba	0.5	mg/kg	< 0.5	-	-	-
Dichlorprop	0.5	mg/kg	< 0.5	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	-
Dinoseb	0.5	mg/kg	< 0.5	-	-	-

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Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#6-O-SS10 Soil S14-Jn24698 Jun 27, 2014	#6-O-SS09 Soil S14-Jn24699 Jun 27, 2014	#6-O-SS13 Soil S14-Jn24700 Jun 27, 2014	#6-O-SS14 Soil S14-Jn24701 Jun 27, 2014
Acid Herbicides						
MCPA	0.5	mg/kg	< 0.5	-	-	-
MCPB	0.5	mg/kg	< 0.5	-	-	-
Mecoprop	0.5	mg/kg	< 0.5	-	-	-
Warfarin (surr.)	1	%	85	-	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	-	< 0.5
Total PCB	0.5	mg/kg	-	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	-	101
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Demeton (total)	1	mg/kg	< 1	< 1	< 1	-
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Monocrotophos	10	mg/kg	< 10	< 10	< 10	-
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Triphenylphosphate (surr.)	1	%	104	102	104	-
% Moisture	0.1	%	5.6	7.1	7.1	19
Heavy Metals						
Arsenic	2	mg/kg	5.2	5.6	9.5	6.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.4	11	24	15
Copper	5	mg/kg	< 5	< 5	< 5	19
Lead	5	mg/kg	9.8	8.5	12	22
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	13
Zinc	5	mg/kg	9.8	< 5	12	170

Client Sample ID			#3-TP04 (0-0.1)	#3-TP05 (0-0.1)	#3-TP06 (0.5-0.6)	#3-TP06 (1.3-1.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24702**	**S14-Jn24704**	**S14-Jn24706**	**S14-Jn24707**
Date Sampled			**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	80	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	80	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	84	79	89	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	111	107	129	-
p-Terphenyl-d14 (surr.)	1	%	120	130	129	-

Client Sample ID			#3-TP04 (0-0.1)	#3-TP05 (0-0.1)	#3-TP06 (0.5-0.6)	#3-TP06 (1.3-1.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24702	S14-Jn24704	S14-Jn24706	S14-Jn24707
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	70	76	70	-
Tetrachloro-m-xylene (surr.)	1	%	74	101	98	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	70	76	70	-
% Moisture	0.1	%	15	18	13	15
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	-
Heavy Metals						
Arsenic	2	mg/kg	12	6.0	6.6	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	49	22	15	-
Copper	5	mg/kg	21	17	19	-
Lead	5	mg/kg	36	21	22	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Nickel	5	mg/kg	12	11	8.5	-
Zinc	5	mg/kg	66	130	53	-

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Client Sample ID			#3-TP04 (0-0.1)	#3-TP05 (0-0.1)	#3-TP06 (0.5-0.6)	#3-TP06 (1.3-1.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24702**	**S14-Jn24704**	**S14-Jn24706**	**S14-Jn24707**
Date Sampled			**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	3.8
pH-OX	0.1	units	-	-	-	3.7
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	63
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	82
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	19
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.10
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.13
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.03
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur	0.02	% S	-	-	-	< 0.02
Net Acid soluble sulfur	0.02	% S	-	-	-	< 0.02
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	< 10
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	< 0.02
Calcium - KCl Extractable	0.02	% Ca	-	-	-	0.03
Calcium - Peroxide	0.02	% Ca	-	-	-	0.03
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	0.08
Magnesium - Peroxide	0.02	% Mg	-	-	-	0.09
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	0.10
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	63
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	5.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#3-TP07 (0-0.1) Soil S14-Jn24708 Jun 27, 2014	#3-TP07 (0.3-0.4) Soil S14-Jn24709 Jun 27, 2014	#7-TP01 (0-0.1) Soil S14-Jn24710 Jun 27, 2014	#7-TP02 (0-0.1) Soil S14-Jn24712 Jun 27, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	88	-	-	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	111	-	-	101
p-Terphenyl-d14 (surr.)	1	%	124	-	-	119

Client Sample ID			#3-TP07 (0-0.1)	#3-TP07 (0.3-0.4)	#7-TP01 (0-0.1)	#7-TP02 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24708**	**S14-Jn24709**	**S14-Jn24710**	**S14-Jn24712**
Date Sampled			**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	92	-	92	86
Tetrachloro-m-xylene (surr.)	1	%	89	-	108	105
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	92	-	-	86
pH (1:5 Aqueous extract)	0.1	units	-	4.9	-	-
% Moisture	0.1	%	11	14	12	7.3
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	see attached
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	8.4	-	-
Heavy Metals						
Arsenic	2	mg/kg	9.1	-	14	4.9
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	10	-	23	9.3
Copper	5	mg/kg	13	-	5.8	< 5
Lead	5	mg/kg	13	-	20	6.8
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	-	< 5	< 5
Zinc	5	mg/kg	16	-	17	< 5

Client Sample ID			#7-TP02 (0.3-0.4)	#3-SED01	#7-TP03 (0-0.1)	#7-TP04 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24713	S14-Jn24714	S14-Jn24715	S14-Jn24716
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	122	89	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	90	103	-
p-Terphenyl-d14 (surr.)	1	%	-	113	119	-

Client Sample ID			#7-TP02 (0.3-0.4)	#3-SED01	#7-TP03 (0-0.1)	#7-TP04 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24713	S14-Jn24714	S14-Jn24715	S14-Jn24716
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	109	85	95
Tetrachloro-m-xylene (surr.)	1	%	-	133	98	100
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	109	85	-
% Moisture	0.1	%	15	34	7.5	21
Asbestos - WA guidelines	0.001	% w/w	-	-	see attached	-
Heavy Metals						
Arsenic	2	mg/kg	-	14	3.9	< 2
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	15	6.6	< 5
Copper	5	mg/kg	-	17	< 5	5.4
Lead	5	mg/kg	-	14	5.5	6.9
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	-	< 5	< 5	< 5
Zinc	5	mg/kg	-	19	< 5	88

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#7-TP02 (0.3-0.4) Soil S14-Jn24713 Jun 27, 2014	#3-SED01 Soil S14-Jn24714 Jun 27, 2014	#7-TP03 (0-0.1) Soil S14-Jn24715 Jun 27, 2014	#7-TP04 (0-0.1) Soil S14-Jn24716 Jun 27, 2014
SPOCAS Suite						
pH-KCL	0.1	units	4.4	5.1	-	-
pH-OX	0.1	units	3.9	3.4	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	32	10	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	57	74	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	25	64	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	0.05	0.02	-	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	0.09	0.12	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	0.04	0.10	-	-
Sulfur - KCl Extractable	0.02	% S	< 0.02	< 0.02	-	-
Sulfur - Peroxide	0.02	% S	< 0.02	< 0.02	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02	< 0.02	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10	< 10	-	-
HCl Extractable Sulfur	0.02	% S	< 0.02	n/a	-	-
Net Acid soluble sulfur	0.02	% S	< 0.02	n/a	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	< 10	n/a	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	< 0.02	n/a	-	-
Calcium - KCl Extractable	0.02	% Ca	< 0.02	0.05	-	-
Calcium - Peroxide	0.02	% Ca	< 0.02	0.04	-	-
Acid Reacted Calcium	0.02	% Ca	< 0.02	< 0.02	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	< 10	< 10	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	< 0.02	< 0.02	-	-
Magnesium - KCl Extractable	0.02	% Mg	0.05	0.05	-	-
Magnesium - Peroxide	0.02	% Mg	0.05	0.04	-	-
Acid Reacted Magnesium	0.02	% Mg	< 0.02	< 0.02	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	< 10	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	< 0.02	< 0.02	-	-
Acid Neutralising Capacity	0.02	%CaCO3	n/a	n/a	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	n/a	n/a	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	n/a	n/a	-	-
ANC Fineness Factor			1.5	1.5	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	0.05	0.02	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	32	< 10	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	2.0	1.0	-	-
Extraneous Material						
<2mm Fraction	0.005	g	n/a	n/a	-	-
>2mm Fraction	0.005		n/a	n/a	-	-
Analysed Material	0.1	%	100	100	-	-
Extraneous Material	0.1	%	< 0.1	< 0.1	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#7-TP05 (0-0.1) Soil S14-Jn24717 Jun 27, 2014	#7-A-SS02 Soil S14-Jn24719 Jun 27, 2014	#6-TP01 (0-0.1) Soil S14-Jn24720 Jun 27, 2014	#6-S-SS15 Soil S14-Jn24721 Jun 27, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	57	-	< 50	< 50
TRH C29-C36	50	mg/kg	120	-	71	120
TRH C10-36 (Total)	50	mg/kg	180	-	71	120
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	73	-	76	84
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	150	-	< 100	130
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dibromoethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	-	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
1.3-Dichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	-	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
2-Butanone (MEK)	0.5	mg/kg	-	-	-	< 0.5
4-Chlorotoluene	0.5	mg/kg	-	-	-	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	-	< 0.5
Benzene	0.1	mg/kg	-	-	-	< 0.1
Bromobenzene	0.5	mg/kg	-	-	-	< 0.5
Bromochloromethane	0.5	mg/kg	-	-	-	< 0.5
Bromodichloromethane	0.5	mg/kg	-	-	-	< 0.5
Bromoform	0.5	mg/kg	-	-	-	< 0.5
Bromomethane	0.5	mg/kg	-	-	-	< 0.5
Carbon disulfide	0.5	mg/kg	-	-	-	< 0.5
Carbon Tetrachloride	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#7-TP05 (0-0.1) Soil S14-Jn24717 Jun 27, 2014	#7-A-SS02 Soil S14-Jn24719 Jun 27, 2014	#6-TP01 (0-0.1) Soil S14-Jn24720 Jun 27, 2014	#6-S-SS15 Soil S14-Jn24721 Jun 27, 2014
Volatile Organics						
Chlorobenzene	0.5	mg/kg	-	-	-	< 0.5
Chloroethane	0.5	mg/kg	-	-	-	< 0.5
Chloroform	0.5	mg/kg	-	-	-	< 0.5
Chloromethane	0.5	mg/kg	-	-	-	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	-	< 0.5
Dibromochloromethane	0.5	mg/kg	-	-	-	< 0.5
Dibromomethane	0.5	mg/kg	-	-	-	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	-	-	-	< 0.5
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	-	< 0.5
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
Methylene Chloride	0.5	mg/kg	-	-	-	< 0.5
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Styrene	0.5	mg/kg	-	-	-	< 0.5
Tetrachloroethene	0.5	mg/kg	-	-	-	< 0.5
Toluene	0.1	mg/kg	-	-	-	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	-	< 0.5
Trichloroethene	0.5	mg/kg	-	-	-	< 0.5
Trichlorofluoromethane	0.5	mg/kg	-	-	-	< 0.5
Vinyl chloride	0.5	mg/kg	-	-	-	< 0.5
Xylenes - Total	0.3	mg/kg	-	-	-	< 0.3
Fluorobenzene (surr.)	1	%	-	-	-	127
4-Bromofluorobenzene (surr.)	1	%	-	-	-	84
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	105	-	103	91
p-Terphenyl-d14 (surr.)	1	%	124	-	128	118

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#7-TP05 (0-0.1) Soil S14-Jn24717 Jun 27, 2014	#7-A-SS02 Soil S14-Jn24719 Jun 27, 2014	#6-TP01 (0-0.1) Soil S14-Jn24720 Jun 27, 2014	#6-S-SS15 Soil S14-Jn24721 Jun 27, 2014
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.17
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	90	80	114	77
Tetrachloro-m-xylene (surr.)	1	%	101	95	124	105
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	90	-	114	77
% Moisture	0.1	%	25	9.3	29	21
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	-
Heavy Metals						
Arsenic	2	mg/kg	8.1	3.4	< 2	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	7.3	< 5	13
Copper	5	mg/kg	6.8	< 5	< 5	19
Lead	5	mg/kg	26	14	6.1	19
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	5.4	< 5	< 5	14
Zinc	5	mg/kg	28	29	9.0	140

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#6-S-SS16 Soil S14-Jn24722 Jun 27, 2014	#6-S-SS17 Soil S14-Jn24723 Jun 27, 2014	#6-S-SS18 Soil S14-Jn24724 Jun 27, 2014	#6-S-SS19 Soil S14-Jn24725 Jun 27, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	62	-	-	-
TRH C29-C36	50	mg/kg	360	-	-	-
TRH C10-36 (Total)	50	mg/kg	420	-	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	83	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	290	-	-	-
TRH >C34-C40	100	mg/kg	160	-	-	-
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-

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Client Sample ID			#6-S-SS16	#6-S-SS17	#6-S-SS18	#6-S-SS19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24722	S14-Jn24723	S14-Jn24724	S14-Jn24725
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Volatile Organics						
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
Fluorobenzene (surr.)	1	%	135	-	-	-
4-Bromofluorobenzene (surr.)	1	%	83	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	-
Anthracene	0.5	mg/kg	< 0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Chrysene	0.5	mg/kg	< 0.5	-	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	-
Fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Fluorene	0.5	mg/kg	< 0.5	-	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	-
Naphthalene	0.5	mg/kg	< 0.5	-	-	-
Phenanthrene	0.5	mg/kg	< 0.5	-	-	-
Pyrene	0.5	mg/kg	< 0.5	-	-	-
Total PAH	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-	-
2-Fluorobiphenyl (surr.)	1	%	119	-	-	-
p-Terphenyl-d14 (surr.)	1	%	128	-	-	-

Client Sample ID			#6-S-SS16	#6-S-SS17	#6-S-SS18	#6-S-SS19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24722	S14-Jn24723	S14-Jn24724	S14-Jn24725
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	99	90	92	80
Tetrachloro-m-xylene (surr.)	1	%	102	115	106	106
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (Ioxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	65	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	-
Total PCB	0.5	mg/kg	< 0.5	-	-	-
Dibutylchlorendate (surr.)	1	%	99	-	-	-

Client Sample ID			#6-S-SS16	#6-S-SS17	#6-S-SS18	#6-S-SS19
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24722	S14-Jn24723	S14-Jn24724	S14-Jn24725
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	-	< 1	< 1	< 1
Diazinon	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	-	< 10	< 10	< 10
Parathion	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	-	111	98	106
% Moisture	0.1	%	28	12	8.3	11
Heavy Metals						
Arsenic	2	mg/kg	3.9	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	69	< 5	< 5	< 5
Copper	5	mg/kg	33	< 5	< 5	< 5
Lead	5	mg/kg	19	< 5	5.8	10
Mercury	0.05	mg/kg	0.07	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	67	< 5	< 5	< 5
Zinc	5	mg/kg	6500	6.2	6.4	16

Client Sample ID			#6-S-SS20	#6-A-SS21	#6-A-SS22	#6-A-SS23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24726	S14-Jn24727	S14-Jn24728	S14-Jn24729
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#6-S-SS20 Soil S14-Jn24726 Jun 27, 2014	#6-A-SS21 Soil S14-Jn24727 Jun 27, 2014	#6-A-SS22 Soil S14-Jn24728 Jun 27, 2014	#6-A-SS23 Soil S14-Jn24729 Jun 27, 2014
Organochlorine Pesticides						
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Dibutylchlorendate (surr.)	1	%	78	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	103	-	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	-	-	-
Coumaphos	0.5	mg/kg	< 0.5	-	-	-
Demeton (total)	1	mg/kg	< 1	-	-	-
Diazinon	0.5	mg/kg	< 0.5	-	-	-
Dichlorvos	0.5	mg/kg	< 0.5	-	-	-
Dimethoate	0.5	mg/kg	< 0.5	-	-	-
Disulfoton	0.5	mg/kg	< 0.5	-	-	-
Ethoprop	0.5	mg/kg	< 0.5	-	-	-
Fenitrothion	0.5	mg/kg	< 0.5	-	-	-
Fensulfothion	0.5	mg/kg	< 0.5	-	-	-
Fenthion	0.5	mg/kg	< 0.5	-	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	-	-	-
Malathion	0.5	mg/kg	< 0.5	-	-	-
Methyl parathion	0.5	mg/kg	< 0.5	-	-	-
Mevinphos	0.5	mg/kg	< 0.5	-	-	-
Monocrotophos	10	mg/kg	< 10	-	-	-
Parathion	0.5	mg/kg	< 0.5	-	-	-
Phorate	0.5	mg/kg	< 0.5	-	-	-
Profenofos	0.5	mg/kg	< 0.5	-	-	-
Prothiofos	0.5	mg/kg	< 0.5	-	-	-
Ronnel	0.5	mg/kg	< 0.5	-	-	-
Stirophos	0.5	mg/kg	< 0.5	-	-	-
Trichloronate	0.5	mg/kg	< 0.5	-	-	-
Triphenylphosphate (surr.)	1	%	117	-	-	-
% Moisture	0.1	%	8.0	-	-	-
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	see attached

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Client Sample ID			#6-S-SS20	#6-A-SS21	#6-A-SS22	#6-A-SS23
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24726**	**S14-Jn24727**	**S14-Jn24728**	**S14-Jn24729**
Date Sampled			**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	-	-	-
Cadmium	0.4	mg/kg	< 0.4	-	-	-
Chromium	5	mg/kg	< 5	-	-	-
Copper	5	mg/kg	< 5	-	-	-
Lead	5	mg/kg	7.3	-	-	-
Mercury	0.05	mg/kg	< 0.05	-	-	-
Nickel	5	mg/kg	< 5	-	-	-
Zinc	5	mg/kg	22	-	-	-

Client Sample ID			#6-A-SS24	QC12	QC13	#6-A-SS25
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jn24730**	**S14-Jn24734**	**S14-Jn24735**	**S14-Jn24736**
Date Sampled			**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	95	90	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#6-A-SS24 Soil S14-Jn24730 Jun 27, 2014	QC12 Soil S14-Jn24734 Jun 27, 2014	QC13 Soil S14-Jn24735 Jun 27, 2014	#6-A-SS25 Soil S14-Jn24736 Jun 27, 2014
Polycyclic Aromatic Hydrocarbons						
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	110	98	-
p-Terphenyl-d14 (surr.)	1	%	-	121	126	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	-	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	-	81	86	-
Tetrachloro-m-xylene (surr.)	1	%	-	98	110	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	81	86	-
% Moisture	0.1	%	-	11	16	-
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	see attached

Client Sample ID			#6-A-SS24	QC12	QC13	#6-A-SS25
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24730	S14-Jn24734	S14-Jn24735	S14-Jn24736
Date Sampled			Jun 27, 2014	Jun 27, 2014	Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	-	10.0	< 2	-
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	-
Chromium	5	mg/kg	-	34	< 5	-
Copper	5	mg/kg	-	21	< 5	-
Lead	5	mg/kg	-	27	< 5	-
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	-
Nickel	5	mg/kg	-	9.5	< 5	-
Zinc	5	mg/kg	-	49	< 5	-

Client Sample ID			#7-SS01	#7-SED01
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24737	S14-Jn24738
Date Sampled			Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	-	< 20
TRH C10-C14	20	mg/kg	-	26
TRH C15-C28	50	mg/kg	-	57
TRH C29-C36	50	mg/kg	-	100
TRH C10-36 (Total)	50	mg/kg	-	180
BTEX				
Benzene	0.1	mg/kg	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50
TRH >C16-C34	100	mg/kg	-	130
TRH >C34-C40	100	mg/kg	-	< 100
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.5	mg/kg	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5

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Client Sample ID			#7-SS01	#7-SED01
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24737	S14-Jn24738
Date Sampled			Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Fluorene	0.5	mg/kg	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2
2-Fluorobiphenyl (surr.)	1	%	-	100
p-Terphenyl-d14 (surr.)	1	%	-	122
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2
Toxaphene	1	mg/kg	-	< 1
Dibutylchlorendate (surr.)	1	%	-	130
Tetrachloro-m-xylene (surr.)	1	%	-	120
Polychlorinated Biphenyls (PCB)				
Aroclor-1016	0.5	mg/kg	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	130
% Moisture	0.1	%	-	22
Asbestos - WA guidelines	0.001	% w/w	see attached	-

Client Sample ID			#7-SS01	#7-SED01
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S14-Jn24737	S14-Jn24738
Date Sampled			Jun 27, 2014	Jun 27, 2014
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	-	12
Cadmium	0.4	mg/kg	-	< 0.4
Chromium	5	mg/kg	-	11
Copper	5	mg/kg	-	< 5
Lead	5	mg/kg	-	7.4
Mercury	0.05	mg/kg	-	< 0.05
Nickel	5	mg/kg	-	< 5
Zinc	5	mg/kg	-	7.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 03, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 02, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 03, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 03, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 02, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jul 01, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jul 03, 2014	14 Day
- Method: MGT 530			
Organophosphorus Pesticides (OP)	Sydney	Jul 03, 2014	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
pH (1:5 Aqueous extract)	Sydney	Jul 03, 2014	7 Day
- Method: E018.2 pH			
% Moisture	Brisbane	Jul 04, 2014	14 Day
- Method: Method 102 - ANZECC - % Moisture			
Asbestos - WA guidelines	Sydney	Jun 30, 2014	0 Day
Ion Exchange Properties	Melbourne	Jul 03, 2014	
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 03, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 03, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jul 04, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jul 04, 2014	0 Day

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NATA # 1261 Site # 20794

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43367

Order No.:
Report #: 423382
Phone: 02 8245 0300
Fax:

Received: Jun 27, 2014 4:38 PM
Due: Jul 7, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	CANCELLED	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
#18-TP01 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24646		X	X										X	X		
#18-TP01 (0.8-0.9)	Jun 26, 2014		Soil	S14-Jn24647	X															X
#18-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24648		X	X										X	X		
QC10	Jun 26, 2014		Soil	S14-Jn24649						X										
#18-TP03 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24650		X			X		X						X	X		
#24-SP-TP01 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24651		X	X										X	X		

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Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	CANCELLED	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#24-SP-TP01 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24652		X			X		X									
#24-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24653		X	X										X	X		
#24-TP02 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24654	X															X
#24-TP03 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24655		X	X										X	X		
#18-SED01	Jun 26, 2014		Soil	S14-Jn24656		X											X	X		
#18-SED02	Jun 26, 2014		Soil	S14-Jn24657		X											X	X		
#20-SD-SS01	Jun 26, 2014		Soil	S14-Jn24658		X	X										X	X		
#20-AST-SS02	Jun 26, 2014		Soil	S14-Jn24659		X												X	X	
#20-AST-SS03	Jun 26, 2014		Soil	S14-Jn24660		X												X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#20-SD-SS04	Jun 26, 2014		Soil	S14-Jn24661		X											X	X	X	
#20-SD-SS05	Jun 26, 2014		Soil	S14-Jn24662		X												X		
#20-AST-SS06	Jun 26, 2014		Soil	S14-Jn24663		X												X		
#20-SD-SS07	Jun 26, 2014		Soil	S14-Jn24664		X												X		
#20-SD-SS08	Jun 26, 2014		Soil	S14-Jn24665		X											X	X		
#20-SD-SS09	Jun 26, 2014		Soil	S14-Jn24666		X	X											X		
#20-SD-SS10	Jun 26, 2014		Soil	S14-Jn24667		X	X										X	X		
#20-SS11	Jun 26, 2014		Soil	S14-Jn24668		X												X		
#20-SD-SS12	Jun 26, 2014		Soil	S14-Jn24669		X												X		
RINSATE	Jun 26, 2014		Water	S14-Jn24670													X	X		
TS140623-Q	Jun 23, 2014		Water	S14-Jn24671											X					

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
TB140623-7	Jun 23, 2014		Water	S14-Jn24672											X					
QC11	Jun 26, 2014		Soil	S14-Jn24673		X	X										X	X		
#2-TP01 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24674		X	X										X	X		
#2-TP01 (0.4-0.5)	Jun 26, 2014		Soil	S14-Jn24675						X										
#2-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24676		X	X										X	X		
#2-TP03 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24677		X						X		X						
#2-TP03 (0.4-0.5)	Jun 26, 2014		Soil	S14-Jn24678						X										
#3-TP01 (0-	Jun 26, 2014		Soil	S14-Jn24679		X	X										X	X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
0.1)																				
#3-TP01 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24680		X			X		X									
#3-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24681		X	X										X	X		
#3-TP03 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24682		X	X										X	X		
#3-TP03 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24683						X										
#6-TP01 (0.5-0.6)	Jun 27, 2014		Soil	S14-Jn24684	X															X
#6-TP02 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24685		X	X										X	X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#6-TP03 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24686						X										
#6-TP06 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24687		X	X										X	X		
#6-IF-SS01	Jun 27, 2014		Soil	S14-Jn24688		X	X										X	X		
#6-O-SS04	Jun 27, 2014		Soil	S14-Jn24689		X						X		X		X				
#6-O-SS05	Jun 27, 2014		Soil	S14-Jn24690		X						X		X		X				
#6-O-SS03	Jun 27, 2014		Soil	S14-Jn24691		X						X	X	X		X				
#6-O-SS07	Jun 27, 2014		Soil	S14-Jn24692		X						X		X		X				
#6-O-SS06	Jun 27, 2014		Soil	S14-Jn24693		X						X		X		X				
#6-O-SS08	Jun 27, 2014		Soil	S14-Jn24694		X						X		X		X				
#6-O-SS12	Jun 27, 2014		Soil	S14-Jn24695		X						X		X		X				

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		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43367				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	CANCELLED	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#6-O-SS11	Jun 27, 2014		Soil	S14-Jn24696		X						X		X		X				
#6-O-SS02	Jun 27, 2014		Soil	S14-Jn24697		X						X		X		X				
#6-O-SS10	Jun 27, 2014		Soil	S14-Jn24698		X						X	X	X		X				
#6-O-SS09	Jun 27, 2014		Soil	S14-Jn24699		X						X		X		X				
#6-O-SS13	Jun 27, 2014		Soil	S14-Jn24700		X						X		X		X				
#6-O-SS14	Jun 27, 2014		Soil	S14-Jn24701		X								X			X	X	X	
#3-TP04 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24702		X	X										X	X		
#3-TP04 (0.5-0.6)	Jun 27, 2014		Soil	S14-Jn24703						X										
#3-TP05 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24704		X	X										X	X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#3-TP06 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24705						X										
#3-TP06 (0.5-0.6)	Jun 27, 2014		Soil	S14-Jn24706		X	X										X	X		
#3-TP06 (1.3-1.4)	Jun 27, 2014		Soil	S14-Jn24707	X															X
#3-TP07 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24708		X	X										X	X		
#3-TP07 (0.3-0.4)	Jun 27, 2014		Soil	S14-Jn24709		X			X		X									
#7-TP01 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24710		X						X		X						
#7-TP01 (0.4-0.5)	Jun 27, 2014		Soil	S14-Jn24711						X										

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#7-TP02 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24712		X	X										X	X		
#7-TP02 (0.3-0.4)	Jun 27, 2014		Soil	S14-Jn24713	X															X
#3-SED01	Jun 27, 2014		Soil	S14-Jn24714		X											X	X		X
#7-TP03 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24715		X	X										X	X		
#7-TP04 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24716		X						X		X						
#7-TP05 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24717		X	X										X	X		
#7-A-SS01	Jun 27, 2014		Soil	S14-Jn24718						X										
#7-A-SS02	Jun 27, 2014		Soil	S14-Jn24719		X						X		X						

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Client Job No.:	BOX HILL 43367				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	CANCELLED	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#6-TP01 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24720		X	X										X	X		
#6-S-SS15	Jun 27, 2014		Soil	S14-Jn24721		X											X	X	X	
#6-S-SS16	Jun 27, 2014		Soil	S14-Jn24722		X											X	X	X	
#6-S-SS17	Jun 27, 2014		Soil	S14-Jn24723		X						X		X		X				
#6-S-SS18	Jun 27, 2014		Soil	S14-Jn24724		X						X	X	X		X				
#6-S-SS19	Jun 27, 2014		Soil	S14-Jn24725		X						X		X		X				
#6-S-SS20	Jun 27, 2014		Soil	S14-Jn24726		X						X		X		X				
#6-A-SS21	Jun 27, 2014		Soil	S14-Jn24727			X													
#6-A-SS22	Jun 27, 2014		Soil	S14-Jn24728			X													
#6-A-SS23	Jun 27, 2014		Soil	S14-Jn24729			X													
#6-A-SS24	Jun 27, 2014		Soil	S14-Jn24730			X													

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NSW 2000

Client Job No.: BOX HILL 43367

Order No.:
Report #: 423382
Phone: 02 8245 0300
Fax:

Received: Jun 27, 2014 4:38 PM
Due: Jul 7, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	CANCELLED	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
RINSATE	Jun 27, 2014		Water	S14-Jn24731													X	X		
TS140623-9	Jun 23, 2014		Water	S14-Jn24732						X										
TB140623-9	Jun 23, 2014		Water	S14-Jn24733						X										
QC12	Jun 27, 2014		Soil	S14-Jn24734		X	X										X	X		
QC13	Jun 27, 2014		Soil	S14-Jn24735		X	X										X	X		
#6-A-SS25	Jun 27, 2014		Soil	S14-Jn24736			X													
#7-SS01	Jun 27, 2014		Soil	S14-Jn24737			X													
#7-SED01	Jun 27, 2014		Soil	S14-Jn24738		X											X	X		
#6-SED02	Jun 27, 2014		Soil	S14-Jn24739				X												

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C10-36 (Total)	mg/kg	< 0			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Total PAH	mg/kg	< 0			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	110			70-130	Pass	
TRH C10-C14	%	79			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	113			70-130	Pass	
Toluene	%	111			70-130	Pass	
Ethylbenzene	%	110			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
o-Xylene	%	106			70-130	Pass	
Xylenes - Total	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	119			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
TRH >C10-C16	%	80			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	109			75-125	Pass	
1.1-Dichloroethene	%	107			70-130	Pass	
1.1.1-Trichloroethane	%	114			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	101			70-130	Pass	
1.1.2-Trichloroethane	%	98			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	95			70-130	Pass	
1.2-Dibromoethane	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	106			70-130	Pass	
1.2-Dichloroethane	%	101			70-130	Pass	
1.2-Dichloropropane	%	103			70-130	Pass	
1.2.3-Trichloropropane	%	90			70-130	Pass	
1.2.4-Trimethylbenzene	%	110			70-130	Pass	
1.3-Dichlorobenzene	%	106			70-130	Pass	
1.3-Dichloropropane	%	99			70-130	Pass	
1.3.5-Trimethylbenzene	%	110			70-130	Pass	
1.4-Dichlorobenzene	%	106			70-130	Pass	
2-Butanone (MEK)	%	84			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4-Chlorotoluene	%	107			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	95			70-130	Pass	
Benzene	%	101			70-130	Pass	
Bromobenzene	%	99			70-130	Pass	
Bromochloromethane	%	102			70-130	Pass	
Bromodichloromethane	%	98			70-130	Pass	
Bromoform	%	89			70-130	Pass	
Bromomethane	%	73			70-130	Pass	
Carbon disulfide	%	99			70-130	Pass	
Carbon Tetrachloride	%	110			70-130	Pass	
Chlorobenzene	%	98			70-130	Pass	
Chloroethane	%	88			70-130	Pass	
Chloroform	%	107			70-130	Pass	
Chloromethane	%	115			70-130	Pass	
cis-1.2-Dichloroethene	%	100			70-130	Pass	
cis-1.3-Dichloropropene	%	97			70-130	Pass	
Dibromochloromethane	%	94			70-130	Pass	
Dibromomethane	%	101			70-130	Pass	
Dichlorodifluoromethane	%	103			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
Isopropyl benzene (Cumene)	%	106			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	
Methylene Chloride	%	104			70-130	Pass	
o-Xylene	%	104			70-130	Pass	
Styrene	%	100			70-130	Pass	
Tetrachloroethene	%	98			70-130	Pass	
Toluene	%	96			70-130	Pass	
trans-1.2-Dichloroethene	%	110			70-130	Pass	
trans-1.3-Dichloropropene	%	97			70-130	Pass	
Trichloroethene	%	103			70-130	Pass	
Trichlorofluoromethane	%	101			70-130	Pass	
Vinyl chloride	%	105			70-130	Pass	
Xylenes - Total	%	94			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	82			70-130	Pass	
Acenaphthylene	%	76			70-130	Pass	
Anthracene	%	93			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	%	82			70-130	Pass	
Benzo(g.h.i)perylene	%	76			70-130	Pass	
Benzo(k)fluoranthene	%	88			70-130	Pass	
Chrysene	%	91			70-130	Pass	
Dibenz(a.h)anthracene	%	76			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	
Fluorene	%	79			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	82			70-130	Pass	
Phenanthrene	%	78			70-130	Pass	
Pyrene	%	86			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	107			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDD	%	107			70-130	Pass	
4.4'-DDE	%	113			70-130	Pass	
4.4'-DDT	%	106			70-130	Pass	
a-BHC	%	117			70-130	Pass	
Aldrin	%	110			70-130	Pass	
b-BHC	%	105			70-130	Pass	
d-BHC	%	113			70-130	Pass	
Dieldrin	%	105			70-130	Pass	
Endosulfan I	%	102			70-130	Pass	
Endosulfan II	%	107			70-130	Pass	
Endosulfan sulphate	%	104			70-130	Pass	
Endrin	%	110			70-130	Pass	
Endrin aldehyde	%	98			70-130	Pass	
Endrin ketone	%	107			70-130	Pass	
g-BHC (Lindane)	%	113			70-130	Pass	
Heptachlor	%	110			70-130	Pass	
Heptachlor epoxide	%	109			70-130	Pass	
Hexachlorobenzene	%	108			70-130	Pass	
Methoxychlor	%	107			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	83			70-130	Pass	
2.4-DB	%	85			70-130	Pass	
2.4.5-T	%	84			70-130	Pass	
2.4.5-TP	%	91			70-130	Pass	
Actril (Ioxynil)	%	87			70-130	Pass	
Dicamba	%	92			70-130	Pass	
Dichlorprop	%	84			70-130	Pass	
Dinitro-o-cresol	%	79			70-130	Pass	
Dinoseb	%	85			70-130	Pass	
MCPA	%	93			70-130	Pass	
MCPB	%	84			70-130	Pass	
Mecoprop	%	90			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	80			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	102			70-130	Pass	
Coumaphos	%	96			70-130	Pass	
Diazinon	%	105			70-130	Pass	
Dichlorvos	%	105			70-130	Pass	
Dimethoate	%	97			70-130	Pass	
Disulfoton	%	100			70-130	Pass	
Ethoprop	%	102			70-130	Pass	
Fenitrothion	%	100			70-130	Pass	
Fensulfothion	%	90			70-130	Pass	
Fenthion	%	103			70-130	Pass	
Methyl azinphos	%	93			70-130	Pass	
Malathion	%	98			70-130	Pass	
Methyl parathion	%	101			70-130	Pass	
Mevinphos	%	102			70-130	Pass	
Monocrotophos	%	85			70-130	Pass	
Parathion	%	91			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phorate			%	101			70-130	Pass	
Profenofos			%	98			70-130	Pass	
Prothiofos			%	100			70-130	Pass	
Ronnel			%	103			70-130	Pass	
Stirophos			%	92			70-130	Pass	
Trichloronate			%	99			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	103			70-130	Pass	
Cadmium			%	102			70-130	Pass	
Chromium			%	103			70-130	Pass	
Copper			%	102			70-130	Pass	
Lead			%	105			70-130	Pass	
Mercury			%	99			70-130	Pass	
Nickel			%	105			70-130	Pass	
Zinc			%	106			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn24648	CP	%	88			70-130	Pass	
TRH C10-C14	S14-Jn24648	CP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn24648	CP	%	88			70-130	Pass	
Toluene	S14-Jn24648	CP	%	84			70-130	Pass	
Ethylbenzene	S14-Jn24648	CP	%	83			70-130	Pass	
m&p-Xylenes	S14-Jn24648	CP	%	89			70-130	Pass	
o-Xylene	S14-Jn24648	CP	%	88			70-130	Pass	
Xylenes - Total	S14-Jn24648	CP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn24648	CP	%	87			70-130	Pass	
TRH C6-C10	S14-Jn24648	CP	%	81			70-130	Pass	
TRH >C10-C16	S14-Jn24648	CP	%	79			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn24648	CP	%	91			70-130	Pass	
Acenaphthylene	S14-Jn24648	CP	%	80			70-130	Pass	
Anthracene	S14-Jn24648	CP	%	101			70-130	Pass	
Benz(a)anthracene	S14-Jn24648	CP	%	82			70-130	Pass	
Benzo(a)pyrene	S14-Jn24648	CP	%	77			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn24648	CP	%	88			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn24648	CP	%	71			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn24648	CP	%	90			70-130	Pass	
Chrysene	S14-Jn24648	CP	%	90			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn24648	CP	%	78			70-130	Pass	
Fluoranthene	S14-Jn24648	CP	%	93			70-130	Pass	
Fluorene	S14-Jn24648	CP	%	88			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24648	CP	%	83			70-130	Pass	
Naphthalene	S14-Jn24648	CP	%	91			70-130	Pass	
Phenanthrene	S14-Jn24648	CP	%	83			70-130	Pass	
Pyrene	S14-Jn24648	CP	%	92			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDD	S14-Jn24648	CP	%	129			70-130	Pass	
4.4'-DDE	S14-Jn24648	CP	%	130			70-130	Pass	
4.4'-DDT	S14-Jn24648	CP	%	93			70-130	Pass	
a-BHC	S14-Jn24648	CP	%	122			70-130	Pass	
Aldrin	S14-Jn24648	CP	%	117			70-130	Pass	
b-BHC	S14-Jn24648	CP	%	103			70-130	Pass	
d-BHC	S14-Jn24648	CP	%	112			70-130	Pass	
Dieldrin	S14-Jn24648	CP	%	111			70-130	Pass	
Endosulfan I	S14-Jn24648	CP	%	102			70-130	Pass	
Endosulfan II	S14-Jn24648	CP	%	108			70-130	Pass	
Endosulfan sulphate	S14-Jn24648	CP	%	106			70-130	Pass	
Endrin	S14-Jn24648	CP	%	119			70-130	Pass	
Endrin aldehyde	S14-Jn24648	CP	%	105			70-130	Pass	
Endrin ketone	S14-Jn24648	CP	%	114			70-130	Pass	
g-BHC (Lindane)	S14-Jn24648	CP	%	118			70-130	Pass	
Heptachlor	S14-Jn24648	CP	%	113			70-130	Pass	
Heptachlor epoxide	S14-Jn24648	CP	%	116			70-130	Pass	
Methoxychlor	S14-Jn24648	CP	%	104			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn24648	CP	%	72			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24648	CP	%	98			70-130	Pass	
Cadmium	S14-Jn24648	CP	%	94			70-130	Pass	
Chromium	S14-Jn24648	CP	%	105			70-130	Pass	
Copper	S14-Jn24648	CP	%	78			70-130	Pass	
Lead	S14-Jn24648	CP	%	96			70-130	Pass	
Mercury	S14-Jn24648	CP	%	82			70-130	Pass	
Nickel	S14-Jn24648	CP	%	92			70-130	Pass	
Zinc	S14-Jn24648	CP	%	101			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn24659	CP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn24659	CP	%	99			70-130	Pass	
Toluene	S14-Jn24659	CP	%	96			70-130	Pass	
Ethylbenzene	S14-Jn24659	CP	%	94			70-130	Pass	
m&p-Xylenes	S14-Jn24659	CP	%	89			70-130	Pass	
o-Xylene	S14-Jn24659	CP	%	91			70-130	Pass	
Xylenes - Total	S14-Jn24659	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn24659	CP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24659	CP	%	104			70-130	Pass	
Cadmium	S14-Jn24659	CP	%	100			70-130	Pass	
Chromium	S14-Jn24659	CP	%	125			70-130	Pass	
Copper	S14-Jn24659	CP	%	101			70-130	Pass	
Lead	S14-Jn24659	CP	%	103			70-130	Pass	
Mercury	S14-Jn24659	CP	%	94			70-130	Pass	
Nickel	S14-Jn24659	CP	%	101			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	S14-Jn24659	CP	%	80			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn24661	CP	%	96			70-130	Pass	
Toluene	S14-Jn24661	CP	%	94			70-130	Pass	
Ethylbenzene	S14-Jn24661	CP	%	98			70-130	Pass	
m&p-Xylenes	S14-Jn24661	CP	%	97			70-130	Pass	
o-Xylene	S14-Jn24661	CP	%	94			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn24661	CP	%	130			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jn24661	CP	%	116			75-125	Pass	
1.1-Dichloroethene	S14-Jn24661	CP	%	109			70-130	Pass	
1.1.1-Trichloroethane	S14-Jn24661	CP	%	102			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn24661	CP	%	91			70-130	Pass	
1.1.2-Trichloroethane	S14-Jn24661	CP	%	91			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn24661	CP	%	93			70-130	Pass	
1.2-Dibromoethane	S14-Jn24661	CP	%	92			70-130	Pass	
1.2-Dichlorobenzene	S14-Jn24661	CP	%	96			70-130	Pass	
1.2-Dichloroethane	S14-Jn24661	CP	%	81			70-130	Pass	
1.2-Dichloropropane	S14-Jn24661	CP	%	97			70-130	Pass	
1.2.3-Trichloropropane	S14-Jn24661	CP	%	102			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jn24661	CP	%	111			70-130	Pass	
1.3-Dichlorobenzene	S14-Jn24661	CP	%	98			70-130	Pass	
1.3-Dichloropropane	S14-Jn24661	CP	%	92			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jn24661	CP	%	111			70-130	Pass	
1.4-Dichlorobenzene	S14-Jn24661	CP	%	96			70-130	Pass	
2-Butanone (MEK)	S14-Jn24661	CP	%	129			70-130	Pass	
4-Chlorotoluene	S14-Jn24661	CP	%	104			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn24661	CP	%	102			70-130	Pass	
Bromobenzene	S14-Jn24661	CP	%	101			70-130	Pass	
Bromochloromethane	S14-Jn24661	CP	%	100			70-130	Pass	
Bromodichloromethane	S14-Jn24661	CP	%	81			70-130	Pass	
Bromoform	S14-Jn24661	CP	%	82			70-130	Pass	
Bromomethane	S14-Jn24661	CP	%	124			70-130	Pass	
Carbon disulfide	S14-Jn24661	CP	%	108			70-130	Pass	
Carbon Tetrachloride	S14-Jn24661	CP	%	96			70-130	Pass	
Chlorobenzene	S14-Jn24661	CP	%	93			70-130	Pass	
Chloroethane	S14-Jn24661	CP	%	110			70-130	Pass	
Chloroform	S14-Jn24661	CP	%	102			70-130	Pass	
Chloromethane	S14-Jn24661	CP	%	102			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jn24661	CP	%	114			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jn24661	CP	%	94			70-130	Pass	
Dibromochloromethane	S14-Jn24661	CP	%	81			70-130	Pass	
Dibromomethane	S14-Jn24661	CP	%	88			70-130	Pass	
Dichlorodifluoromethane	S14-Jn24661	CP	%	81			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jn24661	CP	%	94			70-130	Pass	
Methylene Chloride	S14-Jn24661	CP	%	111			70-130	Pass	
Styrene	S14-Jn24661	CP	%	95			70-130	Pass	
Tetrachloroethene	S14-Jn24661	CP	%	92			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jn24661	CP	%	116			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jn24661	CP	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichloroethene	S14-Jn24661	CP	%	94			70-130	Pass	
Trichlorofluoromethane	S14-Jn24661	CP	%	94			70-130	Pass	
Vinyl chloride	S14-Jn24661	CP	%	89			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	S14-Jn24661	CP	%	122			70-130	Pass	
4.4'-DDE	S14-Jn24661	CP	%	118			70-130	Pass	
4.4'-DDT	S14-Jn24661	CP	%	74			70-130	Pass	
a-BHC	S14-Jn24661	CP	%	109			70-130	Pass	
Aldrin	S14-Jn24661	CP	%	101			70-130	Pass	
b-BHC	S14-Jn24661	CP	%	87			70-130	Pass	
d-BHC	S14-Jn24661	CP	%	97			70-130	Pass	
Dieldrin	S14-Jn24661	CP	%	84			70-130	Pass	
Endosulfan I	S14-Jn24661	CP	%	85			70-130	Pass	
Endosulfan II	S14-Jn24661	CP	%	96			70-130	Pass	
Endosulfan sulphate	S14-Jn24661	CP	%	106			70-130	Pass	
Endrin	S14-Jn24661	CP	%	104			70-130	Pass	
Endrin aldehyde	S14-Jn24661	CP	%	112			70-130	Pass	
Endrin ketone	S14-Jn24661	CP	%	118			70-130	Pass	
g-BHC (Lindane)	S14-Jn24661	CP	%	103			70-130	Pass	
Heptachlor	S14-Jn24661	CP	%	95			70-130	Pass	
Heptachlor epoxide	S14-Jn24661	CP	%	101			70-130	Pass	
Methoxychlor	S14-Jn24661	CP	%	95			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn24661	CP	%	86			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24668	CP	%	100			70-130	Pass	
Chromium	S14-Jn24668	CP	%	90			70-130	Pass	
Copper	S14-Jn24668	CP	%	116			70-130	Pass	
Mercury	S14-Jn24668	CP	%	95			70-130	Pass	
Nickel	S14-Jn24668	CP	%	108			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn24669	CP	%	96			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn24669	CP	%	95			70-130	Pass	
Toluene	S14-Jn24669	CP	%	96			70-130	Pass	
Ethylbenzene	S14-Jn24669	CP	%	92			70-130	Pass	
m&p-Xylenes	S14-Jn24669	CP	%	87			70-130	Pass	
o-Xylene	S14-Jn24669	CP	%	90			70-130	Pass	
Xylenes - Total	S14-Jn24669	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn24669	CP	%	99			70-130	Pass	
TRH C6-C10	S14-Jn24669	CP	%	92			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24669	CP	%	95			70-130	Pass	
Cadmium	S14-Jn24669	CP	%	78			70-130	Pass	
Chromium	S14-Jn24669	CP	%	77			70-130	Pass	
Copper	S14-Jn24669	CP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	S14-Jn24669	CP	%	88			70-130	Pass	
Nickel	S14-Jn24669	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn24687	CP	%	92			70-130	Pass	
TRH C10-C14	S14-Jn24687	CP	%	74			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn24687	CP	%	95			70-130	Pass	
Toluene	S14-Jn24687	CP	%	91			70-130	Pass	
Ethylbenzene	S14-Jn24687	CP	%	87			70-130	Pass	
m&p-Xylenes	S14-Jn24687	CP	%	90			70-130	Pass	
o-Xylene	S14-Jn24687	CP	%	89			70-130	Pass	
Xylenes - Total	S14-Jn24687	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn24687	CP	%	85			70-130	Pass	
TRH C6-C10	S14-Jn24687	CP	%	85			70-130	Pass	
TRH >C10-C16	S14-Jn24687	CP	%	83			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn24687	CP	%	96			70-130	Pass	
Acenaphthylene	S14-Jn24687	CP	%	90			70-130	Pass	
Anthracene	S14-Jn24687	CP	%	111			70-130	Pass	
Benz(a)anthracene	S14-Jn24687	CP	%	94			70-130	Pass	
Benzo(a)pyrene	S14-Jn24687	CP	%	83			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn24687	CP	%	96			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn24687	CP	%	84			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn24687	CP	%	100			70-130	Pass	
Chrysene	S14-Jn24687	CP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn24687	CP	%	87			70-130	Pass	
Fluoranthene	S14-Jn24687	CP	%	104			70-130	Pass	
Fluorene	S14-Jn24687	CP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24687	CP	%	88			70-130	Pass	
Naphthalene	S14-Jn24687	CP	%	98			70-130	Pass	
Phenanthrene	S14-Jn24687	CP	%	89			70-130	Pass	
Pyrene	S14-Jn24687	CP	%	102			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn24687	CP	%	97			70-130	Pass	
4.4'-DDD	S14-Jn24687	CP	%	118			70-130	Pass	
4.4'-DDE	S14-Jn24687	CP	%	87			70-130	Pass	
a-BHC	S14-Jn24687	CP	%	104			70-130	Pass	
Aldrin	S14-Jn24687	CP	%	88			70-130	Pass	
b-BHC	S14-Jn24687	CP	%	101			70-130	Pass	
d-BHC	S14-Jn24687	CP	%	87			70-130	Pass	
Dieldrin	S14-Jn24687	CP	%	101			70-130	Pass	
Endosulfan I	S14-Jn24687	CP	%	97			70-130	Pass	
Endosulfan II	S14-Jn24687	CP	%	91			70-130	Pass	
Endosulfan sulphate	S14-Jn24687	CP	%	91			70-130	Pass	
Endrin	S14-Jn24687	CP	%	102			70-130	Pass	
Endrin aldehyde	S14-Jn24687	CP	%	91			70-130	Pass	
Endrin ketone	S14-Jn24687	CP	%	90			70-130	Pass	
g-BHC (Lindane)	S14-Jn24687	CP	%	82			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	S14-Jn24687	CP	%	92			70-130	Pass	
Heptachlor epoxide	S14-Jn24687	CP	%	103			70-130	Pass	
Hexachlorobenzene	S14-Jn24687	CP	%	125			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn24687	CP	%	86			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24687	CP	%	112			70-130	Pass	
Cadmium	S14-Jn24687	CP	%	105			70-130	Pass	
Chromium	S14-Jn24687	CP	%	107			70-130	Pass	
Copper	S14-Jn24687	CP	%	114			70-130	Pass	
Lead	S14-Jn24687	CP	%	109			70-130	Pass	
Mercury	S14-Jn24687	CP	%	106			70-130	Pass	
Nickel	S14-Jn24687	CP	%	112			70-130	Pass	
Zinc	S14-Jn24687	CP	%	123			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24695	CP	%	77			70-130	Pass	
Cadmium	S14-Jn24695	CP	%	102			70-130	Pass	
Chromium	S14-Jn24695	CP	%	106			70-130	Pass	
Copper	S14-Jn24695	CP	%	104			70-130	Pass	
Lead	S14-Jn24695	CP	%	93			70-130	Pass	
Mercury	S14-Jn24695	CP	%	79			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S14-Jn24697	CP	%	109			70-130	Pass	
Coumaphos	S14-Jn24697	CP	%	112			70-130	Pass	
Diazinon	S14-Jn24697	CP	%	112			70-130	Pass	
Dichlorvos	S14-Jn24697	CP	%	121			70-130	Pass	
Dimethoate	S14-Jn24697	CP	%	113			70-130	Pass	
Disulfoton	S14-Jn24697	CP	%	101			70-130	Pass	
Ethoprop	S14-Jn24697	CP	%	110			70-130	Pass	
Fenitrothion	S14-Jn24697	CP	%	107			70-130	Pass	
Fensulfothion	S14-Jn24697	CP	%	124			70-130	Pass	
Fenthion	S14-Jn24697	CP	%	105			70-130	Pass	
Methyl azinphos	S14-Jn24697	CP	%	115			70-130	Pass	
Malathion	S14-Jn24697	CP	%	117			70-130	Pass	
Methyl parathion	S14-Jn24697	CP	%	108			70-130	Pass	
Mevinphos	S14-Jn24697	CP	%	124			70-130	Pass	
Monocrotophos	S14-Jn24697	CP	%	130			70-130	Pass	
Parathion	S14-Jn24697	CP	%	108			70-130	Pass	
Phorate	S14-Jn24697	CP	%	107			70-130	Pass	
Profenofos	S14-Jn24697	CP	%	121			70-130	Pass	
Prothiofos	S14-Jn24697	CP	%	108			70-130	Pass	
Ronnel	S14-Jn24697	CP	%	106			70-130	Pass	
Stirophos	S14-Jn24697	CP	%	126			70-130	Pass	
Trichloronate	S14-Jn24697	CP	%	105			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	S14-Jn24698	CP	%	81			70-130	Pass	
Actril (Ioxynil)	S14-Jn24698	CP	%	90			70-130	Pass	
Dichlorprop	S14-Jn24698	CP	%	86			70-130	Pass	
MCPA	S14-Jn24698	CP	%	92			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jn24701	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jn24701	CP	%	98			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn24701	CP	%	100			70-130	Pass	
Acenaphthylene	S14-Jn24701	CP	%	87			70-130	Pass	
Anthracene	S14-Jn24701	CP	%	113			70-130	Pass	
Benz(a)anthracene	S14-Jn24701	CP	%	107			70-130	Pass	
Benzo(a)pyrene	S14-Jn24701	CP	%	85			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn24701	CP	%	100			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn24701	CP	%	87			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn24701	CP	%	100			70-130	Pass	
Chrysene	S14-Jn24701	CP	%	97			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn24701	CP	%	87			70-130	Pass	
Fluoranthene	S14-Jn24701	CP	%	110			70-130	Pass	
Fluorene	S14-Jn24701	CP	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24701	CP	%	87			70-130	Pass	
Naphthalene	S14-Jn24701	CP	%	101			70-130	Pass	
Phenanthrene	S14-Jn24701	CP	%	100			70-130	Pass	
Pyrene	S14-Jn24701	CP	%	110			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn24701	CP	%	93			70-130	Pass	
4.4'-DDD	S14-Jn24701	CP	%	124			70-130	Pass	
4.4'-DDE	S14-Jn24701	CP	%	82			70-130	Pass	
a-BHC	S14-Jn24701	CP	%	95			70-130	Pass	
Aldrin	S14-Jn24701	CP	%	82			70-130	Pass	
b-BHC	S14-Jn24701	CP	%	89			70-130	Pass	
d-BHC	S14-Jn24701	CP	%	85			70-130	Pass	
Dieldrin	S14-Jn24701	CP	%	98			70-130	Pass	
Endosulfan I	S14-Jn24701	CP	%	88			70-130	Pass	
Endosulfan II	S14-Jn24701	CP	%	88			70-130	Pass	
Endosulfan sulphate	S14-Jn24701	CP	%	83			70-130	Pass	
Endrin	S14-Jn24701	CP	%	93			70-130	Pass	
Endrin aldehyde	S14-Jn24701	CP	%	85			70-130	Pass	
Endrin ketone	S14-Jn24701	CP	%	86			70-130	Pass	
g-BHC (Lindane)	S14-Jn24701	CP	%	82			70-130	Pass	
Heptachlor	S14-Jn24701	CP	%	83			70-130	Pass	
Heptachlor epoxide	S14-Jn24701	CP	%	97			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn24701	CP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn24708	CP	%	85			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn24708	CP	%	101			70-130	Pass	
Toluene	S14-Jn24708	CP	%	92			70-130	Pass	
Ethylbenzene	S14-Jn24708	CP	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	S14-Jn24708	CP	%	88			70-130	Pass	
o-Xylene	S14-Jn24708	CP	%	88			70-130	Pass	
Xylenes - Total	S14-Jn24708	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn24708	CP	%	73			70-130	Pass	
TRH C6-C10	S14-Jn24708	CP	%	93			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24708	CP	%	93			70-130	Pass	
Cadmium	S14-Jn24708	CP	%	89			70-130	Pass	
Chromium	S14-Jn24708	CP	%	100			70-130	Pass	
Copper	S14-Jn24708	CP	%	110			70-130	Pass	
Lead	S14-Jn24708	CP	%	97			70-130	Pass	
Mercury	S14-Jn24708	CP	%	116			70-130	Pass	
Nickel	S14-Jn24708	CP	%	95			70-130	Pass	
Zinc	S14-Jn24708	CP	%	108			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn24710	CP	%	90			70-130	Pass	
4.4'-DDD	S14-Jn24710	CP	%	91			70-130	Pass	
4.4'-DDE	S14-Jn24710	CP	%	80			70-130	Pass	
4.4'-DDT	S14-Jn24710	CP	%	74			70-130	Pass	
a-BHC	S14-Jn24710	CP	%	94			70-130	Pass	
Aldrin	S14-Jn24710	CP	%	80			70-130	Pass	
b-BHC	S14-Jn24710	CP	%	104			70-130	Pass	
d-BHC	S14-Jn24710	CP	%	88			70-130	Pass	
Dieldrin	S14-Jn24710	CP	%	92			70-130	Pass	
Endosulfan I	S14-Jn24710	CP	%	87			70-130	Pass	
Endosulfan II	S14-Jn24710	CP	%	84			70-130	Pass	
Endosulfan sulphate	S14-Jn24710	CP	%	79			70-130	Pass	
Endrin	S14-Jn24710	CP	%	95			70-130	Pass	
Endrin aldehyde	S14-Jn24710	CP	%	73			70-130	Pass	
Endrin ketone	S14-Jn24710	CP	%	89			70-130	Pass	
g-BHC (Lindane)	S14-Jn24710	CP	%	87			70-130	Pass	
Heptachlor	S14-Jn24710	CP	%	97			70-130	Pass	
Heptachlor epoxide	S14-Jn24710	CP	%	96			70-130	Pass	
Hexachlorobenzene	S14-Jn24710	CP	%	92			70-130	Pass	
Methoxychlor	S14-Jn24710	CP	%	75			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24710	CP	%	111			70-130	Pass	
Cadmium	S14-Jn24710	CP	%	93			70-130	Pass	
Chromium	S14-Jn24710	CP	%	118			70-130	Pass	
Copper	S14-Jn24710	CP	%	95			70-130	Pass	
Lead	S14-Jn24710	CP	%	114			70-130	Pass	
Mercury	S14-Jn24710	CP	%	130			70-130	Pass	
Nickel	S14-Jn24710	CP	%	97			70-130	Pass	
Zinc	S14-Jn24710	CP	%	127			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jn24712	CP	%	87			70-130	Pass	
4.4'-DDD	S14-Jn24712	CP	%	87			70-130	Pass	
4.4'-DDE	S14-Jn24712	CP	%	76			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDT	S14-Jn24712	CP	%	73			70-130	Pass	
a-BHC	S14-Jn24712	CP	%	93			70-130	Pass	
Aldrin	S14-Jn24712	CP	%	79			70-130	Pass	
b-BHC	S14-Jn24712	CP	%	93			70-130	Pass	
d-BHC	S14-Jn24712	CP	%	83			70-130	Pass	
Dieldrin	S14-Jn24712	CP	%	89			70-130	Pass	
Endosulfan I	S14-Jn24712	CP	%	87			70-130	Pass	
Endosulfan II	S14-Jn24712	CP	%	82			70-130	Pass	
Endosulfan sulphate	S14-Jn24712	CP	%	77			70-130	Pass	
Endrin	S14-Jn24712	CP	%	90			70-130	Pass	
Endrin aldehyde	S14-Jn24712	CP	%	70			70-130	Pass	
Endrin ketone	S14-Jn24712	CP	%	80			70-130	Pass	
g-BHC (Lindane)	S14-Jn24712	CP	%	81			70-130	Pass	
Heptachlor	S14-Jn24712	CP	%	92			70-130	Pass	
Heptachlor epoxide	S14-Jn24712	CP	%	92			70-130	Pass	
Hexachlorobenzene	S14-Jn24712	CP	%	86			70-130	Pass	
Methoxychlor	S14-Jn24712	CP	%	72			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn24712	CP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jn24721	CP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jn24721	CP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jn24721	CP	%	106			70-130	Pass	
Acenaphthylene	S14-Jn24721	CP	%	96			70-130	Pass	
Anthracene	S14-Jn24721	CP	%	109			70-130	Pass	
Benz(a)anthracene	S14-Jn24721	CP	%	108			70-130	Pass	
Benzo(a)pyrene	S14-Jn24721	CP	%	88			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jn24721	CP	%	97			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jn24721	CP	%	109			70-130	Pass	
Benzo(k)fluoranthene	S14-Jn24721	CP	%	104			70-130	Pass	
Chrysene	S14-Jn24721	CP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jn24721	CP	%	99			70-130	Pass	
Fluoranthene	S14-Jn24721	CP	%	110			70-130	Pass	
Fluorene	S14-Jn24721	CP	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24721	CP	%	98			70-130	Pass	
Naphthalene	S14-Jn24721	CP	%	103			70-130	Pass	
Phenanthrene	S14-Jn24721	CP	%	108			70-130	Pass	
Pyrene	S14-Jn24721	CP	%	108			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jn24721	CP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24722	CP	%	104			70-130	Pass	
Cadmium	S14-Jn24722	CP	%	100			70-130	Pass	
Chromium	S14-Jn24722	CP	%	93			70-130	Pass	
Lead	S14-Jn24722	CP	%	82			70-130	Pass	
Mercury	S14-Jn24722	CP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	S14-Jn24722	CP	%	100			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S14-Jn24723	CP	%	96			70-130	Pass	
Coumaphos	S14-Jn24723	CP	%	115			70-130	Pass	
Diazinon	S14-Jn24723	CP	%	104			70-130	Pass	
Dichlorvos	S14-Jn24723	CP	%	124			70-130	Pass	
Dimethoate	S14-Jn24723	CP	%	103			70-130	Pass	
Disulfoton	S14-Jn24723	CP	%	94			70-130	Pass	
Ethoprop	S14-Jn24723	CP	%	101			70-130	Pass	
Fenitrothion	S14-Jn24723	CP	%	97			70-130	Pass	
Fensulfothion	S14-Jn24723	CP	%	120			70-130	Pass	
Fenthion	S14-Jn24723	CP	%	95			70-130	Pass	
Methyl azinphos	S14-Jn24723	CP	%	114			70-130	Pass	
Malathion	S14-Jn24723	CP	%	108			70-130	Pass	
Methyl parathion	S14-Jn24723	CP	%	101			70-130	Pass	
Mevinphos	S14-Jn24723	CP	%	115			70-130	Pass	
Monocrotophos	S14-Jn24723	CP	%	129			70-130	Pass	
Parathion	S14-Jn24723	CP	%	94			70-130	Pass	
Phorate	S14-Jn24723	CP	%	95			70-130	Pass	
Profenofos	S14-Jn24723	CP	%	117			70-130	Pass	
Prothiofos	S14-Jn24723	CP	%	96			70-130	Pass	
Ronnel	S14-Jn24723	CP	%	97			70-130	Pass	
Stirophos	S14-Jn24723	CP	%	122			70-130	Pass	
Trichloronate	S14-Jn24723	CP	%	93			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24726	CP	%	94			70-130	Pass	
Cadmium	S14-Jn24726	CP	%	89			70-130	Pass	
Chromium	S14-Jn24726	CP	%	93			70-130	Pass	
Copper	S14-Jn24726	CP	%	89			70-130	Pass	
Lead	S14-Jn24726	CP	%	91			70-130	Pass	
Mercury	S14-Jn24726	CP	%	117			70-130	Pass	
Nickel	S14-Jn24726	CP	%	90			70-130	Pass	
Zinc	S14-Jn24726	CP	%	87			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn24646	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn24646	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn24646	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn24646	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn24646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn24646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn24646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn24646	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn24646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn24646	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn24646	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn24646	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn24646	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn24646	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn24646	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn24646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn24646	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn24646	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn24646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24646	CP	mg/kg	4.2	5.6	30	30%	Pass	
Cadmium	S14-Jn24646	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn24646	CP	mg/kg	10	11	6.0	30%	Pass	
Copper	S14-Jn24646	CP	mg/kg	43	41	5.0	30%	Pass	
Lead	S14-Jn24646	CP	mg/kg	22	22	1.0	30%	Pass	
Mercury	S14-Jn24646	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn24646	CP	mg/kg	23	25	8.0	30%	Pass	
Zinc	S14-Jn24646	CP	mg/kg	81	95	17	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jn24647	CP	units	8.7	8.7	<1	30%	Pass	
pH-OX	S14-Jn24647	CP	units	7.6	7.7	1.0	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jn24647	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jn24647	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jn24647	CP	mol H+/t	< 2	< 2	<1	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jn24647	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jn24647	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jn24647	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - KCl Extractable	S14-Jn24647	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jn24647	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jn24647	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jn24647	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jn24647	CP	% Ca	0.07	0.07	1.0	30%	Pass	
Calcium - Peroxide	S14-Jn24647	CP	% Ca	0.20	0.18	9.0	30%	Pass	
Acid Reacted Calcium	S14-Jn24647	CP	% Ca	0.13	0.12	14	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jn24647	CP	mol H+/t	66	58	14	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jn24647	CP	% S	0.11	0.09	14	30%	Pass	
Magnesium - KCl Extractable	S14-Jn24647	CP	% Mg	0.11	0.11	<1	30%	Pass	
Magnesium - Peroxide	S14-Jn24647	CP	% Mg	0.15	0.13	18	30%	Pass	
Acid Reacted Magnesium	S14-Jn24647	CP	% Mg	0.05	0.02	75	30%	Fail	Q15
acidity - Acid Reacted Magnesium	S14-Jn24647	CP	mol H+/t	37	17	75	30%	Fail	Q15
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jn24647	CP	% S	0.06	0.03	75	30%	Fail	Q15
Acid Neutralising Capacity	S14-Jn24647	CP	%CaCO3	1.6	1.5	9.0	30%	Pass	
Acid Neutralising Capacity - Acidity units	S14-Jn24647	CP	mol H+/t	320	290	9.0	30%	Pass	
ANC Fineness Factor	S14-Jn24647	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jn24647	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jn24647	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Liming rate - SPOCAS	S14-Jn24647	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn24658	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn24658	CP	mg/kg	180	220	23	30%	Pass	
TRH C15-C28	S14-Jn24658	CP	mg/kg	8000	10000	26	30%	Pass	
TRH C29-C36	S14-Jn24658	CP	mg/kg	16000	20000	22	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn24658	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn24658	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn24658	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn24658	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn24658	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn24658	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn24658	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn24658	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn24658	CP	mg/kg	310	360	14	30%	Pass	
TRH >C16-C34	S14-Jn24658	CP	mg/kg	19000	25000	26	30%	Pass	
TRH >C34-C40	S14-Jn24658	CP	mg/kg	14000	18000	24	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn24658	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn24658	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn24658	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn24658	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24658	CP	mg/kg	14	13	3.0	30%	Pass	
Cadmium	S14-Jn24658	CP	mg/kg	0.5	0.5	3.0	30%	Pass	
Chromium	S14-Jn24658	CP	mg/kg	36	35	4.0	30%	Pass	
Copper	S14-Jn24658	CP	mg/kg	41	40	2.0	30%	Pass	
Lead	S14-Jn24658	CP	mg/kg	26	26	3.0	30%	Pass	
Mercury	S14-Jn24658	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn24658	CP	mg/kg	12	12	2.0	30%	Pass	
Zinc	S14-Jn24658	CP	mg/kg	110	110	3.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn24659	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn24659	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn24659	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn24659	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn24659	CP	mg/kg	0.1	0.2	34	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jn24659	CP	mg/kg	1.9	2.2	14	30%	Pass	
1.3-Dichlorobenzene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jn24659	CP	mg/kg	1.9	2.2	14	30%	Pass	
1.4-Dichlorobenzene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Chlorobenzene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jn24659	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn24668	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn24668	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn24668	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn24668	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn24668	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn24668	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn24668	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn24668	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn24668	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn24668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24669	CP	mg/kg	5.0	4.7	6.0	30%	Pass	
Cadmium	S14-Jn24669	CP	mg/kg	5.2	5.3	3.0	30%	Pass	
Chromium	S14-Jn24669	CP	mg/kg	31	28	10	30%	Pass	
Copper	S14-Jn24669	CP	mg/kg	72	75	5.0	30%	Pass	
Lead	S14-Jn24669	CP	mg/kg	270	270	<1	30%	Pass	
Mercury	S14-Jn24669	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn24669	CP	mg/kg	18	19	4.0	30%	Pass	
Zinc	S14-Jn24669	CP	mg/kg	240	240	4.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn24685	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jn24685	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn24685	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn24685	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn24685	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jn24685	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jn24685	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jn24685	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jn24685	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jn24685	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jn24685	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn24685	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jn24685	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn24685	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn24685	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn24685	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
a-BHC	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn24685	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn24685	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn24685	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24685	CP	mg/kg	< 2	2.8	150	30%	Fail	Q15
Cadmium	S14-Jn24685	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn24685	CP	mg/kg	< 5	5.2	120	30%	Fail	Q15
Copper	S14-Jn24685	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jn24685	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	S14-Jn24685	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn24685	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jn24685	CP	mg/kg	8.5	31	120	30%	Fail	Q15
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (Ioxynil)	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jn24691	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24695	CP	mg/kg	8.4	3.8	76	30%	Fail	Q15
Cadmium	S14-Jn24695	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn24695	CP	mg/kg	12	25	68	30%	Fail	Q15
Copper	S14-Jn24695	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jn24695	CP	mg/kg	10	7.8	29	30%	Pass	
Mercury	S14-Jn24695	CP	mg/kg	0.21	0.11	58	30%	Fail	Q15
Nickel	S14-Jn24695	CP	mg/kg	12	18	43	30%	Fail	Q15
Zinc	S14-Jn24695	CP	mg/kg	260	210	21	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-Jn24696	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-Jn24696	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jn24701	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn24701	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn24701	CP	mg/kg	76	65	16	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Jn24701	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn24701	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jn24701	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Fluoranthene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn24701	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn24701	CP	mg/kg	0.08	0.06	20	30%	Pass	
4.4'-DDT	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn24701	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn24701	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn24701	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn24701	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn24708	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

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Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
g-BHC (Lindane)	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn24708	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn24708	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn24708	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn24708	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn24708	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn24708	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn24708	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn24708	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24708	CP	mg/kg	9.1	8.9	2.0	30%	Pass	
Cadmium	S14-Jn24708	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn24708	CP	mg/kg	10	14	26	30%	Pass	
Copper	S14-Jn24708	CP	mg/kg	13	13	2.0	30%	Pass	
Lead	S14-Jn24708	CP	mg/kg	13	12	9.0	30%	Pass	
Mercury	S14-Jn24708	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn24708	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jn24708	CP	mg/kg	16	15	3.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn24712	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn24712	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn24712	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn24712	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn24712	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn24712	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn24712	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn24712	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn24712	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn24712	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jn24721	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jn24721	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jn24721	CP	mg/kg	120	130	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Jn24721	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jn24721	CP	mg/kg	130	130	1.0	30%	Pass	
TRH >C34-C40	S14-Jn24721	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jn24721	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jn24721	CP	mg/kg	0.17	0.18	6.0	30%	Pass	
4.4'-DDT	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jn24721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jn24721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jn24721	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jn24721	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24722	CP	mg/kg	3.9	3.3	16	30%	Pass	
Cadmium	S14-Jn24722	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn24722	CP	mg/kg	69	64	8.0	30%	Pass	
Copper	S14-Jn24722	CP	mg/kg	33	31	7.0	30%	Pass	
Lead	S14-Jn24722	CP	mg/kg	19	17	13	30%	Pass	
Mercury	S14-Jn24722	CP	mg/kg	0.07	0.06	18	30%	Pass	
Nickel	S14-Jn24722	CP	mg/kg	67	61	9.0	30%	Pass	
Zinc	S14-Jn24722	CP	mg/kg	6500	5900	10	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-Jn24723	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-Jn24723	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jn24726	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S14-Jn24726	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jn24726	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S14-Jn24726	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jn24726	CP	mg/kg	7.3	7.6	4.0	30%	Pass	
Mercury	S14-Jn24726	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jn24726	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jn24726	CP	mg/kg	22	24	6.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
R16	The LORs have been raised due to the high concentration of one or more analytes
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Ken Henderson
Report:	423382-S
Client Reference:	**BOX HILL 43367**
Received Date:	27 June 2014
Date Reported:	8 July 2014

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

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NATA Accredited
Accreditation Number 1261
Site Number 18217

WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Site Reference: BOX HILL 43367
Date Sampled: 26 June 2014
Report: 423382

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
#18-TP01 (0-0.1)	14-Jn24646	26 June 2014	Approximate Sample Mass: 660g Sample consisted of: Brown fine-grained soil and rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#18-TP02 (0-0.1)	14-Jn24648	26 June 2014	Approximate Sample Mass: 520g Sample consisted of: Ivory powdery chalk-like soil and clay	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#24-SP-TP01 (0-0.1)	14-Jn24651	26 June 2014	Approximate Sample Mass: 668g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#24-TP02 (0-0.1)	14-Jn24653	26 June 2014	Approximate Sample Mass: 758g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#24-TP03 (0-0.1)	14-Jn24655	26 June 2014	Approximate Sample Mass: 762g Sample consisted of: Grey fine-grained soil and rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#20-SD-SS01	14-Jn24658	26 June 2014	Approximate Sample Mass: 592g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#20-SD-SS09	14-Jn24666	26 June 2014	Approximate Sample Mass: 550g Sample consisted of: Dark brown fine sandy soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#20-SD-SS10	14-Jn24667	26 June 2014	Approximate Sample Mass: 532g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
QC11	14-Jn24673	26 June 2014	Approximate Sample Mass: 696g Sample consisted of: Brown fine-grained soil, rocks and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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8 July 2014
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#2-TP01 (0-0.1)	14-Jn24674	26 June 2014	Approximate Sample Mass: 671g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#2-TP02 (0-0.1)	14-Jn24676	26 June 2014	Approximate Sample Mass: 723g Sample consisted of: Dark grey fine sandy soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-TP01 (0-0.1)	14-Jn24679	26 June 2014	Approximate Sample Mass: 557g Sample consisted of: Dark grey sandy soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-TP02 (0-0.1)	14-Jn24681	26 June 2014	Approximate Sample Mass: 717g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-TP03 (0-0.1)	14-Jn24682	26 June 2014	Sample Mass: 473.24g Sample consisted of: Brown fine-grained soil, rocks, plant matter and fibre cement fragments	Chrysotile and amosite identified embedded in fibre cement and in form of loose fibres. Approximate total asbestos mass : 0.4067g Approximate asbestos w/w: 0.086%

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#6-TP02 (0-0.1)	14-Jn24685	26 June 2014	Approximate Sample Mass: 520g Sample consisted of: Grey fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#6-TP06 (0-0.1)	14-Jn24687	26 June 2014	Approximate Sample Mass: 882g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#6-IF-SS01	14-Jn24688	26 June 2014	Approximate Sample Mass: 766g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-TP01 (0-0.1)	14-Jn24702	26 June 2014	Approximate Sample Mass: 682g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-TP05 (0-0.1)	14-Jn24704	26 June 2014	Approximate Sample Mass: 588g Sample consisted of: Dark brown fine-grained soil and rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-TP06 (0.5-0.6)	14-Jn24706	26 June 2014	Approximate Sample Mass: 882g Sample consisted of: Brown fine-grained soil and rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#3-TP07 (0-0.1)	14-Jn24708	26 June 2014	Approximate Sample Mass: 748g Sample consisted of: Brown fine-grained clayey soil, rocks and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#7-TP02 (0-0.1)	14-Jn24712	26 June 2014	Approximate Sample Mass: 789g Sample consisted of: Brown fine sandy soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#7-TP (0-0.1)	14-Jn24717	26 June 2014	Approximate Sample Mass: 566g Sample consisted of: Dark grey fine sandy soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#6-TP01 (0-0.1)	14-Jn24720	26 June 2014	Approximate Sample Mass: 516g Sample consisted of: Dark brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#6-A-SS21	14-Jn24727	26 June 2014	Approximate Sample Mass: 451g Sample consisted of: Dark brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#6-A-SS22	14-Jn24728	26 June 2014	Approximate Sample Mass: 642g Sample consisted of: Dark grey fine sandy soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#6-A-SS23	14-Jn24729	26 June 2014	Approximate Sample Mass: 498g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#6-A-SS24	14-Jn24730	26 June 2014	Approximate Sample Mass: 514g Sample consisted of: Dark brown fine-grained soil, rocks and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
QC12	14-Jn24734	26 June 2014	Approximate Sample Mass: 688g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
QC13	14-Jn24735	26 June 2014	Approximate Sample Mass: 554g Sample consisted of: Dark grey sandy soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#6-A-SS25	14-Jn24736	26 June 2014	Approximate Sample Mass: 484g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#7-SS01	14-Jn24737	26 June 2014	Approximate Sample Mass: 848.6g Sample consisted of: Dark brown sandy soil	Chrysotile was identified in the form of loose fibre bundle. Total mass of asbestos : 0.0077g Total asbestos w/w : 0.001%

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Sample History
Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos – LTM-ASB-8020	Sydney	xx July 2014	Indefinite

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Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters is performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis.
7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).
For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.
Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.
**NOTE: pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per kilogram
µg/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Nephelometric Turbidity Units

TERMS

Dry	Where moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the client’s batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed on fireproofing, troweled on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).

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PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios)

QC - ACCEPTANCE CRITERIA

RPD Duplicates:	Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%
Surrogate Recoveries:	Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and its Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time.
7. Analysis will begin as soon as possible after sample receipt.
8. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
9. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS's.
10. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
11. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Organic samples had Teflon liners	N/A
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within Holding Time	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by

Jean Heng	Client Services
Nibha Vaidya	Approved Counter/Identifier
Alex Tam	Approved Counter/Identifier

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report.

- Indicates Not Requested
* Indicates NATA accreditation does not cover the performance of this service
Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report	**423382-W**
Client Reference	BOX HILL 43367
Received Date	Jun 27, 2014

Client Sample ID			**RINSATE**	**TS140623-Q**	**TB140623-7**	**RINSATE**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-Jn24670**	**S14-Jn24671**	**S14-Jn24672**	**S14-Jn24731**
Date Sampled			**Jun 26, 2014**	**Jun 23, 2014**	**Jun 23, 2014**	**Jun 27, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-	-	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	105%	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	109%	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	108%	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	112%	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	113%	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	113%	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	87	105	84	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	< 0.1
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	-	-	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	-	-	< 0.001
Anthracene	0.001	mg/L	< 0.001	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-	< 0.001
Chrysene	0.001	mg/L	< 0.001	-	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	-	-	< 0.001
Fluorene	0.001	mg/L	< 0.001	-	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-	< 0.001
Naphthalene	0.001	mg/L	< 0.001	-	-	< 0.001

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Client Sample ID			RINSATE	TS140623-Q	TB140623-7	RINSATE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S14-Jn24670	S14-Jn24671	S14-Jn24672	S14-Jn24731
Date Sampled			Jun 26, 2014	Jun 23, 2014	Jun 23, 2014	Jun 27, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	-	-	< 0.001
Pyrene	0.001	mg/L	< 0.001	-	-	< 0.001
Total PAH	0.001	mg/L	< 0.001	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	108	-	-	122
p-Terphenyl-d14 (surr.)	1	%	126	-	-	126
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	-	-	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	-	-	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	-	-	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	94	-	-	91
Tetrachloro-m-xylene (surr.)	1	%	100	-	-	100
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005	-	-	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005	-	-	< 0.005
Total PCB	0.005	mg/L	< 0.005	-	-	< 0.005
Dibutylchlorendate (surr.)	1	%	94	-	-	91
Heavy Metals						
Arsenic	0.005	mg/L	< 0.005	-	-	< 0.005
Cadmium	0.0005	mg/L	< 0.0005	-	-	< 0.0005
Chromium	0.005	mg/L	< 0.005	-	-	< 0.005
Copper	0.005	mg/L	< 0.005	-	-	< 0.005
Lead	0.005	mg/L	< 0.005	-	-	< 0.005
Mercury	0.0001	mg/L	< 0.0001	-	-	< 0.0001
Nickel	0.005	mg/L	< 0.005	-	-	< 0.005
Zinc	0.005	mg/L	< 0.005	-	-	< 0.005

Sample History

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A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 01, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jun 30, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 01, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 01, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jun 30, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 01, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 01, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

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Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jun 27, 2014 4:38 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423382	**Due:**	Jul 7, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43367				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	CANCELLED	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
#18-TP01 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24646		X	X										X	X		
#18-TP01 (0.8-0.9)	Jun 26, 2014		Soil	S14-Jn24647	X															X
#18-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24648		X	X										X	X		
QC10	Jun 26, 2014		Soil	S14-Jn24649						X										
#18-TP03 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24650		X			X		X						X	X		
#24-SP-TP01 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24651		X	X										X	X		

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		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#24-SP-TP01 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24652		X			X		X									
#24-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24653		X	X										X	X		
#24-TP02 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24654	X															X
#24-TP03 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24655		X	X										X	X		
#18-SED01	Jun 26, 2014		Soil	S14-Jn24656		X											X	X		
#18-SED02	Jun 26, 2014		Soil	S14-Jn24657		X											X	X		
#20-SD-SS01	Jun 26, 2014		Soil	S14-Jn24658		X	X										X	X		
#20-AST-SS02	Jun 26, 2014		Soil	S14-Jn24659		X												X	X	
#20-AST-SS03	Jun 26, 2014		Soil	S14-Jn24660		X												X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#20-SD-SS04	Jun 26, 2014		Soil	S14-Jn24661		X											X	X	X	
#20-SD-SS05	Jun 26, 2014		Soil	S14-Jn24662		X												X		
#20-AST-SS06	Jun 26, 2014		Soil	S14-Jn24663		X												X		
#20-SD-SS07	Jun 26, 2014		Soil	S14-Jn24664		X												X		
#20-SD-SS08	Jun 26, 2014		Soil	S14-Jn24665		X											X	X		
#20-SD-SS09	Jun 26, 2014		Soil	S14-Jn24666		X	X											X		
#20-SD-SS10	Jun 26, 2014		Soil	S14-Jn24667		X	X										X	X		
#20-SS11	Jun 26, 2014		Soil	S14-Jn24668		X												X		
#20-SD-SS12	Jun 26, 2014		Soil	S14-Jn24669		X												X		
RINSATE	Jun 26, 2014		Water	S14-Jn24670													X	X		
TS140623-Q	Jun 23, 2014		Water	S14-Jn24671											X					

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Contact Name: Ken Henderson

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
TB140623-7	Jun 23, 2014		Water	S14-Jn24672											X					
QC11	Jun 26, 2014		Soil	S14-Jn24673		X	X										X	X		
#2-TP01 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24674		X	X										X	X		
#2-TP01 (0.4-0.5)	Jun 26, 2014		Soil	S14-Jn24675						X										
#2-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24676		X	X										X	X		
#2-TP03 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24677		X						X		X						
#2-TP03 (0.4-0.5)	Jun 26, 2014		Soil	S14-Jn24678						X										
#3-TP01 (0-	Jun 26, 2014		Soil	S14-Jn24679		X	X										X	X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
0.1)																				
#3-TP01 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24680		X			X		X									
#3-TP02 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24681		X	X										X	X		
#3-TP03 (0-0.1)	Jun 26, 2014		Soil	S14-Jn24682		X	X										X	X		
#3-TP03 (0.3-0.4)	Jun 26, 2014		Soil	S14-Jn24683						X										
#6-TP01 (0.5-0.6)	Jun 27, 2014		Soil	S14-Jn24684	X															X
#6-TP02 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24685		X	X										X	X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#6-TP03 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24686						X										
#6-TP06 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24687		X	X										X	X		
#6-IF-SS01	Jun 27, 2014		Soil	S14-Jn24688		X	X										X	X		
#6-O-SS04	Jun 27, 2014		Soil	S14-Jn24689		X						X		X		X				
#6-O-SS05	Jun 27, 2014		Soil	S14-Jn24690		X						X		X		X				
#6-O-SS03	Jun 27, 2014		Soil	S14-Jn24691		X						X	X	X		X				
#6-O-SS07	Jun 27, 2014		Soil	S14-Jn24692		X						X		X		X				
#6-O-SS06	Jun 27, 2014		Soil	S14-Jn24693		X						X		X		X				
#6-O-SS08	Jun 27, 2014		Soil	S14-Jn24694		X						X		X		X				
#6-O-SS12	Jun 27, 2014		Soil	S14-Jn24695		X						X		X		X				

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#6-O-SS11	Jun 27, 2014		Soil	S14-Jn24696		X						X		X		X				
#6-O-SS02	Jun 27, 2014		Soil	S14-Jn24697		X						X		X		X				
#6-O-SS10	Jun 27, 2014		Soil	S14-Jn24698		X						X	X	X		X				
#6-O-SS09	Jun 27, 2014		Soil	S14-Jn24699		X						X		X		X				
#6-O-SS13	Jun 27, 2014		Soil	S14-Jn24700		X						X		X		X				
#6-O-SS14	Jun 27, 2014		Soil	S14-Jn24701		X								X			X	X	X	
#3-TP04 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24702		X	X										X	X		
#3-TP04 (0.5-0.6)	Jun 27, 2014		Soil	S14-Jn24703						X										
#3-TP05 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24704		X	X										X	X		

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#3-TP06 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24705						X										
#3-TP06 (0.5-0.6)	Jun 27, 2014		Soil	S14-Jn24706		X	X										X	X		
#3-TP06 (1.3-1.4)	Jun 27, 2014		Soil	S14-Jn24707	X															X
#3-TP07 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24708		X	X										X	X		
#3-TP07 (0.3-0.4)	Jun 27, 2014		Soil	S14-Jn24709		X			X		X									
#7-TP01 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24710		X						X		X						
#7-TP01 (0.4-0.5)	Jun 27, 2014		Soil	S14-Jn24711						X										

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#7-TP02 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24712		X	X										X	X		
#7-TP02 (0.3-0.4)	Jun 27, 2014		Soil	S14-Jn24713	X															X
#3-SED01	Jun 27, 2014		Soil	S14-Jn24714		X											X	X		X
#7-TP03 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24715		X	X										X	X		
#7-TP04 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24716		X						X		X						
#7-TP05 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24717		X	X										X	X		
#7-A-SS01	Jun 27, 2014		Soil	S14-Jn24718						X										
#7-A-SS02	Jun 27, 2014		Soil	S14-Jn24719		X						X		X						

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Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
#6-TP01 (0-0.1)	Jun 27, 2014		Soil	S14-Jn24720		X	X										X	X		
#6-S-SS15	Jun 27, 2014		Soil	S14-Jn24721		X											X	X	X	
#6-S-SS16	Jun 27, 2014		Soil	S14-Jn24722		X											X	X	X	
#6-S-SS17	Jun 27, 2014		Soil	S14-Jn24723		X						X		X		X				
#6-S-SS18	Jun 27, 2014		Soil	S14-Jn24724		X						X	X	X		X				
#6-S-SS19	Jun 27, 2014		Soil	S14-Jn24725		X						X		X		X				
#6-S-SS20	Jun 27, 2014		Soil	S14-Jn24726		X						X		X		X				
#6-A-SS21	Jun 27, 2014		Soil	S14-Jn24727			X													
#6-A-SS22	Jun 27, 2014		Soil	S14-Jn24728			X													
#6-A-SS23	Jun 27, 2014		Soil	S14-Jn24729			X													
#6-A-SS24	Jun 27, 2014		Soil	S14-Jn24730			X													

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Contact Name:	Ken Henderson		

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	CANCELLED	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Organophosphorus Pesticides (OP)	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																				
Melbourne Laboratory - NATA Site # 1254 & 14271									X				X							
Sydney Laboratory - NATA Site # 18217						X	X	X		X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X		X
External Laboratory																				
RINSATE	Jun 27, 2014		Water	S14-Jn24731													X	X		
TS140623-9	Jun 23, 2014		Water	S14-Jn24732						X										
TB140623-9	Jun 23, 2014		Water	S14-Jn24733						X										
QC12	Jun 27, 2014		Soil	S14-Jn24734		X	X										X	X		
QC13	Jun 27, 2014		Soil	S14-Jn24735		X	X										X	X		
#6-A-SS25	Jun 27, 2014		Soil	S14-Jn24736			X													
#7-SS01	Jun 27, 2014		Soil	S14-Jn24737			X													
#7-SED01	Jun 27, 2014		Soil	S14-Jn24738		X											X	X		
#6-SED02	Jun 27, 2014		Soil	S14-Jn24739				X												

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	85			70-130	Pass	
TRH C10-C14	%	89			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	100			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	108			70-130	Pass	
TRH C6-C10	%	94			70-130	Pass	
TRH >C10-C16	%	103			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	130			70-130	Pass	
Acenaphthylene	%	111			70-130	Pass	
Anthracene	%	119			70-130	Pass	
Benz(a)anthracene	%	117			70-130	Pass	
Benzo(a)pyrene	%	116			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene			%	123			70-130	Pass	
Benzo(g.h.i)perylene			%	128			70-130	Pass	
Benzo(k)fluoranthene			%	123			70-130	Pass	
Chrysene			%	127			70-130	Pass	
Dibenz(a.h)anthracene			%	118			70-130	Pass	
Fluoranthene			%	120			70-130	Pass	
Fluorene			%	129			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	122			70-130	Pass	
Naphthalene			%	129			70-130	Pass	
Phenanthrene			%	114			70-130	Pass	
Pyrene			%	121			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	99			70-130	Pass	
4.4'-DDD			%	83			70-130	Pass	
4.4'-DDE			%	70			70-130	Pass	
4.4'-DDT			%	88			70-130	Pass	
a-BHC			%	110			70-130	Pass	
Aldrin			%	90			70-130	Pass	
b-BHC			%	113			70-130	Pass	
d-BHC			%	88			70-130	Pass	
Dieldrin			%	100			70-130	Pass	
Endosulfan I			%	110			70-130	Pass	
Endosulfan II			%	95			70-130	Pass	
Endosulfan sulphate			%	95			70-130	Pass	
Endrin			%	88			70-130	Pass	
Endrin aldehyde			%	93			70-130	Pass	
Endrin ketone			%	100			70-130	Pass	
g-BHC (Lindane)			%	83			70-130	Pass	
Heptachlor			%	98			70-130	Pass	
Heptachlor epoxide			%	103			70-130	Pass	
Methoxychlor			%	80			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	70			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	86			70-130	Pass	
Cadmium			%	87			70-130	Pass	
Chromium			%	87			70-130	Pass	
Copper			%	87			70-130	Pass	
Lead			%	88			70-130	Pass	
Mercury			%	93			70-130	Pass	
Nickel			%	86			70-130	Pass	
Zinc			%	85			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jn24091	NCP	%	96			70-130	Pass	
TRH C10-C14	S14-Jl01906	NCP	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jn24091	NCP	%	106			70-130	Pass	
Toluene	S14-Jn24091	NCP	%	114			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S14-Jn24091	NCP	%	116			70-130	Pass	
m&p-Xylenes	S14-Jn24091	NCP	%	118			70-130	Pass	
o-Xylene	S14-Jn24091	NCP	%	115			70-130	Pass	
Xylenes - Total	S14-Jn24091	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jn24091	NCP	%	119			70-130	Pass	
TRH C6-C10	S14-Jn24091	NCP	%	104			70-130	Pass	
TRH >C10-C16	S14-Jl01906	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl01905	NCP	%	101			70-130	Pass	
Acenaphthylene	S14-Jl01905	NCP	%	106			70-130	Pass	
Anthracene	S14-Jl01905	NCP	%	95			70-130	Pass	
Benz(a)anthracene	S14-Jl01905	NCP	%	89			70-130	Pass	
Benzo(a)pyrene	S14-Jl01905	NCP	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jl01905	NCP	%	86			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jl01905	NCP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S14-Jl01905	NCP	%	97			70-130	Pass	
Chrysene	S14-Jl01905	NCP	%	95			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jl01905	NCP	%	84			70-130	Pass	
Fluoranthene	S14-Jl01905	NCP	%	98			70-130	Pass	
Fluorene	S14-Jl01905	NCP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl01905	NCP	%	87			70-130	Pass	
Naphthalene	S14-Jl01905	NCP	%	111			70-130	Pass	
Phenanthrene	S14-Jl01905	NCP	%	93			70-130	Pass	
Pyrene	S14-Jl01905	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jn24731	CP	%	97			70-130	Pass	
Cadmium	S14-Jn24731	CP	%	96			70-130	Pass	
Chromium	S14-Jn24731	CP	%	97			70-130	Pass	
Copper	S14-Jn24731	CP	%	94			70-130	Pass	
Lead	S14-Jn24731	CP	%	96			70-130	Pass	
Mercury	S14-Jn24731	CP	%	95			70-130	Pass	
Nickel	S14-Jn24731	CP	%	96			70-130	Pass	
Zinc	S14-Jn24731	CP	%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jn24289	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jl01904	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-Jl01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jl01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jn24289	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jn24289	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jn24289	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jn24289	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jn24289	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jn24289	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jn24289	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jn24289	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jn24289	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jl01904	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jl01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jl01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jl01904	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jl02713	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jl02713	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43367
COC number:	02224-02228
Turn around time:	5 Day
Date/Time received:	Jun 27, 2014 4:38 PM
Eurofins | mgt reference:	**423382**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Organic samples had Teflon liners.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

#8-SED02 not received, analysis cancelled | SPCOAS conducted at Eurofins mgt Brisbane | CEC and Acid Herbicides conducted at Eurofins | mgt Melbourne | Bag not received for sample #20-SD-SS08 and #18-TP03 (0.3-0.4), Asbestos analysis cancelled

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

02224

JBS&G

433382

CHAIN OF CUSTODY

PROJECT NO.: 43357	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB Khenderson@jbsg.com.au
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL:
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreer@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	Hardness	SPOCAS	VOCs	BTEX	CEC	pH	NOTES:
#18-TP9 (0-0.1)	Soil	26/6/14		B+J		X	X	X									B7 =
#18-TP01 (0.8-0.9)	↓	↓		↓								X					PAH, TRH,
#18-TP02 (0-0.1)						X	X	X									BTEX, 8 metals
~~#18~~ QC10																	
#18-TP03 (0.3-0.4)				B+J+J		X	X	X							X	X	B13 = OCPs
#24-SP-TP01 (0-0.1)				"		X	X	X									PCBs
#24-SP-TP01 (0.3-0.4)				B+J+J											X	X	
#24-TP02 (0-0.1)				"		X	X	X									Asbestos
#24-TP02 (0.3-0.4)				B+B+J								X					= NEPC 2013
#24-TP03 (0-0.1)				"		X	X	X									
#18-SED01				B+J		X	X										
#18-SED02				"		X	X										
#20-SD-SS01				↓ B+J		X	X	X									
#20-AST-SS02				J		X							X				
#20-AST-SS03						X											
#20-SD-SS04						X	X						X				
#20-SD-SS05						X											
#20-AST-SS06						X											
#20-SD-SS07	↓	↓		↓		X											

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Creer DATE: 26/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 27/6/14 4:35pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02225

CHAIN OF CUSTODY

JBS&G

423382

PROJECT NO.: 43375	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB
SEND REPORT TO: KH, TC — SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: tcreese@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) khenderson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	BTEX	8 metals	8 OCPs	CEC	pH	NOTES:
#20-SD-SS08						X	X	X						
#20-SD-SS09						X								
#20-SD-SS10						X	X	X						
#20-SS11						X								
#20-SD-SS12						X								
Rinsate						X	X							
Trip spike									X					
Trip blank									X					
QC11						X	X	X						
#2-TP01 (0-0.1)						X	X	X						
#2-TP01 (0.4-0.5)														
#2-TP02 (0-0.1)						X	X	X						
#2-TP03 (0-0.1)										X	X			
#2-TP03 (0.4-0.5)														
#3-TP01 (0-0.1)						X	X	X						
#3-TP01 (0.3-0.4)												X	X	
#3-TP02 (0-0.1)						X	X	X						
#3-TP03 (0-0.1)						X	X	X						
#3-TP03 (0.3-0.4)														

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T-Creese DATE: 26/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 27/6/14 4:35pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02227

CHAIN OF CUSTODY

JBS&G

#423382

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS:
SEND REPORT TO: KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	asbestos	SPOCAS	8 metals	OCPs	OPPs	Herbicides	VOCs	NOTES:
#6-TP01(0.5-0.6)		27/6/14		C					X						
#6-TP02(0-0.1)						X	X	X							
#6-TP03(0-0.1)															
~~#6-TP04~~															
#6-TP06(0-0.1)						X	X	X							
#6-F-SS01						X	X	X							
#6-0-SS04										X	X	X			
#6-0-SS05										X	X	X			
#6-0-SS03										X	X	X	X		
#6-0-SS07										X	X	X			
#6-0-SS06										X	X	X			
#6-0-SS08										X	X	X			
#6-0-SS12										X	X	X			
#6-0-SS11										X	X	X			
#6-0-SS02										X	X	X			
#6-0-SS10										X	X	X	X		
#6-0-SS09										X	X	X			
#6-0-SS13										X	X	X			
#6-S-SS14						X	X			X				X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Gray DATE: 27/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 27/6/14 4:25pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02226

CHAIN OF CUSTODY

JBS&G

#423382

PROJECT NO.: 49376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: Kherlersen@jbsg.com
SEND REPORT TO: KH TC SEND INVOICE TO: Grand	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL:
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	SPOCAS	B7	B13	Asbestos	CEC	pH	8 metals	OCPs	NOTES:
#3-TP04 (0-0.1)	27/6/14						X	X	X					B7 = TRH, BTEX
#3-TP04 (0.5-0.6)														PAHs, 8 metals
#3-TP05 (0-0.1)							X	X	X					
#3-TP06 (0-0.1)														B13 = OCP, PCBs
#3-TP06 (0.5-0.6)							X	X	X					
#3-TP06 (1.3-1.4)						X								Asbestos
#3-TP07 (0-0.1)							X	X	X					= NEPC 2013
#3-TP07 (0.3-0.4)										X	X			
#7-TP01 (0-0.1)												X	X	
#7-TP01 (0.4-0.5)														
#7-TP02 (0-0.1)							X	X	X					
#7-TP02 (0.3-0.4)				A		X								
#3-SED01						X	X	X						
#7-TP03 (0-0.1)							X	X	X					
#7-TP04 (0-0.1)												X	X	
#7-TP05 (0-0.1)							X	X	X					
#7-ASS01														
#7-SS02												X	X	
#6-TP01 (0-0.1)							X	X	X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.C... DATE: 27/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmin DATE: OF: 27/6/14 4.35pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02228

CHAIN OF CUSTODY

JBS&G

#423382

PROJECT NO.: 43345	LABORATORY BATCH NO.:
PROJECT NAME: Byn Hill	SAMPLERS: TC
SEND REPORT TO: KH, TC SEND INVOICE TO: GM	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	Herbicides	8 metals	OCPs	OPPs	VOCs	NOTES:
#6-S-SS15		27/6/14				X	X						X	
#6-SS16						X	X						X	
#6-O-SS17										X	X	X		
#6-O-SS18									X	X	X	X		
#6-O-SS19										X	X	X		
#6-O-SS20										X	X	X		
#6-A-SS21								X						
#6-A-SS22								X						
#6-A-SS23								X						
#6-A-SS24								X						
Rinsate						X	X							
Trip spike														
Trip blank														
QC12						X	X	X						
QC13						X	X	X						
#6-A-SS25								X						
#7-SS01								X						
#7-SE001						X	X							
#6-SE001						X	X							

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Cong DATE: 27/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 27/6/14 4:35 pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Enquiries Syd

Subject: FW: Query samples for job Box Hill 43367

From: Tyler Creese [mailto:TCreese@jbsg.com.au]
Sent: Monday, 30 June 2014 12:52 PM
To: Enquiries Syd
Cc: Ken Henderson
Subject: Re: Query samples for job Box Hill 43367

Hi, sorry about the discrepancies.

All the COC changes you listed are correct. #18-TP03 is 0.3 - 0.4. And disregard the same with the x on it. It shouldn't have been included.

Thanks,

Tyler

Sent from my iPhone

On 30 Jun 2014, at 12:40 pm, "Enquiries Syd" <EnquiriesSyd@eurofins.com.au> wrote:

> Hi Tyler,
> Upon unpacking the above job, there are a few labelling discrepancy and sample missing issues. Please see below
> 1, #18- TP03 (0-0.1) was received, however, #18-TP01 (0.3-0.4) was not received. Shall I label #18-TP03 (0-0.1) as #18-TP01 (0.3-0.4) as per COC?
> 2, For sample #18-TP01(0.8-0.9), #18-SED01 and #18-SED02, jars not supplied, analysis will be done from bags
> 3, Through the process of elimination, #2-TP02 labelled as #2-TP02 (0-0.1); #16-TP01 labelled as #16-TP01 (0.5-0.6) and #3-TP06 labelled as #3-TP06 (0-0.1) as per COC, please confirm if it's ok to do so.
> 4, Sample #6-SED02 not received, analysis will be cancelled
> 5, Sample #3-TP01 (0.4-0.5) labelled as #3-TP01 (0.3-0.4) as per COC
> 6, Two jars labelled as #6-O-SS08 (please see picture below). The one on the left hand side is slightly lighter in color. The one on the right hand side has a little cross "X" marked on the label. Please confirm if they are the same samples!
> <image001.png>
>
> Thank you
>
> Regards,
> Jasmine Li
> Sample Receipt Supervisor | NSW

Enquiries Syd

Subject: FW: Query samples for job Box Hill 43367

From: Tyler Creese [mailto:TCreese@jbsg.com.au]
Sent: Monday, 30 June 2014 1:51 PM
To: Enquiries Syd
Cc: Ken Henderson
Subject: Re: Query samples for job Box Hill 43367

Ok thanks. Neither samples require asbestos testing. Could you please ensure the following have asbestos analysis selected:

#20-sd-ss01
#20-sd-ss09
#20-sd-ss10

Sent from my iPhone

On 30 Jun 2014, at 1:40 pm, "Enquiries Syd" <EnquiriesSyd@eurofins.com.au> wrote:

> Hi Tyler,
> One more thing about the job, asbestos bags not received for #18-TP03 (0.3-0.4) and ##20-SD-SS08, analysis will be cancelled. Please confirm if it's ok do so. Thank you
>
> Jasmine
>
> Enquiries Syd
>
> Phone : +61 2 9900 8400
>
> Email : EnquiriesSyd@eurofins.com.au

---

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **423678-S**
Client Reference BOX HILL 43376
Received Date Jul 01, 2014

Client Sample ID			**#13-TP01 (0-0.1)**	**#13-TP01 (0.5-0.6)**	**QC14**	**#13-TP02 (0-0.1)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI01485**	**S14-JI01486**	**S14-JI01487**	**S14-JI01488**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	106	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5

Client Sample ID			#13-TP01 (0-0.1)	#13-TP01 (0.5-0.6)	QC14	#13-TP02 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl01485**	**S14-Jl01486**	**S14-Jl01487**	**S14-Jl01488**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	118	102
p-Terphenyl-d14 (surr.)	1	%	-	-	146	111
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	98	-	93	82
Tetrachloro-m-xylene (surr.)	1	%	121	-	110	95
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	93	82
pH (1:5 Aqueous extract)	0.1	units	-	7.4	-	-
% Moisture	0.1	%	15	18	17	13
Asbestos - WA guidelines	0.001	% w/w	-	-	-	see attached
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	16	-	-

Client Sample ID			#13-TP01 (0-0.1)	#13-TP01 (0.5-0.6)	QC14	#13-TP02 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI01485**	**S14-JI01486**	**S14-JI01487**	**S14-JI01488**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	12	-	15	4.7
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	33	-	38	15
Copper	5	mg/kg	8.5	-	8.9	< 5
Lead	5	mg/kg	19	-	23	6.4
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	-	5.4	< 5
Zinc	5	mg/kg	19	-	21	6.1

Client Sample ID			#13-SP-TP03 (0-0.1)	#13-SP-TP03 (0.4-0.5)	#13-SP-TP04 (0-0.1)	#13-SED01
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI01490**	**S14-JI01491**	**S14-JI01493**	**S14-JI01495**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	87	88	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5

Client Sample ID			#13-SP-TP03 (0-0.1)	#13-SP-TP03 (0.4-0.5)	#13-SP-TP04 (0-0.1)	#13-SED01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI01490	S14-JI01491	S14-JI01493	S14-JI01495
Date Sampled			Jun 30, 2014	Jun 30, 2014	Jun 30, 2014	Jun 30, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	108	114	125
p-Terphenyl-d14 (surr.)	1	%	-	128	123	123
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	85	-	87	85
Tetrachloro-m-xylene (surr.)	1	%	105	-	101	104
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	85	-	87	85
% Moisture	0.1	%	9.5	12	11	29
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	-

Client Sample ID			#13-SP-TP03 (0-0.1)	#13-SP-TP03 (0.4-0.5)	#13-SP-TP04 (0-0.1)	#13-SED01
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl01490**	**S14-Jl01491**	**S14-Jl01493**	**S14-Jl01495**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	-	4.3	7.7	7.9
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	12	15	11
Copper	5	mg/kg	-	7.4	9.4	14
Lead	5	mg/kg	-	14	21	15
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	-	< 5	5.3	10
Zinc	5	mg/kg	-	14	24	33

Client Sample ID			#13-TP05 (0-0.1)	#13-TP06 (0-0.1)	#13-TP06 (0.9-1.0)	#13-TP06 (1.9-2.0)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl01496**	**S14-Jl01498**	**S14-Jl01499**	**S14-Jl01500**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	< 50	-
TRH C29-C36	50	mg/kg	< 50	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	81	-	95	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-

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Client Sample ID			#13-TP05 (0-0.1)	#13-TP06 (0-0.1)	#13-TP06 (0.9-1.0)	#13-TP06 (1.9-2.0)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI01496**	**S14-JI01498**	**S14-JI01499**	**S14-JI01500**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	109	-	103	-
p-Terphenyl-d14 (surr.)	1	%	119	-	119	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	79	85	-	-
Tetrachloro-m-xylene (surr.)	1	%	88	107	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	79	85	-	-
% Moisture	0.1	%	11	16	16	16
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	-

Client Sample ID			#13-TP05 (0-0.1)	#13-TP06 (0-0.1)	#13-TP06 (0.9-1.0)	#13-TP06 (1.9-2.0)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI01496**	**S14-JI01498**	**S14-JI01499**	**S14-JI01500**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	-	5.1	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	21	-	10	-
Copper	5	mg/kg	12	-	9.5	-
Lead	5	mg/kg	23	-	11	-
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	-
Nickel	5	mg/kg	7.7	-	< 5	-
Zinc	5	mg/kg	28	-	15	-
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	4.4
pH-OX	0.1	units	-	-	-	4.1
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	45
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	70
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	25
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.07
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.11
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.04
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur	0.02	% S	-	-	-	< 0.02
Net Acid soluble sulfur	0.02	% S	-	-	-	< 0.02
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	< 10
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	< 0.02
Calcium - KCl Extractable	0.02	% Ca	-	-	-	< 0.02
Calcium - Peroxide	0.02	% Ca	-	-	-	< 0.02
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	0.04
Magnesium - Peroxide	0.02	% Mg	-	-	-	0.04
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	0.07
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	45
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	3.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#13-TP07 (0-0.1) Soil S14-JI01501 Jun 30, 2014	#12-G-TP01 (0-0.1) Soil S14-JI01502 Jun 30, 2014	#12-TP03 (0-0.1) Soil S14-JI01504 Jun 30, 2014	#12-TP05 (0-0.1) Soil S14-JI01507 Jun 30, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	58	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	58	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	83	-	88	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	123	-	102	121
p-Terphenyl-d14 (surr.)	1	%	123	-	100	125

Client Sample ID			#13-TP07 (0-0.1)	#12-G-TP01 (0-0.1)	#12-TP03 (0-0.1)	#12-TP05 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl01501**	**S14-Jl01502**	**S14-Jl01504**	**S14-Jl01507**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	97	83	85	84
Tetrachloro-m-xylene (surr.)	1	%	104	97	106	107
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	97	-	85	84
% Moisture	0.1	%	12	8.7	11	12
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	8.1	5.1	12	6.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	14	24	9.7
Copper	5	mg/kg	15	5.8	10	8.3
Lead	5	mg/kg	20	13	26	20
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	8.3	< 5	5.1	< 5
Zinc	5	mg/kg	100	20	24	29

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#12-TP05 (0.3-0.4) Soil S14-Jl01508 Jun 30, 2014	QC15 Soil S14-Jl01509 Jun 30, 2014	#11-S-TP01 (0-0.1) Soil S14-Jl01510 Jun 30, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	85	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100
Volatile Organics					
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5
Benzene	0.1	mg/kg	-	-	< 0.1
Bromobenzene	0.5	mg/kg	-	-	< 0.5
Bromochloromethane	0.5	mg/kg	-	-	< 0.5
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5
Bromoform	0.5	mg/kg	-	-	< 0.5
Bromomethane	0.5	mg/kg	-	-	< 0.5
Carbon disulfide	0.5	mg/kg	-	-	< 0.5
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5

Client Sample ID			#12-TP05 (0.3-0.4)	QC15	#11-S-TP01 (0-0.1)
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI01508	S14-JI01509	S14-JI01510
Date Sampled			Jun 30, 2014	Jun 30, 2014	Jun 30, 2014
Test/Reference	LOR	Unit			
Volatile Organics					
Chlorobenzene	0.5	mg/kg	-	-	< 0.5
Chloroethane	0.5	mg/kg	-	-	< 0.5
Chloroform	0.5	mg/kg	-	-	< 0.5
Chloromethane	0.5	mg/kg	-	-	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5
Dibromomethane	0.5	mg/kg	-	-	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5
Ethylbenzene	0.1	mg/kg	-	-	< 0.1
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2
Methylene Chloride	0.5	mg/kg	-	-	< 0.5
o-Xylene	0.1	mg/kg	-	-	< 0.1
Styrene	0.5	mg/kg	-	-	< 0.5
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5
Toluene	0.1	mg/kg	-	-	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5
Trichloroethene	0.5	mg/kg	-	-	< 0.5
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5
Vinyl chloride	0.5	mg/kg	-	-	< 0.5
Xylenes - Total	0.3	mg/kg	-	-	< 0.3
Fluorobenzene (surr.)	1	%	-	-	95
4-Bromofluorobenzene (surr.)	1	%	-	-	82
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	105	108
p-Terphenyl-d14 (surr.)	1	%	-	115	117

Client Sample ID			#12-TP05 (0.3-0.4)	QC15	#11-S-TP01 (0-0.1)
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl01508	S14-Jl01509	S14-Jl01510
Date Sampled			Jun 30, 2014	Jun 30, 2014	Jun 30, 2014
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	94	95
Tetrachloro-m-xylene (surr.)	1	%	-	109	117
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	94	95
pH (1:5 Aqueous extract)	0.1	units	8.1	-	-
% Moisture	0.1	%	13	15	26
Asbestos - WA guidelines	0.001	% w/w	-	see attached	-
Ion Exchange Properties					
Cation Exchange Capacity	0.05	meq/100g	11	-	-
Heavy Metals					
Arsenic	2	mg/kg	-	2.4	5.5
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	9.8	14
Copper	5	mg/kg	-	< 5	18
Lead	5	mg/kg	-	8.8	20
Mercury	0.05	mg/kg	-	< 0.05	< 0.05
Nickel	5	mg/kg	-	< 5	7.4
Zinc	5	mg/kg	-	< 5	57

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 07, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 07, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 07, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 07, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 07, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jul 07, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
pH (1:5 Aqueous extract)	Sydney	Jul 08, 2014	7 Day
- Method: E018.2 pH			
% Moisture	Sydney	Jul 07, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos - WA guidelines	Sydney	Jul 02, 2014	0 Day
Ion Exchange Properties	Melbourne	Jul 03, 2014	
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 07, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 07, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jul 07, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jul 07, 2014	0 Day

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 1, 2014 12:15 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423678	**Due:**	Jul 8, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
#13-TP01 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01485		X					X	X					
#13-TP01 (0.5-0.6)	Jun 30, 2014		Soil	S14-Jl01486		X		X		X							
QC14	Jun 30, 2014		Soil	S14-Jl01487		X								X	X		
#13-TP02 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01488		X	X							X	X		
#13-TP02 (0.5-0.6)	Jun 30, 2014		Soil	S14-Jl01489					X								
#13-SP-TP03 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01490		X	X							X			

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Site # 1254 & 14271

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Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 1, 2014 12:15 PM
Address:	Level 1, 50 Margaret St	**Report #:**	423678	**Due:**	Jul 8, 2014
	Sydney	**Phone:**	02 8245 0300	**Priority:**	5 Day
	NSW 2000	**Fax:**		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
#13-SP-TP03 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01491		X									X		
#13-SP-TP03 (0.8-0.9)	Jun 30, 2014		Soil	S14-Jl01492					X								
#13-SP-TP04 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01493		X	X							X	X		
#13-SP-TP04 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01494					X								
#13-SED01	Jun 30, 2014		Soil	S14-Jl01495		X								X	X		
#13-TP05 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01496		X	X							X	X		
#13-TP05 (0.7-0.8)	Jun 30, 2014		Soil	S14-Jl01497					X								

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Eurofins | mgt Client Manager: Jean Heng

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
#13-TP06 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01498		X	X							X			
#13-TP06 (0.9-1.0)	Jun 30, 2014		Soil	S14-Jl01499		X									X		
#13-TP06 (1.9-2.0)	Jun 30, 2014		Soil	S14-Jl01500	X												X
#13-TP07 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01501		X	X							X	X		
#12-G-TP01 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01502		X					X	X					
#12-G-TP01 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01503					X								
#12-TP03 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01504		X	X							X	X		

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Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 423678
Phone: 02 8245 0300
Fax:

Received: Jul 1, 2014 12:15 PM
Due: Jul 8, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
#12-TP03 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01505					X								
#12-SED02	Jun 30, 2014		Soil	S14-Jl01506					X								
#12-TP05 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01507		X	X							X	X		
#12-TP05 (0.3-0.4)	Jun 30, 2014		Soil	S14-Jl01508		X		X		X							
QC15	Jun 30, 2014		Soil	S14-Jl01509		X	X							X	X		
#11-S-TP01 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01510		X								X	X	X	
#11-S-TP01 (0.3-0.4)	Jun 30, 2014		Soil	S14-Jl01511					X								
RINSATE	Jun 30, 2014		Water	S14-Jl01512										X	X		

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
TRIP SPIKE	Jun 30, 2014		Water	S14-Jl01513									X				
TRIP BLANK	Jun 30, 2014		Water	S14-Jl01514									X				

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	-0.01403			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	121			70-130	Pass	
TRH C10-C14	%	86			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	110			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
o-Xylene	%	103			70-130	Pass	
Xylenes - Total	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	126			70-130	Pass	
TRH C6-C10	%	113			70-130	Pass	
TRH >C10-C16	%	94			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	112			75-125	Pass	
1.1-Dichloroethene	%	120			70-130	Pass	
1.1.1-Trichloroethane	%	112			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	104			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.1.2-Trichloroethane	%	108			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	101			70-130	Pass	
1.2-Dibromoethane	%	108			70-130	Pass	
1.2-Dichlorobenzene	%	118			70-130	Pass	
1.2-Dichloroethane	%	117			70-130	Pass	
1.2-Dichloropropane	%	112			70-130	Pass	
1.2.3-Trichloropropane	%	110			70-130	Pass	
1.2.4-Trimethylbenzene	%	124			70-130	Pass	
1.3-Dichlorobenzene	%	120			70-130	Pass	
1.3-Dichloropropane	%	106			70-130	Pass	
1.3.5-Trimethylbenzene	%	126			70-130	Pass	
1.4-Dichlorobenzene	%	119			70-130	Pass	
2-Butanone (MEK)	%	108			70-130	Pass	
4-Chlorotoluene	%	122			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	102			70-130	Pass	
Benzene	%	121			70-130	Pass	
Bromobenzene	%	117			70-130	Pass	
Bromochloromethane	%	107			70-130	Pass	
Bromodichloromethane	%	109			70-130	Pass	
Bromoform	%	97			70-130	Pass	
Bromomethane	%	116			70-130	Pass	
Carbon disulfide	%	117			70-130	Pass	
Carbon Tetrachloride	%	119			70-130	Pass	
Chlorobenzene	%	110			70-130	Pass	
Chloroethane	%	118			70-130	Pass	
Chloroform	%	112			70-130	Pass	
Chloromethane	%	112			70-130	Pass	
cis-1.2-Dichloroethene	%	111			70-130	Pass	
cis-1.3-Dichloropropene	%	100			70-130	Pass	
Dibromochloromethane	%	105			70-130	Pass	
Dibromomethane	%	103			70-130	Pass	
Dichlorodifluoromethane	%	128			70-130	Pass	
Ethylbenzene	%	109			70-130	Pass	
Isopropyl benzene (Cumene)	%	116			70-130	Pass	
m&p-Xylenes	%	108			70-130	Pass	
Methylene Chloride	%	106			70-130	Pass	
o-Xylene	%	110			70-130	Pass	
Styrene	%	107			70-130	Pass	
Tetrachloroethene	%	124			70-130	Pass	
Toluene	%	111			70-130	Pass	
trans-1.2-Dichloroethene	%	113			70-130	Pass	
trans-1.3-Dichloropropene	%	99			70-130	Pass	
Trichloroethene	%	122			70-130	Pass	
Trichlorofluoromethane	%	122			70-130	Pass	
Vinyl chloride	%	119			70-130	Pass	
Xylenes - Total	%	109			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	95			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	114			70-130	Pass	
Benz(a)anthracene	%	88			70-130	Pass	
Benzo(a)pyrene	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g.h.i)perylene			%	107			70-130	Pass	
Benzo(k)fluoranthene			%	102			70-130	Pass	
Chrysene			%	107			70-130	Pass	
Dibenz(a.h)anthracene			%	95			70-130	Pass	
Fluoranthene			%	102			70-130	Pass	
Fluorene			%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	96			70-130	Pass	
Naphthalene			%	94			70-130	Pass	
Phenanthrene			%	90			70-130	Pass	
Pyrene			%	103			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	93			70-130	Pass	
4.4'-DDD			%	86			70-130	Pass	
4.4'-DDE			%	77			70-130	Pass	
4.4'-DDT			%	82			70-130	Pass	
a-BHC			%	92			70-130	Pass	
Aldrin			%	86			70-130	Pass	
b-BHC			%	93			70-130	Pass	
d-BHC			%	84			70-130	Pass	
Dieldrin			%	94			70-130	Pass	
Endosulfan I			%	92			70-130	Pass	
Endosulfan II			%	96			70-130	Pass	
Endosulfan sulphate			%	87			70-130	Pass	
Endrin			%	95			70-130	Pass	
Endrin aldehyde			%	80			70-130	Pass	
Endrin ketone			%	82			70-130	Pass	
g-BHC (Lindane)			%	79			70-130	Pass	
Heptachlor			%	96			70-130	Pass	
Heptachlor epoxide			%	94			70-130	Pass	
Hexachlorobenzene			%	80			70-130	Pass	
Methoxychlor			%	84			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	75			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	97			70-130	Pass	
Cadmium			%	97			70-130	Pass	
Chromium			%	92			70-130	Pass	
Copper			%	92			70-130	Pass	
Lead			%	92			70-130	Pass	
Mercury			%	89			70-130	Pass	
Nickel			%	96			70-130	Pass	
Zinc			%	88			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl01485	CP	%	106			70-130	Pass	
Cadmium	S14-Jl01485	CP	%	99			70-130	Pass	
Chromium	S14-Jl01485	CP	%	118			70-130	Pass	
Copper	S14-Jl01485	CP	%	92			70-130	Pass	
Lead	S14-Jl01485	CP	%	110			70-130	Pass	
Mercury	S14-Jl01485	CP	%	92			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	S14-Jl01485	CP	%	101			70-130	Pass	
Zinc	S14-Jl01485	CP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl01487	CP	%	109			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl01487	CP	%	102			70-130	Pass	
Toluene	S14-Jl01487	CP	%	92			70-130	Pass	
Ethylbenzene	S14-Jl01487	CP	%	87			70-130	Pass	
m&p-Xylenes	S14-Jl01487	CP	%	92			70-130	Pass	
o-Xylene	S14-Jl01487	CP	%	91			70-130	Pass	
Xylenes - Total	S14-Jl01487	CP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl01487	CP	%	127			70-130	Pass	
TRH C6-C10	S14-Jl01487	CP	%	102			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jl01496	CP	%	103			70-130	Pass	
4.4'-DDD	S14-Jl01496	CP	%	101			70-130	Pass	
4.4'-DDE	S14-Jl01496	CP	%	97			70-130	Pass	
4.4'-DDT	S14-Jl01496	CP	%	85			70-130	Pass	
a-BHC	S14-Jl01496	CP	%	95			70-130	Pass	
Aldrin	S14-Jl01496	CP	%	93			70-130	Pass	
b-BHC	S14-Jl01496	CP	%	98			70-130	Pass	
d-BHC	S14-Jl01496	CP	%	94			70-130	Pass	
Dieldrin	S14-Jl01496	CP	%	103			70-130	Pass	
Endosulfan I	S14-Jl01496	CP	%	94			70-130	Pass	
Endosulfan II	S14-Jl01496	CP	%	105			70-130	Pass	
Endosulfan sulphate	S14-Jl01496	CP	%	91			70-130	Pass	
Endrin	S14-Jl01496	CP	%	106			70-130	Pass	
Endrin aldehyde	S14-Jl01496	CP	%	86			70-130	Pass	
Endrin ketone	S14-Jl01496	CP	%	95			70-130	Pass	
g-BHC (Lindane)	S14-Jl01496	CP	%	91			70-130	Pass	
Heptachlor	S14-Jl01496	CP	%	100			70-130	Pass	
Heptachlor epoxide	S14-Jl01496	CP	%	104			70-130	Pass	
Hexachlorobenzene	S14-Jl01496	CP	%	94			70-130	Pass	
Methoxychlor	S14-Jl01496	CP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl01504	CP	%	87			70-130	Pass	
Cadmium	S14-Jl01504	CP	%	99			70-130	Pass	
Chromium	S14-Jl01504	CP	%	72			70-130	Pass	
Copper	S14-Jl01504	CP	%	89			70-130	Pass	
Lead	S14-Jl01504	CP	%	82			70-130	Pass	
Mercury	S14-Jl01504	CP	%	89			70-130	Pass	
Nickel	S14-Jl01504	CP	%	96			70-130	Pass	
Zinc	S14-Jl01504	CP	%	106			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jl01507	CP	%	127			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	S14-JI01509	CP	%	88			70-130	Pass	
TRH C10-C14	S14-JI01509	CP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-JI01509	CP	%	99			70-130	Pass	
Toluene	S14-JI01509	CP	%	90			70-130	Pass	
Ethylbenzene	S14-JI01509	CP	%	88			70-130	Pass	
m&p-Xylenes	S14-JI01509	CP	%	88			70-130	Pass	
o-Xylene	S14-JI01509	CP	%	89			70-130	Pass	
Xylenes - Total	S14-JI01509	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-JI01509	CP	%	90			70-130	Pass	
TRH C6-C10	S14-JI01509	CP	%	90			70-130	Pass	
TRH >C10-C16	S14-JI01509	CP	%	94			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-JI03787	NCP	%	112			75-125	Pass	
1.1-Dichloroethene	S14-JI03787	NCP	%	129			70-130	Pass	
1.1.1-Trichloroethane	S14-JI03787	NCP	%	114			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-JI03787	NCP	%	107			70-130	Pass	
1.1.2-Trichloroethane	S14-JI03787	NCP	%	119			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-JI03787	NCP	%	113			70-130	Pass	
1.2-Dibromoethane	S14-JI03787	NCP	%	127			70-130	Pass	
1.2-Dichlorobenzene	S14-JI03787	NCP	%	119			70-130	Pass	
1.2-Dichloroethane	S14-JI03787	NCP	%	125			70-130	Pass	
1.2-Dichloropropane	S14-JI03787	NCP	%	120			70-130	Pass	
1.2.3-Trichloropropane	S14-JI03787	NCP	%	121			70-130	Pass	
1.2.4-Trimethylbenzene	S14-JI03787	NCP	%	121			70-130	Pass	
1.3-Dichlorobenzene	S14-JI03787	NCP	%	120			70-130	Pass	
1.3-Dichloropropane	S14-JI03787	NCP	%	116			70-130	Pass	
1.3.5-Trimethylbenzene	S14-JI03787	NCP	%	123			70-130	Pass	
1.4-Dichlorobenzene	S14-JI03787	NCP	%	120			70-130	Pass	
2-Butanone (MEK)	S14-JI03787	NCP	%	124			70-130	Pass	
4-Chlorotoluene	S14-JI03787	NCP	%	121			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-JI03787	NCP	%	115			70-130	Pass	
Bromobenzene	S14-JI03787	NCP	%	119			70-130	Pass	
Bromochloromethane	S14-JI03787	NCP	%	119			70-130	Pass	
Bromodichloromethane	S14-JI03787	NCP	%	119			70-130	Pass	
Bromoform	S14-JI03787	NCP	%	102			70-130	Pass	
Bromomethane	S14-JI03787	NCP	%	123			70-130	Pass	
Carbon disulfide	S14-JI03787	NCP	%	119			70-130	Pass	
Carbon Tetrachloride	S14-JI03787	NCP	%	119			70-130	Pass	
Chlorobenzene	S14-JI03787	NCP	%	113			70-130	Pass	
Chloroethane	S14-JI03787	NCP	%	127			70-130	Pass	
Chloroform	S14-JI03787	NCP	%	117			70-130	Pass	
Chloromethane	S14-JI03787	NCP	%	113			70-130	Pass	
cis-1.2-Dichloroethene	S14-JI03787	NCP	%	116			70-130	Pass	
cis-1.3-Dichloropropene	S14-JI03787	NCP	%	95			70-130	Pass	
Dibromochloromethane	S14-JI03787	NCP	%	112			70-130	Pass	
Dibromomethane	S14-JI03787	NCP	%	98			70-130	Pass	
Dichlorodifluoromethane	S14-JI03787	NCP	%	128			70-130	Pass	
Isopropyl benzene (Cumene)	S14-JI03787	NCP	%	118			70-130	Pass	
Methylene Chloride	S14-JI03787	NCP	%	109			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Styrene	S14-Jl03787	NCP	%	110			70-130	Pass	
Tetrachloroethene	S14-Jl03787	NCP	%	128			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jl03787	NCP	%	119			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jl03787	NCP	%	95			70-130	Pass	
Trichloroethene	S14-Jl03787	NCP	%	127			70-130	Pass	
Trichlorofluoromethane	S14-Jl03787	NCP	%	122			70-130	Pass	
Vinyl chloride	S14-Jl03787	NCP	%	115			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl01495	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl01495	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl01495	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl01495	CP	mg/kg	< 1	< 1	<1	30%	Pass	

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Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl01495	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl01495	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl01495	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl01495	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl01495	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl01495	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jl01500	CP	units	4.4	4.4	<1	30%	Pass	
pH-OX	S14-Jl01500	CP	units	4.1	4.1	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jl01500	CP	mol H+/t	45	45	<1	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jl01500	CP	mol H+/t	70	69	2.0	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jl01500	CP	mol H+/t	25	24	5.0	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jl01500	CP	% pyrite S	0.07	0.07	<1	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jl01500	CP	% pyrite S	0.11	0.11	2.0	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jl01500	CP	% pyrite S	0.04	0.04	5.0	30%	Pass	
Sulfur - KCl Extractable	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jl01500	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
HCl Extractable Sulfur	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acid soluble sulfur	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Net Acid soluble sulfur - acidity units	S14-Jl01500	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Net Acid soluble sulfur - equivalent S% pyrite	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jl01500	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Calcium - Peroxide	S14-Jl01500	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Acid Reacted Calcium	S14-Jl01500	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jl01500	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jl01500	CP	% Mg	0.04	0.04	6.0	30%	Pass	
Magnesium - Peroxide	S14-Jl01500	CP	% Mg	0.04	0.04	9.0	30%	Pass	
Acid Reacted Magnesium	S14-Jl01500	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jl01500	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jl01500	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jl01500	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jl01500	CP	% S	0.07	0.07	<1	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jl01500	CP	mol H+/t	45	45	<1	30%	Pass	
Liming rate - SPOCAS	S14-Jl01500	CP	kg CaCO3/t	3.0	3.0	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl01502	CP	mg/kg	5.1	4.4	16	30%	Pass	
Cadmium	S14-Jl01502	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jl01502	CP	mg/kg	14	13	2.0	30%	Pass	
Copper	S14-Jl01502	CP	mg/kg	5.8	5.1	12	30%	Pass	
Lead	S14-Jl01502	CP	mg/kg	13	11	13	30%	Pass	
Mercury	S14-Jl01502	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl01502	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jl01502	CP	mg/kg	20	18	9.0	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl01504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl01504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl01504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl01504	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl01504	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl01504	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl01504	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl01504	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl01504	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl01504	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl01507	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl01507	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl01507	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl01507	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl01507	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl01507	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl01507	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl01507	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl01507	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl01507	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl01507	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jl01507	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl01507	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jl01507	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl01507	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jl01507	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jl01510	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Ken Henderson
Report:	423678-S
Client Reference:	**BOX HILL 43376**
Received Date:	1 July 2014
Date Reported:	11 July 2014

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, "Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise" therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Site Reference: BOX HILL 43376
Date Sampled: 30 June 2014
Report: 423678-S

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
#13-TP02 (0-0.1)	14-Jl01488	30 June 2014	Approximate Sample Mass: 623g Sample consisted of: Brown fine-grained soil, rocks and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#13-SP-TP03 (0-0.1)	14-Jl01490	30 June 2014	Approximate Sample Mass: 732g Sample consisted of: Brown fine-grained soil and rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#13-SP-TP04 (0-0.1)	14-Jl01493	30 June 2014	Approximate Sample Mass: 633g Sample consisted of: Brown clayey soil & rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#13-TP05 (0-0.1)	14-Jl01496	30 June 2014	Approximate Sample Mass: 637g Sample consisted of: Dark brown fine-grained soil & rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#13-TP06 (0-0.1)	14-Jl01498	30 June 2014	Approximate Sample Mass: 746g Sample consisted of: Brown fine-grained clayey soil and rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#13-TP07 (0-0.1)	14-Jl01501	30 June 2014	Approximate Sample Mass: 627g Sample consisted of: Dark brown coarse-grained soil & rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#12-TP03 (0-0.1)	14-JI01504	30 June 2014	Approximate Sample Mass: 631g Sample consisted of: Brown coarse-grained soil & rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#12-TP05 (0-0.1)	14-JI01507	30 June 2014	Approximate Sample Mass: 829g Sample consisted of: Brown fine-grained soil & rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
QC15	14-JI01509	30 June 2014	Approximate Sample Mass: 455g Sample consisted of: Brown fine-grained soil, rocks and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos – LTM-ASB-8020	Sydney	11 July 2014	Indefinite

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Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters is performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis.
7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).
For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.
Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.
**NOTE: pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per kilogram
µg/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Nephelometric Turbidity Units

TERMS

Dry	Where moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the client's batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed on fireproofing, troweled on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).

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PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios)

QC - ACCEPTANCE CRITERIA

RPD Duplicates:	Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%
Surrogate Recoveries:	Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and its Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time.
7. Analysis will begin as soon as possible after sample receipt.
8. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
9. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS's.
10. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
11. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Sydney
Brisbane

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Offices:
Adelaide
Perth
Darwin
Newcastle

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Organic samples had Teflon liners	N/A
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within Holding Time	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by

Jean Heng	Client Services
Nibha Vaidya	Approved Counter/Identifier
Alex Tam	Approved Counter/Identifier

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report.

- Indicates Not Requested
* Indicates NATA accreditation does not cover the performance of this service
Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **423678-W**
Client Reference BOX HILL 43376
Received Date Jul 01, 2014

Client Sample ID			**RINSATE**	**TRIP SPIKE**	**TRIP BLANK**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-Jl01512**	**S14-Jl01513**	**S14-Jl01514**
Date Sampled			**Jun 30, 2014**	**Jun 30, 2014**	**Jun 30, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	-	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-
BTEX					
Benzene	0.001	mg/L	< 0.001	101%	< 0.001
Toluene	0.001	mg/L	< 0.001	100%	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	97%	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	101%	< 0.002
o-Xylene	0.001	mg/L	< 0.001	101%	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	101%	< 0.003
4-Bromofluorobenzene (surr.)	1	%	78	103	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene N02	0.02	mg/L	< 0.02	-	-
TRH C6-C10	0.02	mg/L	< 0.02	-	-
TRH C6-C10 less BTEX (F1) N04	0.02	mg/L	< 0.02	-	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2) N01	0.05	mg/L	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-
Benzo(b&j)fluoranthene N07	0.001	mg/L	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	RINSATE Water S14-Jl01512 Jun 30, 2014	TRIP SPIKE Water S14-Jl01513 Jun 30, 2014	TRIP BLANK Water S14-Jl01514 Jun 30, 2014
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.001	mg/L	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	-	-
Total PAH	0.001	mg/L	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	129	-	-
p-Terphenyl-d14 (surr.)	1	%	124	-	-
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	< 0.001	-	-
4.4'-DDD	0.0001	mg/L	< 0.0001	-	-
4.4'-DDE	0.0001	mg/L	< 0.0001	-	-
4.4'-DDT	0.0001	mg/L	< 0.0001	-	-
a-BHC	0.0001	mg/L	< 0.0001	-	-
Aldrin	0.0001	mg/L	< 0.0001	-	-
b-BHC	0.0001	mg/L	< 0.0001	-	-
d-BHC	0.0001	mg/L	< 0.0001	-	-
Dieldrin	0.0001	mg/L	< 0.0001	-	-
Endosulfan I	0.0001	mg/L	< 0.0001	-	-
Endosulfan II	0.0001	mg/L	< 0.0001	-	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	-	-
Endrin	0.0001	mg/L	< 0.0001	-	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	-	-
Endrin ketone	0.0001	mg/L	< 0.0001	-	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	-	-
Heptachlor	0.0001	mg/L	< 0.0001	-	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	-	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	-	-
Methoxychlor	0.0001	mg/L	< 0.0001	-	-
Toxaphene	0.01	mg/L	< 0.01	-	-
Dibutylchlorendate (surr.)	1	%	70	-	-
Tetrachloro-m-xylene (surr.)	1	%	100	-	-
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	< 0.005	-	-
Aroclor-1232	0.005	mg/L	< 0.005	-	-
Aroclor-1242	0.005	mg/L	< 0.005	-	-
Aroclor-1248	0.005	mg/L	< 0.005	-	-
Aroclor-1254	0.005	mg/L	< 0.005	-	-
Aroclor-1260	0.005	mg/L	< 0.005	-	-
Total PCB	0.005	mg/L	< 0.005	-	-
Dibutylchlorendate (surr.)	1	%	70	-	-
Heavy Metals					
Arsenic	0.005	mg/L	< 0.005	-	-
Cadmium	0.0005	mg/L	< 0.0005	-	-
Chromium	0.005	mg/L	< 0.005	-	-
Copper	0.005	mg/L	< 0.005	-	-
Lead	0.005	mg/L	< 0.005	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-
Nickel	0.005	mg/L	< 0.005	-	-
Zinc	0.005	mg/L	< 0.005	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 02, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 02, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 02, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 02, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 02, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 02, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 02, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 1, 2014 12:15 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423678	**Due:**	Jul 8, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
#13-TP01 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01485		X					X	X					
#13-TP01 (0.5-0.6)	Jun 30, 2014		Soil	S14-Jl01486		X		X		X							
QC14	Jun 30, 2014		Soil	S14-Jl01487		X								X	X		
#13-TP02 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01488		X	X							X	X		
#13-TP02 (0.5-0.6)	Jun 30, 2014		Soil	S14-Jl01489					X								
#13-SP-TP03 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01490		X	X							X			

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
#13-SP-TP03 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01491		X									X		
#13-SP-TP03 (0.8-0.9)	Jun 30, 2014		Soil	S14-Jl01492					X								
#13-SP-TP04 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01493		X	X							X	X		
#13-SP-TP04 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01494					X								
#13-SED01	Jun 30, 2014		Soil	S14-Jl01495		X								X	X		
#13-TP05 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01496		X	X							X	X		
#13-TP05 (0.7-0.8)	Jun 30, 2014		Soil	S14-Jl01497					X								

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Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
#13-TP06 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01498		X	X							X			
#13-TP06 (0.9-1.0)	Jun 30, 2014		Soil	S14-Jl01499		X									X		
#13-TP06 (1.9-2.0)	Jun 30, 2014		Soil	S14-Jl01500	X												X
#13-TP07 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01501		X	X							X	X		
#12-G-TP01 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01502		X					X	X					
#12-G-TP01 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01503					X								
#12-TP03 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01504		X	X							X	X		

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Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
#12-TP03 (0.4-0.5)	Jun 30, 2014		Soil	S14-Jl01505					X								
#12-SED02	Jun 30, 2014		Soil	S14-Jl01506					X								
#12-TP05 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01507		X	X							X	X		
#12-TP05 (0.3-0.4)	Jun 30, 2014		Soil	S14-Jl01508		X		X		X							
QC15	Jun 30, 2014		Soil	S14-Jl01509		X	X							X	X		
#11-S-TP01 (0-0.1)	Jun 30, 2014		Soil	S14-Jl01510		X								X	X	X	
#11-S-TP01 (0.3-0.4)	Jun 30, 2014		Soil	S14-Jl01511					X								
RINSATE	Jun 30, 2014		Water	S14-Jl01512										X	X		

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Eurofins | mgt Client Manager: Jean Heng

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271								X									
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X												X
External Laboratory																	
TRIP SPIKE	Jun 30, 2014		Water	S14-Jl01513									X				
TRIP BLANK	Jun 30, 2014		Water	S14-Jl01514									X				

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	84			70-130	Pass	
TRH C10-C14	%	84			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	106			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	102			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total	%	101			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	84			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
TRH >C10-C16	%	97			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	106			70-130	Pass	
Benz(a)anthracene	%	105			70-130	Pass	
Benzo(a)pyrene	%	96			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene			%	87			70-130	Pass	
Benzo(g.h.i)perylene			%	82			70-130	Pass	
Benzo(k)fluoranthene			%	99			70-130	Pass	
Chrysene			%	95			70-130	Pass	
Dibenz(a.h)anthracene			%	75			70-130	Pass	
Fluoranthene			%	108			70-130	Pass	
Fluorene			%	102			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	77			70-130	Pass	
Naphthalene			%	115			70-130	Pass	
Phenanthrene			%	104			70-130	Pass	
Pyrene			%	108			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	106			70-130	Pass	
4.4'-DDD			%	113			70-130	Pass	
4.4'-DDE			%	118			70-130	Pass	
4.4'-DDT			%	105			70-130	Pass	
a-BHC			%	108			70-130	Pass	
Aldrin			%	108			70-130	Pass	
b-BHC			%	100			70-130	Pass	
d-BHC			%	108			70-130	Pass	
Dieldrin			%	110			70-130	Pass	
Endosulfan I			%	110			70-130	Pass	
Endosulfan II			%	110			70-130	Pass	
Endosulfan sulphate			%	118			70-130	Pass	
Endrin			%	108			70-130	Pass	
Endrin aldehyde			%	105			70-130	Pass	
Endrin ketone			%	118			70-130	Pass	
g-BHC (Lindane)			%	105			70-130	Pass	
Heptachlor			%	108			70-130	Pass	
Heptachlor epoxide			%	108			70-130	Pass	
Methoxychlor			%	110			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	106			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	91			70-130	Pass	
Cadmium			%	85			70-130	Pass	
Chromium			%	94			70-130	Pass	
Copper			%	107			70-130	Pass	
Lead			%	106			70-130	Pass	
Mercury			%	101			70-130	Pass	
Nickel			%	105			70-130	Pass	
Zinc			%	97			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl01906	NCP	%	99			70-130	Pass	
TRH C10-C14	S14-Jl01906	NCP	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl01906	NCP	%	107			70-130	Pass	
Toluene	S14-Jl01906	NCP	%	104			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S14-JI01906	NCP	%	102			70-130	Pass	
m&p-Xylenes	S14-JI01906	NCP	%	107			70-130	Pass	
o-Xylene	S14-JI01906	NCP	%	105			70-130	Pass	
Xylenes - Total	S14-JI01906	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-JI01906	NCP	%	91			70-130	Pass	
TRH C6-C10	S14-JI01906	NCP	%	91			70-130	Pass	
TRH >C10-C16	S14-JI01906	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-JI01905	NCP	%	101			70-130	Pass	
Acenaphthylene	S14-JI01905	NCP	%	106			70-130	Pass	
Anthracene	S14-JI01905	NCP	%	95			70-130	Pass	
Benz(a)anthracene	S14-JI01905	NCP	%	89			70-130	Pass	
Benzo(a)pyrene	S14-JI01905	NCP	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	S14-JI01905	NCP	%	86			70-130	Pass	
Benzo(g.h.i)perylene	S14-JI01905	NCP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S14-JI01905	NCP	%	97			70-130	Pass	
Chrysene	S14-JI01905	NCP	%	95			70-130	Pass	
Dibenz(a.h)anthracene	S14-JI01905	NCP	%	84			70-130	Pass	
Fluoranthene	S14-JI01905	NCP	%	98			70-130	Pass	
Fluorene	S14-JI01905	NCP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-JI01905	NCP	%	87			70-130	Pass	
Naphthalene	S14-JI01905	NCP	%	111			70-130	Pass	
Phenanthrene	S14-JI01905	NCP	%	93			70-130	Pass	
Pyrene	S14-JI01905	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-JI00655	NCP	%	103			70-130	Pass	
Cadmium	S14-JI00655	NCP	%	97			70-130	Pass	
Chromium	S14-JI00655	NCP	%	101			70-130	Pass	
Copper	S14-JI00655	NCP	%	107			70-130	Pass	
Lead	S14-JI00655	NCP	%	110			70-130	Pass	
Mercury	S14-JI00655	NCP	%	101			70-130	Pass	
Nickel	S14-JI00655	NCP	%	110			70-130	Pass	
Zinc	S14-JI00655	NCP	%	89			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-JI01905	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-JI01904	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-JI01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-JI01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-JI01905	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-JI01905	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-JI01905	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-JI01905	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-JI01905	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-JI01905	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl01905	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jl01905	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl01905	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jl01904	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jl01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jl01904	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl00619	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jl00619	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl00619	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jl00619	NCP	mg/L	0.089	0.091	3.0	30%	Pass	
Lead	S14-Jl00619	NCP	mg/L	0.016	0.016	<1	30%	Pass	
Mercury	S14-Jl00619	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl00619	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jl00619	NCP	mg/L	0.17	0.18	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	02229-02230
Turn around time:	5 Day
Date/Time received:	Jul 1, 2014 12:15 PM
Eurofins | mgt reference:	**423678**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 14 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Organic samples had Teflon liners.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

CEC conducted at Eurofins | mgt Melbourne | SPOCAS conducted at Eurofins | mgt Brisbane | 312-SED01 labelled as #12-SED02 as per COC

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

Eurofins | mgt Sample Receipt

02229

CHAIN OF CUSTODY

JBS&G

#423678

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	asbestos	CEC	pH	SPOCAS	metals	OCPs	NOTES:
#13-TP01 (0-0.1)	Soil	30/6/14		B+J								X	X	B7 = TRH, BTEX, PAHs, 8 metals
#13-TP01 (0.5-0.6)	↓	↓		"					X	X				
QC14				Jar		X	X	~~X~~						
#13-TP02 (0-0.1)				B+J		X	X	X						B13 = OCP, PCBs
#13-TP02 (0.5-0.6)				↓										
#13-SP-TP03 (0-0.1)							X	X						Asbestos
#13-SP-TP03 (0.4-0.5)						X								= NEPC 2013
#13-SP-TP03 (0.8-0.9)														
#13-TP04 (0-0.1)						X	X	X						
#13-TP04 (0.4-0.5)														
#13-~~TP~~ SED01						X	X				X			
#13-TP05 (0-0.1)						X	X	X						
#13-TP05 (0.7-0.8)														
#13-TP06 (0-0.1)							X	X						
#13-TP06 (0.9-1.0)						X								
#13-TP06 (1.9-2.0)														
#13-TP07 (0-0.1)				↓		X	X	X						
#12-G-TP01 (0-0.1)				Jar								X	X	
#12-G-TP01 (0.4-0.5)	↓	↓		Jar										

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Creese DATE: 30/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 1/7/14 12:15pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP ....14 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02230

JBS&G

CHAIN OF CUSTODY

#423678

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@JBSG.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreece@JBSG.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	CEC	pH	SPOCAS	BTEX	VOCs	NOTES:
#12-TP03 (0-0.1)	Soil					X	X	X						
#12-TP03 (0.4-0.5)														
#12-SED01											X			
#12-TP05 (0-0.1)						X	X	X						
#12-TP05 (0.3-0.4)									X	X				
QC15						X	X	X						
#11-5-TP01 (0-0.1)						X	X						X	
#11-5-TP01 (0.3-0.4)														
Rinsate						X	X							
Trip spike												X		
Trip blank												X		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: TCreece DATE: 30/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 1/7/14 12:15pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP ..14 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **423743-S**
Client Reference BOX HILL 43376
Received Date Jul 01, 2014

Client Sample ID			**11-TP02 0-0.1**	**11-TP06 0-0.1**	**11-TP06 0.8-0.9**	**SED01**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI02419**	**S14-JI02421**	**S14-JI02422**	**S14-JI02424**
Date Sampled			**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	66	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	66	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89	-	90	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	11-TP02 0-0.1 Soil S14-Jl02419 Jul 01, 2014	11-TP06 0-0.1 Soil S14-Jl02421 Jul 01, 2014	11-TP06 0.8-0.9 Soil S14-Jl02422 Jul 01, 2014	SED01 Soil S14-Jl02424 Jul 01, 2014
Volatile Organics						
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	89	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	11-TP02 0-0.1 Soil S14-Jl02419 Jul 01, 2014	11-TP06 0-0.1 Soil S14-Jl02421 Jul 01, 2014	11-TP06 0.8-0.9 Soil S14-Jl02422 Jul 01, 2014	SED01 Soil S14-Jl02424 Jul 01, 2014
Polycyclic Aromatic Hydrocarbons						
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	107	-	98	93
p-Terphenyl-d14 (surr.)	1	%	112	-	104	99
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	91	79	-	117
Tetrachloro-m-xylene (surr.)	1	%	109	102	-	108
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	91	79	-	117
% Moisture	0.1	%	24	10	15	24
Asbestos - WA guidelines	0.001	% w/w	-	see attached	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	11-TP02 0-0.1 Soil S14-Jl02419 Jul 01, 2014	11-TP06 0-0.1 Soil S14-Jl02421 Jul 01, 2014	11-TP06 0.8-0.9 Soil S14-Jl02422 Jul 01, 2014	SED01 Soil S14-Jl02424 Jul 01, 2014
Heavy Metals						
Arsenic	2	mg/kg	7.8	-	5.2	3.6
Cadmium	0.4	mg/kg	1.5	-	< 0.4	< 0.4
Chromium	5	mg/kg	19	-	5.4	7.4
Copper	5	mg/kg	32	-	14	11
Lead	5	mg/kg	54	-	11	15
Mercury	0.05	mg/kg	0.09	-	0.07	< 0.05
Nickel	5	mg/kg	10	-	< 5	< 5
Zinc	5	mg/kg	2800	-	21	10
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	5.0
pH-OX	0.1	units	-	-	-	4.2
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	15
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	45
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	30
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.02
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.07
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.05
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	n/a
Calcium - KCl Extractable	0.02	% Ca	-	-	-	0.04
Calcium - Peroxide	0.02	% Ca	-	-	-	0.03
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	0.10
Magnesium - Peroxide	0.02	% Mg	-	-	-	0.09
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	0.02
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	15
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	1.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

Client Sample ID			QC16	11-TP07 0-0.1	11-TP07 0.3-0.4	11-G-TP08 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02425	S14-Jl02426	S14-Jl02427	S14-Jl02428
Date Sampled			Jul 01, 2014	Jul 01, 2014	Jul 01, 2014	Jul 01, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	93	93	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	-
2-Fluorobiphenyl (surr.)	1	%	95	91	-	-
p-Terphenyl-d14 (surr.)	1	%	102	98	-	-

Client Sample ID			QC16	11-TP07 0-0.1	11-TP07 0.3-0.4	11-G-TP08 0-0.1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02425**	**S14-Jl02426**	**S14-Jl02427**	**S14-Jl02428**
Date Sampled			**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	111	125	-	127
Tetrachloro-m-xylene (surr.)	1	%	98	111	-	115
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	111	125	-	-
pH (1:5 Aqueous extract)	0.1	units	-	-	5.4	-
% Moisture	0.1	%	9.6	15	13	16
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	-
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	-	5.7	-
Heavy Metals						
Arsenic	2	mg/kg	6.1	11	-	8.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	12	19	-	22
Copper	5	mg/kg	40	26	-	15
Lead	5	mg/kg	18	24	-	32
Mercury	0.05	mg/kg	0.07	0.05	-	0.05
Nickel	5	mg/kg	59	12	-	12
Zinc	5	mg/kg	180	54	-	43

Client Sample ID			11-G-TP09 0-0.1	15-TP01 0-0.1	15-TP02 0-0.1	15-TP02 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI02429**	**S14-JI02431**	**S14-JI02432**	**S14-JI02433**
Date Sampled			**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	89	92	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	125	98	-
p-Terphenyl-d14 (surr.)	1	%	-	133	111	-

Client Sample ID			11-G-TP09 0-0.1	15-TP01 0-0.1	15-TP02 0-0.1	15-TP02 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02429**	**S14-Jl02431**	**S14-Jl02432**	**S14-Jl02433**
Date Sampled			**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	130	126	120	-
Tetrachloro-m-xylene (surr.)	1	%	115	107	111	-
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	-	-
2.4-DB	0.5	mg/kg	< 0.5	-	-	-
2.4.5-T	0.5	mg/kg	< 0.5	-	-	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (Ioxynil)	0.5	mg/kg	< 0.5	-	-	-
Dicamba	0.5	mg/kg	< 0.5	-	-	-
Dichlorprop	0.5	mg/kg	< 0.5	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	-
Dinoseb	0.5	mg/kg	< 0.5	-	-	-
MCPA	0.5	mg/kg	< 0.5	-	-	-
MCPB	0.5	mg/kg	< 0.5	-	-	-
Mecoprop	0.5	mg/kg	< 0.5	-	-	-
Warfarin (surr.)	1	%	68	-	-	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	126	120	-
% Moisture	0.1	%	22	10	20	29
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	-

Client Sample ID			11-G-TP09 0-0.1	15-TP01 0-0.1	15-TP02 0-0.1	15-TP02 0.2-0.3
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02429**	**S14-Jl02431**	**S14-Jl02432**	**S14-Jl02433**
Date Sampled			**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	5.5	7.7	14	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	16	16	18	-
Copper	5	mg/kg	8.0	< 5	15	-
Lead	5	mg/kg	17	11	16	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Nickel	5	mg/kg	< 5	< 5	6.5	-
Zinc	5	mg/kg	27	8.6	38	-
SPOCAS Suite						
pH-KCL	0.1	units	-	-	-	5.3
pH-OX	0.1	units	-	-	-	3.2
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	-	-	11
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	-	-	110
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	-	-	100
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.02
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.18
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	-	-	0.16
Sulfur - KCl Extractable	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide	0.02	% S	-	-	-	< 0.02
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	-	-	< 0.02
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur	0.02	% S	-	-	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	-	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	-	-	n/a
Calcium - KCl Extractable	0.02	% Ca	-	-	-	0.05
Calcium - Peroxide	0.02	% Ca	-	-	-	0.05
Acid Reacted Calcium	0.02	% Ca	-	-	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	-	-	0.03
Magnesium - Peroxide	0.02	% Mg	-	-	-	0.03
Acid Reacted Magnesium	0.02	% Mg	-	-	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	-	-	< 10
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	-	-	< 0.02
Acid Neutralising Capacity	0.02	%CaCO3	-	-	-	n/a
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	-	-	n/a
ANC Fineness Factor			-	-	-	1.5
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	-	-	0.02
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	-	-	11
Liming rate - SPOCAS	1	kg CaCO3/t	-	-	-	1.0
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	n/a
>2mm Fraction	0.005		-	-	-	n/a
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

eurofins | mgt

Client Sample ID			15-TP03 0.1-0.2	15-TP04 0-0.1	15-SS01	8-SP-TP01 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI02434	S14-JI02435	S14-JI02436	S14-JI02437
Date Sampled			Jul 01, 2014	Jul 01, 2014	Jul 01, 2014	Jul 01, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	95	-	-	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	118	-	-	100
p-Terphenyl-d14 (surr.)	1	%	115	-	-	123

Client Sample ID			15-TP03 0.1-0.2	15-TP04 0-0.1	15-SS01	8-SP-TP01 0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02434	S14-Jl02435	S14-Jl02436	S14-Jl02437
Date Sampled			Jul 01, 2014	Jul 01, 2014	Jul 01, 2014	Jul 01, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	112	112	-	129
Tetrachloro-m-xylene (surr.)	1	%	96	99	-	117
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	112	-	-	129
% Moisture	0.1	%	6.8	8.9	-	18
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	7.9	15	-	7.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	10	20	-	21
Copper	5	mg/kg	6.7	7.6	-	25
Lead	5	mg/kg	14	20	-	32
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	0.06
Nickel	5	mg/kg	< 5	5.1	-	16
Zinc	5	mg/kg	21	27	-	53

Client Sample ID			8-TP03 0-0.1	8-TP04 0-0.1
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02438	S14-Jl02440
Date Sampled			Jul 01, 2014	Jul 01, 2014
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	-
TRH C10-C14	20	mg/kg	< 20	-
TRH C15-C28	50	mg/kg	< 50	-
TRH C29-C36	50	mg/kg	73	-
TRH C10-36 (Total)	50	mg/kg	73	-
BTEX				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	90	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-
TRH >C10-C16	50	mg/kg	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.5	mg/kg	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-
2-Fluorobiphenyl (surr.)	1	%	106	-
p-Terphenyl-d14 (surr.)	1	%	119	-
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	8-TP03 0-0.1 Soil S14-Jl02438 Jul 01, 2014	8-TP04 0-0.1 Soil S14-Jl02440 Jul 01, 2014
Organochlorine Pesticides				
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1
Dibutylchlorendate (surr.)	1	%	116	112
Tetrachloro-m-xylene (surr.)	1	%	95	94
Polychlorinated Biphenyls (PCB)				
Aroclor-1016	0.5	mg/kg	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	-
Dibutylchlorendate (surr.)	1	%	116	-
% Moisture	0.1	%	8.2	4.4
Asbestos - WA guidelines	0.001	% w/w	see attached	-
Heavy Metals				
Arsenic	2	mg/kg	10	6.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	26	19
Copper	5	mg/kg	24	32
Lead	5	mg/kg	34	22
Mercury	0.05	mg/kg	< 0.05	< 0.05
Nickel	5	mg/kg	18	11
Zinc	5	mg/kg	85	44

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 08, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 08, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 08, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 08, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 08, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jul 08, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jul 04, 2014	14 Day
- Method: MGT 530			
pH (1:5 Aqueous extract)	Sydney	Jul 08, 2014	7 Day
- Method: E018.2 pH			
% Moisture	Sydney	Jul 08, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos - WA guidelines	Sydney	Jul 02, 2014	0 Day
Ion Exchange Properties	Melbourne	Jul 04, 2014	
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 08, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 08, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jul 09, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jul 09, 2014	0 Day

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 1, 2014 3:50 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423743	**Due:**	Jul 8, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**														
11-TP02 0-0.1	Jul 01, 2014		Soil	S14-Jl02419		X									X	X	X	
11-TP02 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02420					X									
11-TP06 0-0.1	Jul 01, 2014		Soil	S14-Jl02421		X	X								X			
11-TP06 0.8-0.9	Jul 01, 2014		Soil	S14-Jl02422		X										X		
11-TP06 2.0-2.1	Jul 01, 2014		Soil	S14-Jl02423					X									
SED01	Jul 01, 2014		Soil	S14-Jl02424		X									X	X		X
QC16	Jul 01, 2014		Soil	S14-Jl02425		X	X								X	X		
11-TP07 0-0.1	Jul 01, 2014		Soil	S14-Jl02426		X	X								X	X		

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
11-TP07 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02427		X		X		X								
11-G-TP08 0-0.1	Jul 01, 2014		Soil	S14-Jl02428		X					X		X					
11-G-TP09 0-0.1	Jul 01, 2014		Soil	S14-Jl02429		X					X	X	X					
11-G-TP09 0.4-0.5	Jul 01, 2014		Soil	S14-Jl02430					X									
15-TP01 0-0.1	Jul 01, 2014		Soil	S14-Jl02431		X	X								X	X		
15-TP02 0-0.1	Jul 01, 2014		Soil	S14-Jl02432		X	X								X	X		
15-TP02 0.2-0.3	Jul 01, 2014		Soil	S14-Jl02433	X													X
15-TP03 0.1-	Jul 01, 2014		Soil	S14-Jl02434		X	X								X	X		

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
0.2																		
15-TP04 0-0.1	Jul 01, 2014		Soil	S14-Jl02435		X					X		X					
15-SS01	Jul 01, 2014		Soil	S14-Jl02436			X											
8-SP-TP01 0-0.1	Jul 01, 2014		Soil	S14-Jl02437		X	X								X	X		
8-TP03 0-0.1	Jul 01, 2014		Soil	S14-Jl02438		X	X								X	X		
8-TP03 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02439					X									
8-TP04 0-0.1	Jul 01, 2014		Soil	S14-Jl02440		X					X		X					
8-TP04 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02441					X									
TRIP SPIKE	Jul 01, 2014		Water	S14-Jl02442										X				
TRIP BLANK	Jul 01, 2014		Water	S14-Jl02443										X				
RINSATE	Jul 01, 2014		Water	S14-Jl02444											X	X		

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
11-SP-TP04 0.2-0.3	Jul 01, 2014		Soil	S14-Jl02498					X									

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C10-36 (Total)	mg/kg	< 0			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	mg/kg	-0.01403			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0			0.5	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	128			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	109			70-130	Pass	
Toluene	%	99			70-130	Pass	
Ethylbenzene	%	96			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	%	103			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes - Total	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	111			70-130	Pass	
TRH C6-C10	%	125			70-130	Pass	
TRH >C10-C16	%	88			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	112			75-125	Pass	
1.1-Dichloroethene	%	120			70-130	Pass	
1.1.1-Trichloroethane	%	112			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	104			70-130	Pass	
1.1.2-Trichloroethane	%	108			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	101			70-130	Pass	
1.2-Dibromoethane	%	108			70-130	Pass	
1.2-Dichlorobenzene	%	118			70-130	Pass	
1.2-Dichloroethane	%	117			70-130	Pass	
1.2-Dichloropropane	%	112			70-130	Pass	
1.2.3-Trichloropropane	%	110			70-130	Pass	
1.2.4-Trimethylbenzene	%	124			70-130	Pass	
1.3-Dichlorobenzene	%	120			70-130	Pass	
1.3-Dichloropropane	%	106			70-130	Pass	
1.3.5-Trimethylbenzene	%	126			70-130	Pass	
1.4-Dichlorobenzene	%	119			70-130	Pass	
2-Butanone (MEK)	%	108			70-130	Pass	
4-Chlorotoluene	%	122			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	102			70-130	Pass	
Benzene	%	118			70-130	Pass	
Bromobenzene	%	117			70-130	Pass	
Bromochloromethane	%	107			70-130	Pass	
Bromodichloromethane	%	109			70-130	Pass	
Bromoform	%	97			70-130	Pass	
Bromomethane	%	116			70-130	Pass	
Carbon disulfide	%	117			70-130	Pass	
Carbon Tetrachloride	%	119			70-130	Pass	
Chlorobenzene	%	110			70-130	Pass	
Chloroethane	%	118			70-130	Pass	
Chloroform	%	112			70-130	Pass	
Chloromethane	%	112			70-130	Pass	
cis-1.2-Dichloroethene	%	111			70-130	Pass	
cis-1.3-Dichloropropene	%	100			70-130	Pass	
Dibromochloromethane	%	105			70-130	Pass	
Dibromomethane	%	103			70-130	Pass	
Dichlorodifluoromethane	%	128			70-130	Pass	
Ethylbenzene	%	113			70-130	Pass	
Isopropyl benzene (Cumene)	%	116			70-130	Pass	
m&p-Xylenes	%	114			70-130	Pass	
Methylene Chloride	%	106			70-130	Pass	
o-Xylene	%	112			70-130	Pass	
Styrene	%	107			70-130	Pass	
Tetrachloroethene	%	124			70-130	Pass	
Toluene	%	120			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
trans-1.2-Dichloroethene	%	113			70-130	Pass	
trans-1.3-Dichloropropene	%	99			70-130	Pass	
Trichloroethene	%	122			70-130	Pass	
Trichlorofluoromethane	%	122			70-130	Pass	
Vinyl chloride	%	119			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	89			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	89			70-130	Pass	
Benz(a)anthracene	%	88			70-130	Pass	
Benzo(a)pyrene	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	%	95			70-130	Pass	
Benzo(g.h.i)perylene	%	79			70-130	Pass	
Benzo(k)fluoranthene	%	80			70-130	Pass	
Chrysene	%	98			70-130	Pass	
Dibenz(a.h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	88			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	88			70-130	Pass	
Phenanthrene	%	81			70-130	Pass	
Pyrene	%	88			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	93			70-130	Pass	
4.4'-DDD	%	86			70-130	Pass	
4.4'-DDE	%	77			70-130	Pass	
4.4'-DDT	%	82			70-130	Pass	
a-BHC	%	92			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-BHC	%	93			70-130	Pass	
d-BHC	%	84			70-130	Pass	
Dieldrin	%	94			70-130	Pass	
Endosulfan I	%	92			70-130	Pass	
Endosulfan II	%	96			70-130	Pass	
Endosulfan sulphate	%	87			70-130	Pass	
Endrin	%	95			70-130	Pass	
Endrin aldehyde	%	80			70-130	Pass	
Endrin ketone	%	82			70-130	Pass	
g-BHC (Lindane)	%	79			70-130	Pass	
Heptachlor	%	96			70-130	Pass	
Heptachlor epoxide	%	94			70-130	Pass	
Hexachlorobenzene	%	80			70-130	Pass	
Methoxychlor	%	84			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	94			70-130	Pass	
2.4-DB	%	90			70-130	Pass	
2.4.5-T	%	95			70-130	Pass	
2.4.5-TP	%	101			70-130	Pass	
Actril (Ioxynil)	%	97			70-130	Pass	
Dicamba	%	103			70-130	Pass	
Dichlorprop	%	95			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dinitro-o-cresol			%	88			70-130	Pass	
Dinoseb			%	95			70-130	Pass	
MCPA			%	105			70-130	Pass	
MCPB			%	89			70-130	Pass	
Mecoprop			%	102			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	86			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	91			70-130	Pass	
Cadmium			%	88			70-130	Pass	
Chromium			%	86			70-130	Pass	
Copper			%	87			70-130	Pass	
Lead			%	88			70-130	Pass	
Mercury			%	84			70-130	Pass	
Nickel			%	90			70-130	Pass	
Zinc			%	89			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jl03787	NCP	%	112			75-125	Pass	
1.1-Dichloroethene	S14-Jl03787	NCP	%	129			70-130	Pass	
1.1.1-Trichloroethane	S14-Jl03787	NCP	%	114			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl03787	NCP	%	107			70-130	Pass	
1.1.2-Trichloroethane	S14-Jl03787	NCP	%	119			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl03787	NCP	%	113			70-130	Pass	
1.2-Dibromoethane	S14-Jl03787	NCP	%	127			70-130	Pass	
1.2-Dichlorobenzene	S14-Jl03787	NCP	%	119			70-130	Pass	
1.2-Dichloroethane	S14-Jl03787	NCP	%	125			70-130	Pass	
1.2-Dichloropropane	S14-Jl03787	NCP	%	120			70-130	Pass	
1.2.3-Trichloropropane	S14-Jl03787	NCP	%	121			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jl03787	NCP	%	121			70-130	Pass	
1.3-Dichlorobenzene	S14-Jl03787	NCP	%	120			70-130	Pass	
1.3-Dichloropropane	S14-Jl03787	NCP	%	116			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jl03787	NCP	%	123			70-130	Pass	
1.4-Dichlorobenzene	S14-Jl03787	NCP	%	120			70-130	Pass	
2-Butanone (MEK)	S14-Jl03787	NCP	%	124			70-130	Pass	
4-Chlorotoluene	S14-Jl03787	NCP	%	121			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl03787	NCP	%	115			70-130	Pass	
Bromobenzene	S14-Jl03787	NCP	%	119			70-130	Pass	
Bromochloromethane	S14-Jl03787	NCP	%	119			70-130	Pass	
Bromodichloromethane	S14-Jl03787	NCP	%	119			70-130	Pass	
Bromoform	S14-Jl03787	NCP	%	102			70-130	Pass	
Bromomethane	S14-Jl03787	NCP	%	123			70-130	Pass	
Carbon disulfide	S14-Jl03787	NCP	%	119			70-130	Pass	
Carbon Tetrachloride	S14-Jl03787	NCP	%	119			70-130	Pass	
Chlorobenzene	S14-Jl03787	NCP	%	113			70-130	Pass	
Chloroethane	S14-Jl03787	NCP	%	127			70-130	Pass	
Chloroform	S14-Jl03787	NCP	%	117			70-130	Pass	
Chloromethane	S14-Jl03787	NCP	%	113			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jl03787	NCP	%	116			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jl03787	NCP	%	95			70-130	Pass	
Dibromochloromethane	S14-Jl03787	NCP	%	112			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibromomethane	S14-Jl03787	NCP	%	98			70-130	Pass	
Dichlorodifluoromethane	S14-Jl03787	NCP	%	128			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jl03787	NCP	%	118			70-130	Pass	
Methylene Chloride	S14-Jl03787	NCP	%	109			70-130	Pass	
Styrene	S14-Jl03787	NCP	%	110			70-130	Pass	
Tetrachloroethene	S14-Jl03787	NCP	%	128			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jl03787	NCP	%	119			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jl03787	NCP	%	95			70-130	Pass	
Trichloroethene	S14-Jl03787	NCP	%	127			70-130	Pass	
Trichlorofluoromethane	S14-Jl03787	NCP	%	122			70-130	Pass	
Vinyl chloride	S14-Jl03787	NCP	%	115			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jl02421	CP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl02422	CP	%	109			70-130	Pass	
TRH C10-C14	S14-Jl02422	CP	%	75			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl02422	CP	%	102			70-130	Pass	
Toluene	S14-Jl02422	CP	%	94			70-130	Pass	
Ethylbenzene	S14-Jl02422	CP	%	89			70-130	Pass	
m&p-Xylenes	S14-Jl02422	CP	%	95			70-130	Pass	
o-Xylene	S14-Jl02422	CP	%	94			70-130	Pass	
Xylenes - Total	S14-Jl02422	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl02422	CP	%	126			70-130	Pass	
TRH C6-C10	S14-Jl02422	CP	%	101			70-130	Pass	
TRH >C10-C16	S14-Jl02422	CP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl02422	CP	%	95			70-130	Pass	
Acenaphthylene	S14-Jl02422	CP	%	92			70-130	Pass	
Anthracene	S14-Jl02422	CP	%	93			70-130	Pass	
Benz(a)anthracene	S14-Jl02422	CP	%	96			70-130	Pass	
Benzo(a)pyrene	S14-Jl02422	CP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jl02422	CP	%	116			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jl02422	CP	%	85			70-130	Pass	
Benzo(k)fluoranthene	S14-Jl02422	CP	%	86			70-130	Pass	
Chrysene	S14-Jl02422	CP	%	103			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jl02422	CP	%	87			70-130	Pass	
Fluoranthene	S14-Jl02422	CP	%	94			70-130	Pass	
Fluorene	S14-Jl02422	CP	%	94			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl02422	CP	%	87			70-130	Pass	
Naphthalene	S14-Jl02422	CP	%	92			70-130	Pass	
Phenanthrene	S14-Jl02422	CP	%	86			70-130	Pass	
Pyrene	S14-Jl02422	CP	%	95			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jl02424	CP	%	113			70-130	Pass	
4.4'-DDD	S14-Jl02424	CP	%	130			70-130	Pass	
4.4'-DDE	S14-Jl02424	CP	%	126			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDT	S14-Jl02424	CP	%	105			70-130	Pass	
a-BHC	S14-Jl02424	CP	%	111			70-130	Pass	
Aldrin	S14-Jl02424	CP	%	111			70-130	Pass	
b-BHC	S14-Jl02424	CP	%	102			70-130	Pass	
d-BHC	S14-Jl02424	CP	%	110			70-130	Pass	
Dieldrin	S14-Jl02424	CP	%	123			70-130	Pass	
Endosulfan I	S14-Jl02424	CP	%	111			70-130	Pass	
Endosulfan II	S14-Jl02424	CP	%	121			70-130	Pass	
Endosulfan sulphate	S14-Jl02424	CP	%	125			70-130	Pass	
Endrin	S14-Jl02424	CP	%	127			70-130	Pass	
Endrin aldehyde	S14-Jl02424	CP	%	99			70-130	Pass	
Endrin ketone	S14-Jl02424	CP	%	128			70-130	Pass	
g-BHC (Lindane)	S14-Jl02424	CP	%	109			70-130	Pass	
Heptachlor	S14-Jl02424	CP	%	110			70-130	Pass	
Heptachlor epoxide	S14-Jl02424	CP	%	113			70-130	Pass	
Hexachlorobenzene	S14-Jl02424	CP	%	109			70-130	Pass	
Methoxychlor	S14-Jl02424	CP	%	107			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M14-Jl03537	NCP	%	86			70-130	Pass	
Actril (loxynil)	M14-Jl03537	NCP	%	87			70-130	Pass	
Dichlorprop	M14-Jl03537	NCP	%	92			70-130	Pass	
MCPA	M14-Jl03537	NCP	%	97			70-130	Pass	
MCPB	M14-Jl03537	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl02434	CP	%	93			70-130	Pass	
Cadmium	S14-Jl02434	CP	%	92			70-130	Pass	
Chromium	S14-Jl02434	CP	%	90			70-130	Pass	
Copper	S14-Jl02434	CP	%	92			70-130	Pass	
Lead	S14-Jl02434	CP	%	92			70-130	Pass	
Mercury	S14-Jl02434	CP	%	89			70-130	Pass	
Nickel	S14-Jl02434	CP	%	92			70-130	Pass	
Zinc	S14-Jl02434	CP	%	92			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl02419	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl02419	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl02419	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl02419	CP	mg/kg	66	61	8.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl02419	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl02419	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl02419	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl02419	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl02419	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl02419	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jl02419	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl02419	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jl02419	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl02419	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jl02419	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jn25658	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl02419	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl02419	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl02419	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl02419	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl02419	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jl02424	CP	units	5.0	5.0	1.0	30%	Pass	
pH-OX	S14-Jl02424	CP	units	4.2	4.1	1.0	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jl02424	CP	mol H+/t	15	15	1.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jl02424	CP	mol H+/t	45	46	2.0	30%	Pass	

Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
Acid trail - Titratable Sulfidic Acidity	S14-Jl02424	CP	mol H+/t	30	31	3.0	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jl02424	CP	% pyrite S	0.02	0.02	1.0	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jl02424	CP	% pyrite S	0.07	0.07	2.0	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jl02424	CP	% pyrite S	0.05	0.05	3.0	30%	Pass	
Sulfur - KCl Extractable	S14-Jl02424	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jl02424	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jl02424	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jl02424	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jl02424	CP	% Ca	0.04	0.04	2.0	30%	Pass	
Calcium - Peroxide	S14-Jl02424	CP	% Ca	0.03	0.04	15	30%	Pass	
Acid Reacted Calcium	S14-Jl02424	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jl02424	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jl02424	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jl02424	CP	% Mg	0.10	0.10	<1	30%	Pass	
Magnesium - Peroxide	S14-Jl02424	CP	% Mg	0.09	0.10	15	30%	Pass	
Acid Reacted Magnesium	S14-Jl02424	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jl02424	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jl02424	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jl02424	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jl02424	CP	% S	0.02	0.02	1.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jl02424	CP	mol H+/t	15	15	1.0	30%	Pass	
Liming rate - SPOCAS	S14-Jl02424	CP	kg CaCO3/t	1.0	1.0	1.0	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jl02429	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl02431	CP	mg/kg	7.7	7.8	<1	30%	Pass	
Cadmium	S14-Jl02431	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jl02431	CP	mg/kg	16	16	<1	30%	Pass	
Copper	S14-Jl02431	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S14-Jl02431	CP	mg/kg	11	13	13	30%	Pass	
Mercury	S14-Jl02431	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl02431	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jl02431	CP	mg/kg	8.6	9.2	7.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Ken Henderson
Report:	423743-S
Client Reference:	**BOX HILL 43376**
Received Date:	1 July 2014
Date Reported:	11 July 2014

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, "Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise" therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

eurofins | mgt

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Site Reference: BOX HILL 43376
Date Sampled: 1 July 2014
Report: 423743-S

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
11-TP06 0-0.1	14-JI02421	1 July 2014	Approximate Sample Mass: 811g Sample consisted of: Grey coarse-grained soil	No asbestos detected at the reporting limit of 0.001% w/w*
QC16	14-JI02425	1 July 2014	Approximate Sample Mass: 799g Sample consisted of: Grey coarse-grained soil and rock	No asbestos detected at the reporting limit of 0.001% w/w*
11-TP07 0-0.1	14-JI02426	1 July 2014	Approximate Sample Mass: 664g Sample consisted of: Reddish brown fine-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w*
15-TP01 0-0.1	14-JI02431	1 July 2014	Approximate Sample Mass: 557g Sample consisted of: Brown fine-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w*
15-TP02 0-0.1	14-JI02432	1 July 2014	Approximate Sample Mass: 421g Sample consisted of: Brown coarse-grained soil	No asbestos detected at the reporting limit of 0.001% w/w*
15-TP03 0.1-0.2	14-JI02434	1 July 2014	Approximate Sample Mass: 485g Sample consisted of: Light brown fine-grained soil	No asbestos detected at the reporting limit of 0.001% w/w*

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15-SS01	14-Jl02436	1 July 2014	Approximate Sample Mass: 302g Sample consisted of: Brown fine-grained soil and plant matter	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
8-SP-TP01 0-0.1	14-Jl02437	1 July 2014	Approximate Sample Mass: 378g Sample consisted of: Dark brown fine-grained soil, rocks and plant matter	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w*
8-TP03 0-0.1	14-Jl02438	1 July 2014	Approximate Sample Mass: 575g Sample consisted of: Brown fine-grained soil and rocks	Organic fibres, No asbestos detected at the reporting limit of 0.001% w/w*

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos – LTM-ASB-8020	Sydney	x July 2014	Indefinite

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Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters is performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis.
7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).
For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.
Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.
**NOTE: pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per kilogram
µg/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Nephelometric Turbidity Units

TERMS

Dry	Where moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the client’s batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed on fireproofing, troweled on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).

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PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios)

QC - ACCEPTANCE CRITERIA

RPD Duplicates:	Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%
Surrogate Recoveries:	Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and its Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time.
7. Analysis will begin as soon as possible after sample receipt.
8. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
9. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS's.
10. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
11. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Comments

Sample S14-Jl2436: Insufficient sample provided; the supplied sample volume was considerably below the recommended volume of 500 mL as per 'Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia 2009'. The result may not be a true indication of the sampled area due to the small sample size and can lead to an inaccurate interpretation.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Organic samples had Teflon liners	N/A
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within Holding Time	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by

Jean Heng	Client Services
Nibha Vaidya	Approved Counter/Identifier
Alex Tam	Approved Counter/Identifier

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report.

- Indicates Not Requested
* Indicates NATA accreditation does not cover the performance of this service
Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **423743-W**
Client Reference BOX HILL 43376
Received Date Jul 01, 2014

Client Sample ID			**TRIP SPIKE**	**TRIP BLANK**	**RINSATE**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-Jl02442**	**S14-Jl02443**	**S14-Jl02444**
Date Sampled			**Jul 01, 2014**	**Jul 01, 2014**	**Jul 01, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1
BTEX					
Benzene	0.001	mg/L	112%	< 0.001	< 0.001
Toluene	0.001	mg/L	106%	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	101%	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	107%	< 0.002	< 0.002
o-Xylene	0.001	mg/L	106%	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	107%	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	98	78	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	-	-	< 0.02
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	-	-	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TRIP SPIKE Water S14-Jl02442 Jul 01, 2014	TRIP BLANK Water S14-Jl02443 Jul 01, 2014	RINSATE Water S14-Jl02444 Jul 01, 2014
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.001	mg/L	-	-	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001
Total PAH	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	130
p-Terphenyl-d14 (surr.)	1	%	-	-	127
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	-	-	129
Tetrachloro-m-xylene (surr.)	1	%	-	-	80
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	-	-	< 0.005
Aroclor-1232	0.005	mg/L	-	-	< 0.005
Aroclor-1242	0.005	mg/L	-	-	< 0.005
Aroclor-1248	0.005	mg/L	-	-	< 0.005
Aroclor-1254	0.005	mg/L	-	-	< 0.005
Aroclor-1260	0.005	mg/L	-	-	< 0.005
Total PCB	0.005	mg/L	-	-	< 0.005
Dibutylchlorendate (surr.)	1	%	-	-	129
Heavy Metals					
Arsenic	0.005	mg/L	-	-	< 0.005
Cadmium	0.0005	mg/L	-	-	< 0.0005
Chromium	0.005	mg/L	-	-	< 0.005
Copper	0.005	mg/L	-	-	< 0.005
Lead	0.005	mg/L	-	-	< 0.005
Mercury	0.0001	mg/L	-	-	< 0.0001
Nickel	0.005	mg/L	-	-	< 0.005
Zinc	0.005	mg/L	-	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 03, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 02, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 03, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 03, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 02, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 03, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 03, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

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Brisbane
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NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 1, 2014 3:50 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423743	**Due:**	Jul 8, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**														
11-TP02 0-0.1	Jul 01, 2014		Soil	S14-Jl02419		X									X	X	X	
11-TP02 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02420					X									
11-TP06 0-0.1	Jul 01, 2014		Soil	S14-Jl02421		X	X								X			
11-TP06 0.8-0.9	Jul 01, 2014		Soil	S14-Jl02422		X										X		
11-TP06 2.0-2.1	Jul 01, 2014		Soil	S14-Jl02423					X									
SED01	Jul 01, 2014		Soil	S14-Jl02424		X									X	X		X
QC16	Jul 01, 2014		Soil	S14-Jl02425		X	X								X	X		
11-TP07 0-0.1	Jul 01, 2014		Soil	S14-Jl02426		X	X								X	X		

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Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
11-TP07 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02427		X		X		X								
11-G-TP08 0-0.1	Jul 01, 2014		Soil	S14-Jl02428		X					X		X					
11-G-TP09 0-0.1	Jul 01, 2014		Soil	S14-Jl02429		X					X	X	X					
11-G-TP09 0.4-0.5	Jul 01, 2014		Soil	S14-Jl02430					X									
15-TP01 0-0.1	Jul 01, 2014		Soil	S14-Jl02431		X	X								X	X		
15-TP02 0-0.1	Jul 01, 2014		Soil	S14-Jl02432		X	X								X	X		
15-TP02 0.2-0.3	Jul 01, 2014		Soil	S14-Jl02433	X													X
15-TP03 0.1-	Jul 01, 2014		Soil	S14-Jl02434		X	X								X	X		

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Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
0.2																		
15-TP04 0-0.1	Jul 01, 2014		Soil	S14-Jl02435		X					X		X					
15-SS01	Jul 01, 2014		Soil	S14-Jl02436			X											
8-SP-TP01 0-0.1	Jul 01, 2014		Soil	S14-Jl02437		X	X								X	X		
8-TP03 0-0.1	Jul 01, 2014		Soil	S14-Jl02438		X	X								X	X		
8-TP03 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02439					X									
8-TP04 0-0.1	Jul 01, 2014		Soil	S14-Jl02440		X					X		X					
8-TP04 0.3-0.4	Jul 01, 2014		Soil	S14-Jl02441					X									
TRIP SPIKE	Jul 01, 2014		Water	S14-Jl02442										X				
TRIP BLANK	Jul 01, 2014		Water	S14-Jl02443										X				
RINSATE	Jul 01, 2014		Water	S14-Jl02444											X	X		

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 1, 2014 3:50 PM
Address:	Level 1, 50 Margaret St	**Report #:**	423743	**Due:**	Jul 8, 2014
	Sydney	**Phone:**	02 8245 0300	**Priority:**	5 Day
	NSW 2000	**Fax:**		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																		
Melbourne Laboratory - NATA Site # 1254 & 14271								X				X						
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X													X
External Laboratory																		
11-SP-TP04 0.2-0.3	Jul 01, 2014		Soil	S14-Jl02498					X									

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	91			70-130	Pass	
TRH C10-C14	%	85			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	111			70-130	Pass	
Toluene	%	108			70-130	Pass	
Ethylbenzene	%	105			70-130	Pass	
m&p-Xylenes	%	110			70-130	Pass	
o-Xylene	%	108			70-130	Pass	
Xylenes - Total	%	109			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	86			70-130	Pass	
TRH C6-C10	%	101			70-130	Pass	
TRH >C10-C16	%	94			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	106			70-130	Pass	
Benz(a)anthracene	%	105			70-130	Pass	
Benzo(a)pyrene	%	96			70-130	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	%	87			70-130	Pass	
Benzo(g.h.i)perylene	%	82			70-130	Pass	
Benzo(k)fluoranthene	%	99			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a.h)anthracene	%	75			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	102			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	77			70-130	Pass	
Naphthalene	%	115			70-130	Pass	
Phenanthrene	%	104			70-130	Pass	
Pyrene	%	108			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	100			70-130	Pass	
4.4'-DDD	%	100			70-130	Pass	
4.4'-DDE	%	100			70-130	Pass	
4.4'-DDT	%	75			70-130	Pass	
a-BHC	%	100			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	100			70-130	Pass	
d-BHC	%	75			70-130	Pass	
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	75			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	75			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	75			70-130	Pass	
Heptachlor	%	75			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	100			70-130	Pass	
Methoxychlor	%	75			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	75			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	86			70-130	Pass	
Cadmium	%	87			70-130	Pass	
Chromium	%	87			70-130	Pass	
Copper	%	87			70-130	Pass	
Lead	%	88			70-130	Pass	
Mercury	%	93			70-130	Pass	
Nickel	%	86			70-130	Pass	
Zinc	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl02305	NCP	%	102			70-130	Pass	
Toluene	S14-Jl02305	NCP	%	99			70-130	Pass	
Ethylbenzene	S14-Jl02305	NCP	%	96			70-130	Pass	
m&p-Xylenes	S14-Jl02305	NCP	%	102			70-130	Pass	
o-Xylene	S14-Jl02305	NCP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total	S14-Jl02305	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl02305	NCP	%	102			70-130	Pass	
TRH C10-C14	S14-Jl01373	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl02305	NCP	%	84			70-130	Pass	
TRH C6-C10	S14-Jl02305	NCP	%	99			70-130	Pass	
TRH >C10-C16	S14-Jl01373	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl02713	NCP	%	113			70-130	Pass	
Acenaphthylene	S14-Jl02713	NCP	%	117			70-130	Pass	
Anthracene	S14-Jl02713	NCP	%	104			70-130	Pass	
Benz(a)anthracene	S14-Jl02713	NCP	%	101			70-130	Pass	
Benzo(a)pyrene	S14-Jl02713	NCP	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jl02713	NCP	%	99			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jl02713	NCP	%	108			70-130	Pass	
Benzo(k)fluoranthene	S14-Jl02713	NCP	%	115			70-130	Pass	
Chrysene	S14-Jl02713	NCP	%	111			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jl02713	NCP	%	96			70-130	Pass	
Fluoranthene	S14-Jl02713	NCP	%	107			70-130	Pass	
Fluorene	S14-Jl02713	NCP	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl02713	NCP	%	99			70-130	Pass	
Naphthalene	S14-Jl02713	NCP	%	119			70-130	Pass	
Phenanthrene	S14-Jl02713	NCP	%	101			70-130	Pass	
Pyrene	S14-Jl02713	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M14-Jn25608	NCP	%	77			70-130	Pass	
Cadmium	M14-Jn25608	NCP	%	78			70-130	Pass	
Chromium	M14-Jn25608	NCP	%	77			70-130	Pass	
Copper	M14-Jn25608	NCP	%	79			70-130	Pass	
Lead	M14-Jn25608	NCP	%	77			70-130	Pass	
Mercury	M14-Jn25608	NCP	%	83			70-130	Pass	
Nickel	M14-Jn25608	NCP	%	76			70-130	Pass	
Zinc	M14-Jn25608	NCP	%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl02304	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jl02304	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jl02304	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jl02304	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jl02304	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jl02304	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl02304	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jl01372	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-Jl01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jl01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl02304	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jl02304	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl02304	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jl01372	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jl01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jl01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jl02713	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jl02713	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jl02713	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Jul 1, 2014 3:50 PM
Eurofins | mgt reference:	**423743**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 8 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Extra sample received, 11- SP- TP04 0.2-0.3 has been placed on hold| Acid Herbicide and CEC conducted at Eurofins mgt Melbourne| SPOCAS conducted at Eurofins mgt Brisbane.

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

02231 #423743

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 13376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tgreer@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	PH	CEC	VOCs	SPOCAS	Herbicides	Phenols	OCPs	NOTES:
#11-TP02 (0-0.1)	Soil	1/7/14		B+J		X	X				X					B7 = TRH/BTEX, PAH, Sudo...
#11-TP02 (0.3-0.4)																
#11-TP06 (0-0.1)							X	X								
#11-TP06 (0.8-0.9)						X										B13 = OCP/PCBs
#11-TP06 (2.0-2.1)																
#11-SED01						X	X					X				* Asbestos
QC16						X	X	X								= 2013 NEPC
#11-TP07 (0-0.1)						X	X	X								
#11-TP07 (0.3-0.4)									X	X						
~~#11-TP08 (0-0.1)~~																
#11-G-TP08 (0-0.1)				J										X	X	
#11-G-TP09 (0-0.1)				"									X	X	X	
#11-G-TP09 (0.4-0.5)				"												
#15-TP01 (0-0.1)				B+J		X	X	X								
#15-TP02 (0-0.1)						X	X	X								
#15-TP02 (0.2-0.3)												X				
#15-TP03 (0.1-0.2)						X	X	X								
#15-TP04 (0-0.1)														X	X	
#15-SS01				B				X								

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Greer DATE: 1/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

RECEIVED 01 JUL 2014 BY: Sean D 350

02232

CHAIN OF CUSTODY

#423743

JBS&G

PROJECT NO.: 43576	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com tgreaves@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	8 metals	OCPs	BTEX	NOTES:
#8-SP-TP01 (0-0.1)	Soil	1/7/14		B+J		X	X	X				
#8 – TP03 (0-0.1)						X	X	X				
#8 – TP03 (0.3-0.4)												
#8 – TP04 (0-0.1)									X	X		
#8 – TP04 (0.3-0.4)												
Trip Spike	Water										X	
Trip Blank											X	
Rinsate						X	X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T-Gree DATE: 1/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **423820-S**
Client Reference BOX HILL 43376
Received Date Jul 02, 2014

Client Sample ID			**#17-SS01**	**#17-SS02**	**#17-SD-SS03**	**#17-SD-SS04**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02769**	**S14-Jl02770**	**S14-Jl02771**	**S14-Jl02772**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	27	< 20
TRH C15-C28	50	mg/kg	390	860	400	120
TRH C29-C36	50	mg/kg	240	440	740	240
TRH C10-36 (Total)	50	mg/kg	630	1300	1200	360
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	95	96	100	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	51	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	51	< 50
TRH >C16-C34	100	mg/kg	610	1200	1100	280
TRH >C34-C40	100	mg/kg	120	350	400	200
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			#17-SS01	#17-SS02	#17-SD-SS03	#17-SD-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02769	S14-Jl02770	S14-Jl02771	S14-Jl02772
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	125	116	119	106
p-Terphenyl-d14 (surr.)	1	%	128	129	126	121
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	1.3
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	104	111
Tetrachloro-m-xylene (surr.)	1	%	-	-	73	73
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	104	111
Heavy Metals						
Arsenic	2	mg/kg	15	15	18	5.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	6.5	< 0.4
Chromium	5	mg/kg	35	32	77	9.9
Copper	5	mg/kg	16	14	180	8.4
Lead	5	mg/kg	37	31	530	19
Mercury	0.05	mg/kg	< 0.05	< 0.05	0.41	< 0.05
Nickel	5	mg/kg	< 5	< 5	35	< 5
Zinc	5	mg/kg	51	36	660	28

Client Sample ID			#17-SS01	#17-SS02	#17-SD-SS03	#17-SD-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02769	S14-Jl02770	S14-Jl02771	S14-Jl02772
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
% Moisture	0.1	%	4.1	3.8	7.4	3.9

Client Sample ID			#17-A-SS05	#17-A-SS06	#2-O-SS01	#2-O-SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02773	S14-Jl02774	S14-Jl02775	S14-Jl02776
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	129	109
Tetrachloro-m-xylene (surr.)	1	%	-	-	106	91
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	-	-	< 0.5	< 0.5
Demeton (total)	1	mg/kg	-	-	< 1	< 1
Diazinon	0.5	mg/kg	-	-	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	-	-	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	-	-	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	-	-	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	-	-	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	-	-	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	-	-	< 0.5	< 0.5
Fenthion	0.5	mg/kg	-	-	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	< 0.5
Malathion	0.5	mg/kg	-	-	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	-	-	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	-	-	< 0.5	< 0.5
Monocrotophos	10	mg/kg	-	-	< 10	< 10

Client Sample ID			#17-A-SS05	#17-A-SS06	#2-O-SS01	#2-O-SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02773	S14-Jl02774	S14-Jl02775	S14-Jl02776
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Parathion	0.5	mg/kg	-	-	< 0.5	< 0.5
Phorate	0.5	mg/kg	-	-	< 0.5	< 0.5
Profenofos	0.5	mg/kg	-	-	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	-	-	< 0.5	< 0.5
Ronnel	0.5	mg/kg	-	-	< 0.5	< 0.5
Stirophos	0.5	mg/kg	-	-	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	-	-	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	95	96
% Moisture	0.1	%	-	-	7.1	7.8
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	-

Client Sample ID			#2-O-SS03	#2-O-SS04	#2-O-SS05	#2-O-SS06
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02777	S14-Jl02778	S14-Jl02779	S14-Jl02780
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.08
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	121	129	101	113
Tetrachloro-m-xylene (surr.)	1	%	102	105	85	90
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (Ioxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#2-O-SS03 Soil S14-Jl02777 Jul 02, 2014	#2-O-SS04 Soil S14-Jl02778 Jul 02, 2014	#2-O-SS05 Soil S14-Jl02779 Jul 02, 2014	#2-O-SS06 Soil S14-Jl02780 Jul 02, 2014
Acid Herbicides						
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	68	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	99	95	102	102
% Moisture	0.1	%	14	11	13	10.0

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#2-O-SS07 Soil S14-Jl02781 Jul 02, 2014	#2-O-SS08 Soil S14-Jl02782 Jul 02, 2014	#3-SD-SS01 Soil S14-Jl02783 Jul 02, 2014	#3-A-SS02 Soil S14-Jl02784 Jul 02, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#2-O-SS07 Soil S14-Jl02781 Jul 02, 2014	#2-O-SS08 Soil S14-Jl02782 Jul 02, 2014	#3-SD-SS01 Soil S14-Jl02783 Jul 02, 2014	#3-A-SS02 Soil S14-Jl02784 Jul 02, 2014
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	89	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5	-
Benzene	0.1	mg/kg	-	-	< 0.1	-
Bromobenzene	0.5	mg/kg	-	-	< 0.5	-
Bromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromoform	0.5	mg/kg	-	-	< 0.5	-
Bromomethane	0.5	mg/kg	-	-	< 0.5	-
Carbon disulfide	0.5	mg/kg	-	-	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5	-
Chlorobenzene	0.5	mg/kg	-	-	< 0.5	-
Chloroethane	0.5	mg/kg	-	-	< 0.5	-
Chloroform	0.5	mg/kg	-	-	< 0.5	-
Chloromethane	0.5	mg/kg	-	-	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#2-O-SS07 Soil S14-Jl02781 Jul 02, 2014	#2-O-SS08 Soil S14-Jl02782 Jul 02, 2014	#3-SD-SS01 Soil S14-Jl02783 Jul 02, 2014	#3-A-SS02 Soil S14-Jl02784 Jul 02, 2014
Volatile Organics						
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Dibromomethane	0.5	mg/kg	-	-	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
Methylene Chloride	0.5	mg/kg	-	-	< 0.5	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Styrene	0.5	mg/kg	-	-	< 0.5	-
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Trichloroethene	0.5	mg/kg	-	-	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5	-
Vinyl chloride	0.5	mg/kg	-	-	< 0.5	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
Fluorobenzene (surr.)	1	%	-	-	75	-
4-Bromofluorobenzene (surr.)	1	%	-	-	89	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	-	114	-
p-Terphenyl-d14 (surr.)	1	%	-	-	123	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#2-O-SS07 Soil S14-Jl02781 Jul 02, 2014	#2-O-SS08 Soil S14-Jl02782 Jul 02, 2014	#3-SD-SS01 Soil S14-Jl02783 Jul 02, 2014	#3-A-SS02 Soil S14-Jl02784 Jul 02, 2014
Organochlorine Pesticides						
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	117	125	108	123
Tetrachloro-m-xylene (surr.)	1	%	98	107	95	98
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	108	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	-	-
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Demeton (total)	1	mg/kg	< 1	< 1	-	-
Diazinon	0.5	mg/kg	< 0.5	< 0.5	-	-
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	-	-
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	-	-
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	-	-
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenthion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Malathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Monocrotophos	10	mg/kg	< 10	< 10	-	-
Parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Phorate	0.5	mg/kg	< 0.5	< 0.5	-	-
Profenofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Ronnel	0.5	mg/kg	< 0.5	< 0.5	-	-
Stirophos	0.5	mg/kg	< 0.5	< 0.5	-	-

Client Sample ID			#2-O-SS07	#2-O-SS08	#3-SD-SS01	#3-A-SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02781	S14-Jl02782	S14-Jl02783	S14-Jl02784
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	-	-
Triphenylphosphate (surr.)	1	%	108	100	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	16	8.5
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	42	24
Copper	5	mg/kg	-	-	21	28
Lead	5	mg/kg	-	-	26	52
Mercury	0.05	mg/kg	-	-	< 0.05	0.06
Nickel	5	mg/kg	-	-	6.3	18
Zinc	5	mg/kg	-	-	40	130
% Moisture	0.1	%	15	16	7.5	4.6
Asbestos - WA guidelines	0.001	% w/w	-	-	see attached	see attached

Client Sample ID			#3-A-SS03	#3-A-SS04	QC17	#3-O-SS05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02785	S14-Jl02786	S14-Jl02787	S14-Jl02788
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.13
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	118	121	113	116
Tetrachloro-m-xylene (surr.)	1	%	94	102	88	99

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#3-A-SS03 Soil S14-Jl02785 Jul 02, 2014	#3-A-SS04 Soil S14-Jl02786 Jul 02, 2014	QC17 Soil S14-Jl02787 Jul 02, 2014	#3-O-SS05 Soil S14-Jl02788 Jul 02, 2014
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (loxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	74	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	-	-	< 0.5	< 0.5
Demeton (total)	1	mg/kg	-	-	< 1	< 1
Diazinon	0.5	mg/kg	-	-	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	-	-	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	-	-	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	-	-	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	-	-	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	-	-	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	-	-	< 0.5	< 0.5
Fenthion	0.5	mg/kg	-	-	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	< 0.5
Malathion	0.5	mg/kg	-	-	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	-	-	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	-	-	< 0.5	< 0.5
Monocrotophos	10	mg/kg	-	-	< 10	< 10
Parathion	0.5	mg/kg	-	-	< 0.5	< 0.5
Phorate	0.5	mg/kg	-	-	< 0.5	< 0.5
Profenofos	0.5	mg/kg	-	-	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	-	-	< 0.5	< 0.5
Ronnel	0.5	mg/kg	-	-	< 0.5	< 0.5
Stirophos	0.5	mg/kg	-	-	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	-	-	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	99	99
Heavy Metals						
Arsenic	2	mg/kg	11	7.3	7.0	14
Cadmium	0.4	mg/kg	< 0.4	0.7	< 0.4	< 0.4
Chromium	5	mg/kg	38	24	25	20
Copper	5	mg/kg	27	42	18	29
Lead	5	mg/kg	66	71	24	25
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	19	19	7.4	5.8
Zinc	5	mg/kg	130	170	47	36
% Moisture	0.1	%	3.8	8.6	13	15
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#3-O-SS06 Soil S14-Jl02789 Jul 02, 2014	#3-O-SS07 Soil S14-Jl02790 Jul 02, 2014	#3-O-SS08 Soil S14-Jl02791 Jul 02, 2014	#3-O-SS09 Soil S14-Jl02792 Jul 02, 2014
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.062	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	115	127	121	72
Tetrachloro-m-xylene (surr.)	1	%	101	101	106	104
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	< 0.5	-
2.4-DB	0.5	mg/kg	< 0.5	-	< 0.5	-
2.4.5-T	0.5	mg/kg	< 0.5	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	< 0.5	-
Actril (Ioxynil)	0.5	mg/kg	< 0.5	-	< 0.5	-
Dicamba	0.5	mg/kg	< 0.5	-	< 0.5	-
Dichlorprop	0.5	mg/kg	< 0.5	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	< 0.5	-
Dinoseb	0.5	mg/kg	< 0.5	-	< 0.5	-
MCPA	0.5	mg/kg	< 0.5	-	< 0.5	-
MCPB	0.5	mg/kg	< 0.5	-	< 0.5	-
Mecoprop	0.5	mg/kg	< 0.5	-	< 0.5	-
Warfarin (surr.)	1	%	71	-	69	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			#3-O-SS06	#3-O-SS07	#3-O-SS08	#3-O-SS09
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02789**	**S14-Jl02790**	**S14-Jl02791**	**S14-Jl02792**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	94	96	94	98
Heavy Metals						
Arsenic	2	mg/kg	6.2	11	8.4	7.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	22	15	15
Copper	5	mg/kg	28	16	22	15
Lead	5	mg/kg	25	32	21	19
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	7.9	8.5	< 5	< 5
Zinc	5	mg/kg	59	72	34	17
% Moisture	0.1	%	13	9.4	12	10

Client Sample ID			#3-O-SS10	#3-O-SS11	#3-O-SS12	#3-O-SS13
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02793**	**S14-Jl02794**	**S14-Jl02795**	**S14-Jl02796**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			#3-O-SS10	#3-O-SS11	#3-O-SS12	#3-O-SS13
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02793**	**S14-Jl02794**	**S14-Jl02795**	**S14-Jl02796**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	122	111	122	104
Tetrachloro-m-xylene (surr.)	1	%	106	114	125	100
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	90	78	93	115
Heavy Metals						
Arsenic	2	mg/kg	5.9	5.4	7.6	6.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	21	21	31
Copper	5	mg/kg	29	14	14	15
Lead	5	mg/kg	23	23	22	24
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	< 5	< 5	7.2
Zinc	5	mg/kg	23	31	33	36
% Moisture	0.1	%	7.3	7.5	14	13

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#3-A-SS15 Soil S14-Jl02797 Jul 02, 2014	#3-A-SS16 Soil S14-Jl02798 Jul 02, 2014	#3-A-SS17 Soil S14-Jl02799 Jul 02, 2014	#3-S-SS18 Soil S14-Jl02800 Jul 02, 2014
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	85
TRH C10-36 (Total)	50	mg/kg	-	-	-	85
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dibromoethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichloroethane	0.5	mg/kg	-	-	-	< 0.5
1.2-Dichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	-	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
1.3-Dichloropropane	0.5	mg/kg	-	-	-	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	-	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	-	-	-	< 0.5
2-Butanone (MEK)	0.5	mg/kg	-	-	-	< 0.5
4-Chlorotoluene	0.5	mg/kg	-	-	-	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	-	< 0.5
Benzene	0.1	mg/kg	-	-	-	< 0.1
Bromobenzene	0.5	mg/kg	-	-	-	< 0.5
Bromochloromethane	0.5	mg/kg	-	-	-	< 0.5
Bromodichloromethane	0.5	mg/kg	-	-	-	< 0.5
Bromoform	0.5	mg/kg	-	-	-	< 0.5
Bromomethane	0.5	mg/kg	-	-	-	< 0.5
Carbon disulfide	0.5	mg/kg	-	-	-	< 0.5
Carbon Tetrachloride	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#3-A-SS15 Soil S14-Jl02797 Jul 02, 2014	#3-A-SS16 Soil S14-Jl02798 Jul 02, 2014	#3-A-SS17 Soil S14-Jl02799 Jul 02, 2014	#3-S-SS18 Soil S14-Jl02800 Jul 02, 2014
Volatile Organics						
Chlorobenzene	0.5	mg/kg	-	-	-	< 0.5
Chloroethane	0.5	mg/kg	-	-	-	< 0.5
Chloroform	0.5	mg/kg	-	-	-	< 0.5
Chloromethane	0.5	mg/kg	-	-	-	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	-	< 0.5
Dibromochloromethane	0.5	mg/kg	-	-	-	< 0.5
Dibromomethane	0.5	mg/kg	-	-	-	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	-	-	-	< 0.5
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	-	< 0.5
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
Methylene Chloride	0.5	mg/kg	-	-	-	< 0.5
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Styrene	0.5	mg/kg	-	-	-	< 0.5
Tetrachloroethene	0.5	mg/kg	-	-	-	< 0.5
Toluene	0.1	mg/kg	-	-	-	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	-	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	-	< 0.5
Trichloroethene	0.5	mg/kg	-	-	-	< 0.5
Trichlorofluoromethane	0.5	mg/kg	-	-	-	< 0.5
Vinyl chloride	0.5	mg/kg	-	-	-	< 0.5
Xylenes - Total	0.3	mg/kg	-	-	-	< 0.3
Fluorobenzene (surr.)	1	%	-	-	-	72
4-Bromofluorobenzene (surr.)	1	%	-	-	-	92
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	-	111
p-Terphenyl-d14 (surr.)	1	%	-	-	-	122

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#3-A-SS15 Soil S14-Jl02797 Jul 02, 2014	#3-A-SS16 Soil S14-Jl02798 Jul 02, 2014	#3-A-SS17 Soil S14-Jl02799 Jul 02, 2014	#3-S-SS18 Soil S14-Jl02800 Jul 02, 2014
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.2	mg/kg	-	-	-	< 0.2
Toxaphene	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	122
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	133
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	-	< 0.5
Total PCB	0.5	mg/kg	-	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	-	122
Heavy Metals						
Arsenic	2	mg/kg	-	-	-	15
Cadmium	0.4	mg/kg	-	-	-	1.7
Chromium	5	mg/kg	-	-	-	27
Copper	5	mg/kg	-	-	-	43
Lead	5	mg/kg	-	-	-	87
Mercury	0.05	mg/kg	-	-	-	< 0.05
Nickel	5	mg/kg	-	-	-	14
Zinc	5	mg/kg	-	-	-	610
% Moisture	0.1	%	-	-	-	13
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	-

Client Sample ID			#3-S-SS19	#3-S-SS20	#3-S-SS21	#10-TP01 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02801**	**S14-Jl02802**	**S14-Jl02803**	**S14-Jl02804**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	23	< 20	-	< 20
TRH C15-C28	50	mg/kg	320	120	-	< 50
TRH C29-C36	50	mg/kg	290	300	-	< 50
TRH C10-36 (Total)	50	mg/kg	630	420	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	0.2	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	0.5	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	94	89	-	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	570	370	-	< 100
TRH >C34-C40	100	mg/kg	230	170	-	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Bromoform	0.5	mg/kg	< 0.5	< 0.5	-	-
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	-	-

Client Sample ID			#3-S-SS19	#3-S-SS20	#3-S-SS21	#10-TP01 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02801	S14-Jl02802	S14-Jl02803	S14-Jl02804
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Volatile Organics						
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Chloroform	0.5	mg/kg	< 0.5	< 0.5	-	-
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Ethylbenzene	0.1	mg/kg	0.5	< 0.1	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Styrene	0.5	mg/kg	2.1	< 0.5	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	-	-
Toluene	0.1	mg/kg	0.2	< 0.1	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	-	-
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	-
Fluorobenzene (surr.)	1	%	77	79	-	-
4-Bromofluorobenzene (surr.)	1	%	94	89	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.6	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.0	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	0.9	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	1.0	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	0.8	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	4.3	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	0.7	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	1.0	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.3	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	108	108	-	104
p-Terphenyl-d14 (surr.)	1	%	119	129	-	118

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#3-S-SS19 Soil S14-Jl02801 Jul 02, 2014	#3-S-SS20 Soil S14-Jl02802 Jul 02, 2014	#3-S-SS21 Soil S14-Jl02803 Jul 02, 2014	#10-TP01 (0-0.1) Soil S14-Jl02804 Jul 02, 2014
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	0.07	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	74	105	75	113
Tetrachloro-m-xylene (surr.)	1	%	98	71	78	90
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibutylchlorendate (surr.)	1	%	74	105	-	113
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-	-	< 0.5	-
Coumaphos	0.5	mg/kg	-	-	< 0.5	-
Demeton (total)	1	mg/kg	-	-	< 1	-
Diazinon	0.5	mg/kg	-	-	< 0.5	-
Dichlorvos	0.5	mg/kg	-	-	< 0.5	-
Dimethoate	0.5	mg/kg	-	-	< 0.5	-
Disulfoton	0.5	mg/kg	-	-	< 0.5	-
Ethoprop	0.5	mg/kg	-	-	< 0.5	-
Fenitrothion	0.5	mg/kg	-	-	< 0.5	-
Fensulfothion	0.5	mg/kg	-	-	< 0.5	-
Fenthion	0.5	mg/kg	-	-	< 0.5	-
Methyl azinphos	0.5	mg/kg	-	-	< 0.5	-
Malathion	0.5	mg/kg	-	-	< 0.5	-
Methyl parathion	0.5	mg/kg	-	-	< 0.5	-
Mevinphos	0.5	mg/kg	-	-	< 0.5	-
Monocrotophos	10	mg/kg	-	-	< 10	-

Client Sample ID			#3-S-SS19	#3-S-SS20	#3-S-SS21	#10-TP01 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02801	S14-Jl02802	S14-Jl02803	S14-Jl02804
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Parathion	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.5	mg/kg	-	-	< 0.5	-
Profenofos	0.5	mg/kg	-	-	< 0.5	-
Prothiofos	0.5	mg/kg	-	-	< 0.5	-
Ronnel	0.5	mg/kg	-	-	< 0.5	-
Stirophos	0.5	mg/kg	-	-	< 0.5	-
Trichloronate	0.5	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	84	-
Heavy Metals						
Arsenic	2	mg/kg	5.2	8.5	3.5	10
Cadmium	0.4	mg/kg	< 0.4	1.0	< 0.4	< 0.4
Chromium	5	mg/kg	15	28	17	22
Copper	5	mg/kg	75	240	97	12
Lead	5	mg/kg	29	45	23	21
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	10	21	16	7.8
Zinc	5	mg/kg	170	580	160	33
% Moisture	0.1	%	9.7	15	2.4	12
Asbestos - WA guidelines	0.001	% w/w	-	-	-	see attached

Client Sample ID			#10-TP02 (0-0.1)	#10-SED01	#10-SS01	#10-TP04 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02806	S14-Jl02809	S14-Jl02810	S14-Jl02811
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	180
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	180
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	86	-	-	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	140
TRH >C34-C40	100	mg/kg	< 100	-	-	240

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#10-TP02 (0-0.1) Soil S14-Jl02806 Jul 02, 2014	#10-SED01 Soil S14-Jl02809 Jul 02, 2014	#10-SS01 Soil S14-Jl02810 Jul 02, 2014	#10-TP04 (0-0.1) Soil S14-Jl02811 Jul 02, 2014
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	105	-	-	105
p-Terphenyl-d14 (surr.)	1	%	121	-	-	121
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	110	81	110	111
Tetrachloro-m-xylene (surr.)	1	%	108	128	96	76

Client Sample ID			#10-TP02 (0-0.1)	#10-SED01	#10-SS01	#10-TP04 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02806	S14-Jl02809	S14-Jl02810	S14-Jl02811
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	110	-	-	111
Heavy Metals						
Arsenic	2	mg/kg	9.6	3.9	21	4.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	30	15	45	10
Copper	5	mg/kg	17	22	41	25
Lead	5	mg/kg	24	24	41	30
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.05
Nickel	5	mg/kg	12	5.3	14	5.2
Zinc	5	mg/kg	43	37	63	42
% Moisture	0.1	%	13	48	11	11
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	see attached

Client Sample ID			#21-TP01 (0-0.1)	#21-TP01 (1.9-2.0)	#21-TP02 (0-0.1)	#21-TP02 (0.3-0.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02813	S14-Jl02815	S14-Jl02816	S14-Jl02817
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	-	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	-	-	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100

Client Sample ID			#21-TP01 (0-0.1)	#21-TP01 (1.9-2.0)	#21-TP02 (0-0.1)	#21-TP02 (0.3-0.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI02813	S14-JI02815	S14-JI02816	S14-JI02817
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-	1.2
2-Fluorobiphenyl (surr.)	1	%	107	-	-	96
p-Terphenyl-d14 (surr.)	1	%	120	-	-	127
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Dibutylchlorendate (surr.)	1	%	130	-	112	-
Tetrachloro-m-xylene (surr.)	1	%	105	-	87	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#21-TP01 (0-0.1) Soil S14-Jl02813 Jul 02, 2014	#21-TP01 (1.9-2.0) Soil S14-Jl02815 Jul 02, 2014	#21-TP02 (0-0.1) Soil S14-Jl02816 Jul 02, 2014	#21-TP02 (0.3-0.4) Soil S14-Jl02817 Jul 02, 2014
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	130	-	112	-
Heavy Metals						
Arsenic	2	mg/kg	10	-	-	7.6
Cadmium	0.4	mg/kg	< 0.4	-	-	< 0.4
Chromium	5	mg/kg	25	-	-	18
Copper	5	mg/kg	17	-	-	16
Lead	5	mg/kg	23	-	-	20
Mercury	0.05	mg/kg	< 0.05	-	-	< 0.05
Nickel	5	mg/kg	7.3	-	-	5.8
Zinc	5	mg/kg	31	-	-	26
SPOCAS Suite						
pH-KCL	0.1	units	-	5.5	-	-
pH-OX	0.1	units	-	5.3	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	9.0	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	15	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	5.0	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.02	-	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	-	0.02	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	-	< 0.02	-	-
Sulfur - KCl Extractable	0.02	% S	-	< 0.02	-	-
Sulfur - Peroxide	0.02	% S	-	< 0.02	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	< 0.02	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	< 10	-	-
HCl Extractable Sulfur	0.02	% S	-	n/a	-	-
Net Acid soluble sulfur	0.02	% S	-	n/a	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	n/a	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	-	n/a	-	-
Calcium - KCl Extractable	0.02	% Ca	-	< 0.02	-	-
Calcium - Peroxide	0.02	% Ca	-	< 0.02	-	-
Acid Reacted Calcium	0.02	% Ca	-	< 0.02	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	-	< 10	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	-	< 0.02	-	-
Magnesium - KCl Extractable	0.02	% Mg	-	0.09	-	-
Magnesium - Peroxide	0.02	% Mg	-	0.08	-	-
Acid Reacted Magnesium	0.02	% Mg	-	< 0.02	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	-	< 10	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	-	< 0.02	-	-
Acid Neutralising Capacity	0.02	%CaCO3	-	n/a	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	-	n/a	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	-	n/a	-	-

Client Sample ID			#21-TP01 (0-0.1)	#21-TP01 (1.9-2.0)	#21-TP02 (0-0.1)	#21-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02813**	**S14-Jl02815**	**S14-Jl02816**	**S14-Jl02817**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
SPOCAS Suite						
ANC Fineness Factor			-	1.5	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	-	0.02	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	-	< 10	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	-	1.0	-	-
Extraneous Material						
<2mm Fraction	0.005	g	-	n/a	-	-
>2mm Fraction	0.005		-	n/a	-	-
Analysed Material	0.1	%	-	100	-	-
Extraneous Material	0.1	%	-	< 0.1	-	-
% Moisture	0.1	%	10	12	11	12
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	see attached

Client Sample ID			#22-TP01 (0-0.1)	#22-TP01 (0.3-0.4)	#22-TP02 (0-0.1)	#22-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl02819**	**S14-Jl02820**	**S14-Jl02822**	**S14-Jl02823**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	< 50	-	< 50
TRH C29-C36	50	mg/kg	-	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	-	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	75	-	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5

Client Sample ID			#22-TP01 (0-0.1)	#22-TP01 (0.3-0.4)	#22-TP02 (0-0.1)	#22-TP02 (0.3-0.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl02819	S14-Jl02820	S14-Jl02822	S14-Jl02823
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	-	109	-	99
p-Terphenyl-d14 (surr.)	1	%	-	116	-	116
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	-	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	-	121	122	-
Tetrachloro-m-xylene (surr.)	1	%	-	110	97	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	121	122	-

Client Sample ID			#22-TP01 (0-0.1)	#22-TP01 (0.3-0.4)	#22-TP02 (0-0.1)	#22-TP02 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI02819**	**S14-JI02820**	**S14-JI02822**	**S14-JI02823**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	-	8.0	-	12
Cadmium	0.4	mg/kg	-	1.0	-	< 0.4
Chromium	5	mg/kg	-	18	-	37
Copper	5	mg/kg	-	22	-	16
Lead	5	mg/kg	-	24	-	27
Mercury	0.05	mg/kg	-	0.06	-	< 0.05
Nickel	5	mg/kg	-	12	-	6.9
Zinc	5	mg/kg	-	51	-	31
% Moisture	0.1	%	-	14	16	17
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	see attached

Client Sample ID			#21-SED01	10-SD-SS02	10-SD-TP04
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI02825**	**S14-JI04027**	**S14-JI04037**
Date Sampled			**Jul 02, 2014**	**Jul 02, 2014**	**Jul 02, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	78	88	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#21-SED01 Soil S14-Jl02825 Jul 02, 2014	10-SD-SS02 Soil S14-Jl04027 Jul 02, 2014	10-SD-TP04 Soil S14-Jl04037 Jul 02, 2014
Polycyclic Aromatic Hydrocarbons					
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	96	102	-
p-Terphenyl-d14 (surr.)	1	%	102	124	-
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	83	123	-
Tetrachloro-m-xylene (surr.)	1	%	72	98	-
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	83	123	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#21-SED01 Soil S14-Jl02825 Jul 02, 2014	10-SD-SS02 Soil S14-Jl04027 Jul 02, 2014	10-SD-TP04 Soil S14-Jl04037 Jul 02, 2014
Heavy Metals					
Arsenic	2	mg/kg	7.7	6.4	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-
Chromium	5	mg/kg	19	13	-
Copper	5	mg/kg	22	13	-
Lead	5	mg/kg	46	23	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	-
Nickel	5	mg/kg	7.7	< 5	-
Zinc	5	mg/kg	40	200	-
% Moisture	0.1	%	28	11	-
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 11, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 11, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 11, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 10, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 10, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jul 11, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jul 07, 2014	14 Day
- Method: MGT 530			
% Moisture	Sydney	Jul 10, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos - WA guidelines	Sydney	Jul 12, 2014	0 Day
Eurofins | mgt Suite 14			
Organochlorine Pesticides	Sydney	Jul 10, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jul 08, 2014	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Eurofins | mgt Suite 13			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 10, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jul 08, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jul 08, 2014	0 Day

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Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 2, 2014 5:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423820	**Due:**	Jul 10, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
#17-SS01	Jul 02, 2014		Soil	S14-Jl02769	X									X		
#17-SS02	Jul 02, 2014		Soil	S14-Jl02770	X									X		
#17-SD-SS03	Jul 02, 2014		Soil	S14-Jl02771	X							X		X		
#17-SD-SS04	Jul 02, 2014		Soil	S14-Jl02772	X							X		X		
#17-A-SS05	Jul 02, 2014		Soil	S14-Jl02773		X										
#17-A-SS06	Jul 02, 2014		Soil	S14-Jl02774		X										
#2-O-SS01	Jul 02, 2014		Soil	S14-Jl02775	X								X			
#2-O-SS02	Jul 02, 2014		Soil	S14-Jl02776	X								X			
#2-O-SS03	Jul 02, 2014		Soil	S14-Jl02777	X								X			
#2-O-SS04	Jul 02, 2014		Soil	S14-Jl02778	X								X			

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Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#2-O-SS05	Jul 02, 2014		Soil	S14-Jl02779	X				X				X			
#2-O-SS06	Jul 02, 2014		Soil	S14-Jl02780	X								X			
#2-O-SS07	Jul 02, 2014		Soil	S14-Jl02781	X								X			
#2-O-SS08	Jul 02, 2014		Soil	S14-Jl02782	X								X			
#3-SD-SS01	Jul 02, 2014		Soil	S14-Jl02783	X	X						X		X	X	
#3-A-SS02	Jul 02, 2014		Soil	S14-Jl02784	X	X		X		X						
#3-A-SS03	Jul 02, 2014		Soil	S14-Jl02785	X	X		X		X						
#3-A-SS04	Jul 02, 2014		Soil	S14-Jl02786	X	X		X		X						
QC17	Jul 02, 2014		Soil	S14-Jl02787	X				X	X			X			
#3-O-SS05	Jul 02, 2014		Soil	S14-Jl02788	X					X			X			
#3-O-SS06	Jul 02, 2014		Soil	S14-Jl02789	X				X	X			X			

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Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#3-O-SS07	Jul 02, 2014		Soil	S14-Jl02790	X					X			X			
#3-O-SS08	Jul 02, 2014		Soil	S14-Jl02791	X				X	X			X			
#3-O-SS09	Jul 02, 2014		Soil	S14-Jl02792	X					X			X			
#3-O-SS10	Jul 02, 2014		Soil	S14-Jl02793	X					X			X			
#3-O-SS11	Jul 02, 2014		Soil	S14-Jl02794	X					X			X			
#3-O-SS12	Jul 02, 2014		Soil	S14-Jl02795	X					X			X			
#3-O-SS13	Jul 02, 2014		Soil	S14-Jl02796	X					X			X			
#3-A-SS15	Jul 02, 2014		Soil	S14-Jl02797		X										
#3-A-SS16	Jul 02, 2014		Soil	S14-Jl02798		X										
#3-A-SS17	Jul 02, 2014		Soil	S14-Jl02799		X										
#3-S-SS18	Jul 02, 2014		Soil	S14-Jl02800	X							X		X	X	

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#3-S-SS19	Jul 02, 2014		Soil	S14-Jl02801	X							X		X	X	
#3-S-SS20	Jul 02, 2014		Soil	S14-Jl02802	X							X		X	X	
#3-S-SS21	Jul 02, 2014		Soil	S14-Jl02803	X					X			X			
#10-TP01 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02804	X	X						X		X		
#10-TP01 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02805			X									
#10-TP02 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02806	X	X						X		X		
#10-TP02 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02807			X									
#10-TP02 (1.1-1.2)	Jul 02, 2014		Soil	S14-Jl02808			X									

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Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#10-SED01	Jul 02, 2014		Soil	S14-Jl02809	X			X		X						
#10-SS01	Jul 02, 2014		Soil	S14-Jl02810	X			X		X						
#10-TP04 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02811	X	X						X		X		
#10-TP04 (0.2-0.3)	Jul 02, 2014		Soil	S14-Jl02812			X									
#21-TP01 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02813	X	X						X		X		
#21-TP01 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02814			X									
#21-TP01 (1.9-2.0)	Jul 02, 2014		Soil	S14-Jl02815	X											X
#21-TP02 (0-	Jul 02, 2014		Soil	S14-Jl02816	X							X				

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Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
0.1)																
#21-TP02 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02817	X	X								X		
#21-TP02 (1.9-2.0)	Jul 02, 2014		Soil	S14-Jl02818			X									
#22-TP01 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02819		X										
#22-TP01 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02820	X	X						X		X		
#22-TP01 (1.9-2.0)	Jul 02, 2014		Soil	S14-Jl02821			X									
#22-TP02 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02822	X							X				

eurofins | mgt

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NATA # 1261 Site # 20794

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 423820
Phone: 02 8245 0300
Fax:

Received: Jul 2, 2014 5:10 PM
Due: Jul 10, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#22-TP02 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02823	X	X								X		
#22-TP02 (1.9-2.0)	Jul 02, 2014		Soil	S14-Jl02824			X									
#21-SED01	Jul 02, 2014		Soil	S14-Jl02825	X							X		X		
RINSATE	Jul 02, 2014		Water	S14-Jl02826								X		X		
TRIP SPIKE	Jul 02, 2014		Water	S14-Jl02827							X					
TRIP BLANK	Jul 02, 2014		Water	S14-Jl02828							X					
10-SD-SS02	Jul 02, 2014		Soil	S14-Jl04027	X	X						X		X		
10-SD-TP04	Jul 02, 2014		Soil	S14-Jl04037		X										
21-TP01 0.4-0.5	Jul 02, 2014		Soil	S14-Jl04038			X									

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:** Jul 2, 2014 5:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423820	**Due:** Jul 10, 2014
		Phone:	02 8245 0300	**Priority:** 5 Day
		Fax:		**Contact Name:** Ken Henderson
Client Job No.:	BOX HILL 43376			

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
3-SS14	Jul 02, 2014		Soil	S14-Jl04039			X									
21-TP03 0-0.1	Jul 02, 2014		Soil	S14-Jl04040			X									
21-TP03 0.3-0.4	Jul 02, 2014		Soil	S14-Jl04041			X									
3-0-SS03	Jul 02, 2014		Soil	S14-Jl04042			X									

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C10-36 (Total)	mg/kg	< 0			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0			0.5	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	106			70-130	Pass	
TRH C10-C14	%	75			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	93			70-130	Pass	
Toluene	%	87			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	98			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Xylenes - Total	%	99			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	118			70-130	Pass	
TRH C6-C10	%	100			70-130	Pass	
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	95			75-125	Pass	
1.1-Dichloroethene	%	95			70-130	Pass	
1.1.1-Trichloroethane	%	96			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	94			70-130	Pass	
1.1.2-Trichloroethane	%	97			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	107			70-130	Pass	
1.2-Dibromoethane	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	93			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
1.2-Dichloropropane	%	94			70-130	Pass	
1.2.3-Trichloropropane	%	91			70-130	Pass	
1.2.4-Trimethylbenzene	%	83			70-130	Pass	
1.3-Dichlorobenzene	%	90			70-130	Pass	
1.3-Dichloropropane	%	99			70-130	Pass	
1.3.5-Trimethylbenzene	%	83			70-130	Pass	
1.4-Dichlorobenzene	%	90			70-130	Pass	
2-Butanone (MEK)	%	91			70-130	Pass	
4-Chlorotoluene	%	89			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	100			70-130	Pass	
Benzene	%	94			70-130	Pass	
Bromobenzene	%	87			70-130	Pass	
Bromochloromethane	%	89			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Bromodichloromethane	%	92			70-130	Pass	
Bromoform	%	100			70-130	Pass	
Carbon disulfide	%	82			70-130	Pass	
Carbon Tetrachloride	%	88			70-130	Pass	
Chlorobenzene	%	95			70-130	Pass	
Chloroethane	%	89			70-130	Pass	
Chloroform	%	90			70-130	Pass	
Chloromethane	%	93			70-130	Pass	
cis-1.2-Dichloroethene	%	80			70-130	Pass	
cis-1.3-Dichloropropene	%	82			70-130	Pass	
Dibromochloromethane	%	87			70-130	Pass	
Dibromomethane	%	99			70-130	Pass	
Dichlorodifluoromethane	%	116			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
Isopropyl benzene (Cumene)	%	101			70-130	Pass	
m&p-Xylenes	%	102			70-130	Pass	
Methylene Chloride	%	94			70-130	Pass	
o-Xylene	%	103			70-130	Pass	
Styrene	%	92			70-130	Pass	
Tetrachloroethene	%	92			70-130	Pass	
Toluene	%	93			70-130	Pass	
trans-1.2-Dichloroethene	%	95			70-130	Pass	
trans-1.3-Dichloropropene	%	82			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
Trichlorofluoromethane	%	98			70-130	Pass	
Vinyl chloride	%	105			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	95			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	114			70-130	Pass	
Benz(a)anthracene	%	88			70-130	Pass	
Benzo(a)pyrene	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	
Benzo(g.h.i)perylene	%	107			70-130	Pass	
Benzo(k)fluoranthene	%	102			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	102			70-130	Pass	
Fluorene	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	96			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
Phenanthrene	%	90			70-130	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	95			70-130	Pass	
4.4'-DDD	%	103			70-130	Pass	
4.4'-DDE	%	100			70-130	Pass	
4.4'-DDT	%	101			70-130	Pass	
a-BHC	%	99			70-130	Pass	
Aldrin	%	96			70-130	Pass	
b-BHC	%	92			70-130	Pass	
d-BHC	%	98			70-130	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dieldrin	%	101			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	102			70-130	Pass	
Endrin	%	106			70-130	Pass	
Endrin aldehyde	%	84			70-130	Pass	
Endrin ketone	%	104			70-130	Pass	
g-BHC (Lindane)	%	98			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	99			70-130	Pass	
Hexachlorobenzene	%	95			70-130	Pass	
Methoxychlor	%	93			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	77			70-130	Pass	
2.4-DB	%	75			70-130	Pass	
2.4.5-T	%	80			70-130	Pass	
2.4.5-TP	%	86			70-130	Pass	
Actril (loxynil)	%	82			70-130	Pass	
Dicamba	%	87			70-130	Pass	
Dichlorprop	%	80			70-130	Pass	
Dinitro-o-cresol	%	71			70-130	Pass	
Dinoseb	%	80			70-130	Pass	
MCPA	%	87			70-130	Pass	
MCPB	%	74			70-130	Pass	
Mecoprop	%	85			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	78			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	102			70-130	Pass	
Coumaphos	%	96			70-130	Pass	
Demeton (total)	%	96			70-130	Pass	
Diazinon	%	105			70-130	Pass	
Dichlorvos	%	105			70-130	Pass	
Dimethoate	%	97			70-130	Pass	
Disulfoton	%	100			70-130	Pass	
Ethoprop	%	102			70-130	Pass	
Fenitrothion	%	100			70-130	Pass	
Fensulfothion	%	90			70-130	Pass	
Fenthion	%	103			70-130	Pass	
Methyl azinphos	%	93			70-130	Pass	
Malathion	%	98			70-130	Pass	
Methyl parathion	%	101			70-130	Pass	
Mevinphos	%	102			70-130	Pass	
Monocrotophos	%	85			70-130	Pass	
Parathion	%	91			70-130	Pass	
Phorate	%	101			70-130	Pass	
Profenofos	%	98			70-130	Pass	
Prothiofos	%	100			70-130	Pass	
Ronnel	%	103			70-130	Pass	
Stirophos	%	92			70-130	Pass	
Trichloronate	%	99			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery									
Heavy Metals									
Arsenic			%	89			70-130	Pass	
Cadmium			%	95			70-130	Pass	
Chromium			%	93			70-130	Pass	
Copper			%	93			70-130	Pass	
Lead			%	94			70-130	Pass	
Mercury			%	98			70-130	Pass	
Nickel			%	88			70-130	Pass	
Zinc			%	77			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl02770	CP	%	107			70-130	Pass	
TRH C10-C14	S14-Jl02770	CP	%	83			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl02770	CP	%	90			70-130	Pass	
Toluene	S14-Jl02770	CP	%	86			70-130	Pass	
Ethylbenzene	S14-Jl02770	CP	%	99			70-130	Pass	
m&p-Xylenes	S14-Jl02770	CP	%	99			70-130	Pass	
o-Xylene	S14-Jl02770	CP	%	100			70-130	Pass	
Xylenes - Total	S14-Jl02770	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl02770	CP	%	122			70-130	Pass	
TRH C6-C10	S14-Jl02770	CP	%	108			70-130	Pass	
TRH >C10-C16	S14-Jl02770	CP	%	103			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	S14-Jl02770	CP	%	109			70-130	Pass	
Copper	S14-Jl02770	CP	%	124			70-130	Pass	
Mercury	S14-Jl02770	CP	%	114			70-130	Pass	
Nickel	S14-Jl02770	CP	%	111			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jl05061	NCP	%	103			70-130	Pass	
4.4'-DDD	S14-Jl05061	NCP	%	104			70-130	Pass	
4.4'-DDE	S14-Jl05061	NCP	%	109			70-130	Pass	
4.4'-DDT	S14-Jl05061	NCP	%	77			70-130	Pass	
a-BHC	S14-Jl05061	NCP	%	94			70-130	Pass	
Aldrin	S14-Jl05061	NCP	%	96			70-130	Pass	
b-BHC	S14-Jl05061	NCP	%	96			70-130	Pass	
d-BHC	S14-Jl05061	NCP	%	90			70-130	Pass	
Dieldrin	S14-Jl05061	NCP	%	103			70-130	Pass	
Endosulfan I	S14-Jl05061	NCP	%	95			70-130	Pass	
Endosulfan II	S14-Jl05061	NCP	%	103			70-130	Pass	
Endosulfan sulphate	S14-Jl05061	NCP	%	90			70-130	Pass	
Endrin	S14-Jl05061	NCP	%	102			70-130	Pass	
Endrin aldehyde	S14-Jl05061	NCP	%	87			70-130	Pass	
Endrin ketone	S14-Jl05061	NCP	%	97			70-130	Pass	
g-BHC (Lindane)	S14-Jl05061	NCP	%	84			70-130	Pass	
Heptachlor	S14-Jl05061	NCP	%	100			70-130	Pass	
Heptachlor epoxide	S14-Jl05061	NCP	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	S14-Jl05061	NCP	%	101			70-130	Pass	
Methoxychlor	S14-Jl05061	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S14-Jl02776	CP	%	99			70-130	Pass	
Coumaphos	S14-Jl02776	CP	%	91			70-130	Pass	
Demeton (total)	S14-Jl02776	CP	%	103			70-130	Pass	
Diazinon	S14-Jl02776	CP	%	100			70-130	Pass	
Dichlorvos	S14-Jl02776	CP	%	112			70-130	Pass	
Dimethoate	S14-Jl02776	CP	%	97			70-130	Pass	
Disulfoton	S14-Jl02776	CP	%	100			70-130	Pass	
Ethoprop	S14-Jl02776	CP	%	99			70-130	Pass	
Fenitrothion	S14-Jl02776	CP	%	94			70-130	Pass	
Fensulfothion	S14-Jl02776	CP	%	88			70-130	Pass	
Fenthion	S14-Jl02776	CP	%	100			70-130	Pass	
Methyl azinphos	S14-Jl02776	CP	%	90			70-130	Pass	
Malathion	S14-Jl02776	CP	%	97			70-130	Pass	
Methyl parathion	S14-Jl02776	CP	%	92			70-130	Pass	
Mevinphos	S14-Jl02776	CP	%	102			70-130	Pass	
Monocrotophos	S14-Jl02776	CP	%	87			70-130	Pass	
Parathion	S14-Jl02776	CP	%	95			70-130	Pass	
Phorate	S14-Jl02776	CP	%	102			70-130	Pass	
Profenofos	S14-Jl02776	CP	%	95			70-130	Pass	
Prothiofos	S14-Jl02776	CP	%	99			70-130	Pass	
Ronnel	S14-Jl02776	CP	%	99			70-130	Pass	
Stirophos	S14-Jl02776	CP	%	88			70-130	Pass	
Trichloronate	S14-Jl02776	CP	%	100			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M14-Jl03182	NCP	%	80			70-130	Pass	
Actril (loxynil)	M14-Jl03182	NCP	%	81			70-130	Pass	
Dichlorprop	M14-Jl03182	NCP	%	83			70-130	Pass	
MCPA	M14-Jl03182	NCP	%	22			70-130	Fail	Q08
MCPB	M14-Jl03182	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S14-Jl02790	CP	%	103			70-130	Pass	
Coumaphos	S14-Jl02790	CP	%	108			70-130	Pass	
Demeton (total)	S14-Jl02790	CP	%	90			70-130	Pass	
Diazinon	S14-Jl02790	CP	%	110			70-130	Pass	
Dichlorvos	S14-Jl02790	CP	%	117			70-130	Pass	
Dimethoate	S14-Jl02790	CP	%	104			70-130	Pass	
Disulfoton	S14-Jl02790	CP	%	85			70-130	Pass	
Ethoprop	S14-Jl02790	CP	%	109			70-130	Pass	
Fenitrothion	S14-Jl02790	CP	%	99			70-130	Pass	
Fensulfothion	S14-Jl02790	CP	%	101			70-130	Pass	
Fenthion	S14-Jl02790	CP	%	102			70-130	Pass	
Methyl azinphos	S14-Jl02790	CP	%	92			70-130	Pass	
Malathion	S14-Jl02790	CP	%	102			70-130	Pass	
Methyl parathion	S14-Jl02790	CP	%	98			70-130	Pass	
Mevinphos	S14-Jl02790	CP	%	111			70-130	Pass	
Monocrotophos	S14-Jl02790	CP	%	88			70-130	Pass	
Parathion	S14-Jl02790	CP	%	107			70-130	Pass	
Phorate	S14-Jl02790	CP	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Profenofos	S14-Jl02790	CP	%	102			70-130	Pass	
Prothiofos	S14-Jl02790	CP	%	105			70-130	Pass	
Ronnel	S14-Jl02790	CP	%	102			70-130	Pass	
Stirophos	S14-Jl02790	CP	%	98			70-130	Pass	
Trichloronate	S14-Jl02790	CP	%	102			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl02790	CP	%	92			70-130	Pass	
Cadmium	S14-Jl02790	CP	%	93			70-130	Pass	
Chromium	S14-Jl02790	CP	%	96			70-130	Pass	
Copper	S14-Jl02790	CP	%	88			70-130	Pass	
Lead	S14-Jl02790	CP	%	78			70-130	Pass	
Mercury	S14-Jl02790	CP	%	100			70-130	Pass	
Nickel	S14-Jl02790	CP	%	102			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jl02794	CP	%	102			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl02800	CP	%	94			70-130	Pass	
Toluene	S14-Jl02800	CP	%	95			70-130	Pass	
Ethylbenzene	S14-Jl02800	CP	%	97			70-130	Pass	
m&p-Xylenes	S14-Jl02800	CP	%	101			70-130	Pass	
o-Xylene	S14-Jl02800	CP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl02800	CP	%	118			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jl02800	CP	%	96			75-125	Pass	
1.1-Dichloroethene	S14-Jl02800	CP	%	98			70-130	Pass	
1.1.1-Trichloroethane	S14-Jl02800	CP	%	96			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl02800	CP	%	91			70-130	Pass	
1.1.2-Trichloroethane	S14-Jl02800	CP	%	99			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl02800	CP	%	110			70-130	Pass	
1.2-Dibromoethane	S14-Jl02800	CP	%	103			70-130	Pass	
1.2-Dichlorobenzene	S14-Jl02800	CP	%	95			70-130	Pass	
1.2-Dichloroethane	S14-Jl02800	CP	%	105			70-130	Pass	
1.2-Dichloropropane	S14-Jl02800	CP	%	95			70-130	Pass	
1.2.3-Trichloropropane	S14-Jl02800	CP	%	98			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jl02800	CP	%	90			70-130	Pass	
1.3-Dichlorobenzene	S14-Jl02800	CP	%	93			70-130	Pass	
1.3-Dichloropropane	S14-Jl02800	CP	%	101			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jl02800	CP	%	90			70-130	Pass	
1.4-Dichlorobenzene	S14-Jl02800	CP	%	93			70-130	Pass	
2-Butanone (MEK)	S14-Jl02800	CP	%	97			70-130	Pass	
4-Chlorotoluene	S14-Jl02800	CP	%	93			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl02800	CP	%	113			70-130	Pass	
Bromobenzene	S14-Jl02800	CP	%	88			70-130	Pass	
Bromochloromethane	S14-Jl02800	CP	%	91			70-130	Pass	
Bromodichloromethane	S14-Jl02800	CP	%	90			70-130	Pass	
Bromoform	S14-Jl02800	CP	%	94			70-130	Pass	
Carbon disulfide	S14-Jl02800	CP	%	74			70-130	Pass	
Carbon Tetrachloride	S14-Jl02800	CP	%	88			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	S14-JI02800	CP	%	93			70-130	Pass	
Chloroethane	S14-JI02800	CP	%	93			70-130	Pass	
Chloroform	S14-JI02800	CP	%	92			70-130	Pass	
Chloromethane	S14-JI02800	CP	%	111			70-130	Pass	
cis-1.2-Dichloroethene	S14-JI02800	CP	%	80			70-130	Pass	
cis-1.3-Dichloropropene	S14-JI02800	CP	%	83			70-130	Pass	
Dibromochloromethane	S14-JI02800	CP	%	85			70-130	Pass	
Dibromomethane	S14-JI02800	CP	%	101			70-130	Pass	
Dichlorodifluoromethane	S14-JI02800	CP	%	119			70-130	Pass	
Isopropyl benzene (Cumene)	S14-JI02800	CP	%	101			70-130	Pass	
Methylene Chloride	S14-JI02800	CP	%	97			70-130	Pass	
Styrene	S14-JI02800	CP	%	91			70-130	Pass	
Tetrachloroethene	S14-JI02800	CP	%	93			70-130	Pass	
trans-1.2-Dichloroethene	S14-JI02800	CP	%	96			70-130	Pass	
trans-1.3-Dichloropropene	S14-JI02800	CP	%	83			70-130	Pass	
Trichloroethene	S14-JI02800	CP	%	93			70-130	Pass	
Trichlorofluoromethane	S14-JI02800	CP	%	99			70-130	Pass	
Vinyl chloride	S14-JI02800	CP	%	109			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-JI02803	CP	%	92			70-130	Pass	
Cadmium	S14-JI02803	CP	%	98			70-130	Pass	
Chromium	S14-JI02803	CP	%	84			70-130	Pass	
Copper	S14-JI02803	CP	%	115			70-130	Pass	
Lead	S14-JI02803	CP	%	102			70-130	Pass	
Mercury	S14-JI02803	CP	%	103			70-130	Pass	
Nickel	S14-JI02803	CP	%	123			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-JI02813	CP	%	74			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-JI02813	CP	%	81			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-JI05079	NCP	%	99			70-130	Pass	
Acenaphthylene	S14-JI05079	NCP	%	98			70-130	Pass	
Anthracene	S14-JI05079	NCP	%	98			70-130	Pass	
Benz(a)anthracene	S14-JI05079	NCP	%	108			70-130	Pass	
Benzo(a)pyrene	S14-JI05079	NCP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	S14-JI05079	NCP	%	94			70-130	Pass	
Benzo(g.h.i)perylene	S14-JI05079	NCP	%	79			70-130	Pass	
Benzo(k)fluoranthene	S14-JI05079	NCP	%	101			70-130	Pass	
Chrysene	S14-JI05079	NCP	%	103			70-130	Pass	
Dibenz(a.h)anthracene	S14-JI05079	NCP	%	85			70-130	Pass	
Fluoranthene	S14-JI05079	NCP	%	102			70-130	Pass	
Fluorene	S14-JI05079	NCP	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-JI05079	NCP	%	84			70-130	Pass	
Naphthalene	S14-JI05079	NCP	%	96			70-130	Pass	
Phenanthrene	S14-JI05079	NCP	%	90			70-130	Pass	
Pyrene	S14-JI05079	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-JI02820	CP	%	98			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	S14-Jl02820	CP	%	87			70-130	Pass	
Chromium	S14-Jl02820	CP	%	107			70-130	Pass	
Copper	S14-Jl02820	CP	%	99			70-130	Pass	
Lead	S14-Jl02820	CP	%	104			70-130	Pass	
Mercury	S14-Jl02820	CP	%	78			70-130	Pass	
Nickel	S14-Jl02820	CP	%	85			70-130	Pass	
Zinc	S14-Jl02820	CP	%	76			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl02825	CP	%	81			70-130	Pass	
Cadmium	S14-Jl02825	CP	%	90			70-130	Pass	
Copper	S14-Jl02825	CP	%	77			70-130	Pass	
Lead	S14-Jl02825	CP	%	71			70-130	Pass	
Mercury	S14-Jl02825	CP	%	101			70-130	Pass	
Nickel	S14-Jl02825	CP	%	83			70-130	Pass	
Zinc	S14-Jl02825	CP	%	81			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl02769	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl02769	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl02769	CP	mg/kg	390	360	6.0	30%	Pass	
TRH C29-C36	S14-Jl02769	CP	mg/kg	240	240	1.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl02769	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl02769	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl02769	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl02769	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl02769	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl02769	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl02769	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jl02769	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl02769	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jl02769	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl02769	CP	mg/kg	610	580	4.0	30%	Pass	
TRH >C34-C40	S14-Jl02769	CP	mg/kg	120	160	33	30%	Fail	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl02769	CP	mg/kg	15	13	17	30%	Pass	
Cadmium	S14-Jl02769	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jl02769	CP	mg/kg	35	25	31	30%	Fail	Q02
Copper	S14-Jl02769	CP	mg/kg	16	15	3.0	30%	Pass	
Lead	S14-Jl02769	CP	mg/kg	37	32	16	30%	Pass	
Mercury	S14-Jl02769	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl02769	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S14-Jl02769	CP	mg/kg	51	48	5.0	30%	Pass	

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Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl02771	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl02771	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl02771	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl02771	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl02771	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl02771	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl02771	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl02771	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl02771	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl02771	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S14-Jl02775	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-Jl02775	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Strophos	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-Jl02775	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	M14-Jl03979	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl02783	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl02783	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl02783	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl02783	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl02783	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
cis-1.2-Dichloroethene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jl02783	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S14-Jl02789	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-Jl02789	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-Jl02789	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl02789	CP	mg/kg	6.2	7.5	19	30%	Pass	
Cadmium	S14-Jl02789	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jl02789	CP	mg/kg	23	26	12	30%	Pass	
Copper	S14-Jl02789	CP	mg/kg	28	26	9.0	30%	Pass	
Lead	S14-Jl02789	CP	mg/kg	25	25	1.0	30%	Pass	
Mercury	S14-Jl02789	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl02789	CP	mg/kg	7.9	9.1	14	30%	Pass	
Zinc	S14-Jl02789	CP	mg/kg	59	59	<1	30%	Pass	

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Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-JI02802	CP	mg/kg	8.5	8.3	3.0	30%	Pass	
Cadmium	S14-JI02802	CP	mg/kg	1.0	1.0	5.0	30%	Pass	
Chromium	S14-JI02802	CP	mg/kg	28	39	33	30%	Fail	Q15
Copper	S14-JI02802	CP	mg/kg	240	240	<1	30%	Pass	
Lead	S14-JI02802	CP	mg/kg	45	47	5.0	30%	Pass	
Mercury	S14-JI02802	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-JI02802	CP	mg/kg	21	26	22	30%	Pass	
Zinc	S14-JI02802	CP	mg/kg	580	560	5.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-JI02811	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-JI02811	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-JI02811	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-JI02811	CP	mg/kg	180	190	8.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-JI02811	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-JI02811	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-JI02811	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-JI02811	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-JI02811	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-JI02811	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-JI02811	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-JI02811	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-JI02811	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-JI02811	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-JI02811	CP	mg/kg	140	130	3.0	30%	Pass	
TRH >C34-C40	S14-JI02811	CP	mg/kg	240	260	7.0	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-JI02815	CP	units	5.5	5.4	2.0	30%	Pass	
pH-OX	S14-JI02815	CP	units	5.3	5.3	<1	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-JI02815	CP	mol H+/t	9.0	10	9.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-JI02815	CP	mol H+/t	15	13	12	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-JI02815	CP	mol H+/t	5.0	3.0	63	30%	Fail	Q15
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-JI02815	CP	% pyrite S	0.02	0.02	9.0	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-JI02815	CP	% pyrite S	0.02	0.02	12	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-JI02815	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - KCl Extractable	S14-JI02815	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-JI02815	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-JI02815	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-JI02815	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-JI02815	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Calcium - Peroxide	S14-JI02815	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Acid Reacted Calcium	S14-JI02815	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-JI02815	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-JI02815	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-JI02815	CP	% Mg	0.09	0.08	12	30%	Pass	
Magnesium - Peroxide	S14-JI02815	CP	% Mg	0.08	0.08	4.0	30%	Pass	

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Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
Acid Reacted Magnesium	S14-Jl02815	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jl02815	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jl02815	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jl02815	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jl02815	CP	% S	0.02	0.02	9.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jl02815	CP	mol H+/t	< 10	10	9.0	30%	Pass	
Liming rate - SPOCAS	S14-Jl02815	CP	kg CaCO3/t	1.0	1.0	9.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl02816	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl02816	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl02816	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl02816	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl02816	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl02816	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl02816	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl02816	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl02816	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl02816	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl02820	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl02820	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl02820	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl02820	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl02820	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl02820	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl02820	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl02820	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl02820	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl02820	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-JI02820	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-JI02820	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-JI02820	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-JI02820	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-JI02820	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-JI02820	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-JI02820	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-JI02820	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-JI02820	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-JI02820	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl02820	CP	mg/kg	8.0	17	72	30%	Fail	Q02
Cadmium	S14-Jl02820	CP	mg/kg	1.0	0.5	61	30%	Fail	Q15
Chromium	S14-Jl02820	CP	mg/kg	18	30	53	30%	Fail	Q02
Copper	S14-Jl02820	CP	mg/kg	22	18	24	30%	Pass	
Lead	S14-Jl02820	CP	mg/kg	24	16	40	30%	Fail	Q15
Mercury	S14-Jl02820	CP	mg/kg	0.06	< 0.05	<1	30%	Pass	
Nickel	S14-Jl02820	CP	mg/kg	12	7.9	39	30%	Fail	Q15
Zinc	S14-Jl02820	CP	mg/kg	51	35	36	30%	Fail	Q02
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl02823	CP	mg/kg	12	13	5.0	30%	Pass	
Cadmium	S14-Jl02823	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jl02823	CP	mg/kg	37	34	7.0	30%	Pass	
Copper	S14-Jl02823	CP	mg/kg	16	20	25	30%	Pass	
Lead	S14-Jl02823	CP	mg/kg	27	34	24	30%	Pass	
Mercury	S14-Jl02823	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl02823	CP	mg/kg	6.9	8.9	26	30%	Pass	
Zinc	S14-Jl02823	CP	mg/kg	31	43	33	30%	Fail	Q15

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Ken Henderson
Report:	423820-S
Client Reference:	**BOX HILL 43376**
Received Date:	2 July 2014
Date Reported:	14 July 2014

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, "Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise" therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Site Reference: BOX HILL 43376
Date Sampled: 2 July 2014
Report: 423820-S

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
#17-A-SS05	14-Jl02773	2 July 2014	Approximate Sample Mass: 240g Sample consisted of: Dark brown clayey soil & rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#17-A-SS06	14-Jl02774	2 July 2014	Approximate Sample Mass:159g Sample consisted of: Brown mulch & rocks	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-SD-SS01	14-Jl02783	2 July 2014	Approximate Sample Mass: 478g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-A-SS02	14-Jl02784	2 July 2014	Approximate Sample Mass: 558g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#3-A-SS03	14-JI02785	2 July 2014	Approximate Sample Mass: 637g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-A-SS04	14-JI02786	2 July 2014	Approximate Sample Mass: 588g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-A-SS15	14-JI02797	2 July 2014	Approximate Sample Mass: 673g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-A-SS16	14-JI02798	2 July 2014	Approximate Sample Mass: 532g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#3-A-SS17	14-JI02799	2 July 2014	Approximate Sample Mass: 708g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#10-TP01 (0-0.1)	14-JI02804	2 July 2014	Approximate Sample Mass: 426g Sample consisted of: Brown clayey soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#10-TP02 (0-0.1)	14-Jl02806	2 July 2014	Approximate Sample Mass: 457g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#10-TP04 (0-0.1)	14-Jl02811	2 July 2014	Approximate Sample Mass: 598g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#21-TP01 (0-0.1)	14-Jl02813	2 July 2014	Approximate Sample Mass: 652g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#21-TP (0.3-0.4)	14-Jl02817	2 July 2014	Approximate Sample Mass: 762g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#22-TP01 (0-0.1)	14-Jl02819	2 July 2014	Approximate Sample Mass: 597g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
#22-TP01 (0.3-0.4)	14-Jl02820	2 July 2014	Approximate Sample Mass: 612g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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#22-TP02 (0.3-0.4)	14-JI02823	2 July 2014	Approximate Sample Mass: 701 g Sample consisted of: Brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
10-SD-SS02	14-JI04027	2 July 2014	Approximate Sample Mass: 307g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*
10-SD-TP04	14-JI04037	2 July 2014	Approximate Sample Mass: 784g Sample consisted of: Dark brown fine-grained soil	Organic fibres, no asbestos detected at the reporting limit of 0.001% w/w*

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos – LTM-ASB-8020	Sydney	11 July 2014	Indefinite

Eurofins | mgt
Laboratories:
Melbourne
Sydney
Brisbane

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Darwin
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Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters is performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis.
7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).
For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.
Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.
**NOTE: pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per kilogram
µg/l: micrograms per litre
ppb: Parts per billion
org/100ml: Organisms per 100 millilitres
MPN/100mL: Most Probable Number of organisms per 100 millilitres
mg/l: milligrams per litre
ppm: Parts per million
%: Percentage
NTU: Nephelometric Turbidity Units

TERMS

Dry	Where moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the client’s batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed on fireproofing, troweled on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).

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PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios)

QC - ACCEPTANCE CRITERIA

RPD Duplicates:	Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%
Surrogate Recoveries:	Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and its Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time.
7. Analysis will begin as soon as possible after sample receipt.
8. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
9. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS's.
10. For Matrix Spikes and LCS results a dash “-" in the report means that the specific analyte was not added to the QC sample.
11. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Organic samples had Teflon liners	N/A
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within Holding Time	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by

Jean Heng	Client Services
Nibha Vaidya	Approved Counter/Identifier
Alex Tam	Approved Counter/Identifier

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report.

- Indicates Not Requested
* Indicates NATA accreditation does not cover the performance of this service
Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **423820-W**
Client Reference BOX HILL 43376
Received Date Jul 02, 2014

Client Sample ID			RINSATE	TRIP SPIKE	TRIP BLANK
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S14-Jl02826	S14-Jl02827	S14-Jl02828
Date Sampled			Jul 02, 2014	Jul 02, 2014	Jul 02, 2014
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	-	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-
BTEX					
Benzene	0.001	mg/L	< 0.001	80%	< 0.001
Toluene	0.001	mg/L	< 0.001	85%	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	114%	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	94%	< 0.002
o-Xylene	0.001	mg/L	< 0.001	90%	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	93%	< 0.003
4-Bromofluorobenzene (surr.)	1	%	71	122	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	< 0.02	-	-
TRH C6-C10	0.02	mg/L	< 0.02	-	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	RINSATE Water S14-Jl02826 Jul 02, 2014	TRIP SPIKE Water S14-Jl02827 Jul 02, 2014	TRIP BLANK Water S14-Jl02828 Jul 02, 2014
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.001	mg/L	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	-	-
Total PAH	0.001	mg/L	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	74	-	-
p-Terphenyl-d14 (surr.)	1	%	77	-	-
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	< 0.001	-	-
4.4'-DDD	0.0001	mg/L	< 0.0001	-	-
4.4'-DDE	0.0001	mg/L	< 0.0001	-	-
4.4'-DDT	0.0001	mg/L	< 0.0001	-	-
a-BHC	0.0001	mg/L	< 0.0001	-	-
Aldrin	0.0001	mg/L	< 0.0001	-	-
b-BHC	0.0001	mg/L	< 0.0001	-	-
d-BHC	0.0001	mg/L	< 0.0001	-	-
Dieldrin	0.0001	mg/L	< 0.0001	-	-
Endosulfan I	0.0001	mg/L	< 0.0001	-	-
Endosulfan II	0.0001	mg/L	< 0.0001	-	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	-	-
Endrin	0.0001	mg/L	< 0.0001	-	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	-	-
Endrin ketone	0.0001	mg/L	< 0.0001	-	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	-	-
Heptachlor	0.0001	mg/L	< 0.0001	-	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	-	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	-	-
Methoxychlor	0.0001	mg/L	< 0.0001	-	-
Toxaphene	0.01	mg/L	< 0.01	-	-
Dibutylchlorendate (surr.)	1	%	109	-	-
Tetrachloro-m-xylene (surr.)	1	%	80	-	-
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	< 0.005	-	-
Aroclor-1232	0.005	mg/L	< 0.005	-	-
Aroclor-1242	0.005	mg/L	< 0.005	-	-
Aroclor-1248	0.005	mg/L	< 0.005	-	-
Aroclor-1254	0.005	mg/L	< 0.005	-	-
Aroclor-1260	0.005	mg/L	< 0.005	-	-
Total PCB	0.005	mg/L	< 0.005	-	-
Dibutylchlorendate (surr.)	1	%	109	-	-
Heavy Metals					
Arsenic	0.005	mg/L	< 0.005	-	-
Cadmium	0.0005	mg/L	< 0.0005	-	-
Chromium	0.005	mg/L	< 0.005	-	-
Copper	0.005	mg/L	< 0.005	-	-
Lead	0.005	mg/L	< 0.005	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-
Nickel	0.005	mg/L	< 0.005	-	-
Zinc	0.005	mg/L	< 0.005	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 03, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 02, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 03, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 03, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 02, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 14			
Organochlorine Pesticides	Sydney	Jul 03, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Eurofins | mgt Suite 13			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 03, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

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Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 2, 2014 5:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	423820	**Due:**	Jul 10, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
#17-SS01	Jul 02, 2014		Soil	S14-Jl02769	X									X		
#17-SS02	Jul 02, 2014		Soil	S14-Jl02770	X									X		
#17-SD-SS03	Jul 02, 2014		Soil	S14-Jl02771	X							X		X		
#17-SD-SS04	Jul 02, 2014		Soil	S14-Jl02772	X							X		X		
#17-A-SS05	Jul 02, 2014		Soil	S14-Jl02773		X										
#17-A-SS06	Jul 02, 2014		Soil	S14-Jl02774		X										
#2-O-SS01	Jul 02, 2014		Soil	S14-Jl02775	X								X			
#2-O-SS02	Jul 02, 2014		Soil	S14-Jl02776	X								X			
#2-O-SS03	Jul 02, 2014		Soil	S14-Jl02777	X								X			
#2-O-SS04	Jul 02, 2014		Soil	S14-Jl02778	X								X			

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Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#2-O-SS05	Jul 02, 2014		Soil	S14-Jl02779	X				X				X			
#2-O-SS06	Jul 02, 2014		Soil	S14-Jl02780	X								X			
#2-O-SS07	Jul 02, 2014		Soil	S14-Jl02781	X								X			
#2-O-SS08	Jul 02, 2014		Soil	S14-Jl02782	X								X			
#3-SD-SS01	Jul 02, 2014		Soil	S14-Jl02783	X	X						X		X	X	
#3-A-SS02	Jul 02, 2014		Soil	S14-Jl02784	X	X		X		X						
#3-A-SS03	Jul 02, 2014		Soil	S14-Jl02785	X	X		X		X						
#3-A-SS04	Jul 02, 2014		Soil	S14-Jl02786	X	X		X		X						
QC17	Jul 02, 2014		Soil	S14-Jl02787	X				X	X			X			
#3-O-SS05	Jul 02, 2014		Soil	S14-Jl02788	X					X			X			
#3-O-SS06	Jul 02, 2014		Soil	S14-Jl02789	X				X	X			X			

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Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#3-O-SS07	Jul 02, 2014		Soil	S14-Jl02790	X					X			X			
#3-O-SS08	Jul 02, 2014		Soil	S14-Jl02791	X				X	X			X			
#3-O-SS09	Jul 02, 2014		Soil	S14-Jl02792	X					X			X			
#3-O-SS10	Jul 02, 2014		Soil	S14-Jl02793	X					X			X			
#3-O-SS11	Jul 02, 2014		Soil	S14-Jl02794	X					X			X			
#3-O-SS12	Jul 02, 2014		Soil	S14-Jl02795	X					X			X			
#3-O-SS13	Jul 02, 2014		Soil	S14-Jl02796	X					X			X			
#3-A-SS15	Jul 02, 2014		Soil	S14-Jl02797		X										
#3-A-SS16	Jul 02, 2014		Soil	S14-Jl02798		X										
#3-A-SS17	Jul 02, 2014		Soil	S14-Jl02799		X										
#3-S-SS18	Jul 02, 2014		Soil	S14-Jl02800	X							X		X	X	

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Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#3-S-SS19	Jul 02, 2014		Soil	S14-Jl02801	X							X		X	X	
#3-S-SS20	Jul 02, 2014		Soil	S14-Jl02802	X							X		X	X	
#3-S-SS21	Jul 02, 2014		Soil	S14-Jl02803	X					X			X			
#10-TP01 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02804	X	X						X		X		
#10-TP01 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02805			X									
#10-TP02 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02806	X	X						X		X		
#10-TP02 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02807			X									
#10-TP02 (1.1-1.2)	Jul 02, 2014		Soil	S14-Jl02808			X									

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Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 2, 2014 5:10 PM
Address:	Level 1, 50 Margaret St	**Report #:**	423820	**Due:**	Jul 10, 2014
	Sydney	**Phone:**	02 8245 0300	**Priority:**	5 Day
	NSW 2000	**Fax:**		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#10-SED01	Jul 02, 2014		Soil	S14-Jl02809	X			X		X						
#10-SS01	Jul 02, 2014		Soil	S14-Jl02810	X			X		X						
#10-TP04 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02811	X	X						X		X		
#10-TP04 (0.2-0.3)	Jul 02, 2014		Soil	S14-Jl02812			X									
#21-TP01 (0-0.1)	Jul 02, 2014		Soil	S14-Jl02813	X	X						X		X		
#21-TP01 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02814			X									
#21-TP01 (1.9-2.0)	Jul 02, 2014		Soil	S14-Jl02815	X											X
#21-TP02 (0-	Jul 02, 2014		Soil	S14-Jl02816	X							X				

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Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 423820
Phone: 02 8245 0300
Fax:

Received: Jul 2, 2014 5:10 PM
Due: Jul 10, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
0.1)																
#21-TP02 (0.3-0.4)	Jul 02, 2014		Soil	S14-JI02817	X	X								X		
#21-TP02 (1.9-2.0)	Jul 02, 2014		Soil	S14-JI02818			X									
#22-TP01 (0-0.1)	Jul 02, 2014		Soil	S14-JI02819		X										
#22-TP01 (0.3-0.4)	Jul 02, 2014		Soil	S14-JI02820	X	X						X		X		
#22-TP01 (1.9-2.0)	Jul 02, 2014		Soil	S14-JI02821			X									
#22-TP02 (0-0.1)	Jul 02, 2014		Soil	S14-JI02822	X							X				

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		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
#22-TP02 (0.3-0.4)	Jul 02, 2014		Soil	S14-Jl02823	X	X								X		
#22-TP02 (1.9-2.0)	Jul 02, 2014		Soil	S14-Jl02824			X									
#21-SED01	Jul 02, 2014		Soil	S14-Jl02825	X							X		X		
RINSATE	Jul 02, 2014		Water	S14-Jl02826								X		X		
TRIP SPIKE	Jul 02, 2014		Water	S14-Jl02827							X					
TRIP BLANK	Jul 02, 2014		Water	S14-Jl02828							X					
10-SD-SS02	Jul 02, 2014		Soil	S14-Jl04027	X	X						X		X		
10-SD-TP04	Jul 02, 2014		Soil	S14-Jl04037		X										
21-TP01 0.4-0.5	Jul 02, 2014		Soil	S14-Jl04038			X									

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Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271									X							
Sydney Laboratory - NATA Site # 18217					X	X	X	X		X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
External Laboratory																
3-SS14	Jul 02, 2014		Soil	S14-Jl04039			X									
21-TP03 0-0.1	Jul 02, 2014		Soil	S14-Jl04040			X									
21-TP03 0.3-0.4	Jul 02, 2014		Soil	S14-Jl04041			X									
3-0-SS03	Jul 02, 2014		Soil	S14-Jl04042			X									

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	85			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	80			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	108			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
o-Xylene	%	111			70-130	Pass	
Xylenes - Total	%	107			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	115			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	94			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	117			70-130	Pass	
Acenaphthylene	%	123			70-130	Pass	
Anthracene	%	111			70-130	Pass	
Benz(a)anthracene	%	106			70-130	Pass	
Benzo(a)pyrene	%	102			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	%	105			70-130	Pass	
Benzo(g.h.i)perylene	%	114			70-130	Pass	
Benzo(k)fluoranthene	%	121			70-130	Pass	
Chrysene	%	117			70-130	Pass	
Dibenz(a.h)anthracene	%	102			70-130	Pass	
Fluoranthene	%	113			70-130	Pass	
Fluorene	%	118			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	105			70-130	Pass	
Naphthalene	%	127			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	113			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	100			70-130	Pass	
4.4'-DDD	%	100			70-130	Pass	
4.4'-DDE	%	100			70-130	Pass	
4.4'-DDT	%	75			70-130	Pass	
a-BHC	%	100			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	100			70-130	Pass	
d-BHC	%	75			70-130	Pass	
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	75			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	75			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	75			70-130	Pass	
Heptachlor	%	75			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	100			70-130	Pass	
Methoxychlor	%	75			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	75			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			70-130	Pass	
Cadmium	%	96			70-130	Pass	
Chromium	%	91			70-130	Pass	
Copper	%	93			70-130	Pass	
Lead	%	99			70-130	Pass	
Mercury	%	79			70-130	Pass	
Nickel	%	96			70-130	Pass	
Zinc	%	94			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl02713	NCP	%	97			70-130	Pass	
TRH C10-C14	S14-Jl01373	NCP	%	73			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl02713	NCP	%	75			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S14-JI02713	NCP	%	81			70-130	Pass	
Ethylbenzene	S14-JI02713	NCP	%	103			70-130	Pass	
m&p-Xylenes	S14-JI02713	NCP	%	96			70-130	Pass	
o-Xylene	S14-JI02713	NCP	%	88			70-130	Pass	
Xylenes - Total	S14-JI02713	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-JI02713	NCP	%	109			70-130	Pass	
TRH C6-C10	S14-JI02713	NCP	%	88			70-130	Pass	
TRH >C10-C16	S14-JI01373	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-JI02713	NCP	%	113			70-130	Pass	
Acenaphthylene	S14-JI02713	NCP	%	117			70-130	Pass	
Anthracene	S14-JI02713	NCP	%	104			70-130	Pass	
Benz(a)anthracene	S14-JI02713	NCP	%	101			70-130	Pass	
Benzo(a)pyrene	S14-JI02713	NCP	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	S14-JI02713	NCP	%	99			70-130	Pass	
Benzo(g.h.i)perylene	S14-JI02713	NCP	%	108			70-130	Pass	
Benzo(k)fluoranthene	S14-JI02713	NCP	%	115			70-130	Pass	
Chrysene	S14-JI02713	NCP	%	111			70-130	Pass	
Dibenz(a.h)anthracene	S14-JI02713	NCP	%	96			70-130	Pass	
Fluoranthene	S14-JI02713	NCP	%	107			70-130	Pass	
Fluorene	S14-JI02713	NCP	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-JI02713	NCP	%	99			70-130	Pass	
Naphthalene	S14-JI02713	NCP	%	119			70-130	Pass	
Phenanthrene	S14-JI02713	NCP	%	101			70-130	Pass	
Pyrene	S14-JI02713	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-JI05486	NCP	%	99			70-130	Pass	
Cadmium	S14-JI05486	NCP	%	100			70-130	Pass	
Chromium	S14-JI05486	NCP	%	91			70-130	Pass	
Copper	S14-JI05486	NCP	%	90			70-130	Pass	
Lead	S14-JI05486	NCP	%	95			70-130	Pass	
Mercury	S14-JI05486	NCP	%	85			70-130	Pass	
Nickel	S14-JI05486	NCP	%	94			70-130	Pass	
Zinc	S14-JI05486	NCP	%	77			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-JI04104	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-JI01372	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-JI01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-JI01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-JI04104	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-JI04104	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-JI04104	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-JI04104	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-JI04104	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-JI04104	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl04104	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jl04104	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl04104	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jl01372	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jl01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jl01372	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jl01372	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl04381	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jl04381	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl04381	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jl04381	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jl04381	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jl04381	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl04381	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jl04381	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	02233
Turn around time:	5 Day
Date/Time received:	Jul 2, 2014 5:10 PM
Eurofins | mgt reference:	**423820**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 15 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☒ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Please see attached email for discrepancies| Jars not received for#3-SD-SS01, #3-A-SS02-, #3-A-SS03 and #3-A-SS04. Analysis cancelled except for Asbestos| Bag not received for #3-S-SS21.Asbestos analysis cancelled.

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

Eurofins | mgt Sample Receipt

02233

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au tcreese@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	B14	Herbicides	VOCs	metals	OCPs	NOTES:
#17-SS01	Soil	2/7/14		J		X								B7 =
#17-SS02				J		X								TRH, BTEX
#17-SD-SS03				B+J		X	X							PAH, 8 metals
#17-SD-SS04				B+J		X	X							
#17-A-SS05				B				X						B13
#17-A-SS06				B				X						= OCP, PCBs
#2-0-SS01				J					X					
#2-0-SS02									X					Asbestos
#2-0-SS03									X					= WA
#2-0-SS04									X					
#2-0-SS05									X	X				B14
#2-0-SS06									X					= OCP/OPP
#2-0-SS07									X					
#2-0-SS08									X					
#3-SD-SS01				B+J		X	X	X			X			
#3-A-SS02				B				X				X	X	
#3-A-SS03								X				X	X	
#3-A-SS04								X				X	X	
QC17				J					X	X		X		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: TCreese DATE: 2/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jamie DATE: 2/7/14 5:10pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

① Contact TC for sample 17SVCs

02234

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB tcruse@jbsg.com.au
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL:
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) khenderson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B14	metals	Herbicides	Asbestos	VOCs	B7	B13													NOTES:
#3-0-5505	Soil	2/7/14		J		X	X																		
#3-0-5506						X	X	X																	
#3-0-5507						X	X																		
#3-0-5508						X	X	X																	
#3-0-5509						X	X																		
#3-0-5510						X	X																		
#3-0-5511						X	X																		
#3-0-5512						X	X																		
#3-0-5513						X	X																		
#3-A-5515				B					X																
#3-A-5516									X																
#3-A-5517									X																
#3-S-5518				J						X	X	X													
#3-S-5519										X	X	X													
#3-S-5520										X	X	X													
#3-S-5521						X	X		X																
#10-TP01 (0-0.1)				B+J					X		X	X													
#10-TP01 (0.3-0.4)				"																					
#10-TP02 (0-0.1)				"					X		X	X													

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Cruse DATE: 2/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 2/7/14 2:10pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 - Chain of Custody - Generic

02235

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB
SEND REPORT TO: TC, KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: klenderson@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcreese@jbsg.com

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	asbestos	metals	OCPs	Specs	NOTES:
#10-TP02 (0.3-0.4)												
#10-TP02 (1.1-1.2)												
#10-SED01									X	X		
#10-SS01									X	X		
#10-TP04 (0-0.1)						X	X	X				
#10-TP04 (0.2-0.3)												
#21-TP01 (0-0.1)						X	X	X				
#21-TP01 (0.3-0.4)												
#21-TP01 (1.9-2.0)											X	
#21-TP02 (0-0.1)							X					
#21-TP02 (0.3-0.4)						X		X				
#21-TP02 (1.9-2.0)												
#22-TP01 (0-0.1)						X	X	X				
#22-TP01 (0.3-0.4)												
#22-TP01 (1.9-2.0)												
#22-TP02 (0-0.1)							X					
#22-TP02 (0.3-0.4)						X		X				
#22-TP02 (1.9-2.0)												
#21-SED01						X	X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Clerke DATE: 2/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 2/7/14 5:10pm OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02236

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TR
SEND REPORT TO: SEND INVOICE TO:	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: klenderson@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	BTEX	B7	TB13	NOTES:
Rinsate	Water	2/7/14					X	X	
Trip spike	↓	"				X			
Trip blank						X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: 2/7/14 DATE: OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 2/7/14 5:10pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

From: Admin Syd
Sent: Thursday, 3 July 2014 1:00 PM
To: Tyler Creese
Cc: EnviroSampleNSW
Subject: Box Hill 43376

Hi Tyler,

I found the #17 samples in another esky so that's fine. Please see below for the discrepancies:

Rinsate- Only a 1x1L amber received

Missing- 3-D-SS01 (Bag and jar), 3ASS02(jar), 3ASS03(Jar), 3ASS04 (Jar), #21-TP03 (0.3-0.4)- double labelled jar, #22_TP01 0-0.1- Might be double labelled jar, 3-S-SS21 (Missing bag)

Extra samples received- #21-TP01 0.4-0.5 (bag and Jar), #3-SS14 (Bag and Jar), #3-O-SS03 (Bag), #10-TP04 (Bag), #10-SD-SS02 (Bag and Jar), #3-SD-SS01.

Other labelling discrepancies

COC: #10-TP04 0.2-0.3, Jar# 10-TP04 0.3-0.4. We have labelled as per the COC
COC:#21-TP02 0.3-0.4, Jar:#21-TP02 0.4-0.5. We have labelled as per the COC

COC/BAG: #22-TP02 0.3-0.4 (Correct), Jar: TP02 0.4-0.5. We have labelled the jar as per the bag.

-----Original Message-----
From: Tyler Creese [mailto:TCreese@jbsg.com.au]
Sent: Thursday, 3 July 2014 2:35 PM
To: Admin Syd
Subject: Re: Box Hill 43376

Hopefully this clears it up:

- can all rinsate analyses be conducted from Amber (?)

- there is no #3-d-ss01. It is #3-sd-ss01

- please test 10-sd-ss02 for B7, B13, asbestos

- put 10-sd- tp04 on for asbestos

- disregard the unlabelled jar.

- never mind analysis on additional samples

Does this clear most up?

Sent from my iPhone

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **424036-S**
Client Reference BOX HILL 43376
Received Date Jul 03, 2014

Client Sample ID			**#22-G-TP03 (0-0.1)**	**#22-G-TP03 (0.4-0.5)**	**QC18**	**#22-TP04 (0-0.1)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI04543**	**S14-JI04544**	**S14-JI04545**	**S14-JI04546**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	94	77
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5

Client Sample ID			#22-G-TP03 (0-0.1)	#22-G-TP03 (0.4-0.5)	QC18	#22-TP04 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl04543	S14-Jl04544	S14-Jl04545	S14-Jl04546
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	97	114
p-Terphenyl-d14 (surr.)	1	%	-	-	124	122
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	122	-	116	87
Tetrachloro-m-xylene (surr.)	1	%	118	-	115	92
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	116	87
pH (1:5 Aqueous extract)	0.1	units	-	6.8	-	-
% Moisture	0.1	%	14	12	16	15
Asbestos - WA guidelines	0.001	% w/w	-	-	-	see attached
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	6.9	-	-

Client Sample ID			#22-G-TP03 (0-0.1)	#22-G-TP03 (0.4-0.5)	QC18	#22-TP04 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl04543**	**S14-Jl04544**	**S14-Jl04545**	**S14-Jl04546**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.7	-	2.5	9.5
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	< 0.4
Chromium	5	mg/kg	6.9	-	7.0	17
Copper	5	mg/kg	7.1	-	8.0	14
Lead	5	mg/kg	< 5	-	< 5	15
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	-	< 5	< 5
Zinc	5	mg/kg	22	-	21	30

Client Sample ID			#22-TP04 (0.4-0.5)	#22-SED01	#21-SP-TP06 (0.4-0.5)	#21-TP07 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl04547**	**S14-Jl04548**	**S14-Jl04550**	**S14-Jl04552**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	101	98
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5

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Client Sample ID			#22-TP04 (0.4-0.5)	#22-SED01	#21-SP-TP06 (0.4-0.5)	#21-TP07 (0.3-0.4)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl04547	S14-Jl04548	S14-Jl04550	S14-Jl04552
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	-	101	100
p-Terphenyl-d14 (surr.)	1	%	-	-	122	124
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	-	< 0.2
Toxaphene	1	mg/kg	-	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	-	86	-	111
Tetrachloro-m-xylene (surr.)	1	%	-	94	-	111
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1232	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	-	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	-	-	-	< 0.5
Total PCB	0.5	mg/kg	-	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	-	-	-	111
% Moisture	0.1	%	13	14	17	12
Asbestos - WA guidelines	0.001	% w/w	-	-	see attached	see attached

Client Sample ID			#22-TP04 (0.4-0.5)	#22-SED01	#21-SP-TP06 (0.4-0.5)	#21-TP07 (0.3-0.4)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl04547**	**S14-Jl04548**	**S14-Jl04550**	**S14-Jl04552**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	-	7.1	3.3	7.1
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	14	8.4	13
Copper	5	mg/kg	-	7.3	< 5	14
Lead	5	mg/kg	-	9.7	< 5	17
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	-	< 5	< 5	5.6
Zinc	5	mg/kg	-	6.5	19	20
SPOCAS Suite						
pH-KCL	0.1	units	4.6	-	-	-
pH-OX	0.1	units	4.5	-	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	26	-	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	47	-	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	22	-	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	0.04	-	-	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	0.08	-	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	0.03	-	-	-
Sulfur - KCl Extractable	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02	-	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10	-	-	-
HCl Extractable Sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	-	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	-	-	-
Calcium - KCl Extractable	0.02	% Ca	0.02	-	-	-
Calcium - Peroxide	0.02	% Ca	0.03	-	-	-
Acid Reacted Calcium	0.02	% Ca	< 0.02	-	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Magnesium - KCl Extractable	0.02	% Mg	0.06	-	-	-
Magnesium - Peroxide	0.02	% Mg	0.07	-	-	-
Acid Reacted Magnesium	0.02	% Mg	< 0.02	-	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Acid Neutralising Capacity	0.02	%CaCO3	n/a	-	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	n/a	-	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	n/a	-	-	-
ANC Fineness Factor			1.5	-	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	0.04	-	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	26	-	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	2.0	-	-	-
Extraneous Material						
<2mm Fraction	0.005	g	n/a	-	-	-
>2mm Fraction	0.005		n/a	-	-	-
Analysed Material	0.1	%	100	-	-	-
Extraneous Material	0.1	%	< 0.1	-	-	-

Client Sample ID			#21-TP08 (0.3-0.4)	#21-TP09 (0.3-0.4)	#21-G-TP10 (0-0.1)	#21-G-TP11 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl04554	S14-Jl04556	S14-Jl04558	S14-Jl04559
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	95	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	-	-
2-Fluorobiphenyl (surr.)	1	%	-	98	-	-
p-Terphenyl-d14 (surr.)	1	%	-	105	-	-

Client Sample ID			#21-TP08 (0.3-0.4)	#21-TP09 (0.3-0.4)	#21-G-TP10 (0-0.1)	#21-G-TP11 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI04554**	**S14-JI04556**	**S14-JI04558**	**S14-JI04559**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	120	115	118
Tetrachloro-m-xylene (surr.)	1	%	-	70	111	96
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (loxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	72	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	-
Total PCB	0.5	mg/kg	-	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	-	120	-	-
% Moisture	0.1	%	-	9.1	21	6.4
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	-

Client Sample ID			#21-TP08 (0.3-0.4)	#21-TP09 (0.3-0.4)	#21-G-TP10 (0-0.1)	#21-G-TP11 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI04554**	**S14-JI04556**	**S14-JI04558**	**S14-JI04559**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	-	6.9	6.3	12
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	0.6
Chromium	5	mg/kg	-	12	8.2	28
Copper	5	mg/kg	-	19	11	28
Lead	5	mg/kg	-	17	9.1	24
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	-	5.3	6.5	17
Zinc	5	mg/kg	-	25	21	78

Client Sample ID			#21-SS01	#14-G-TP01 (0-0.1)	#14-SD-TP02 (0-0.1)	#14-SD-TP04 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI04560**	**S14-JI04561**	**S14-JI04563**	**S14-JI04564**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	-	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	93	-	97	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene N02	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1) N04	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) N01	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	0.7	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.9	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	1.5	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene N07	0.5	mg/kg	1.1	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	1.2	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	2.2	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	1.6	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			#21-SS01	#14-G-TP01 (0-0.1)	#14-SD-TP02 (0-0.1)	#14-SD-TP04 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl04560**	**S14-Jl04561**	**S14-Jl04563**	**S14-Jl04564**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	3.7	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.9	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.8	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	3.4	-	< 0.5	< 0.5
Total PAH	0.5	mg/kg	19	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	2.1	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	2.4	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	2.6	-	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	106	-	103	101
p-Terphenyl-d14 (surr.)	1	%	132	-	116	118
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	126	104	93	103
Tetrachloro-m-xylene (surr.)	1	%	109	94	99	96
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	126	-	93	103
% Moisture	0.1	%	2.3	4.9	9.5	7.0
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	see attached

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Client Sample ID			#21-SS01	#14-G-TP01 (0-0.1)	#14-SD-TP02 (0-0.1)	#14-SD-TP04 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI04560	S14-JI04561	S14-JI04563	S14-JI04564
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	4.7	3.0	6.3
Cadmium	0.4	mg/kg	1.6	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	33	10	5.3	14
Copper	5	mg/kg	32	< 5	< 5	< 5
Lead	5	mg/kg	41	7.6	6.5	16
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	16	< 5	< 5	< 5
Zinc	5	mg/kg	910	19	23	7.4

Client Sample ID			#14-G-TP05 (0-0.1)	#5-SS01	#5-SS02	#5-A-SS03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI04565	S14-JI04568	S14-JI04569	S14-JI04570
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	0.39	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	109	113	104	-
Tetrachloro-m-xylene (surr.)	1	%	118	112	113	-
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	-	-
2.4-DB	0.5	mg/kg	< 0.5	-	-	-
2.4.5-T	0.5	mg/kg	< 0.5	-	-	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (Ioxynil)	0.5	mg/kg	< 0.5	-	-	-
Dicamba	0.5	mg/kg	< 0.5	-	-	-
Dichlorprop	0.5	mg/kg	< 0.5	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			#14-G-TP05 (0-0.1)	#5-SS01	#5-SS02	#5-A-SS03
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl04565**	**S14-Jl04568**	**S14-Jl04569**	**S14-Jl04570**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Acid Herbicides						
Dinoseb	0.5	mg/kg	< 0.5	-	-	-
MCPA	0.5	mg/kg	< 0.5	-	-	-
MCPB	0.5	mg/kg	< 0.5	-	-	-
Mecoprop	0.5	mg/kg	< 0.5	-	-	-
Warfarin (surr.)	1	%	75	-	-	-
% Moisture	0.1	%	15	5.6	6.7	-
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	5.0	4.7	4.1	-
Cadmium	0.4	mg/kg	< 0.4	4.7	< 0.4	-
Chromium	5	mg/kg	6.7	8.0	7.7	-
Copper	5	mg/kg	6.2	< 5	< 5	-
Lead	5	mg/kg	11	16	12	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Nickel	5	mg/kg	< 5	< 5	< 5	-
Zinc	5	mg/kg	9.7	120	29	-

Client Sample ID			#5-A-SS04	#5-O-SS05	#5-O-SS06	#5-O-SS07
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl04571**	**S14-Jl04572**	**S14-Jl04573**	**S14-Jl04574**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	111	100	123
Tetrachloro-m-xylene (surr.)	1	%	-	122	110	133

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#5-A-SS04 Soil S14-Jl04571 Jul 03, 2014	#5-O-SS05 Soil S14-Jl04572 Jul 03, 2014	#5-O-SS06 Soil S14-Jl04573 Jul 03, 2014	#5-O-SS07 Soil S14-Jl04574 Jul 03, 2014
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (loxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	72	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	-		< 0.5	< 0.5
Coumaphos	0.5	mg/kg	-		< 0.5	< 0.5
Demeton (total)	1	mg/kg	-		< 1	< 1
Diazinon	0.5	mg/kg	-		< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	-		< 0.5	< 0.5
Dimethoate	0.5	mg/kg	-		< 0.5	< 0.5
Disulfoton	0.5	mg/kg	-		< 0.5	< 0.5
Ethoprop	0.5	mg/kg	-		< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	-		< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	-		< 0.5	< 0.5
Fenthion	0.5	mg/kg	-		< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	-		< 0.5	< 0.5
Malathion	0.5	mg/kg	-		< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	-		< 0.5	< 0.5
Mevinphos	0.5	mg/kg	-		< 0.5	< 0.5
Monocrotophos	10	mg/kg	-		< 10	< 10
Parathion	0.5	mg/kg	-		< 0.5	< 0.5
Phorate	0.5	mg/kg	-		< 0.5	< 0.5
Profenofos	0.5	mg/kg	-		< 0.5	< 0.5
Prothiofos	0.5	mg/kg	-		< 0.5	< 0.5
Ronnel	0.5	mg/kg	-		< 0.5	< 0.5
Stirophos	0.5	mg/kg	-		< 0.5	< 0.5
Trichloronate	0.5	mg/kg	-		< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	-		76	89
% Moisture	0.1	%	-	16	8.0	22
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	-

eurofins | mgt

Client Sample ID			#4-O-SS01	#4-O-SS02	#4-O-SS03	#4-O-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl04575	S14-Jl04576	S14-Jl04577	S14-Jl04578
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	116	106	105	74
Tetrachloro-m-xylene (surr.)	1	%	124	113	111	123
Acid Herbicides						
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 0.5	-
2.4.5-T	0.5	mg/kg	-	-	< 0.5	-
2.4.5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (Ioxynil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	72	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#4-O-SS01 Soil S14-Jl04575 Jul 03, 2014	#4-O-SS02 Soil S14-Jl04576 Jul 03, 2014	#4-O-SS03 Soil S14-Jl04577 Jul 03, 2014	#4-O-SS04 Soil S14-Jl04578 Jul 03, 2014
Organophosphorus Pesticides (OP)						
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	98	107	99	101
% Moisture	0.1	%	27	7.4	9.0	21

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#4-O-SS05 Soil S14-Jl04579 Jul 03, 2014	#4-O-SS06 Soil S14-Jl04580 Jul 03, 2014	#4-O-SS07 Soil S14-Jl04581 Jul 03, 2014	#4-O-SS08 Soil S14-Jl04582 Jul 03, 2014
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	100	110	116	97
Tetrachloro-m-xylene (surr.)	1	%	104	117	111	122

Client Sample ID			#4-O-SS05	#4-O-SS06	#4-O-SS07	#4-O-SS08
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl04579	S14-Jl04580	S14-Jl04581	S14-Jl04582
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fenthion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Malathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Monocrotophos	10	mg/kg	< 10	< 10	< 10	< 10
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Profenofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Triphenylphosphate (surr.)	1	%	90	94	79	94
% Moisture	0.1	%	5.4	5.9	3.1	8.8

Client Sample ID			#4-O-SS09	#4-O-SS10	#4-G-SS21	#4-A-SS11
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl04583	S14-Jl04584	S14-Jl04585	S14-Jl04586
Date Sampled			Jul 03, 2014	Jul 03, 2014	Jul 03, 2014	Jul 03, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#4-O-SS09 Soil S14-Jl04583 Jul 03, 2014	#4-O-SS10 Soil S14-Jl04584 Jul 03, 2014	#4-G-SS21 Soil S14-Jl04585 Jul 03, 2014	#4-A-SS11 Soil S14-Jl04586 Jul 03, 2014
Organochlorine Pesticides						
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	105	108	89	-
Tetrachloro-m-xylene (surr.)	1	%	112	116	114	-
Acid Herbicides						
2.4-D	0.5	mg/kg	-	< 0.5	-	-
2.4-DB	0.5	mg/kg	-	< 0.5	-	-
2.4.5-T	0.5	mg/kg	-	< 0.5	-	-
2.4.5-TP	0.5	mg/kg	-	< 0.5	-	-
Actril (Ioxynil)	0.5	mg/kg	-	< 0.5	-	-
Dicamba	0.5	mg/kg	-	< 0.5	-	-
Dichlorprop	0.5	mg/kg	-	< 0.5	-	-
Dinitro-o-cresol	0.5	mg/kg	-	< 0.5	-	-
Dinoseb	0.5	mg/kg	-	< 0.5	-	-
MCPA	0.5	mg/kg	-	< 0.5	-	-
MCPB	0.5	mg/kg	-	< 0.5	-	-
Mecoprop	0.5	mg/kg	-	< 0.5	-	-
Warfarin (surr.)	1	%	-	83	-	-
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.5	mg/kg	< 0.5	< 0.5	-	-
Coumaphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Demeton (total)	1	mg/kg	< 1	< 1	-	-
Diazinon	0.5	mg/kg	< 0.5	< 0.5	-	-
Dichlorvos	0.5	mg/kg	< 0.5	< 0.5	-	-
Dimethoate	0.5	mg/kg	< 0.5	< 0.5	-	-
Disulfoton	0.5	mg/kg	< 0.5	< 0.5	-	-
Ethoprop	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenitrothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fensulfothion	0.5	mg/kg	< 0.5	< 0.5	-	-
Fenthion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl azinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Malathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Methyl parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Mevinphos	0.5	mg/kg	< 0.5	< 0.5	-	-
Monocrotophos	10	mg/kg	< 10	< 10	-	-
Parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Phorate	0.5	mg/kg	< 0.5	< 0.5	-	-
Profenofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	-	-
Ronnel	0.5	mg/kg	< 0.5	< 0.5	-	-
Stirophos	0.5	mg/kg	< 0.5	< 0.5	-	-
Trichloronate	0.5	mg/kg	< 0.5	< 0.5	-	-
Triphenylphosphate (surr.)	1	%	81	85	-	-
% Moisture	0.1	%	5.8	29	15	-
Asbestos - WA guidelines	0.001	% w/w	-	-	-	see attached

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#4-O-SS09 Soil S14-Jl04583 Jul 03, 2014	#4-O-SS10 Soil S14-Jl04584 Jul 03, 2014	#4-G-SS21 Soil S14-Jl04585 Jul 03, 2014	#4-A-SS11 Soil S14-Jl04586 Jul 03, 2014
Heavy Metals						
Arsenic	2	mg/kg	-	-	6.4	-
Cadmium	0.4	mg/kg	-	-	0.4	-
Chromium	5	mg/kg	-	-	21	-
Copper	5	mg/kg	-	-	16	-
Lead	5	mg/kg	-	-	21	-
Mercury	0.05	mg/kg	-	-	< 0.05	-
Nickel	5	mg/kg	-	-	6.3	-
Zinc	5	mg/kg	-	-	92	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#4-A-SS13 Soil S14-Jl04588 Jul 03, 2014	#4-A-SS15 Soil S14-Jl04590 Jul 03, 2014	#4-A-SS16 Soil S14-Jl04591 Jul 03, 2014	#4-A-SS17 Soil S14-Jl04592 Jul 03, 2014
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	see attached

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#4-A-SS19 Soil S14-Jl04594 Jul 03, 2014	#4-A-SS20 Soil S14-Jl04595 Jul 03, 2014
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 09, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 09, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 09, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 09, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 09, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 14			
Organochlorine Pesticides	Sydney	Jul 09, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jul 09, 2014	14 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Acid Herbicides	Melbourne	Jul 07, 2014	14 Day
- Method: MGT 530			
pH (1:5 Aqueous extract)	Sydney	Jul 10, 2014	7 Day
- Method: E018.2 pH			
% Moisture	Sydney	Jul 09, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos - WA guidelines	Sydney	Jul 04, 2014	0 Day
Ion Exchange Properties	Melbourne	Jul 07, 2014	
Eurofins | mgt Suite 13			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 09, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jul 08, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jul 08, 2014	0 Day

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 3, 2014 4:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424036	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
#22-G-TP03 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04543	X					X		X					
#22-G-TP03 (0.4-0.5)	Jul 03, 2014		Soil	S14-Jl04544	X		X		X								
QC18	Jul 03, 2014		Soil	S14-Jl04545	X									X		X	
#22-TP04 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04546	X	X								X		X	
#22-TP04 (0.4-0.5)	Jul 03, 2014		Soil	S14-Jl04547	X												X
#22-SED01	Jul 03, 2014		Soil	S14-Jl04548	X					X		X					
#21-SP-TP06	Jul 03, 2014		Soil	S14-Jl04549				X									

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NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 3, 2014 4:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424036	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
(0-0.1)																	
#21-SP-TP06 (0.4-0.5)	Jul 03, 2014		Soil	S14-Jl04550	X	X										X	
#21-SP-TP06 (1.3-1.4)	Jul 03, 2014		Soil	S14-Jl04551				X									
#21-TP07 (0.3-0.4)	Jul 03, 2014		Soil	S14-Jl04552	X	X								X		X	
#21-TP07 (1.0-1.1)	Jul 03, 2014		Soil	S14-Jl04553				X									
#21-TP08 (0.3-0.4)	Jul 03, 2014		Soil	S14-Jl04554		X											
#21-TP08 (1.0-1.1)	Jul 03, 2014		Soil	S14-Jl04555				X									

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 3, 2014 4:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424036	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#21-TP09 (0.3-0.4)	Jul 03, 2014		Soil	S14-Jl04556	X	X								X		X	
#21-TP09 (1.0-1.1)	Jul 03, 2014		Soil	S14-Jl04557				X									
#21-G-TP10 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04558	X					X	X	X					
#21-G-TP11 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04559	X					X		X					
#21-SS01	Jul 03, 2014		Soil	S14-Jl04560	X	X								X		X	
#14-G-TP01 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04561	X					X		X					
#14-G-TP01 (0.3-0.4)	Jul 03, 2014		Soil	S14-Jl04562				X									

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NSW 2000

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#14-SD-TP02 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04563	X	X								X		X	
#14-SD-TP04 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04564	X	X								X		X	
#14-G-TP05 (0-0.1)	Jul 03, 2014		Soil	S14-Jl04565	X					X	X	X					
#5-HA01	Jul 03, 2014		Soil	S14-Jl04566				X									
#5-HA02	Jul 03, 2014		Soil	S14-Jl04567				X									
#5-SS01	Jul 03, 2014		Soil	S14-Jl04568	X	X				X		X					
#5-SS02	Jul 03, 2014		Soil	S14-Jl04569	X	X				X		X					
#5-A-SS03	Jul 03, 2014		Soil	S14-Jl04570		X											
#5-A-SS04	Jul 03, 2014		Soil	S14-Jl04571		X											

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#5-O-SS05	Jul 03, 2014		Soil	S14-Jl04572	X										X		
#5-O-SS06	Jul 03, 2014		Soil	S14-Jl04573	X						X				X		
#5-O-SS07	Jul 03, 2014		Soil	S14-Jl04574	X										X		
#4-O-SS01	Jul 03, 2014		Soil	S14-Jl04575	X										X		
#4-O-SS02	Jul 03, 2014		Soil	S14-Jl04576	X										X		
#4-O-SS03	Jul 03, 2014		Soil	S14-Jl04577	X						X				X		
#4-O-SS04	Jul 03, 2014		Soil	S14-Jl04578	X										X		
#4-O-SS05	Jul 03, 2014		Soil	S14-Jl04579	X										X		
#4-O-SS06	Jul 03, 2014		Soil	S14-Jl04580	X										X		
#4-O-SS07	Jul 03, 2014		Soil	S14-Jl04581	X										X		
#4-O-SS08	Jul 03, 2014		Soil	S14-Jl04582	X										X		

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NATA # 1261 Site # 20794

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#4-O-SS09	Jul 03, 2014		Soil	S14-Jl04583	X										X		
#4-O-SS10	Jul 03, 2014		Soil	S14-Jl04584	X						X				X		
#4-G-SS21	Jul 03, 2014		Soil	S14-Jl04585	X					X		X					
#4-A-SS11	Jul 03, 2014		Soil	S14-Jl04586		X											
#4-A-SS12	Jul 03, 2014		Soil	S14-Jl04587				X									
#4-A-SS13	Jul 03, 2014		Soil	S14-Jl04588		X											
#4-A-SS14	Jul 03, 2014		Soil	S14-Jl04589				X									
#4-A-SS15	Jul 03, 2014		Soil	S14-Jl04590		X											
#4-A-SS16	Jul 03, 2014		Soil	S14-Jl04591		X											
#4-A-SS17	Jul 03, 2014		Soil	S14-Jl04592		X											
#4-A-SS18	Jul 03, 2014		Soil	S14-Jl04593				X									

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#4-A-SS19	Jul 03, 2014		Soil	S14-Jl04594		X											
#4-A-SS20	Jul 03, 2014		Soil	S14-Jl04595		X											
TRIP SPIKE	Jul 03, 2014		Water	S14-Jl04596									X				
TRIP BLANK	Jul 03, 2014		Water	S14-Jl04597									X				
RINSATE	Jul 03, 2014		Water	S14-Jl04598										X		X	

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	mg/kg	< 0.5			0.5	Pass	
Coumaphos	mg/kg	< 0.5			0.5	Pass	
Demeton (total)	mg/kg	< 1			1	Pass	
Diazinon	mg/kg	< 0.5			0.5	Pass	
Dichlorvos	mg/kg	< 0.5			0.5	Pass	
Dimethoate	mg/kg	< 0.5			0.5	Pass	
Disulfoton	mg/kg	< 0.5			0.5	Pass	
Ethoprop	mg/kg	< 0.5			0.5	Pass	
Fenitrothion	mg/kg	< 0.5			0.5	Pass	
Fensulfothion	mg/kg	< 0.5			0.5	Pass	
Fenthion	mg/kg	< 0.5			0.5	Pass	
Methyl azinphos	mg/kg	< 0.5			0.5	Pass	
Malathion	mg/kg	< 0.5			0.5	Pass	
Methyl parathion	mg/kg	< 0.5			0.5	Pass	
Mevinphos	mg/kg	< 0.5			0.5	Pass	
Monocrotophos	mg/kg	< 10			10	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Profenofos	mg/kg	< 0.5			0.5	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Ronnel	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Trichloronate	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	83			70-130	Pass	
TRH C10-C14	%	72			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	92			70-130	Pass	
Ethylbenzene	%	89			70-130	Pass	
m&p-Xylenes	%	89			70-130	Pass	
o-Xylene	%	89			70-130	Pass	
Xylenes - Total	%	89			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	111			70-130	Pass	
TRH C6-C10	%	83			70-130	Pass	
TRH >C10-C16	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	108			70-130	Pass	
Acenaphthylene	%	101			70-130	Pass	
Anthracene	%	122			70-130	Pass	
Benz(a)anthracene	%	118			70-130	Pass	
Benzo(a)pyrene	%	95			70-130	Pass	
Benzo(b&j)fluoranthene	%	102			70-130	Pass	
Benzo(g.h.i)perylene	%	88			70-130	Pass	
Benzo(k)fluoranthene	%	117			70-130	Pass	
Chrysene	%	111			70-130	Pass	
Dibenz(a.h)anthracene	%	81			70-130	Pass	
Fluoranthene	%	115			70-130	Pass	
Fluorene	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	79			70-130	Pass	
Naphthalene	%	105			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	113			70-130	Pass	
LCS - % Recovery							

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides							
Chlordanes - Total	%	92			70-130	Pass	
4.4'-DDD	%	79			70-130	Pass	
4.4'-DDE	%	71			70-130	Pass	
4.4'-DDT	%	77			70-130	Pass	
a-BHC	%	90			70-130	Pass	
Aldrin	%	91			70-130	Pass	
b-BHC	%	92			70-130	Pass	
d-BHC	%	81			70-130	Pass	
Dieldrin	%	93			70-130	Pass	
Endosulfan I	%	100			70-130	Pass	
Endosulfan II	%	92			70-130	Pass	
Endosulfan sulphate	%	83			70-130	Pass	
Endrin	%	94			70-130	Pass	
Endrin aldehyde	%	71			70-130	Pass	
Endrin ketone	%	77			70-130	Pass	
g-BHC (Lindane)	%	81			70-130	Pass	
Heptachlor	%	93			70-130	Pass	
Heptachlor epoxide	%	93			70-130	Pass	
Hexachlorobenzene	%	78			70-130	Pass	
Methoxychlor	%	77			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	90			70-130	Pass	
2.4-DB	%	95			70-130	Pass	
2.4.5-T	%	90			70-130	Pass	
2.4.5-TP	%	93			70-130	Pass	
Actril (Ioxynil)	%	86			70-130	Pass	
Dicamba	%	91			70-130	Pass	
Dichlorprop	%	95			70-130	Pass	
Dinitro-o-cresol	%	96			70-130	Pass	
Dinoseb	%	86			70-130	Pass	
MCPA	%	91			70-130	Pass	
MCPB	%	92			70-130	Pass	
Mecoprop	%	96			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	90			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides (OP)							
Chlorpyrifos	%	102			70-130	Pass	
Coumaphos	%	96			70-130	Pass	
Demeton (total)	%	80			70-130	Pass	
Diazinon	%	105			70-130	Pass	
Dichlorvos	%	105			70-130	Pass	
Dimethoate	%	97			70-130	Pass	
Disulfoton	%	100			70-130	Pass	
Ethoprop	%	102			70-130	Pass	
Fenitrothion	%	100			70-130	Pass	
Fensulfothion	%	90			70-130	Pass	
Fenthion	%	103			70-130	Pass	
Methyl azinphos	%	93			70-130	Pass	
Malathion	%	98			70-130	Pass	
Methyl parathion	%	101			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mevinphos			%	102			70-130	Pass	
Monocrotophos			%	85			70-130	Pass	
Parathion			%	91			70-130	Pass	
Phorate			%	101			70-130	Pass	
Profenofos			%	98			70-130	Pass	
Prothiofos			%	100			70-130	Pass	
Ronnel			%	103			70-130	Pass	
Stirophos			%	92			70-130	Pass	
Trichloronate			%	99			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	91			70-130	Pass	
Cadmium			%	77			70-130	Pass	
Chromium			%	86			70-130	Pass	
Copper			%	115			70-130	Pass	
Lead			%	85			70-130	Pass	
Mercury			%	86			70-130	Pass	
Nickel			%	88			70-130	Pass	
Zinc			%	78			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl04514	NCP	%	80			70-130	Pass	
TRH C10-C14	S14-Jl04545	CP	%	70			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl04514	NCP	%	91			70-130	Pass	
Toluene	S14-Jl04514	NCP	%	87			70-130	Pass	
Ethylbenzene	S14-Jl04514	NCP	%	84			70-130	Pass	
m&p-Xylenes	S14-Jl04514	NCP	%	84			70-130	Pass	
o-Xylene	S14-Jl04514	NCP	%	84			70-130	Pass	
Xylenes - Total	S14-Jl04514	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl04514	NCP	%	83			70-130	Pass	
TRH C6-C10	S14-Jl04514	NCP	%	79			70-130	Pass	
TRH >C10-C16	S14-Jl05092	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jl04545	CP	%	93			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl05079	NCP	%	99			70-130	Pass	
Acenaphthylene	S14-Jl05079	NCP	%	98			70-130	Pass	
Anthracene	S14-Jl05079	NCP	%	98			70-130	Pass	
Benz(a)anthracene	S14-Jl05079	NCP	%	108			70-130	Pass	
Benzo(a)pyrene	S14-Jl05079	NCP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jl05079	NCP	%	94			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jl05079	NCP	%	79			70-130	Pass	
Benzo(k)fluoranthene	S14-Jl05079	NCP	%	101			70-130	Pass	
Chrysene	S14-Jl05079	NCP	%	103			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jl05079	NCP	%	85			70-130	Pass	
Fluoranthene	S14-Jl05079	NCP	%	102			70-130	Pass	
Fluorene	S14-Jl05079	NCP	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	S14-Jl05079	NCP	%	84			70-130	Pass	
Naphthalene	S14-Jl05079	NCP	%	96			70-130	Pass	
Phenanthrene	S14-Jl05079	NCP	%	90			70-130	Pass	
Pyrene	S14-Jl05079	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl04559	CP	%	75			70-130	Pass	
Cadmium	S14-Jl04559	CP	%	81			70-130	Pass	
Chromium	S14-Jl04559	CP	%	56			70-130	Fail	Q08
Copper	S14-Jl04559	CP	%	123			70-130	Pass	
Lead	S14-Jl04559	CP	%	89			70-130	Pass	
Mercury	S14-Jl04559	CP	%	88			70-130	Pass	
Nickel	S14-Jl04559	CP	%	94			70-130	Pass	
Zinc	S14-Jl04559	CP	%	94			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	S14-Jl04565	CP	%	78			70-130	Pass	
Actril (Ioxynil)	S14-Jl04565	CP	%	79			70-130	Pass	
Dichlorprop	S14-Jl04565	CP	%	82			70-130	Pass	
MCPA	S14-Jl04565	CP	%	82			70-130	Pass	
MCPB	S14-Jl04565	CP	%	79			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides (OP)				Result 1					
Chlorpyrifos	S14-Jl04574	CP	%	102			70-130	Pass	
Coumaphos	S14-Jl04574	CP	%	102			70-130	Pass	
Demeton (total)	S14-Jl04574	CP	%	108			70-130	Pass	
Diazinon	S14-Jl04574	CP	%	104			70-130	Pass	
Dichlorvos	S14-Jl04574	CP	%	108			70-130	Pass	
Dimethoate	S14-Jl04574	CP	%	102			70-130	Pass	
Disulfoton	S14-Jl04574	CP	%	103			70-130	Pass	
Ethoprop	S14-Jl04574	CP	%	105			70-130	Pass	
Fenitrothion	S14-Jl04574	CP	%	99			70-130	Pass	
Fensulfothion	S14-Jl04574	CP	%	90			70-130	Pass	
Fenthion	S14-Jl04574	CP	%	102			70-130	Pass	
Methyl azinphos	S14-Jl04574	CP	%	94			70-130	Pass	
Malathion	S14-Jl04574	CP	%	99			70-130	Pass	
Methyl parathion	S14-Jl04574	CP	%	97			70-130	Pass	
Mevinphos	S14-Jl04574	CP	%	105			70-130	Pass	
Monocrotophos	S14-Jl04574	CP	%	87			70-130	Pass	
Parathion	S14-Jl04574	CP	%	110			70-130	Pass	
Phorate	S14-Jl04574	CP	%	106			70-130	Pass	
Profenofos	S14-Jl04574	CP	%	98			70-130	Pass	
Prothiofos	S14-Jl04574	CP	%	101			70-130	Pass	
Ronnel	S14-Jl04574	CP	%	101			70-130	Pass	
Stirophos	S14-Jl04574	CP	%	96			70-130	Pass	
Trichloronate	S14-Jl04574	CP	%	101			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jl04583	CP	%	96			70-130	Pass	
4.4'-DDD	S14-Jl04583	CP	%	103			70-130	Pass	
4.4'-DDE	S14-Jl04583	CP	%	99			70-130	Pass	
4.4'-DDT	S14-Jl04583	CP	%	79			70-130	Pass	
a-BHC	S14-Jl04583	CP	%	99			70-130	Pass	
Aldrin	S14-Jl04583	CP	%	98			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
b-BHC	S14-Jl04583	CP	%	85			70-130	Pass	
d-BHC	S14-Jl04583	CP	%	94			70-130	Pass	
Dieldrin	S14-Jl04583	CP	%	91			70-130	Pass	
Endosulfan I	S14-Jl04583	CP	%	87			70-130	Pass	
Endosulfan II	S14-Jl04583	CP	%	88			70-130	Pass	
Endosulfan sulphate	S14-Jl04583	CP	%	93			70-130	Pass	
Endrin	S14-Jl04583	CP	%	93			70-130	Pass	
Endrin aldehyde	S14-Jl04583	CP	%	86			70-130	Pass	
Endrin ketone	S14-Jl04583	CP	%	101			70-130	Pass	
g-BHC (Lindane)	S14-Jl04583	CP	%	95			70-130	Pass	
Heptachlor	S14-Jl04583	CP	%	87			70-130	Pass	
Heptachlor epoxide	S14-Jl04583	CP	%	102			70-130	Pass	
Hexachlorobenzene	S14-Jl04583	CP	%	107			70-130	Pass	
Methoxychlor	S14-Jl04583	CP	%	74			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jl04956	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl04545	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl04545	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Methoxychlor	S14-Jl04545	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl04545	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl04545	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl04545	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl04545	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl04545	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl04545	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl04545	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jl04547	CP	units	4.6	4.6	<1	30%	Pass	
pH-OX	S14-Jl04547	CP	units	4.5	4.4	1.0	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jl04547	CP	mol H+/t	26	25	2.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jl04547	CP	mol H+/t	47	46	3.0	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jl04547	CP	mol H+/t	22	21	3.0	30%	Pass	
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jl04547	CP	% pyrite S	0.04	0.04	2.0	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jl04547	CP	% pyrite S	0.08	0.07	3.0	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jl04547	CP	% pyrite S	0.03	0.03	3.0	30%	Pass	
Sulfur - KCl Extractable	S14-Jl04547	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jl04547	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jl04547	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jl04547	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jl04547	CP	% Ca	0.02	0.02	2.0	30%	Pass	
Calcium - Peroxide	S14-Jl04547	CP	% Ca	0.03	0.02	16	30%	Pass	
Acid Reacted Calcium	S14-Jl04547	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jl04547	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jl04547	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jl04547	CP	% Mg	0.06	0.06	5.0	30%	Pass	
Magnesium - Peroxide	S14-Jl04547	CP	% Mg	0.07	0.06	11	30%	Pass	
Acid Reacted Magnesium	S14-Jl04547	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jl04547	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jl04547	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
ANC Fineness Factor	S14-Jl04547	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jl04547	CP	% S	0.04	0.04	2.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jl04547	CP	mol H+/t	26	25	2.0	30%	Pass	
Liming rate - SPOCAS	S14-Jl04547	CP	kg CaCO3/t	2.0	2.0	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl04552	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl04552	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl04552	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl04552	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl04552	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl04552	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl04552	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl04552	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl04552	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl04552	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl04552	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jl04552	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl04552	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jl04552	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl04552	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jl04552	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jl04558	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl04558	CP	mg/kg	6.3	5.1	21	30%	Pass	
Cadmium	S14-Jl04558	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S14-Jl04558	CP	mg/kg	8.2	9.7	16	30%	Pass	
Copper	S14-Jl04558	CP	mg/kg	11	11	<1	30%	Pass	
Lead	S14-Jl04558	CP	mg/kg	9.1	7.9	14	30%	Pass	
Mercury	S14-Jl04558	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl04558	CP	mg/kg	6.5	6.9	6.0	30%	Pass	
Zinc	S14-Jl04558	CP	mg/kg	21	23	8.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl04578	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin ketone	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl04578	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl04578	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl04578	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl04578	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl04578	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl04578	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl04578	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl04578	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl04578	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD			
Chlorpyrifos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton (total)	S14-Jl04583	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Diazinon	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl azinphos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S14-Jl04583	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Parathion	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Profenofos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Prothiofos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Stirophos	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S14-Jl04583	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET40231/ 43411 / 1 - 19
Your ref : 424036
NATA Accreditation No: 14484

10 July 2014

Eurofins | MGT
Unit F3, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of nineteen samples, forwarded by Eurofins | MGT on 10 July 2014, for analysis for asbestos.

1.Introduction: Nineteen samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1 and Australian Guidelines AS 4964 - 2004 and WA/ NEPM Guidelines**)

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia/ NEPM Guidelines for the Assessment Remediation and Management of Asbestos in contaminated sites.

3. Results : **Sample No. 1. ASET40231 / 43411 / 1. #22-TP04 (0-0.1) - JI04546.**
Approx dimensions 12.0 cm x 12.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET40231 / 43411 / 2. #21-SP-TP06 (0.4-0.5) – JI04550
Approx dimensions 14.0 cm x 14.0 cm x 5.0 cm
The sample consisted of a mixture of soil, stones, sandstones, plant matter, fragments of plaster and cement.
No asbestos detected.

Sample No. 3. ASET40231 / 43411 / 3. #21-TP07 (0.3-0.4) – JI04552
Approx dimensions 13.0 cm x 13.0 cm x 5.3 cm
The sample consisted of a mixture of clayish soil, stones, shale, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 4. ASET40231 / 43411 / 4. #21-TP08 (0.3-0.4) – JI04554
Approx dimensions 12.5 cm x 12.5 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and brick.
No asbestos detected.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635
PHONE: (02) 99872183 FAX: (02)99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

Sample No. 5. ASET40231 / 43411 / 5. #21-TP09 (0.3-0.4) – JI04556
Approx dimensions 13.0 cm x 13.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and brick.
No asbestos detected.

Sample No. 6. ASET40231 / 43411 / 6. #21-SS01 - JI04560.
Approx dimensions 10.0 cm x 8.0 cm x 5.0 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, brick, paint flakes and corroded metal.
No asbestos detected.

Sample No. 7. ASET40231 / 43411 / 7. #14-SD -TP02 (0-0.1) – JI04563.
Approx dimensions 10.0 cm x 10.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and brick.
No asbestos detected.

Sample No. 8. ASET40231 / 43411 / 8. #14-SD-TP04 (0-0.1) – JI04564 .
Approx dimensions 14.0 cm x 14.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 9. ASET40231 / 43411 / 9. #5- SS01 – JI04568 .
Approx dimensions 14.0 cm x 12.5 cm x 5.6 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, brick and corroded metal.
No asbestos detected.

Sample No. 10. ASET40231 / 43411 / 10. #5- SS02– JI04569 .
Approx dimensions 13.0 cm x 12.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and brick.
No asbestos detected.

Sample No. 11. ASET40231 / 43411 / 11. #5-A - SS03 – JI04570.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and brick.
No asbestos detected.

Sample No. 12. ASET40231 / 43411 / 12. #5- A -SS04 – JI04571.
Approx dimensions 10.1 cm x 10.0 cm x 5.1 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, cement, brick and pieces of glass.
No asbestos detected.

Sample No. 13. ASET40231 / 43411 / 13. #4- A- SS11 – JI04586.
Approx dimensions 12.0 cm x 12.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, cement, brick, corroded metal and glass.
No asbestos detected.

Sample No. 14. ASET40231 / 43411 / 14. #4-A- SS13– JI04588.
Approx dimensions 12.0 cm x 12.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 15. ASET40231 / 43411 / 15. #4-A - SS15 – JI04590.
Approx dimensions 11.0 cm x 11.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 16. ASET40231 / 43411 / 16. #4-A - SS16 – JI04591 .
Approx dimensions 10.5 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 17. ASET40231 / 43411 / 17. #4-A - SS17 – JI04592 .
Approx dimensions 10.0 cm x 10.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 18. ASET40231 / 43411 / 18. #4-A - SS19 – JI04594 .
Approx dimensions 11.0 cm x 10.0 cm x 4.8 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 19. ASET40231 / 43411 / 19. #4-A – SS20 – JI04595.
Approx dimensions 12.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Analysed and reported by,

Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier
Approved Signatory

WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos detected in Soil/ Dust.

***denotes fibres in bonded form in fragments**

All samples indicating " No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **424036-W**
Client Reference BOX HILL 43376
Received Date Jul 03, 2014

Client Sample ID			**TRIP SPIKE**	**TRIP BLANK**	**RINSATE**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-JI04596**	**S14-JI04597**	**S14-JI04598**
Date Sampled			**Jul 03, 2014**	**Jul 03, 2014**	**Jul 03, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1
BTEX					
Benzene	0.001	mg/L	87%	< 0.001	< 0.1
Toluene	0.001	mg/L	86%	< 0.001	< 0.1
Ethylbenzene	0.001	mg/L	97%	< 0.001	< 0.1
m&p-Xylenes	0.002	mg/L	101%	< 0.002	< 0.2
o-Xylene	0.001	mg/L	101%	< 0.001	< 0.1
Xylenes - Total	0.003	mg/L	101%	< 0.003	< 0.3
4-Bromofluorobenzene (surr.)	1	%	106	74	71
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	-	-	< 0.1
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	-	-	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TRIP SPIKE Water S14-Jl04596 Jul 03, 2014	TRIP BLANK Water S14-Jl04597 Jul 03, 2014	RINSATE Water S14-Jl04598 Jul 03, 2014
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.001	mg/L	-	-	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001
Total PAH	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	95
p-Terphenyl-d14 (surr.)	1	%	-	-	86
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	-	-	96
Tetrachloro-m-xylene (surr.)	1	%	-	-	108
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	-	-	< 0.005
Aroclor-1232	0.005	mg/L	-	-	< 0.005
Aroclor-1242	0.005	mg/L	-	-	< 0.005
Aroclor-1248	0.005	mg/L	-	-	< 0.005
Aroclor-1254	0.005	mg/L	-	-	< 0.005
Aroclor-1260	0.005	mg/L	-	-	< 0.005
Total PCB	0.005	mg/L	-	-	< 0.005
Dibutylchlorendate (surr.)	1	%	-	-	96
Heavy Metals					
Arsenic	0.005	mg/L	-	-	< 0.005
Cadmium	0.0005	mg/L	-	-	< 0.0005
Chromium	0.005	mg/L	-	-	< 0.005
Copper	0.005	mg/L	-	-	< 0.005
Lead	0.005	mg/L	-	-	< 0.005
Mercury	0.0001	mg/L	-	-	< 0.0001
Nickel	0.005	mg/L	-	-	< 0.005
Zinc	0.005	mg/L	-	-	< 0.005

eurofins | mgt

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 09, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 04, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 09, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 09, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 04, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 14			
Organochlorine Pesticides	Sydney	Jul 09, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Eurofins | mgt Suite 13			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 09, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

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Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 3, 2014 4:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424036	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
#22-G-TP03 (0-0.1)	Jul 03, 2014		Soil	S14-JI04543	X					X		X					
#22-G-TP03 (0.4-0.5)	Jul 03, 2014		Soil	S14-JI04544	X		X		X								
QC18	Jul 03, 2014		Soil	S14-JI04545	X									X		X	
#22-TP04 (0-0.1)	Jul 03, 2014		Soil	S14-JI04546	X	X								X		X	
#22-TP04 (0.4-0.5)	Jul 03, 2014		Soil	S14-JI04547	X												X
#22-SED01	Jul 03, 2014		Soil	S14-JI04548	X					X		X					
#21-SP-TP06	Jul 03, 2014		Soil	S14-JI04549				X									

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
(0-0.1)																	
#21-SP-TP06 (0.4-0.5)	Jul 03, 2014		Soil	S14-Jl04550	X	X										X	
#21-SP-TP06 (1.3-1.4)	Jul 03, 2014		Soil	S14-Jl04551				X									
#21-TP07 (0.3-0.4)	Jul 03, 2014		Soil	S14-Jl04552	X	X								X		X	
#21-TP07 (1.0-1.1)	Jul 03, 2014		Soil	S14-Jl04553				X									
#21-TP08 (0.3-0.4)	Jul 03, 2014		Soil	S14-Jl04554		X											
#21-TP08 (1.0-1.1)	Jul 03, 2014		Soil	S14-Jl04555				X									

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Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
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NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 424036
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Fax:

Received: Jul 3, 2014 4:10 PM
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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#21-TP09 (0.3-0.4)	Jul 03, 2014		Soil	S14-JI04556	X	X								X		X	
#21-TP09 (1.0-1.1)	Jul 03, 2014		Soil	S14-JI04557				X									
#21-G-TP10 (0-0.1)	Jul 03, 2014		Soil	S14-JI04558	X					X	X	X					
#21-G-TP11 (0-0.1)	Jul 03, 2014		Soil	S14-JI04559	X					X		X					
#21-SS01	Jul 03, 2014		Soil	S14-JI04560	X	X								X		X	
#14-G-TP01 (0-0.1)	Jul 03, 2014		Soil	S14-JI04561	X					X		X					
#14-G-TP01 (0.3-0.4)	Jul 03, 2014		Soil	S14-JI04562				X									

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 14	Eurofins | mgt Suite 7	SPOCAS Suite
Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#14-SD-TP02 (0-0.1)	Jul 03, 2014		Soil	S14-JI04563	X	X								X		X	
#14-SD-TP04 (0-0.1)	Jul 03, 2014		Soil	S14-JI04564	X	X								X		X	
#14-G-TP05 (0-0.1)	Jul 03, 2014		Soil	S14-JI04565	X					X	X	X					
#5-HA01	Jul 03, 2014		Soil	S14-JI04566				X									
#5-HA02	Jul 03, 2014		Soil	S14-JI04567				X									
#5-SS01	Jul 03, 2014		Soil	S14-JI04568	X	X				X		X					
#5-SS02	Jul 03, 2014		Soil	S14-JI04569	X	X				X		X					
#5-A-SS03	Jul 03, 2014		Soil	S14-JI04570		X											
#5-A-SS04	Jul 03, 2014		Soil	S14-JI04571		X											

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#5-O-SS05	Jul 03, 2014		Soil	S14-Jl04572	X										X		
#5-O-SS06	Jul 03, 2014		Soil	S14-Jl04573	X						X				X		
#5-O-SS07	Jul 03, 2014		Soil	S14-Jl04574	X										X		
#4-O-SS01	Jul 03, 2014		Soil	S14-Jl04575	X										X		
#4-O-SS02	Jul 03, 2014		Soil	S14-Jl04576	X										X		
#4-O-SS03	Jul 03, 2014		Soil	S14-Jl04577	X						X				X		
#4-O-SS04	Jul 03, 2014		Soil	S14-Jl04578	X										X		
#4-O-SS05	Jul 03, 2014		Soil	S14-Jl04579	X										X		
#4-O-SS06	Jul 03, 2014		Soil	S14-Jl04580	X										X		
#4-O-SS07	Jul 03, 2014		Soil	S14-Jl04581	X										X		
#4-O-SS08	Jul 03, 2014		Soil	S14-Jl04582	X										X		

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#4-O-SS09	Jul 03, 2014		Soil	S14-Jl04583	X										X		
#4-O-SS10	Jul 03, 2014		Soil	S14-Jl04584	X						X				X		
#4-G-SS21	Jul 03, 2014		Soil	S14-Jl04585	X					X		X					
#4-A-SS11	Jul 03, 2014		Soil	S14-Jl04586		X											
#4-A-SS12	Jul 03, 2014		Soil	S14-Jl04587				X									
#4-A-SS13	Jul 03, 2014		Soil	S14-Jl04588		X											
#4-A-SS14	Jul 03, 2014		Soil	S14-Jl04589				X									
#4-A-SS15	Jul 03, 2014		Soil	S14-Jl04590		X											
#4-A-SS16	Jul 03, 2014		Soil	S14-Jl04591		X											
#4-A-SS17	Jul 03, 2014		Soil	S14-Jl04592		X											
#4-A-SS18	Jul 03, 2014		Soil	S14-Jl04593				X									

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Laboratory where analysis is conducted																	
Melbourne Laboratory - NATA Site # 1254 & 14271							X				X						
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																	X
External Laboratory																	
#4-A-SS19	Jul 03, 2014		Soil	S14-Jl04594		X											
#4-A-SS20	Jul 03, 2014		Soil	S14-Jl04595		X											
TRIP SPIKE	Jul 03, 2014		Water	S14-Jl04596									X				
TRIP BLANK	Jul 03, 2014		Water	S14-Jl04597									X				
RINSATE	Jul 03, 2014		Water	S14-Jl04598										X		X	

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	79			70-130	Pass	
TRH C10-C14	%	100			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	85			70-130	Pass	
Toluene	%	80			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	91			70-130	Pass	
Xylenes - Total	%	91			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	83			70-130	Pass	
TRH C6-C10	%	84			70-130	Pass	
TRH >C10-C16	%	114			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	120			70-130	Pass	
Acenaphthylene	%	105			70-130	Pass	
Anthracene	%	90			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	112			70-130	Pass	
Benzo(b&j)fluoranthene	%	118			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g.h.i)perylene			%	102			70-130	Pass	
Benzo(k)fluoranthene			%	117			70-130	Pass	
Chrysene			%	100			70-130	Pass	
Dibenz(a.h)anthracene			%	86			70-130	Pass	
Fluoranthene			%	95			70-130	Pass	
Fluorene			%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	98			70-130	Pass	
Naphthalene			%	107			70-130	Pass	
Phenanthrene			%	106			70-130	Pass	
Pyrene			%	122			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	100			70-130	Pass	
4.4'-DDD			%	100			70-130	Pass	
4.4'-DDE			%	100			70-130	Pass	
4.4'-DDT			%	100			70-130	Pass	
a-BHC			%	100			70-130	Pass	
Aldrin			%	100			70-130	Pass	
b-BHC			%	100			70-130	Pass	
d-BHC			%	100			70-130	Pass	
Dieldrin			%	100			70-130	Pass	
Endosulfan I			%	100			70-130	Pass	
Endosulfan II			%	100			70-130	Pass	
Endosulfan sulphate			%	100			70-130	Pass	
Endrin			%	100			70-130	Pass	
Endrin aldehyde			%	100			70-130	Pass	
Endrin ketone			%	100			70-130	Pass	
g-BHC (Lindane)			%	100			70-130	Pass	
Heptachlor			%	100			70-130	Pass	
Heptachlor epoxide			%	100			70-130	Pass	
Hexachlorobenzene			%	100			70-130	Pass	
Methoxychlor			%	100			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	70			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	102			70-130	Pass	
Cadmium			%	102			70-130	Pass	
Chromium			%	101			70-130	Pass	
Copper			%	97			70-130	Pass	
Lead			%	99			70-130	Pass	
Mercury			%	110			70-130	Pass	
Nickel			%	100			70-130	Pass	
Zinc			%	100			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl04465	NCP	%	78			70-130	Pass	
Toluene	S14-Jl04465	NCP	%	72			70-130	Pass	
Ethylbenzene	S14-Jl04465	NCP	%	84			70-130	Pass	
m&p-Xylenes	S14-Jl04465	NCP	%	87			70-130	Pass	
o-Xylene	S14-Jl04465	NCP	%	87			70-130	Pass	
Xylenes - Total	S14-Jl04465	NCP	%	87			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl04465	NCP	%	83			70-130	Pass	
TRH C10-C14	S14-Jl02751	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl04465	NCP	%	85			70-130	Pass	
TRH C6-C10	S14-Jl04465	NCP	%	75			70-130	Pass	
TRH >C10-C16	S14-Jl02751	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl02750	NCP	%	95			70-130	Pass	
Acenaphthylene	S14-Jl02750	NCP	%	93			70-130	Pass	
Anthracene	S14-Jl02750	NCP	%	94			70-130	Pass	
Benz(a)anthracene	S14-Jl02750	NCP	%	77			70-130	Pass	
Benzo(a)pyrene	S14-Jl02750	NCP	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jl02750	NCP	%	94			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jl02750	NCP	%	93			70-130	Pass	
Benzo(k)fluoranthene	S14-Jl02750	NCP	%	99			70-130	Pass	
Chrysene	S14-Jl02750	NCP	%	95			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jl02750	NCP	%	81			70-130	Pass	
Fluoranthene	S14-Jl02750	NCP	%	95			70-130	Pass	
Fluorene	S14-Jl02750	NCP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl02750	NCP	%	88			70-130	Pass	
Naphthalene	S14-Jl02750	NCP	%	108			70-130	Pass	
Phenanthrene	S14-Jl02750	NCP	%	94			70-130	Pass	
Pyrene	S14-Jl02750	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl04061	NCP	%	106			70-130	Pass	
Cadmium	S14-Jl04061	NCP	%	109			70-130	Pass	
Chromium	S14-Jl04061	NCP	%	105			70-130	Pass	
Copper	S14-Jl04061	NCP	%	93			70-130	Pass	
Lead	S14-Jl04061	NCP	%	96			70-130	Pass	
Mercury	S14-Jl04061	NCP	%	82			70-130	Pass	
Nickel	S14-Jl04061	NCP	%	97			70-130	Pass	
Zinc	S14-Jl04061	NCP	%	101			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jl04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jl04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jl04348	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jl04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jl04348	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jl02752	NCP	mg/L	6.3	6.3	1.0	30%	Pass	
TRH C15-C28	S14-Jl02752	NCP	mg/L	0.40	0.30	39	30%	Fail	Q15
TRH C29-C36	S14-Jl02752	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jl04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jl02752	NCP	mg/L	3.1	2.9	7.0	30%	Pass	
TRH >C16-C34	S14-Jl02752	NCP	mg/L	0.20	0.10	40	30%	Fail	Q15
TRH >C34-C40	S14-Jl02752	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jl02752	NCP	mg/L	0.54	0.50	7.0	30%	Pass	
Phenanthrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl04598	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jl04598	CP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl04598	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jl04598	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jl04598	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jl04598	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl04598	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jl04598	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

eurofins | mgt

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Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Jul 3, 2014 4:10 PM
Eurofins | mgt reference:	**424036**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 15 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

CEC and Acid Herb conducted at Eurofins | mgt Melbourne | SPOCAS conducted at Eurofins | mgt Brisbane

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

Eurofins | mgt Sample Receipt

02237

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43316

PROJECT NAME: Box Hill

SEND REPORT TO: KH, TC SEND INVOICE TO: GNG

DATE NEEDED BY: Standard

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:

SAMPLERS: TC, LB

PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khendrisan@jbsg.com... tcross@jbsg.com

QC LEVEL: NEPM (2013)

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	CEC	pH	SPOCAS	metals	OCPs	herbicides	NOTES:
#22-G-TP03 (0-0.1)	Soil	3/7		J								X	X		B7 = TRH,
#22-G-TP03 (0.4-0.5)	↓	↓		"					X	X					BTEX, PAH, ...
QC18				"		X	X								
#22-TP04 (0-0.1)				B+J		X	X	X							B17 = OCP, ...
#22-TP04 (0.4-0.5)				"							X				
#22-SED01				J								X	X		Asbestos
#21-~~TP06~~ SP-TP06 (0-0.1)				B+J											= NEPC
#21-~~TP06~~ SP-TP06 (0.4-0.5)				↓		X		X							2013
#21-~~TP06~~ SP-TP06 (1.3-1.4)															
~~#21~~-TP07 (0.3-0.4)						X	X	X							
#21-TP07 (1.0-1.1)															
#21-TP08 (0.3-0.4)								X							
#21-TP08 (1.0-1.1)															
#21-TP09 (0.3-0.4)						X	X	X							
#21-TP09 (1.0-1.1)				↓											
#21-G-TP10 (0-0.1)				J								X	X	X	
#21-G-TP11 (0-0.1)				"								X	X		
#21-SS01						X	X	X							
#14-G-TP01 (0-0.1)	↓	↓										X	X		

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T Cross DATE: 3/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 3/7/14 4:10pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Ot

① Contact TC for sample issues.

02238

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43316	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: R
SEND REPORT TO: TC KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) fcreagh@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	asbestos	metals	OCPs	herbicides	B14	NOTES:
#14-G-TP01 (0.3-0.4)	Soil	3/7		J									B14
#14-SD-TP02 (0-0.1)				B+J		X	X	X					= OPP/OC…
#14-SD-TP04 (0-0.1)				"		X	X	X					
#14-G-TP05 (0-0.1)				J					X	X	X		
#5-HA01				"									
#5-HA02				"									
#5-SS01				B+J				X	X	X			
#5-SS02				"				X	X	X			
#5-A-SS03				B				X					
#5-A-SS04				"				X					
#5-O-SS05				J								X	
#5-O-SS06											X	X	
#5-O-SS07												X	
#4-O-SS01												X	
#4-O-SS02												X	
#4-O-SS03											X	X	
#4-O-SS04												X	
#4-O-SS05												X	
#4-O-SS06												X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Creak DATE: 3/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 3/7/14 4:10pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Ot

IMSO FormsO13 - Chain of Custody - Generic

London

02239

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS:
SEND REPORT TO: TC, KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcrease@jbsg.com

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B14	Herbicides	metals	OCPs	Asbestos	BTEX	B7	B13												NOTES:
#4-O-5507	Soil	3/7		J		X																			
#4-O-5508						X																			
#4-O-5509						X																			
#4-O-5510						X	X																		
#4-G-5521				11				X	X																
#4-A-5511				B						X															
#4-A-5512																									
#4-A-5513										X															
#4-A-5514																									
#4-A-5515										X															
#4-A-5516										X															
#4-A-5517										X															
#4-A-5518																									
#4-A-5519										X															
#4-A-5520										X															
Trip spike	water										X														
trip blank											X														
Rinsate												X	X												

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Crea DATE: 3/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 3/7/14 3:10pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Ot

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **424180-S**
Client Reference BOX HILL 43376
Received Date Jul 04, 2014

Client Sample ID			**#1-A-SS09**	**#1-A-SS10**	**#1-SS12**	**#1-SS14**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-JI05602**	**S14-JI05603**	**S14-JI05605**	**S14-JI05606**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Dibutylchlorendate (surr.)	1	%	-	91	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	100	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	28	-	-
Cadmium	0.4	mg/kg	-	0.4	-	-
Chromium	5	mg/kg	-	99	-	-
Copper	5	mg/kg	-	320	-	-
Lead	5	mg/kg	-	42	-	-
Mercury	0.05	mg/kg	-	< 0.05	-	-
Nickel	5	mg/kg	-	33	-	-
Zinc	5	mg/kg	-	310	-	-
% Moisture	0.1	%	-	5.6	-	-
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	see attached

Client Sample ID			#1-SS15	#1-SS17	#1-SS18	#1-A-SS20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05607	S14-Jl05609	S14-Jl05610	S14-Jl05613
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	-
Toxaphene	1	mg/kg	< 1	-	< 1	-
Dibutylchlorendate (surr.)	1	%	111	-	99	-
Tetrachloro-m-xylene (surr.)	1	%	80	-	98	-
Heavy Metals						
Arsenic	2	mg/kg	4.1	-	< 2	-
Cadmium	0.4	mg/kg	0.6	-	0.6	-
Chromium	5	mg/kg	62	-	11	-
Copper	5	mg/kg	21	-	10	-
Lead	5	mg/kg	28	-	18	-
Mercury	0.05	mg/kg	< 0.05	-	< 0.05	-
Nickel	5	mg/kg	31	-	5.9	-
Zinc	5	mg/kg	180	-	2300	-
% Moisture	0.1	%	5.0	-	16	-
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	see attached

Client Sample ID			#1-G-SS21	#1-G-SS22	#1-A-SS23	#1-A-SS24
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05614	S14-Jl05615	S14-Jl05616	S14-Jl05617
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-

Client Sample ID			#1-G-SS21	#1-G-SS22	#1-A-SS23	#1-A-SS24
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05614	S14-Jl05615	S14-Jl05616	S14-Jl05617
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	111	110	-	-
Tetrachloro-m-xylene (surr.)	1	%	93	101	-	-
Heavy Metals						
Arsenic	2	mg/kg	3.4	3.8	-	-
Cadmium	0.4	mg/kg	< 0.4	0.8	-	-
Chromium	5	mg/kg	16	27	-	-
Copper	5	mg/kg	7.7	11	-	-
Lead	5	mg/kg	44	18	-	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	-
Nickel	5	mg/kg	< 5	5.7	-	-
Zinc	5	mg/kg	60	55	-	-
% Moisture	0.1	%	9.1	19	-	-
Asbestos - WA guidelines	0.001	% w/w	-	-	see attached	see attached

Client Sample ID			#1-A-SS26	#1-A-SS28	#1-A-SS29	#1-A-SS30
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05619	S14-Jl05621	S14-Jl05622	S14-Jl05623
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	see attached

eurofins | mgt

Client Sample ID			#1-A-SS31	#1-A-SS32	#1-A-SS01	#12-A-SS01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05624	S14-Jl05625	S14-Jl05626	S14-Jl05627
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	

Client Sample ID			#12-A-SS02	#12-A-SS03	#12-A-SS04	#12-A-SS05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05628	S14-Jl05629	S14-Jl05630	S14-Jl05631
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	see attached

Client Sample ID			#12-SD-SS06	#12-SD-SS07	#12-SD-SS08	#12-AST-SS09
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05632	S14-Jl05633	S14-Jl05634	S14-Jl05635
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	240
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	320
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	560
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	87	84	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	470
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	110
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#12-SD-SS06 Soil S14-Jl05632 Jul 04, 2014	#12-SD-SS07 Soil S14-Jl05633 Jul 04, 2014	#12-SD-SS08 Soil S14-Jl05634 Jul 04, 2014	#12-AST-SS09 Soil S14-Jl05635 Jul 04, 2014
Volatile Organics						
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
Fluorobenzene (surr.)	1	%	76	74	79	-
4-Bromofluorobenzene (surr.)	1	%	91	87	84	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#12-SD-SS06 Soil S14-Jl05632 Jul 04, 2014	#12-SD-SS07 Soil S14-Jl05633 Jul 04, 2014	#12-SD-SS08 Soil S14-Jl05634 Jul 04, 2014	#12-AST-SS09 Soil S14-Jl05635 Jul 04, 2014
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluorantheneN07	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	94	114	107	111
p-Terphenyl-d14 (surr.)	1	%	100	119	113	117
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	1.4	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	1.1	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	0.41	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	95	114	119	-
Tetrachloro-m-xylene (surr.)	1	%	93	113	96	-
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			#12-SD-SS06	#12-SD-SS07	#12-SD-SS08	#12-AST-SS09
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl05632**	**S14-Jl05633**	**S14-Jl05634**	**S14-Jl05635**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	95	114	119	-
Heavy Metals						
Arsenic	2	mg/kg	9.2	17	3.7	7.6
Cadmium	0.4	mg/kg	< 0.4	0.5	0.5	0.6
Chromium	5	mg/kg	8.0	39	14	25
Copper	5	mg/kg	31	31	17	37
Lead	5	mg/kg	19	15	15	30
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	33	10	6.2	9.7
Zinc	5	mg/kg	39	71	58	1600
% Moisture	0.1	%	7.1	16	10	13

Client Sample ID			#12-G-SS10	#23-HA01 (0-0.1)	#23-HA02 (0-0.1)	#23-HA03 (0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl05636**	**S14-Jl05637**	**S14-Jl05638**	**S14-Jl05639**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	86	81	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5

Client Sample ID			#12-G-SS10	#23-HA01 (0-0.1)	#23-HA02 (0-0.1)	#23-HA03 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05636	S14-Jl05637	S14-Jl05638	S14-Jl05639
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluorantheneN07	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	109	111	109
p-Terphenyl-d14 (surr.)	1	%	-	118	114	117
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	123	116	97	99
Tetrachloro-m-xylene (surr.)	1	%	92	93	96	95
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	116	97	99

Client Sample ID			#12-G-SS10	#23-HA01 (0-0.1)	#23-HA02 (0-0.1)	#23-HA03 (0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05636	S14-Jl05637	S14-Jl05638	S14-Jl05639
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	25	5.7	4.0	8.7
Cadmium	0.4	mg/kg	0.8	0.6	0.5	0.5
Chromium	5	mg/kg	18	12	13	16
Copper	5	mg/kg	20	26	22	26
Lead	5	mg/kg	14	17	15	18
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	6.9	8.5	7.6	10
Zinc	5	mg/kg	40	42	32	48
% Moisture	0.1	%	7.9	13	13	12
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	see attached

Client Sample ID			#23-HA03 (0.4-0.5)	#23-HA04 (0-0.1)	#23-SED01	#23-G-HA05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05640	S14-Jl05641	S14-Jl05642	S14-Jl05643
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	79	84	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-

Client Sample ID			#23-HA03 (0.4-0.5)	#23-HA04 (0-0.1)	#23-SED01	#23-G-HA05
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl05640**	**S14-Jl05641**	**S14-Jl05642**	**S14-Jl05643**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	108	109	-
p-Terphenyl-d14 (surr.)	1	%	-	117	115	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	0.10
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	102	94	121
Tetrachloro-m-xylene (surr.)	1	%	-	95	101	135
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	102	94	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#23-HA03 (0.4-0.5) Soil S14-Jl05640 Jul 04, 2014	#23-HA04 (0-0.1) Soil S14-Jl05641 Jul 04, 2014	#23-SED01 Soil S14-Jl05642 Jul 04, 2014	#23-G-HA05 Soil S14-Jl05643 Jul 04, 2014
Heavy Metals						
Arsenic	2	mg/kg	-	3.7	4.5	< 2
Cadmium	0.4	mg/kg	-	1.0	0.5	0.6
Chromium	5	mg/kg	-	23	25	20
Copper	5	mg/kg	-	24	21	33
Lead	5	mg/kg	-	23	25	19
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	-	12	12	12
Zinc	5	mg/kg	-	52	36	71
SPOCAS Suite						
pH-KCL	0.1	units	5.6	-	-	-
pH-OX	0.1	units	6.6	-	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	10	-	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	10	-	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	< 2	-	-	-
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	0.02	% pyrite S	0.02	-	-	-
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	0.02	% pyrite S	0.02	-	-	-
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	0.02	% pyrite S	< 0.02	-	-	-
Sulfur - KCl Extractable	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide	0.02	% S	< 0.02	-	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02	-	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10	-	-	-
HCl Extractable Sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur	0.02	% S	n/a	-	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	-	-	-
Net Acid soluble sulfur - equivalent S% pyrite[S02]	0.02	% S	n/a	-	-	-
Calcium - KCl Extractable	0.02	% Ca	< 0.02	-	-	-
Calcium - Peroxide	0.02	% Ca	< 0.02	-	-	-
Acid Reacted Calcium	0.02	% Ca	< 0.02	-	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Calcium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Magnesium - KCl Extractable	0.02	% Mg	0.09	-	-	-
Magnesium - Peroxide	0.02	% Mg	0.10	-	-	-
Acid Reacted Magnesium	0.02	% Mg	< 0.02	-	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	-	-	-
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
Acid Neutralising Capacity	0.02	%CaCO3	< 0.02	-	-	-
Acid Neutralising Capacity - Acidity units	10	mol H+/t	< 10	-	-	-
Acid Neutralising Capacity equivalent S% pyrite	0.02	% S	< 0.02	-	-	-
ANC Fineness Factor			1.5	-	-	-
Net Acidity (sulfur units) - SPOCAS	0.02	% S	0.02	-	-	-
Net Acidity (acidity units) - SPOCAS	10	mol H+/t	< 10	-	-	-
Liming rate - SPOCAS	1	kg CaCO3/t	1.0	-	-	-
Extraneous Material						
<2mm Fraction	0.005	g	n/a	-	-	-
>2mm Fraction	0.005		n/a	-	-	-
Analysed Material	0.1	%	100	-	-	-
Extraneous Material	0.1	%	< 0.1	-	-	-

Client Sample ID			#23-HA03 (0.4-0.5)	#23-HA04 (0-0.1)	#23-SED01	#23-G-HA05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI05640	S14-JI05641	S14-JI05642	S14-JI05643
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
% Moisture	0.1	%	10	12	4.8	31
Asbestos - WA guidelines	0.001	% w/w	-	see attached	-	-

Client Sample ID			#25-F-SS01	#25-S-SS02	#25-SD-SS03	#25-SD-SS04
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-JI05644	S14-JI05645	S14-JI05646	S14-JI05647
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	66	< 50	< 50
TRH C29-C36	50	mg/kg	99	230	140	210
TRH C10-36 (Total)	50	mg/kg	99	300	140	210
BTEX						
Benzene	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	92	87	93	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	210	120	200
TRH >C34-C40	100	mg/kg	< 100	130	< 100	130
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#25-F-SS01 Soil S14-Jl05644 Jul 04, 2014	#25-S-SS02 Soil S14-Jl05645 Jul 04, 2014	#25-SD-SS03 Soil S14-Jl05646 Jul 04, 2014	#25-SD-SS04 Soil S14-Jl05647 Jul 04, 2014
Volatile Organics						
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Fluorobenzene (surr.)	1	%	81	75	72	75
4-Bromofluorobenzene (surr.)	1	%	92	87	93	95
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#25-F-SS01 Soil S14-Jl05644 Jul 04, 2014	#25-S-SS02 Soil S14-Jl05645 Jul 04, 2014	#25-SD-SS03 Soil S14-Jl05646 Jul 04, 2014	#25-SD-SS04 Soil S14-Jl05647 Jul 04, 2014
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	102	112	109	102
p-Terphenyl-d14 (surr.)	1	%	101	115	118	110
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	100	74	100	128
Tetrachloro-m-xylene (surr.)	1	%	102	121	93	107
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	100	74	100	128
Heavy Metals						
Arsenic	2	mg/kg	270	48	49	19
Cadmium	0.4	mg/kg	0.6	0.9	1.0	1.1
Chromium	5	mg/kg	140	43	57	30
Copper	5	mg/kg	240	66	63	51
Lead	5	mg/kg	36	48	22	32

Client Sample ID			#25-F-SS01	#25-S-SS02	#25-SD-SS03	#25-SD-SS04
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl05644**	**S14-Jl05645**	**S14-Jl05646**	**S14-Jl05647**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury	0.05	mg/kg	0.06	0.06	< 0.05	0.08
Nickel	5	mg/kg	7.9	9.9	8.1	12
Zinc	5	mg/kg	300	390	120	400
% Moisture	0.1	%	3.7	31	13	19
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	see attached

Client Sample ID			#25-G-SS05	#24-SED01	#24-G-SS01	#24-AST-SS02
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl05648**	**S14-Jl05649**	**S14-Jl05650**	**S14-Jl05651**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	< 50	-	< 50
TRH C29-C36	50	mg/kg	-	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	-	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	86	-	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#25-G-SS05 Soil S14-Jl05648 Jul 04, 2014	#24-SED01 Soil S14-Jl05649 Jul 04, 2014	#24-G-SS01 Soil S14-Jl05650 Jul 04, 2014	#24-AST-SS02 Soil S14-Jl05651 Jul 04, 2014
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	-	1.2
2-Fluorobiphenyl (surr.)	1	%	-	109	-	106
p-Terphenyl-d14 (surr.)	1	%	-	115	-	114
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	0.10	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	106	80	109	-
Tetrachloro-m-xylene (surr.)	1	%	92	122	94	-
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	-	-
2.4-DB	0.5	mg/kg	< 0.5	-	-	-
2.4.5-T	0.5	mg/kg	< 0.5	-	-	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (loxynil)	0.5	mg/kg	< 0.5	-	-	-
Dicamba	0.5	mg/kg	< 0.5	-	-	-
Dichlorprop	0.5	mg/kg	< 0.5	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	-
Dinoseb	0.5	mg/kg	< 0.5	-	-	-
MCPA	0.5	mg/kg	< 0.5	-	-	-
MCPB	0.5	mg/kg	< 0.5	-	-	-
Mecoprop	0.5	mg/kg	< 0.5	-	-	-
Warfarin (surr.)	1	%	72	-	-	-

Client Sample ID			#25-G-SS05	#24-SED01	#24-G-SS01	#24-AST-SS02
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl05648**	**S14-Jl05649**	**S14-Jl05650**	**S14-Jl05651**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	-
Total PCB	0.5	mg/kg	-	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	-	80	-	-
Heavy Metals						
Arsenic	2	mg/kg	7.6	6.6	9.2	7.6
Cadmium	0.4	mg/kg	0.8	0.9	0.8	1.0
Chromium	5	mg/kg	23	16	19	26
Copper	5	mg/kg	12	25	25	26
Lead	5	mg/kg	17	19	14	33
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	6.2	6.6	< 5	13
Zinc	5	mg/kg	39	54	40	310
% Moisture	0.1	%	14	48	1.8	23

Client Sample ID			#24-SS03	QC20	QC19
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl05652**	**S14-Jl05653**	**S14-Jl05808**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 04, 2014**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	-	-
TRH C15-C28	50	mg/kg	65	-	-
TRH C29-C36	50	mg/kg	77	-	-
TRH C10-36 (Total)	50	mg/kg	140	-	-
BTEX					
Benzene	0.1	mg/kg	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	120	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	-
TRH >C16-C34	100	mg/kg	130	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#24-SS03 Soil S14-Jl05652 Jul 04, 2014	QC20 Soil S14-Jl05653 Jul 04, 2014	QC19 Soil S14-Jl05808 Jul 04, 2014
Volatile Organics					
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-
Benzene	0.1	mg/kg	< 0.1	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-
Styrene	0.5	mg/kg	< 0.5	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-
Toluene	0.1	mg/kg	< 0.1	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#24-SS03 Soil S14-Jl05652 Jul 04, 2014	QC20 Soil S14-Jl05653 Jul 04, 2014	QC19 Soil S14-Jl05808 Jul 04, 2014
Volatile Organics					
Xylenes - Total	0.3	mg/kg	< 0.3	-	-
Fluorobenzene (surr.)	1	%	77	-	-
4-Bromofluorobenzene (surr.)	1	%	120	-	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.5	mg/kg	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	-	-
Total PAH	0.5	mg/kg	< 0.5	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	-	-
2-Fluorobiphenyl (surr.)	1	%	101	-	-
p-Terphenyl-d14 (surr.)	1	%	108	-	-
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	74	108	124
Tetrachloro-m-xylene (surr.)	1	%	126	114	100

Client Sample ID			#24-SS03	QC20	QC19
Sample Matrix			Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl05652	S14-Jl05653	S14-Jl05808
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 04, 2014
Test/Reference	LOR	Unit			
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.5	mg/kg	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	-	-
Total PCB	0.5	mg/kg	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	74	-	-
Heavy Metals					
Arsenic	2	mg/kg	12	7.1	4.2
Cadmium	0.4	mg/kg	1.2	0.8	< 0.4
Chromium	5	mg/kg	27	26	17
Copper	5	mg/kg	16	12	8.1
Lead	5	mg/kg	26	20	160
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	9.2	7.9	< 5
Zinc	5	mg/kg	92	40	34
% Moisture	0.1	%	20	12	4.0
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 10, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 10, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 10, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 10, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 10, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jul 10, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Acid Herbicides	Melbourne	Jul 08, 2014	14 Day
- Method: MGT 530			
% Moisture	Sydney	Jul 10, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos - WA guidelines	Sydney	Jul 04, 2014	0 Day
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 10, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 10, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jul 15, 2014	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jul 15, 2014	0 Day

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NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 4, 2014 3:10 PM
Address:	Level 1, 50 Margaret St	**Report #:**	424180	**Due:**	Jul 11, 2014
	Sydney	**Phone:**	02 8245 0300	**Priority:**	5 Day
	NSW 2000	**Fax:**		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
#1-A-SS09	Jul 04, 2014		Soil	S14-Jl05602			X									
#1-A-SS10	Jul 04, 2014		Soil	S14-Jl05603		X			X		X					
#1-SS11	Jul 04, 2014		Soil	S14-Jl05604				X								
#1-SS12	Jul 04, 2014		Soil	S14-Jl05605			X									
#1-SS14	Jul 04, 2014		Soil	S14-Jl05606			X									
#1-SS15	Jul 04, 2014		Soil	S14-Jl05607		X			X		X					
#1-SS16	Jul 04, 2014		Soil	S14-Jl05608				X								
#1-SS17	Jul 04, 2014		Soil	S14-Jl05609			X									
#1-SS18	Jul 04, 2014		Soil	S14-Jl05610		X	X		X		X					
#1-SS19	Jul 04, 2014		Soil	S14-Jl05611				X								

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Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 4, 2014 3:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424180	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#1-SS19	Jul 04, 2014		Soil	S14-Jl05612				X								
#1-A-SS20	Jul 04, 2014		Soil	S14-Jl05613			X									
#1-G-SS21	Jul 04, 2014		Soil	S14-Jl05614		X			X		X					
#1-G-SS22	Jul 04, 2014		Soil	S14-Jl05615		X			X		X					
#1-A-SS23	Jul 04, 2014		Soil	S14-Jl05616			X									
#1-A-SS24	Jul 04, 2014		Soil	S14-Jl05617			X									
#1-A-SS25	Jul 04, 2014		Soil	S14-Jl05618				X								
#1-A-SS26	Jul 04, 2014		Soil	S14-Jl05619			X									
#1-A-SS27	Jul 04, 2014		Soil	S14-Jl05620				X								
#1-A-SS28	Jul 04, 2014		Soil	S14-Jl05621			X									
#1-A-SS29	Jul 04, 2014		Soil	S14-Jl05622			X									

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NATA # 1261 Site # 20794

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 424180
Phone: 02 8245 0300
Fax:

Received: Jul 4, 2014 3:10 PM
Due: Jul 11, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#1-A-SS30	Jul 04, 2014		Soil	S14-Jl05623			X									
#1-A-SS31	Jul 04, 2014		Soil	S14-Jl05624			X									
#1-A-SS32	Jul 04, 2014		Soil	S14-Jl05625			X									
#1-A-SS01	Jul 04, 2014		Soil	S14-Jl05626			X									
#12-A-SS01	Jul 04, 2014		Soil	S14-Jl05627			X									
#12-A-SS02	Jul 04, 2014		Soil	S14-Jl05628			X									
#12-A-SS03	Jul 04, 2014		Soil	S14-Jl05629			X									
#12-A-SS04	Jul 04, 2014		Soil	S14-Jl05630			X									
#12-A-SS05	Jul 04, 2014		Soil	S14-Jl05631			X									
#12-SD-SS06	Jul 04, 2014		Soil	S14-Jl05632		X							X	X	X	
#12-SD-SS07	Jul 04, 2014		Soil	S14-Jl05633		X							X	X	X	

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Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424180	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#12-SD-SS08	Jul 04, 2014		Soil	S14-Jl05634		X							X	X	X	
#12-AST-SS09	Jul 04, 2014		Soil	S14-Jl05635		X								X		
#12-G-SS10	Jul 04, 2014		Soil	S14-Jl05636		X			X		X					
#23-HA01 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05637		X	X						X	X		
#23-HA02 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05638		X	X						X	X		
#23-HA03 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05639		X	X						X	X		
#23-HA03 (0.4-0.5)	Jul 04, 2014		Soil	S14-Jl05640	X											X
#23-HA04 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05641		X	X						X	X		

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 4, 2014 3:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424180	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#23-SED01	Jul 04, 2014		Soil	S14-Jl05642		X							X	X		
#23-G-HA05	Jul 04, 2014		Soil	S14-Jl05643		X			X		X					
#25-F-SS01	Jul 04, 2014		Soil	S14-Jl05644		X	X						X	X	X	
#25-S-SS02	Jul 04, 2014		Soil	S14-Jl05645		X	X						X	X	X	
#25-SD-SS03	Jul 04, 2014		Soil	S14-Jl05646		X	X						X	X	X	
#25-SD-SS04	Jul 04, 2014		Soil	S14-Jl05647		X	X						X	X	X	
#25-G-SS05	Jul 04, 2014		Soil	S14-Jl05648		X			X	X	X					
#24-SED01	Jul 04, 2014		Soil	S14-Jl05649		X							X	X		
#24-G-SS01	Jul 04, 2014		Soil	S14-Jl05650		X			X		X					
#24-AST-SS02	Jul 04, 2014		Soil	S14-Jl05651		X								X		
#24-SS03	Jul 04, 2014		Soil	S14-Jl05652		X	X						X	X	X	

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Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
QC20	Jul 04, 2014		Soil	S14-Jl05653		X			X		X					
TRIP SPIKE	Jul 04, 2014		Water	S14-Jl05654								X				
TRIP BLANK	Jul 04, 2014		Water	S14-Jl05655								X				
RINSATE	Jul 04, 2014		Water	S14-Jl05656									X	X		
QC19	Jul 04, 2014		Soil	S14-Jl05808		X			X		X					

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C10-36 (Total)	mg/kg	< 0			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (Ioxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 1			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	90			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	108			70-130	Pass	
Toluene	%	99			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	94			70-130	Pass	
o-Xylene	%	95			70-130	Pass	
Xylenes - Total	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	106			70-130	Pass	
TRH C6-C10	%	98			70-130	Pass	
TRH >C10-C16	%	83			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	95			75-125	Pass	
1.1-Dichloroethene	%	95			70-130	Pass	
1.1.1-Trichloroethane	%	96			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	94			70-130	Pass	
1.1.2-Trichloroethane	%	97			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	107			70-130	Pass	
1.2-Dibromoethane	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	93			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
1.2-Dichloropropane	%	94			70-130	Pass	
1.2.3-Trichloropropane	%	91			70-130	Pass	
1.2.4-Trimethylbenzene	%	83			70-130	Pass	
1.3-Dichlorobenzene	%	90			70-130	Pass	
1.3-Dichloropropane	%	99			70-130	Pass	
1.3.5-Trimethylbenzene	%	83			70-130	Pass	
1.4-Dichlorobenzene	%	90			70-130	Pass	
2-Butanone (MEK)	%	91			70-130	Pass	
4-Chlorotoluene	%	89			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	100			70-130	Pass	
Bromobenzene	%	87			70-130	Pass	
Bromochloromethane	%	89			70-130	Pass	
Bromodichloromethane	%	92			70-130	Pass	
Bromoform	%	100			70-130	Pass	
Carbon disulfide	%	82			70-130	Pass	
Carbon Tetrachloride	%	88			70-130	Pass	
Chlorobenzene	%	95			70-130	Pass	
Chloroethane	%	89			70-130	Pass	
Chloroform	%	90			70-130	Pass	
Chloromethane	%	93			70-130	Pass	
cis-1.2-Dichloroethene	%	80			70-130	Pass	
cis-1.3-Dichloropropene	%	82			70-130	Pass	
Dibromochloromethane	%	87			70-130	Pass	
Dibromomethane	%	99			70-130	Pass	
Dichlorodifluoromethane	%	116			70-130	Pass	
Isopropyl benzene (Cumene)	%	101			70-130	Pass	
Methylene Chloride	%	94			70-130	Pass	
Styrene	%	92			70-130	Pass	
Tetrachloroethene	%	92			70-130	Pass	
trans-1.2-Dichloroethene	%	95			70-130	Pass	
trans-1.3-Dichloropropene	%	82			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
Trichlorofluoromethane	%	98			70-130	Pass	
Vinyl chloride	%	105			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	118			70-130	Pass	
Acenaphthylene	%	114			70-130	Pass	
Anthracene	%	120			70-130	Pass	
Benz(a)anthracene	%	116			70-130	Pass	
Benzo(a)pyrene	%	83			70-130	Pass	
Benzo(b&j)fluoranthene	%	111			70-130	Pass	
Benzo(g.h.i)perylene	%	86			70-130	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	%	113			70-130	Pass	
Chrysene	%	109			70-130	Pass	
Dibenz(a.h)anthracene	%	77			70-130	Pass	
Fluoranthene	%	120			70-130	Pass	
Fluorene	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	84			70-130	Pass	
Naphthalene	%	117			70-130	Pass	
Phenanthrene	%	113			70-130	Pass	
Pyrene	%	120			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	88			70-130	Pass	
4.4'-DDD	%	76			70-130	Pass	
4.4'-DDE	%	75			70-130	Pass	
4.4'-DDT	%	76			70-130	Pass	
a-BHC	%	90			70-130	Pass	
Aldrin	%	87			70-130	Pass	
b-BHC	%	90			70-130	Pass	
d-BHC	%	81			70-130	Pass	
Dieldrin	%	90			70-130	Pass	
Endosulfan I	%	97			70-130	Pass	
Endosulfan II	%	90			70-130	Pass	
Endosulfan sulphate	%	75			70-130	Pass	
Endrin	%	91			70-130	Pass	
Endrin aldehyde	%	74			70-130	Pass	
Endrin ketone	%	75			70-130	Pass	
g-BHC (Lindane)	%	79			70-130	Pass	
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	88			70-130	Pass	
Hexachlorobenzene	%	72			70-130	Pass	
Methoxychlor	%	76			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	78			70-130	Pass	
2.4-DB	%	74			70-130	Pass	
2.4.5-T	%	80			70-130	Pass	
2.4.5-TP	%	77			70-130	Pass	
Actril (loxynil)	%	77			70-130	Pass	
Dicamba	%	83			70-130	Pass	
Dichlorprop	%	80			70-130	Pass	
Dinitro-o-cresol	%	74			70-130	Pass	
Dinoseb	%	78			70-130	Pass	
MCPA	%	82			70-130	Pass	
MCPB	%	76			70-130	Pass	
Mecoprop	%	78			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	101			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	74			70-130	Pass	
Cadmium	%	82			70-130	Pass	
Chromium	%	79			70-130	Pass	
Copper	%	82			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead			%	79			70-130	Pass	
Mercury			%	81			70-130	Pass	
Nickel			%	80			70-130	Pass	
Zinc			%	91			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl04634	NCP	%	100			70-130	Pass	
Acenaphthylene	S14-Jl04634	NCP	%	98			70-130	Pass	
Anthracene	S14-Jl04634	NCP	%	100			70-130	Pass	
Benz(a)anthracene	S14-Jl04634	NCP	%	102			70-130	Pass	
Benzo(a)pyrene	S14-Jl04634	NCP	%	96			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jl04634	NCP	%	83			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jl04634	NCP	%	101			70-130	Pass	
Benzo(k)fluoranthene	S14-Jl04634	NCP	%	107			70-130	Pass	
Chrysene	S14-Jl04634	NCP	%	106			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jl04634	NCP	%	101			70-130	Pass	
Fluoranthene	S14-Jl04634	NCP	%	102			70-130	Pass	
Fluorene	S14-Jl04634	NCP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl04634	NCP	%	101			70-130	Pass	
Naphthalene	S14-Jl04634	NCP	%	99			70-130	Pass	
Phenanthrene	S14-Jl04634	NCP	%	98			70-130	Pass	
Pyrene	S14-Jl04634	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl05632	CP	%	84			70-130	Pass	
Cadmium	S14-Jl05632	CP	%	89			70-130	Pass	
Chromium	S14-Jl05632	CP	%	86			70-130	Pass	
Copper	S14-Jl05632	CP	%	87			70-130	Pass	
Lead	S14-Jl05632	CP	%	112			70-130	Pass	
Mercury	S14-Jl05632	CP	%	80			70-130	Pass	
Zinc	S14-Jl05632	CP	%	113			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl05633	CP	%	95			70-130	Pass	
Toluene	S14-Jl05633	CP	%	96			70-130	Pass	
Ethylbenzene	S14-Jl05633	CP	%	88			70-130	Pass	
m&p-Xylenes	S14-Jl05633	CP	%	91			70-130	Pass	
o-Xylene	S14-Jl05633	CP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl05633	CP	%	97			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jl05633	CP	%	97			75-125	Pass	
1.1-Dichloroethene	S14-Jl05633	CP	%	97			70-130	Pass	
1.1.1-Trichloroethane	S14-Jl05633	CP	%	97			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl05633	CP	%	82			70-130	Pass	
1.1.2-Trichloroethane	S14-Jl05633	CP	%	101			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl05633	CP	%	101			70-130	Pass	
1.2-Dibromoethane	S14-Jl05633	CP	%	83			70-130	Pass	
1.2-Dichlorobenzene	S14-Jl05633	CP	%	95			70-130	Pass	
1.2-Dichloroethane	S14-Jl05633	CP	%	96			70-130	Pass	
1.2-Dichloropropane	S14-Jl05633	CP	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2.3-Trichloropropane	S14-Jl05633	CP	%	97			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jl05633	CP	%	89			70-130	Pass	
1.3-Dichlorobenzene	S14-Jl05633	CP	%	92			70-130	Pass	
1.3-Dichloropropane	S14-Jl05633	CP	%	102			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jl05633	CP	%	89			70-130	Pass	
1.4-Dichlorobenzene	S14-Jl05633	CP	%	92			70-130	Pass	
2-Butanone (MEK)	S14-Jl05633	CP	%	102			70-130	Pass	
4-Chlorotoluene	S14-Jl05633	CP	%	93			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl05633	CP	%	83			70-130	Pass	
Bromobenzene	S14-Jl05633	CP	%	89			70-130	Pass	
Bromochloromethane	S14-Jl05633	CP	%	93			70-130	Pass	
Bromodichloromethane	S14-Jl05633	CP	%	89			70-130	Pass	
Bromoform	S14-Jl05633	CP	%	84			70-130	Pass	
Carbon Tetrachloride	S14-Jl05633	CP	%	88			70-130	Pass	
Chlorobenzene	S14-Jl05633	CP	%	84			70-130	Pass	
Chloroethane	S14-Jl05633	CP	%	93			70-130	Pass	
Chloroform	S14-Jl05633	CP	%	93			70-130	Pass	
Chloromethane	S14-Jl05633	CP	%	85			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jl05633	CP	%	81			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jl05633	CP	%	85			70-130	Pass	
Dibromochloromethane	S14-Jl05633	CP	%	85			70-130	Pass	
Dibromomethane	S14-Jl05633	CP	%	101			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jl05633	CP	%	92			70-130	Pass	
Methylene Chloride	S14-Jl05633	CP	%	98			70-130	Pass	
Styrene	S14-Jl05633	CP	%	83			70-130	Pass	
Tetrachloroethene	S14-Jl05633	CP	%	94			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jl05633	CP	%	96			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jl05633	CP	%	85			70-130	Pass	
Trichloroethene	S14-Jl05633	CP	%	94			70-130	Pass	
Trichlorofluoromethane	S14-Jl05633	CP	%	98			70-130	Pass	
Vinyl chloride	S14-Jl05633	CP	%	93			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-Jl05633	CP	%	128			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jl05639	CP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jl05639	CP	%	83			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jl05639	CP	%	93			70-130	Pass	
4.4'-DDD	S14-Jl05639	CP	%	102			70-130	Pass	
4.4'-DDE	S14-Jl05639	CP	%	84			70-130	Pass	
4.4'-DDT	S14-Jl05639	CP	%	74			70-130	Pass	
a-BHC	S14-Jl05639	CP	%	87			70-130	Pass	
Aldrin	S14-Jl05639	CP	%	89			70-130	Pass	
b-BHC	S14-Jl05639	CP	%	88			70-130	Pass	
d-BHC	S14-Jl05639	CP	%	83			70-130	Pass	
Dieldrin	S14-Jl05639	CP	%	94			70-130	Pass	
Endosulfan I	S14-Jl05639	CP	%	92			70-130	Pass	
Endosulfan II	S14-Jl05639	CP	%	92			70-130	Pass	
Endosulfan sulphate	S14-Jl05639	CP	%	81			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	S14-Jl05639	CP	%	92			70-130	Pass	
Endrin aldehyde	S14-Jl05639	CP	%	76			70-130	Pass	
Endrin ketone	S14-Jl05639	CP	%	75			70-130	Pass	
g-BHC (Lindane)	S14-Jl05639	CP	%	79			70-130	Pass	
Heptachlor	S14-Jl05639	CP	%	80			70-130	Pass	
Heptachlor epoxide	S14-Jl05639	CP	%	91			70-130	Pass	
Hexachlorobenzene	S14-Jl05639	CP	%	82			70-130	Pass	
Methoxychlor	S14-Jl05639	CP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl05641	CP	%	73			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl05641	CP	%	95			70-130	Pass	
Toluene	S14-Jl05641	CP	%	85			70-130	Pass	
Ethylbenzene	S14-Jl05641	CP	%	81			70-130	Pass	
m&p-Xylenes	S14-Jl05641	CP	%	81			70-130	Pass	
o-Xylene	S14-Jl05641	CP	%	82			70-130	Pass	
Xylenes - Total	S14-Jl05641	CP	%	81			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl05641	CP	%	87			70-130	Pass	
TRH C6-C10	S14-Jl05641	CP	%	79			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl05642	CP	%	87			70-130	Pass	
Cadmium	S14-Jl05642	CP	%	97			70-130	Pass	
Chromium	S14-Jl05642	CP	%	94			70-130	Pass	
Copper	S14-Jl05642	CP	%	104			70-130	Pass	
Lead	S14-Jl05642	CP	%	67			70-130	Fail	Q08
Nickel	S14-Jl05642	CP	%	95			70-130	Pass	
Zinc	S14-Jl05642	CP	%	113			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl05646	CP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl05646	CP	%	95			70-130	Pass	
Toluene	S14-Jl05646	CP	%	86			70-130	Pass	
Ethylbenzene	S14-Jl05646	CP	%	84			70-130	Pass	
m&p-Xylenes	S14-Jl05646	CP	%	84			70-130	Pass	
o-Xylene	S14-Jl05646	CP	%	85			70-130	Pass	
Xylenes - Total	S14-Jl05646	CP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl05646	CP	%	87			70-130	Pass	
TRH C6-C10	S14-Jl05646	CP	%	82			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl05647	CP	%	109			70-130	Pass	
Toluene	S14-Jl05647	CP	%	106			70-130	Pass	
Ethylbenzene	S14-Jl05647	CP	%	101			70-130	Pass	
m&p-Xylenes	S14-Jl05647	CP	%	103			70-130	Pass	
o-Xylene	S14-Jl05647	CP	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl05647	CP	%	109			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-Jl05647	CP	%	112			75-125	Pass	
1.1-Dichloroethene	S14-Jl05647	CP	%	107			70-130	Pass	
1.1.1-Trichloroethane	S14-Jl05647	CP	%	111			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl05647	CP	%	98			70-130	Pass	
1.1.2-Trichloroethane	S14-Jl05647	CP	%	114			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl05647	CP	%	107			70-130	Pass	
1.2-Dibromoethane	S14-Jl05647	CP	%	116			70-130	Pass	
1.2-Dichlorobenzene	S14-Jl05647	CP	%	110			70-130	Pass	
1.2-Dichloroethane	S14-Jl05647	CP	%	122			70-130	Pass	
1.2-Dichloropropane	S14-Jl05647	CP	%	112			70-130	Pass	
1.2.3-Trichloropropane	S14-Jl05647	CP	%	110			70-130	Pass	
1.2.4-Trimethylbenzene	S14-Jl05647	CP	%	105			70-130	Pass	
1.3-Dichlorobenzene	S14-Jl05647	CP	%	105			70-130	Pass	
1.3-Dichloropropane	S14-Jl05647	CP	%	116			70-130	Pass	
1.3.5-Trimethylbenzene	S14-Jl05647	CP	%	105			70-130	Pass	
1.4-Dichlorobenzene	S14-Jl05647	CP	%	107			70-130	Pass	
2-Butanone (MEK)	S14-Jl05647	CP	%	106			70-130	Pass	
4-Chlorotoluene	S14-Jl05647	CP	%	105			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl05647	CP	%	123			70-130	Pass	
Bromobenzene	S14-Jl05647	CP	%	102			70-130	Pass	
Bromochloromethane	S14-Jl05647	CP	%	102			70-130	Pass	
Bromodichloromethane	S14-Jl05647	CP	%	103			70-130	Pass	
Bromoform	S14-Jl05647	CP	%	94			70-130	Pass	
Carbon disulfide	S14-Jl05647	CP	%	77			70-130	Pass	
Carbon Tetrachloride	S14-Jl05647	CP	%	100			70-130	Pass	
Chlorobenzene	S14-Jl05647	CP	%	96			70-130	Pass	
Chloroethane	S14-Jl05647	CP	%	93			70-130	Pass	
Chloroform	S14-Jl05647	CP	%	107			70-130	Pass	
Chloromethane	S14-Jl05647	CP	%	98			70-130	Pass	
cis-1.2-Dichloroethene	S14-Jl05647	CP	%	93			70-130	Pass	
cis-1.3-Dichloropropene	S14-Jl05647	CP	%	95			70-130	Pass	
Dibromochloromethane	S14-Jl05647	CP	%	95			70-130	Pass	
Dibromomethane	S14-Jl05647	CP	%	117			70-130	Pass	
Dichlorodifluoromethane	S14-Jl05647	CP	%	109			70-130	Pass	
Isopropyl benzene (Cumene)	S14-Jl05647	CP	%	103			70-130	Pass	
Methylene Chloride	S14-Jl05647	CP	%	107			70-130	Pass	
Styrene	S14-Jl05647	CP	%	92			70-130	Pass	
Tetrachloroethene	S14-Jl05647	CP	%	106			70-130	Pass	
trans-1.2-Dichloroethene	S14-Jl05647	CP	%	109			70-130	Pass	
trans-1.3-Dichloropropene	S14-Jl05647	CP	%	95			70-130	Pass	
Trichloroethene	S14-Jl05647	CP	%	109			70-130	Pass	
Trichlorofluoromethane	S14-Jl05647	CP	%	105			70-130	Pass	
Vinyl chloride	S14-Jl05647	CP	%	102			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	S14-Jl04565	NCP	%	78			70-130	Pass	
Actril (Ioxynil)	S14-Jl04565	NCP	%	79			70-130	Pass	
Dichlorprop	S14-Jl04565	NCP	%	82			70-130	Pass	
MCPA	S14-Jl04565	NCP	%	82			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
MCPB	S14-Jl04565	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jl05652	CP	%	73			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jl05652	CP	%	77			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl05603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl05603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl05603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl05603	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl05603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl05603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl05603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl05603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl05603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl05603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl05615	CP	mg/kg	3.8	3.0	24	30%	Pass	
Cadmium	S14-Jl05615	CP	mg/kg	0.8	0.5	39	30%	Fail	Q15
Chromium	S14-Jl05615	CP	mg/kg	27	18	41	30%	Fail	Q15
Copper	S14-Jl05615	CP	mg/kg	11	9.9	9.0	30%	Pass	
Lead	S14-Jl05615	CP	mg/kg	18	13	31	30%	Fail	Q15
Mercury	S14-Jl05615	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl05615	CP	mg/kg	5.7	< 5	24	30%	Pass	
Zinc	S14-Jl05615	CP	mg/kg	55	61	10	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Chrysene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jl10706	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl05632	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl05638	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl05638	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl05638	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl05638	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl05638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl05638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl05638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl05638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl05638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl05638	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl05639	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl05639	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl05639	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl05639	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl05639	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl05639	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl05639	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl05639	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl05639	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl05639	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl05639	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jl05639	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl05639	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jl05639	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl05639	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jl05639	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-KCL	S14-Jl05640	CP	units	5.6	5.7	1.0	30%	Pass	
pH-OX	S14-Jl05640	CP	units	6.6	6.5	1.0	30%	Pass	
Acid trail - Titratable Actual Acidity	S14-Jl05640	CP	mol H+/t	10	9.0	5.0	30%	Pass	
Acid trail - Titratable Peroxide Acidity	S14-Jl05640	CP	mol H+/t	10	11	11	30%	Pass	
Acid trail - Titratable Sulfidic Acidity	S14-Jl05640	CP	mol H+/t	< 2	2.0	160	30%	Fail	Q15
sulfidic - Titratable Actual Acidity - equivalent S% pyrite	S14-Jl05640	CP	% pyrite S	0.02	< 0.02	5.0	30%	Pass	
sulfidic - Titratable Peroxide Acidity - equivalent S% pyrite	S14-Jl05640	CP	% pyrite S	0.02	0.02	11	30%	Pass	
sulfidic - Titratable Sulfidic Acidity - equivalent S% pyrite	S14-Jl05640	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - KCl Extractable	S14-Jl05640	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide	S14-Jl05640	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - Peroxide Oxidisable Sulfur	S14-Jl05640	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
acidity - Peroxide Oxidisable Sulfur	S14-Jl05640	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Calcium - KCl Extractable	S14-Jl05640	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Calcium - Peroxide	S14-Jl05640	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
Acid Reacted Calcium	S14-Jl05640	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Calcium	S14-Jl05640	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Calcium equivalent S% pyrite	S14-Jl05640	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - KCl Extractable	S14-Jl05640	CP	% Mg	0.09	0.09	1.0	30%	Pass	
Magnesium - Peroxide	S14-Jl05640	CP	% Mg	0.10	0.09	8.0	30%	Pass	
Acid Reacted Magnesium	S14-Jl05640	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S14-Jl05640	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Magnesium equivalent S% pyrite	S14-Jl05640	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Acid Neutralising Capacity	S14-Jl05640	CP	%CaCO3	< 0.02	< 0.02	<1	30%	Pass	
Acid Neutralising Capacity - Acidity units	S14-Jl05640	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
ANC Fineness Factor	S14-Jl05640	CP		1.5	1.5	<1	30%	Pass	
Net Acidity (sulfur units) - SPOCAS	S14-Jl05640	CP	% S	0.02	< 0.02	5.0	30%	Pass	
Net Acidity (acidity units) - SPOCAS	S14-Jl05640	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
Liming rate - SPOCAS	S14-Jl05640	CP	kg CaCO3/t	1.0	1.0	5.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl05641	CP	mg/kg	3.7	5.3	36	30%	Fail	Q15
Cadmium	S14-Jl05641	CP	mg/kg	1.0	0.7	33	30%	Fail	Q15
Chromium	S14-Jl05641	CP	mg/kg	23	18	25	30%	Pass	
Copper	S14-Jl05641	CP	mg/kg	24	27	10	30%	Pass	
Lead	S14-Jl05641	CP	mg/kg	23	20	14	30%	Pass	
Mercury	S14-Jl05641	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl05641	CP	mg/kg	12	11	10	30%	Pass	
Zinc	S14-Jl05641	CP	mg/kg	52	48	7.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl05644	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl05644	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl05644	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl05644	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl05644	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl05644	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl05644	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl05644	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl05644	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl05644	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jl05645	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl05645	CP	mg/kg	66	63	4.0	30%	Pass	
TRH C29-C36	S14-Jl05645	CP	mg/kg	230	240	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Jl05645	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl05645	CP	mg/kg	210	230	6.0	30%	Pass	
TRH >C34-C40	S14-Jl05645	CP	mg/kg	130	140	12	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl05646	CP	mg/kg	< 20	< 20	<1	30%	Pass	

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Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl05646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl05646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl05646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl05646	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl05646	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl05646	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jl05646	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl05646	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Trichloroethene	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jl05646	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl05647	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl05647	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl05647	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl05647	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl05647	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl05647	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl05647	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl05647	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl05647	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl05647	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S14-Jl05648	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jl05649	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl05649	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl05649	CP	mg/kg	< 50	< 50	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-JI05649	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-JI05649	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-JI05649	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-JI05649	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-JI05649	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-JI05649	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-JI05649	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-JI05649	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-JI05649	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-JI05649	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-JI05649	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-JI05649	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-JI05649	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-JI05652	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-JI05652	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-JI05652	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-JI05652	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-JI05652	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-JI05652	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-JI05652	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-JI05652	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-JI05652	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-JI05652	CP	mg/kg	< 20	< 20	<1	30%	Pass	

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Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref: ASET40235/ 43415 / 1 - 29
Your ref: 424180
NATA Accreditation No: 14484

10 July 2014

Eurofins MGT
Unit F3, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of twenty-nine samples, forwarded by Eurofins MGT on 10 July 2014, for analysis for asbestos.

1.Introduction: Twenty-nine samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1 and Australian Standards AS 4964 - 2004 and WA/ NEPM Guidelines)**

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia/NEPM Guidelines for the Assessment Remediation and Management of Asbestos in contaminated sites.

3. Results : **Sample No. 1. ASET40235 / 43415 / 1. #1-A-SS09 - Jl05602.**
Approx dimensions 10.0 cm x 10.0 cm x 4.0 cm
The sample consisted of a mixture of clayish soil, stones, fibres^, plant matter, fragments of plaster, cement, fibre cement*, brick and glass.
Chrysotile^* (Estimated approximate weight= 0.14g) asbestos, Amosite^* (Estimated approximate weight= 0.038g) asbestos and Crocidolite^* (Estimated approximate weight= 0.062g) asbestos detected.
Estimated approximate total weight of asbestos = 0.24g
Approximate total weight of asbestos (AF/loose fibres) = 0.18g
Estimated approximate total weight of asbestos in ACM (>7mm) = 0.06g
Approximate total weight of ACM (>7mm) = 0.4g
Approximate total weight of soil = 418.0g
Approximate % w/w for AF = 0.04%
Estimated approximate % w/w for ACM = 0.01%

Sample No. 2. ASET40235 / 43415 / 2. #1-SS12 - Jl05605.
Approx dimensions 10.0 cm x 10.0 cm x 4.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 3. ASET40235 / 43415 / 3. #1-SS14 - Jl05606.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster and metal pieces.
No asbestos detected.

Sample No. 4. ASET40235 / 43415 / 4. #1-SS17 - Jl05609.
Approx dimensions 11.0 cm x 10.5 cm x 5.0 cm
The sample consisted of a mixture of sandy soil, stones and plant matter.
No asbestos detected.

Sample No. 5. ASET40235 / 43415 / 5. #1-SS18 - Jl05610.
Approx dimensions 10.0 cm x 9.0 cm x 5.2 cm
The sample consisted of a mixture of soil, stones and plant matter.
No asbestos detected.

Sample No. 6. ASET40235 / 43415 / 6. #1-A-SS20 - Jl05613.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of soil, stones, fibres^, plant matter, fragments of plaster and glass.
Chrysotile^ (Approximate weight = 0.011g) asbestos, Amosite^ (Approximate weight = 0.004g) asbestos and Crocidolite^ (Approximate weight = 0.006g) asbestos detected.
Approximate total weight of asbestos (AF/loose fibres) = 0.021g
Approximate total weight of soil = 460.0g
Approximate % w/w = 0.005%

Sample No. 7. ASET40235 / 43415 / 7. #1-A-SS23 - Jl05616.
Approx dimensions 11.0 cm x 11.0 cm x 5.0. cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 8. ASET40235 / 43415 / 8. #1-A-SS24 - Jl05617.
Approx dimensions 12.0 cm x 12.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, cement and paint flakes.
No asbestos detected.

Sample No. 9. ASET40235 / 43415 / 9. #1-A-SS26 - Jl05619.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 10. ASET40235 / 43415 / 10. #1-A-SS28 - JI05621.
Approx dimensions 10.0 cm x 10.0 cm x 5.1 cm
The sample consisted of a mixture of clayish soil, stones, fibres^, plant matter, paint flakes and fragments of plaster.
Chrysotile^ (Approximate weight= 0.0025g) asbestos, Amosite^ (Approximate weight= 0.001g) asbestos and Crocidolite^ (Approximate weight= 0.0008g) asbestos detected.
Approximate total weight of asbestos (AF/loose fibres) = 0.0043g
Approximate total weight of soil = 525.0g
Approximate % w/w = 0.0008%

Sample No. 11. ASET40235 / 43415 / 11. #1-A-SS29 - JI05622.
Approx dimensions 10.0 cm x 10.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, cement and paint flakes.
No asbestos detected.

Sample No. 12. ASET40235 / 43415 / 12. #1-A-SS30 - JI05623.
Approx dimensions 10.0 cm x 10.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and paint flakes.
No asbestos detected.

Sample No. 13. ASET40235 / 43415 / 13. #1-A-SS31 - JI05624.
Approx dimensions 12.0 cm x 12.0 cm x 4.5 cm
The sample consisted of a mixture of clayish soil, stones, fragments of plaster, cement, glass and paint flakes.
No asbestos detected.

Sample No. 14. ASET40235 / 43415 / 14. #1-A-SS32 - JI05625.
Approx dimensions 12.0 cm x 12.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, cement and paint flakes.
No asbestos detected.

Sample No. 15. ASET40235 / 43415 / 15. #1-A-SS01 - JI05626.
Approx dimensions 12.0 cm x 12.0 cm x 5.8 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 16. ASET40235 / 43415 / 16. Sample Missing.

Sample No. 17. ASET40235 / 43415 / 17. #12-A-SS02 - JI05628.
Approx dimensions 11.0 cm x 11.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 18. ASET40235 / 43415 / 18. #12-A-SS03 - Jl05629.
Approx dimensions 13.0 cm x 11.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 19. ASET40235 / 43415 / 19. #12-A-SS04 - Jl05630.
Approx dimensions 12.5 cm x 12.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and paint flakes.
No asbestos detected.

Sample No. 20. ASET40235 / 43415 / 20. #12-A-SS05 - Jl05631.
Approx dimensions 12.0 cm x 12.0 cm x 5.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, brick and glass.
No asbestos detected.

Sample No. 21. ASET40235 / 43415 / 21. #23-HA01 (0-0.1) - Jl05637.
Approx dimensions 11.0 cm x 10.5 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 22. ASET40235 / 43415 / 22. #23-HA02 (0-0.1) - Jl05638.
Approx dimensions 10.0 cm x 10.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 23. ASET40235 / 43415 / 23. #23-HA03 (0-0.1) - Jl05639.
Approx dimensions 12.0 cm x 10.5 cm x 5.2 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 24. ASET40235 / 43415 / 24. #23-HA04 (0-0.1) - Jl05641.
Approx dimensions 10.0 cm x 10.0 cm x 4.4 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 25. ASET40235 / 43415 / 25. #25-F-SS01 - Jl05644.
Approx dimensions 10.0 cm x 10.0 cm x 4.7 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, paint flakes and corroded metal.
No asbestos detected.

Sample No. 26. ASET40235 / 43415 / 26. #25-S-SS02 - Jl05645.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, corroded metal and fragments of plaster.
No asbestos detected.

Sample No. 27. ASET40235 / 43415 / 27. #25-SD-SS03 - Jl05646.
Approx dimensions 10.0 cm x 10.0 cm x 4.6 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 28. ASET40235 / 43415 / 28. #25-SD-SS04 - Jl05647.
Approx dimensions 10.5 cm x 10.2 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 29. ASET40235 / 43415 / 29. #24-SS03 - Jl05652.
Approx dimensions 10.0 cm x 10.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Analysed and reported by,

Nisansala Maddage. BSc(Hons)
Environmental Scientist/Approved Identifier
Approved Signatory

WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation only covers the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos types detected in soil/dust.
*** denotes asbestos detected in ACM in bonded form.**

All samples indicating “No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **424180-W**
Client Reference BOX HILL 43376
Received Date Jul 04, 2014

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**TRIP SPIKE** **Water** **S14-JI05654** **Jul 04, 2014**	**TRIP BLANK** **Water** **S14-JI05655** **Jul 04, 2014**	**RINSATE** **Water** **S14-JI05656** **Jul 04, 2014**
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1
BTEX					
Benzene	0.001	mg/L	89%	< 0.001	< 0.001
Toluene	0.001	mg/L	89%	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	98%	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	100%	< 0.002	< 0.002
o-Xylene	0.001	mg/L	101%	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	100%	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	96	91	90
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	-	-	< 0.02
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	-	-	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TRIP SPIKE Water S14-Jl05654 Jul 04, 2014	TRIP BLANK Water S14-Jl05655 Jul 04, 2014	RINSATE Water S14-Jl05656 Jul 04, 2014
Polycyclic Aromatic Hydrocarbons					
Phenanthrene	0.001	mg/L	-	-	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001
Total PAH	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	90
p-Terphenyl-d14 (surr.)	1	%	-	-	90
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	-	-	108
Tetrachloro-m-xylene (surr.)	1	%	-	-	89
Polychlorinated Biphenyls (PCB)					
Aroclor-1016	0.005	mg/L	-	-	< 0.005
Aroclor-1232	0.005	mg/L	-	-	< 0.005
Aroclor-1242	0.005	mg/L	-	-	< 0.005
Aroclor-1248	0.005	mg/L	-	-	< 0.005
Aroclor-1254	0.005	mg/L	-	-	< 0.005
Aroclor-1260	0.005	mg/L	-	-	< 0.005
Total PCB	0.005	mg/L	-	-	< 0.005
Dibutylchlorendate (surr.)	1	%	-	-	108
Heavy Metals					
Arsenic	0.005	mg/L	-	-	< 0.005
Cadmium	0.0005	mg/L	-	-	< 0.0005
Chromium	0.005	mg/L	-	-	< 0.005
Copper	0.005	mg/L	-	-	< 0.005
Lead	0.005	mg/L	-	-	< 0.005
Mercury	0.0001	mg/L	-	-	< 0.0001
Nickel	0.005	mg/L	-	-	< 0.005
Zinc	0.005	mg/L	-	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 09, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 04, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 09, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 09, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 04, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 09, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 09, 2014	7 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

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NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 4, 2014 3:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424180	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
#1-A-SS09	Jul 04, 2014		Soil	S14-Jl05602			X									
#1-A-SS10	Jul 04, 2014		Soil	S14-Jl05603		X			X		X					
#1-SS11	Jul 04, 2014		Soil	S14-Jl05604				X								
#1-SS12	Jul 04, 2014		Soil	S14-Jl05605			X									
#1-SS14	Jul 04, 2014		Soil	S14-Jl05606			X									
#1-SS15	Jul 04, 2014		Soil	S14-Jl05607		X			X		X					
#1-SS16	Jul 04, 2014		Soil	S14-Jl05608				X								
#1-SS17	Jul 04, 2014		Soil	S14-Jl05609			X									
#1-SS18	Jul 04, 2014		Soil	S14-Jl05610		X	X		X		X					
#1-SS19	Jul 04, 2014		Soil	S14-Jl05611				X								

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#1-SS19	Jul 04, 2014		Soil	S14-Jl05612				X								
#1-A-SS20	Jul 04, 2014		Soil	S14-Jl05613			X									
#1-G-SS21	Jul 04, 2014		Soil	S14-Jl05614		X			X		X					
#1-G-SS22	Jul 04, 2014		Soil	S14-Jl05615		X			X		X					
#1-A-SS23	Jul 04, 2014		Soil	S14-Jl05616			X									
#1-A-SS24	Jul 04, 2014		Soil	S14-Jl05617			X									
#1-A-SS25	Jul 04, 2014		Soil	S14-Jl05618				X								
#1-A-SS26	Jul 04, 2014		Soil	S14-Jl05619			X									
#1-A-SS27	Jul 04, 2014		Soil	S14-Jl05620				X								
#1-A-SS28	Jul 04, 2014		Soil	S14-Jl05621			X									
#1-A-SS29	Jul 04, 2014		Soil	S14-Jl05622			X									

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Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
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Client Job No.: BOX HILL 43376

Order No.:
Report #: 424180
Phone: 02 8245 0300
Fax:

Received: Jul 4, 2014 3:10 PM
Due: Jul 11, 2014
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#1-A-SS30	Jul 04, 2014		Soil	S14-Jl05623			X									
#1-A-SS31	Jul 04, 2014		Soil	S14-Jl05624			X									
#1-A-SS32	Jul 04, 2014		Soil	S14-Jl05625			X									
#1-A-SS01	Jul 04, 2014		Soil	S14-Jl05626			X									
#12-A-SS01	Jul 04, 2014		Soil	S14-Jl05627			X									
#12-A-SS02	Jul 04, 2014		Soil	S14-Jl05628			X									
#12-A-SS03	Jul 04, 2014		Soil	S14-Jl05629			X									
#12-A-SS04	Jul 04, 2014		Soil	S14-Jl05630			X									
#12-A-SS05	Jul 04, 2014		Soil	S14-Jl05631			X									
#12-SD-SS06	Jul 04, 2014		Soil	S14-Jl05632		X							X	X	X	
#12-SD-SS07	Jul 04, 2014		Soil	S14-Jl05633		X							X	X	X	

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		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#12-SD-SS08	Jul 04, 2014		Soil	S14-Jl05634		X							X	X	X	
#12-AST-SS09	Jul 04, 2014		Soil	S14-Jl05635		X								X		
#12-G-SS10	Jul 04, 2014		Soil	S14-Jl05636		X			X		X					
#23-HA01 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05637		X	X						X	X		
#23-HA02 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05638		X	X						X	X		
#23-HA03 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05639		X	X						X	X		
#23-HA03 (0.4-0.5)	Jul 04, 2014		Soil	S14-Jl05640	X											X
#23-HA04 (0-0.1)	Jul 04, 2014		Soil	S14-Jl05641		X	X						X	X		

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		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
#23-SED01	Jul 04, 2014		Soil	S14-Jl05642		X							X	X		
#23-G-HA05	Jul 04, 2014		Soil	S14-Jl05643		X			X		X					
#25-F-SS01	Jul 04, 2014		Soil	S14-Jl05644		X	X						X	X	X	
#25-S-SS02	Jul 04, 2014		Soil	S14-Jl05645		X	X						X	X	X	
#25-SD-SS03	Jul 04, 2014		Soil	S14-Jl05646		X	X						X	X	X	
#25-SD-SS04	Jul 04, 2014		Soil	S14-Jl05647		X	X						X	X	X	
#25-G-SS05	Jul 04, 2014		Soil	S14-Jl05648		X			X	X	X					
#24-SED01	Jul 04, 2014		Soil	S14-Jl05649		X							X	X		
#24-G-SS01	Jul 04, 2014		Soil	S14-Jl05650		X			X		X					
#24-AST-SS02	Jul 04, 2014		Soil	S14-Jl05651		X								X		
#24-SS03	Jul 04, 2014		Soil	S14-Jl05652		X	X						X	X	X	

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 4, 2014 3:10 PM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424180	**Due:**	Jul 11, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Ken Henderson
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	% Moisture	Asbestos - WA guidelines	HOLD	Organochlorine Pesticides	Acid Herbicides	Metals M8	BTEX	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics	SPOCAS Suite
Laboratory where analysis is conducted																
Melbourne Laboratory - NATA Site # 1254 & 14271										X						
Sydney Laboratory - NATA Site # 18217						X	X	X	X		X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794					X											X
External Laboratory																
QC20	Jul 04, 2014		Soil	S14-Jl05653		X			X		X					
TRIP SPIKE	Jul 04, 2014		Water	S14-Jl05654								X				
TRIP BLANK	Jul 04, 2014		Water	S14-Jl05655								X				
RINSATE	Jul 04, 2014		Water	S14-Jl05656									X	X		
QC19	Jul 04, 2014		Soil	S14-Jl05808		X			X		X					

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General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB	mg/L	< 0.005			0.005	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	97			70-130	Pass	
TRH C10-C14	%	100			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	90			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	97			70-130	Pass	
m&p-Xylenes	%	98			70-130	Pass	
o-Xylene	%	98			70-130	Pass	
Xylenes - Total	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	114			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	120			70-130	Pass	
Acenaphthylene	%	105			70-130	Pass	
Anthracene	%	90			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	112			70-130	Pass	
Benzo(b&j)fluoranthene	%	118			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g.h.i)perylene	%	102			70-130	Pass	
Benzo(k)fluoranthene	%	117			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	86			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	98			70-130	Pass	
Naphthalene	%	107			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	122			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	100			70-130	Pass	
4.4'-DDD	%	100			70-130	Pass	
4.4'-DDE	%	100			70-130	Pass	
4.4'-DDT	%	100			70-130	Pass	
a-BHC	%	100			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	100			70-130	Pass	
d-BHC	%	100			70-130	Pass	
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	100			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	100			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	100			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	100			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls (PCB)							
Aroclor-1260	%	70			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	94			70-130	Pass	
Cadmium	%	94			70-130	Pass	
Chromium	%	97			70-130	Pass	
Copper	%	87			70-130	Pass	
Lead	%	96			70-130	Pass	
Mercury	%	74			70-130	Pass	
Nickel	%	94			70-130	Pass	
Zinc	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl04349	NCP	%	86			70-130	Pass	
Toluene	S14-Jl04349	NCP	%	82			70-130	Pass	
Ethylbenzene	S14-Jl04349	NCP	%	93			70-130	Pass	
m&p-Xylenes	S14-Jl04349	NCP	%	97			70-130	Pass	
o-Xylene	S14-Jl04349	NCP	%	98			70-130	Pass	
Xylenes - Total	S14-Jl04349	NCP	%	98			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-JI04349	NCP	%	74			70-130	Pass	
TRH C10-C14	S14-JI02751	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-JI04349	NCP	%	90			70-130	Pass	
TRH C6-C10	S14-JI04349	NCP	%	78			70-130	Pass	
TRH >C10-C16	S14-JI02751	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-JI02750	NCP	%	95			70-130	Pass	
Acenaphthylene	S14-JI02750	NCP	%	93			70-130	Pass	
Anthracene	S14-JI02750	NCP	%	94			70-130	Pass	
Benz(a)anthracene	S14-JI02750	NCP	%	77			70-130	Pass	
Benzo(a)pyrene	S14-JI02750	NCP	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	S14-JI02750	NCP	%	94			70-130	Pass	
Benzo(g.h.i)perylene	S14-JI02750	NCP	%	93			70-130	Pass	
Benzo(k)fluoranthene	S14-JI02750	NCP	%	99			70-130	Pass	
Chrysene	S14-JI02750	NCP	%	95			70-130	Pass	
Dibenz(a.h)anthracene	S14-JI02750	NCP	%	81			70-130	Pass	
Fluoranthene	S14-JI02750	NCP	%	95			70-130	Pass	
Fluorene	S14-JI02750	NCP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-JI02750	NCP	%	88			70-130	Pass	
Naphthalene	S14-JI02750	NCP	%	108			70-130	Pass	
Phenanthrene	S14-JI02750	NCP	%	94			70-130	Pass	
Pyrene	S14-JI02750	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-JI07515	NCP	%	93			70-130	Pass	
Cadmium	S14-JI07515	NCP	%	95			70-130	Pass	
Chromium	S14-JI07515	NCP	%	119			70-130	Pass	
Copper	M14-JI05185	NCP	%	88			70-130	Pass	
Lead	S14-JI07515	NCP	%	125			70-130	Pass	
Mercury	S14-JI07515	NCP	%	77			70-130	Pass	
Nickel	S14-JI07515	NCP	%	119			70-130	Pass	
Zinc	M14-JI05185	NCP	%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-JI04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-JI04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-JI04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-JI04348	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-JI04348	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-JI04348	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-JI04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-JI02752	NCP	mg/L	6.3	6.3	1.0	30%	Pass	
TRH C15-C28	S14-JI02752	NCP	mg/L	0.40	0.30	39	30%	Fail	Q15
TRH C29-C36	S14-JI02752	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jl04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl04348	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jl02752	NCP	mg/L	3.1	2.9	7.0	30%	Pass	
TRH >C16-C34	S14-Jl02752	NCP	mg/L	0.20	0.10	40	30%	Fail	Q15
TRH >C34-C40	S14-Jl02752	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jl02752	NCP	mg/L	0.54	0.50	7.0	30%	Pass	
Phenanthrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jl02752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jl05102	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jl05102	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Ken Henderson
Client job number:	BOX HILL 43376
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Jul 4, 2014 3:10 PM
Eurofins | mgt reference:	**424180**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Ken Henderson - khenderson@jbsgroup.com.au.

Eurofins | mgt Sample Receipt

02240

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 49776	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB
SEND REPORT TO: KH, TC SEND INVOICE TO: GN/G	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: tcreese@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) khenderson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	metals	OCPs	NOTES:
#1-A-SS09	Soil	4/7		B				X			B7
#1-A-SS10				"					X	X	– TRH, BTEX
#1-SS11				B+J							PAHs, metals
#1-SS12				"				X			
#1-SS14				"				X			B13
#1-SS15				"					X	X	– OCP, PCBs
#1-SS16				"							
#1-SS17				"				X			Asbestos
#1-SS18				"				X	X	X	– WA
#1-SS19				"							
#1-A-SS20				B				X			
#1-G-SS21				J					X	X	
#1-G-SS22				J					X	X	
#1-A-SS23				B				X			
#1-A-SS24				B				X			
#1-A-SS25											
#1-A-SS26								X			
#1-A-SS27											
#1-A-SS28	↓	↓		↓				X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Creese DATE: 4/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 4/7/14 3.10pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP 11.5 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02241

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, KB tcreae@jbsg.com.au
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL:
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) khenderson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Asbestos	B7	B13	VOCs	Metals	OCPs	SPOCAS	NOTES:
#1-A-SS29	Soil	4/7		B		X							
#1-A-SS30						X							
#1-A-SS31						X							
#1-A-SS32						X							
#12-A-SS01						X							
#12-A-SS02						X							
#12-A-SS03						X							
#12-A-SS04						X							
#12-A-SS05						X							
#12-SD-SS06				D+J			X	X	X				
#12-SD-SS07							X	X	X				
#12-SD-SS08							X	X	X				
#12-AST-SS09				J			X						
#12-G-SS10				J						X	X		
#23-HA01 (0-0.1)				B+J		X	X	X					
#23-HA02 (0-0.1)						X	X	X					
#23-HA03 (0-0.1)						X	X	X					
#23-HA03 (0.4-0.5)												X	
#23-HA04 (0-0.1)						X	X	X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Creae DATE: 4/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 4/7/14 3:10pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02242

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, KH
SEND REPORT TO: TC, KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Kheckes@jbsg.com
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcrane@jbsg.com

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	metals	OCPs	Herbicides	Btex	VOCs	NOTES:
#23-SED01	Soil	4/7		J		X	X							
#23-G-HA05				J					X	X				
#25-F-SS01				B+J		X	X	X					X	
#25-S-SS02				"		X	X	X					X	
#25-SD-SS03				"		X	X	X					X	
#25-SD-SS04				"		X	X	X					X	
#25-~~SD~~G-SS05				J					X	X	X			
#24-SED01				J		X	X							
#24-G-SS01				J					X	X				
#24-AST-SS02				J		X								
#24-SS03				B+J		X	X	X					X	
QC19				J					X	X				
QC20				J					X	X				
Trip spike												X		
Trip blank												X		
Rinsate						X	X							

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Gray DATE: 4/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: OF: 4/7/14 3:10pm	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **424407-S**
Client Reference BOX HILL 43376
Received Date Jul 08, 2014

Client Sample ID			**#9-SP-HA01 (0.3-0.4)**	**QC21**	**#9-SP-HA02(0-0.1)**	**#9-G-HA04(0-0.1)**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07664**	**S14-Jl07665**	**S14-Jl07666**	**S14-Jl07668**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	51	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	51	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	70	83	87	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			#9-SP-HA01 (0.3-0.4)	QC21	#9-SP-HA02(0-0.1)	#9-G-HA04(0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07664**	**S14-Jl07665**	**S14-Jl07666**	**S14-Jl07668**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	100	107	108	-
p-Terphenyl-d14 (surr.)	1	%	105	112	115	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	99	86
Tetrachloro-m-xylene (surr.)	1	%	-	-	82	90
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	99	-
% Moisture	0.1	%	11	12	12	16
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	see attached	-

Client Sample ID			#9-SP-HA01 (0.3-0.4)	QC21	#9-SP-HA02(0-0.1)	#9-G-HA04(0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07664	S14-Jl07665	S14-Jl07666	S14-Jl07668
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	10	5.1	12	11
Cadmium	0.4	mg/kg	0.5	0.7	0.5	0.9
Chromium	5	mg/kg	25	23	20	28
Copper	5	mg/kg	19	20	24	19
Lead	5	mg/kg	31	29	26	24
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	12	14	12	9.8
Zinc	5	mg/kg	90	95	99	48

Client Sample ID			#9-G-HA04(0.3-0.4)	#9-HA05(0-0.1)	#9-HA06(0-0.1)	#9-HA07(0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07669	S14-Jl07670	S14-Jl07671	S14-Jl07673
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	-	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	86	86	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5

Client Sample ID			#9-G-HA04(0.3-0.4)	#9-HA05(0-0.1)	#9-HA06(0-0.1)	#9-HA07(0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07669**	**S14-Jl07670**	**S14-Jl07671**	**S14-Jl07673**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	-	100	103	106
p-Terphenyl-d14 (surr.)	1	%	-	106	105	112
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	115	106	82
Tetrachloro-m-xylene (surr.)	1	%	-	115	91	87
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	115	106	82
pH (1:5 Aqueous extract)	0.1	units	6.7	-	-	-
% Moisture	0.1	%	21	22	7.9	8.3
Asbestos - WA guidelines	0.001	% w/w	-	see attached	see attached	see attached

Client Sample ID			#9-G-HA04(0.3-0.4)	#9-HA05(0-0.1)	#9-HA06(0-0.1)	#9-HA07(0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07669**	**S14-Jl07670**	**S14-Jl07671**	**S14-Jl07673**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	12	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	-	11	6.9	9.4
Cadmium	0.4	mg/kg	-	0.8	< 0.4	0.4
Chromium	5	mg/kg	-	32	12	12
Copper	5	mg/kg	-	39	13	17
Lead	5	mg/kg	-	24	14	17
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	0.06
Nickel	5	mg/kg	-	11	7.1	< 5
Zinc	5	mg/kg	-	98	25	32

Client Sample ID			#9-HA08(0-0.1)	#9-AST-SS01	#9-S-SS02	#9-SD-SS03
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07676**	**S14-Jl07677**	**S14-Jl07678**	**S14-Jl07679**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	250	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	48000	170	75
TRH C29-C36	50	mg/kg	< 50	1300	81	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	50000	250	75
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	85	73	92	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	2500	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	2500	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	53000	240	110
TRH >C34-C40	100	mg/kg	< 100	750	< 100	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#9-HA08(0-0.1) Soil S14-JI07676 Jul 07, 2014	#9-AST-SS01 Soil S14-JI07677 Jul 07, 2014	#9-S-SS02 Soil S14-JI07678 Jul 07, 2014	#9-SD-SS03 Soil S14-JI07679 Jul 07, 2014
Volatile Organics						
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5	< 0.5
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Bromobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromochloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromoform	0.5	mg/kg	-	-	< 0.5	< 0.5
Bromomethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Carbon disulfide	0.5	mg/kg	-	-	< 0.5	< 0.5
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5	< 0.5
Chlorobenzene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chloroethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Chloroform	0.5	mg/kg	-	-	< 0.5	< 0.5
Chloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibromomethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	< 0.1
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5	< 0.5
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	< 0.2
Methylene Chloride	0.5	mg/kg	-	-	< 0.5	< 0.5
o-Xylene	0.1	mg/kg	-	-	< 0.1	< 0.1
Styrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
Toluene	0.1	mg/kg	-	-	< 0.1	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	< 0.5
Trichloroethene	0.5	mg/kg	-	-	< 0.5	< 0.5
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5	< 0.5
Vinyl chloride	0.5	mg/kg	-	-	< 0.5	< 0.5
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	92	91
Polycyclic Aromatic Hydrocarbons						
Comments				R16		
Acenaphthene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5

Client Sample ID			#9-HA08(0-0.1)	#9-AST-SS01	#9-S-SS02	#9-SD-SS03
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07676	S14-Jl07677	S14-Jl07678	S14-Jl07679
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	12	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	100	102	102	104
p-Terphenyl-d14 (surr.)	1	%	113	110	112	114
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	94	-	102	78
Tetrachloro-m-xylene (surr.)	1	%	118	-	100	79
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5

Client Sample ID			#9-HA08(0-0.1)	#9-AST-SS01	#9-S-SS02	#9-SD-SS03
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07676**	**S14-Jl07677**	**S14-Jl07678**	**S14-Jl07679**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Total PCB	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	94	-	102	78
% Moisture	0.1	%	22	8.7	20	16
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	7.4	14	14	12
Cadmium	0.4	mg/kg	0.5	0.5	0.9	0.7
Chromium	5	mg/kg	25	17	35	29
Copper	5	mg/kg	26	51	28	27
Lead	5	mg/kg	23	31	26	28
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	8.9	10	12	12
Zinc	5	mg/kg	76	120	97	120

Client Sample ID			#9-SD-SS04	#9-SD-SS05	#16-SD-HA01(0-0.1)	#16-SD-HA02(0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07680**	**S14-Jl07681**	**S14-Jl07682**	**S14-Jl07684**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	36	< 20	66	< 20
TRH C15-C28	50	mg/kg	17000	< 50	590	< 50
TRH C29-C36	50	mg/kg	33000	< 50	1200	84
TRH C10-36 (Total)	50	mg/kg	50000	< 50	1900	84
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89	91	91	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	140	< 50	68	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	140	< 50	68	< 50
TRH >C16-C34	100	mg/kg	46000	< 100	1600	< 100
TRH >C34-C40	100	mg/kg	11000	< 100	460	< 100
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			#9-SD-SS04	#9-SD-SS05	#16-SD-HA01(0-0.1)	#16-SD-HA02(0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07680**	**S14-Jl07681**	**S14-Jl07682**	**S14-Jl07684**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Volatile Organics						
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	89	91	91	-

Client Sample ID			#9-SD-SS04	#9-SD-SS05	#16-SD-HA01(0-0.1)	#16-SD-HA02(0-0.1)
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07680	S14-Jl07681	S14-Jl07682	S14-Jl07684
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Comments			R16			
Acenaphthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	12	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	102	98	101	111
p-Terphenyl-d14 (surr.)	1	%	97	112	104	106
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	129	76	79	76
Tetrachloro-m-xylene (surr.)	1	%	72	73	87	79

Client Sample ID			#9-SD-SS04	#9-SD-SS05	#16-SD-HA01(0-0.1)	#16-SD-HA02(0-0.1)
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07680**	**S14-Jl07681**	**S14-Jl07682**	**S14-Jl07684**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	129	76	79	76
% Moisture	0.1	%	13	16	6.5	2.3
Asbestos - WA guidelines	0.001	% w/w	see attached	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	8.1	4.6	2.3	6.0
Cadmium	0.4	mg/kg	0.4	0.4	1.3	< 0.4
Chromium	5	mg/kg	18	6.0	8.4	8.1
Copper	5	mg/kg	35	41	6.9	8.1
Lead	5	mg/kg	19	21	19	22
Mercury	0.05	mg/kg	< 0.05	0.07	< 0.05	< 0.05
Nickel	5	mg/kg	9.5	12	< 5	< 5
Zinc	5	mg/kg	140	66	89	28

Client Sample ID			#16-SD-HA03(0-0.1)	#16-SD-HA04(0-0.1)	#22-A-SS01	#22-A-SS02
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07685**	**S14-Jl07687**	**S14-Jl07688**	**S14-Jl07689**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	50	49	-	-
TRH C15-C28	50	mg/kg	80	120	-	-
TRH C29-C36	50	mg/kg	190	210	-	-
TRH C10-36 (Total)	50	mg/kg	320	380	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	90	87	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	220	300	-	-
TRH >C34-C40	100	mg/kg	< 100	120	-	-

Client Sample ID			#16-SD-HA03(0-0.1)	#16-SD-HA04(0-0.1)	#22-A-SS01	#22-A-SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07685	S14-Jl07687	S14-Jl07688	S14-Jl07689
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	-	-	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	-	-	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	-	-	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	-	-	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-	-	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	-	-	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-	-	-
Benzene	0.1	mg/kg	< 0.1	-	-	-
Bromobenzene	0.5	mg/kg	< 0.5	-	-	-
Bromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromodichloromethane	0.5	mg/kg	< 0.5	-	-	-
Bromoform	0.5	mg/kg	< 0.5	-	-	-
Bromomethane	0.5	mg/kg	< 0.5	-	-	-
Carbon disulfide	0.5	mg/kg	< 0.5	-	-	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	-	-	-
Chlorobenzene	0.5	mg/kg	< 0.5	-	-	-
Chloroethane	0.5	mg/kg	< 0.5	-	-	-
Chloroform	0.5	mg/kg	< 0.5	-	-	-
Chloromethane	0.5	mg/kg	< 0.5	-	-	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Dibromochloromethane	0.5	mg/kg	< 0.5	-	-	-
Dibromomethane	0.5	mg/kg	< 0.5	-	-	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
Methylene Chloride	0.5	mg/kg	< 0.5	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Styrene	0.5	mg/kg	< 0.5	-	-	-
Tetrachloroethene	0.5	mg/kg	< 0.5	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	-	-	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	-	-	-
Trichloroethene	0.5	mg/kg	< 0.5	-	-	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	-	-	-
Vinyl chloride	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			#16-SD-HA03(0-0.1)	#16-SD-HA04(0-0.1)	#22-A-SS01	#22-A-SS02
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07685**	**S14-Jl07687**	**S14-Jl07688**	**S14-Jl07689**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Volatile Organics						
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	90	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	-	-
2-Fluorobiphenyl (surr.)	1	%	117	126	-	-
p-Terphenyl-d14 (surr.)	1	%	118	129	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	81	128	-	-
Tetrachloro-m-xylene (surr.)	1	%	82	97	-	-

Client Sample ID			#16-SD-HA03(0-0.1)	#16-SD-HA04(0-0.1)	#22-A-SS01	#22-A-SS02
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07685	S14-Jl07687	S14-Jl07688	S14-Jl07689
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PCB	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	81	128	-	-
% Moisture	0.1	%	4.7	2.3	-	-
Asbestos - WA guidelines	0.001	% w/w	-	-	see attached	see attached
Heavy Metals						
Arsenic	2	mg/kg	8.5	3.2	-	-
Cadmium	0.4	mg/kg	< 0.4	0.5	-	-
Chromium	5	mg/kg	16	7.7	-	-
Copper	5	mg/kg	< 5	5.8	-	-
Lead	5	mg/kg	13	30	-	-
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	-
Nickel	5	mg/kg	< 5	< 5	-	-
Zinc	5	mg/kg	28	1100	-	-

Client Sample ID			#22-A-SS03	#22-F-SS04	#22-S-SS05	#22-A-SS06
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07690	S14-Jl07691	S14-Jl07692	S14-Jl07693
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	340	690	-
TRH C29-C36	50	mg/kg	-	660	1200	-
TRH C10-36 (Total)	50	mg/kg	-	1000	1900	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	96	91	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	910	1700	-
TRH >C34-C40	100	mg/kg	-	290	410	-

Client Sample ID			#22-A-SS03	#22-F-SS04	#22-S-SS05	#22-A-SS06
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07690**	**S14-Jl07691**	**S14-Jl07692**	**S14-Jl07693**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5	-
Benzene	0.1	mg/kg	-	-	< 0.1	-
Bromobenzene	0.5	mg/kg	-	-	< 0.5	-
Bromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromoform	0.5	mg/kg	-	-	< 0.5	-
Bromomethane	0.5	mg/kg	-	-	< 0.5	-
Carbon disulfide	0.5	mg/kg	-	-	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5	-
Chlorobenzene	0.5	mg/kg	-	-	< 0.5	-
Chloroethane	0.5	mg/kg	-	-	< 0.5	-
Chloroform	0.5	mg/kg	-	-	< 0.5	-
Chloromethane	0.5	mg/kg	-	-	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Dibromomethane	0.5	mg/kg	-	-	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
Methylene Chloride	0.5	mg/kg	-	-	< 0.5	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Styrene	0.5	mg/kg	-	-	< 0.5	-
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Trichloroethene	0.5	mg/kg	-	-	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5	-
Vinyl chloride	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#22-A-SS03 Soil S14-Jl07690 Jul 07, 2014	#22-F-SS04 Soil S14-Jl07691 Jul 07, 2014	#22-S-SS05 Soil S14-Jl07692 Jul 07, 2014	#22-A-SS06 Soil S14-Jl07693 Jul 07, 2014
Volatile Organics						
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	91	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	112	110	-
p-Terphenyl-d14 (surr.)	1	%	-	112	115	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	-	0.11	0.34	-
Endosulfan II	0.05	mg/kg	-	0.10	0.28	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	-	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	-	87	112	-
Tetrachloro-m-xylene (surr.)	1	%	-	91	91	-

Client Sample ID			#22-A-SS03	#22-F-SS04	#22-S-SS05	#22-A-SS06
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07690**	**S14-Jl07691**	**S14-Jl07692**	**S14-Jl07693**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	87	112	-
% Moisture	0.1	%	-	2.3	9.2	-
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	-	5.3	7.6	-
Cadmium	0.4	mg/kg	-	0.7	0.6	-
Chromium	5	mg/kg	-	23	23	-
Copper	5	mg/kg	-	13	20	-
Lead	5	mg/kg	-	15	18	-
Mercury	0.05	mg/kg	-	< 0.05	< 0.05	-
Nickel	5	mg/kg	-	11	8.1	-
Zinc	5	mg/kg	-	67	180	-

Client Sample ID			#28-TP04 (0-0.1)	#29-TP05 (0-0.1)	#29-SED01	#18-SD-SS01
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07694**	**S14-Jl07695**	**S14-Jl07696**	**S14-Jl07697**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	60	50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	60	50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	86	91	84	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#28-TP04 (0-0.1) Soil S14-Jl07694 Jul 07, 2014	#29-TP05 (0-0.1) Soil S14-Jl07695 Jul 07, 2014	#29-SED01 Soil S14-Jl07696 Jul 07, 2014	#18-SD-SS01 Soil S14-Jl07697 Jul 07, 2014
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.05	< 0.5
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	1.2	1.2	1.2	1.2
2-Fluorobiphenyl (surr.)	1	%	113	117	87	114
p-Terphenyl-d14 (surr.)	1	%	117	119	90	120
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	93	120	100	102
Tetrachloro-m-xylene (surr.)	1	%	93	99	108	107

Client Sample ID			#28-TP04 (0-0.1)	#29-TP05 (0-0.1)	#29-SED01	#18-SD-SS01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07694	S14-Jl07695	S14-Jl07696	S14-Jl07697
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	93	120	100	102
% Moisture	0.1	%	15	15	21	19
Asbestos - WA guidelines	0.001	% w/w	see attached	see attached	-	see attached
Heavy Metals						
Arsenic	2	mg/kg	9.9	6.2	30	8.2
Cadmium	0.4	mg/kg	0.6	< 0.4	1.5	0.7
Chromium	5	mg/kg	26	16	77	26
Copper	5	mg/kg	13	11	11	23
Lead	5	mg/kg	18	16	36	34
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	6.0	5.4	12	6.0
Zinc	5	mg/kg	27	23	55	280

Client Sample ID			#8-SS01	#3-SD-SS23	#3-F-SS24	#16-G-HA05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07698	S14-Jl07699	S14-Jl07700	S14-Jl07701
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	61	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	61	< 50	-
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	80	88	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-

Client Sample ID			#8-SS01	#3-SD-SS23	#3-F-SS24	#16-G-HA05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S14-Jl07698	S14-Jl07699	S14-Jl07700	S14-Jl07701
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	-	-	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.3-Trichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	-	-	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	-	-	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	-	-	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	-	-	< 0.5	-
4-Chlorotoluene	0.5	mg/kg	-	-	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	-	-	< 0.5	-
Benzene	0.1	mg/kg	-	-	< 0.1	-
Bromobenzene	0.5	mg/kg	-	-	< 0.5	-
Bromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromodichloromethane	0.5	mg/kg	-	-	< 0.5	-
Bromoform	0.5	mg/kg	-	-	< 0.5	-
Bromomethane	0.5	mg/kg	-	-	< 0.5	-
Carbon disulfide	0.5	mg/kg	-	-	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	-	-	< 0.5	-
Chlorobenzene	0.5	mg/kg	-	-	< 0.5	-
Chloroethane	0.5	mg/kg	-	-	< 0.5	-
Chloroform	0.5	mg/kg	-	-	< 0.5	-
Chloromethane	0.5	mg/kg	-	-	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Dibromochloromethane	0.5	mg/kg	-	-	< 0.5	-
Dibromomethane	0.5	mg/kg	-	-	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	-	-	< 0.5	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
Isopropyl benzene (Cumene)	0.5	mg/kg	-	-	< 0.5	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
Methylene Chloride	0.5	mg/kg	-	-	< 0.5	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Styrene	0.5	mg/kg	-	-	< 0.5	-
Tetrachloroethene	0.5	mg/kg	-	-	< 0.5	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	-	-	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	-	-	< 0.5	-
Trichloroethene	0.5	mg/kg	-	-	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	-	-	< 0.5	-
Vinyl chloride	0.5	mg/kg	-	-	< 0.5	-

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Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	#8-SS01 Soil S14-Jl07698 Jul 07, 2014	#3-SD-SS23 Soil S14-Jl07699 Jul 07, 2014	#3-F-SS24 Soil S14-Jl07700 Jul 07, 2014	#16-G-HA05 Soil S14-Jl07701 Jul 07, 2014
Volatile Organics						
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	88	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (lower bound)*	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound)*	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound)*	0.5	mg/kg	-	1.2	1.2	-
2-Fluorobiphenyl (surr.)	1	%	-	118	109	-
p-Terphenyl-d14 (surr.)	1	%	-	121	113	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	88	-	109	84
Tetrachloro-m-xylene (surr.)	1	%	94	-	107	81

Client Sample ID			#8-SS01	#3-SD-SS23	#3-F-SS24	#16-G-HA05
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S14-Jl07698**	**S14-Jl07699**	**S14-Jl07700**	**S14-Jl07701**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls (PCB)						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	109	-
% Moisture	0.1	%	11	18	17	3.2
Asbestos - WA guidelines	0.001	% w/w	see attached	-	see attached	-
Heavy Metals						
Arsenic	2	mg/kg	8.1	8.4	8.5	3.7
Cadmium	0.4	mg/kg	0.5	0.5	< 0.4	0.5
Chromium	5	mg/kg	23	18	16	9.7
Copper	5	mg/kg	24	18	13	8.6
Lead	5	mg/kg	25	17	17	13
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	8.9	6.8	6.4	< 5
Zinc	5	mg/kg	48	63	38	35

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 14, 2014	14 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 14, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 14, 2014	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 11, 2014	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 11, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Volatile Organics	Sydney	Jul 14, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
pH (1:5 Aqueous extract)	Sydney	Jul 14, 2014	7 Day
- Method: E018.2 pH			
% Moisture	Sydney	Jul 11, 2014	28 Day
- Method: E005 Moisture Content			
Asbestos - WA guidelines	Sydney	Jul 08, 2014	0 Day
Ion Exchange Properties	Melbourne	Jul 10, 2014	
Eurofins | mgt Suite 13			
Organochlorine Pesticides	Sydney	Jul 11, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Polychlorinated Biphenyls (PCB)	Sydney	Jul 11, 2014	28 Day
- Method: E013 Polychlorinated Biphenyls (PCB)			

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 424407
Phone: 02 8245 0300
Fax:

Received: Jul 8, 2014 10:40 AM
Due: Jul 15, 2014
Priority: 5 Day
Contact Name: Kasey Hills

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
#9-SP-HA01 (0-0.1)	Jul 07, 2014		Soil	S14-Jl07663				X						
#9-SP-HA01 (0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07664	X	X							X	
QC21	Jul 07, 2014		Soil	S14-Jl07665	X	X							X	
#9-SP-HA02(0-0.1)	Jul 07, 2014		Soil	S14-Jl07666	X	X						X	X	
#9-SP-HA02(0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07667				X						
#9-G-HA04(0-0.1)	Jul 07, 2014		Soil	S14-Jl07668	X					X	X			

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
#9-G-HA04(0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07669	X		X		X					
#9-HA05(0-0.1)	Jul 07, 2014		Soil	S14-Jl07670	X	X						X	X	
#9-HA06(0-0.1)	Jul 07, 2014		Soil	S14-Jl07671	X	X						X	X	
#9-HA06(0.2-0.3)	Jul 07, 2014		Soil	S14-Jl07672				X						
#9-HA07(0-0.1)	Jul 07, 2014		Soil	S14-Jl07673	X	X						X	X	
#9-HA07(0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07674				X						
#9-HA07(0.5-0.6)	Jul 07, 2014		Soil	S14-Jl07675				X						
#9-HA08(0-0.1)	Jul 07, 2014		Soil	S14-Jl07676	X	X						X	X	
#9-AST-SS01	Jul 07, 2014		Soil	S14-Jl07677	X								X	

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
#9-S-SS02	Jul 07, 2014		Soil	S14-Jl07678	X							X	X	X
#9-SD-SS03	Jul 07, 2014		Soil	S14-Jl07679	X	X						X	X	X
#9-SD-SS04	Jul 07, 2014		Soil	S14-Jl07680	X	X						X	X	X
#9-SD-SS05	Jul 07, 2014		Soil	S14-Jl07681	X							X	X	X
#16-SD-HA01(0-0.1)	Jul 07, 2014		Soil	S14-Jl07682	X							X	X	X
#16-SD-HA01(0.2-0.3)	Jul 07, 2014		Soil	S14-Jl07683				X						
#16-SD-HA02(0-0.1)	Jul 07, 2014		Soil	S14-Jl07684	X							X	X	
#16-SD-HA03(0-0.1)	Jul 07, 2014		Soil	S14-Jl07685	X							X	X	X
#16-SD-	Jul 07, 2014		Soil	S14-Jl07686				X						

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 8, 2014 10:40 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424407	**Due:**	Jul 15, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Kasey Hills
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
HA03(0.2-0.3)														
#16-SD-HA04(0-0.1)	Jul 07, 2014		Soil	S14-Jl07687	X							X	X	
#22-A-SS01	Jul 07, 2014		Soil	S14-Jl07688		X								
#22-A-SS02	Jul 07, 2014		Soil	S14-Jl07689		X								
#22-A-SS03	Jul 07, 2014		Soil	S14-Jl07690		X								
#22-F-SS04	Jul 07, 2014		Soil	S14-Jl07691	X	X						X	X	
#22-S-SS05	Jul 07, 2014		Soil	S14-Jl07692	X							X	X	X
#22-A-SS06	Jul 07, 2014		Soil	S14-Jl07693		X								
#28-TP04 (0-0.1)	Jul 07, 2014		Soil	S14-Jl07694	X	X						X	X	
#29-TP05 (0-	Jul 07, 2014		Soil	S14-Jl07695	X	X						X	X	

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424407
		Phone:	02 8245 0300
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Client Job No.:	BOX HILL 43376		
Received:	Jul 8, 2014 10:40 AM		
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Contact Name:	Kasey Hills		

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
0.1)														
#29-SED01	Jul 07, 2014		Soil	S14-Jl07696	X							X	X	
#18-SD-SS01	Jul 07, 2014		Soil	S14-Jl07697	X	X						X	X	
#8-SS01	Jul 07, 2014		Soil	S14-Jl07698	X	X				X	X			
#3-SD-SS23	Jul 07, 2014		Soil	S14-Jl07699	X								X	
#3-F-SS24	Jul 07, 2014		Soil	S14-Jl07700	X	X						X	X	X
#16-G-HA05	Jul 07, 2014		Soil	S14-Jl07701	X					X	X			
RINSATE	Jul 07, 2014		Water	S14-Jl07702									X	

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram	**mg/l:** milligrams per litre
ug/l: micrograms per litre	**ppm:** Parts per million
ppb: Parts per billion	**%:** Percentage
org/100ml: Organisms per 100 millilitres	**NTU:** Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres	

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C10-36 (Total)	mg/kg	< 0			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Benzene	mg/kg	< 0.1			0.1	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls (PCB)							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	87			70-130	Pass	
TRH C10-C14	%	86			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	89			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	84			70-130	Pass	
m&p-Xylenes	%	87			70-130	Pass	
o-Xylene	%	85			70-130	Pass	
Xylenes - Total	%	87			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	120			70-130	Pass	
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	89			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	108			75-125	Pass	
1.1-Dichloroethene	%	111			70-130	Pass	
1.1.1-Trichloroethane	%	115			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.1.1.2-Tetrachloroethane	%	101			70-130	Pass	
1.1.2-Trichloroethane	%	104			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	116			70-130	Pass	
1.2-Dibromoethane	%	109			70-130	Pass	
1.2-Dichlorobenzene	%	100			70-130	Pass	
1.2-Dichloroethane	%	111			70-130	Pass	
1.2-Dichloropropane	%	102			70-130	Pass	
1.2.3-Trichloropropane	%	102			70-130	Pass	
1.2.4-Trimethylbenzene	%	93			70-130	Pass	
1.3-Dichlorobenzene	%	97			70-130	Pass	
1.3-Dichloropropane	%	106			70-130	Pass	
1.3.5-Trimethylbenzene	%	93			70-130	Pass	
1.4-Dichlorobenzene	%	97			70-130	Pass	
2-Butanone (MEK)	%	115			70-130	Pass	
4-Chlorotoluene	%	97			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	112			70-130	Pass	
Benzene	%	100			70-130	Pass	
Bromobenzene	%	94			70-130	Pass	
Bromochloromethane	%	103			70-130	Pass	
Bromodichloromethane	%	103			70-130	Pass	
Bromoform	%	112			70-130	Pass	
Bromomethane	%	74			70-130	Pass	
Carbon disulfide	%	98			70-130	Pass	
Carbon Tetrachloride	%	108			70-130	Pass	
Chlorobenzene	%	97			70-130	Pass	
Chloroethane	%	96			70-130	Pass	
Chloroform	%	107			70-130	Pass	
Chloromethane	%	90			70-130	Pass	
cis-1.2-Dichloroethene	%	91			70-130	Pass	
cis-1.3-Dichloropropene	%	94			70-130	Pass	
Dibromochloromethane	%	99			70-130	Pass	
Dibromomethane	%	109			70-130	Pass	
Dichlorodifluoromethane	%	109			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
Isopropyl benzene (Cumene)	%	105			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
Methylene Chloride	%	105			70-130	Pass	
o-Xylene	%	107			70-130	Pass	
Styrene	%	95			70-130	Pass	
Tetrachloroethene	%	99			70-130	Pass	
Toluene	%	98			70-130	Pass	
trans-1.2-Dichloroethene	%	109			70-130	Pass	
trans-1.3-Dichloropropene	%	94			70-130	Pass	
Trichloroethene	%	100			70-130	Pass	
Trichlorofluoromethane	%	111			70-130	Pass	
Vinyl chloride	%	111			70-130	Pass	
Xylenes - Total	%	88			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	110			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	118			70-130	Pass	
Benz(a)anthracene	%	91			70-130	Pass	
Benzo(a)pyrene	%	95			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene			%	95			70-130	Pass	
Benzo(g.h.i)perylene			%	117			70-130	Pass	
Benzo(k)fluoranthene			%	115			70-130	Pass	
Chrysene			%	123			70-130	Pass	
Dibenz(a.h)anthracene			%	102			70-130	Pass	
Fluoranthene			%	106			70-130	Pass	
Fluorene			%	106			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	106			70-130	Pass	
Naphthalene			%	109			70-130	Pass	
Phenanthrene			%	92			70-130	Pass	
Pyrene			%	104			70-130	Pass	
LCS - % Recovery									
Organochlorine Pesticides									
Chlordanes - Total			%	92			70-130	Pass	
4.4'-DDD			%	79			70-130	Pass	
4.4'-DDE			%	71			70-130	Pass	
4.4'-DDT			%	77			70-130	Pass	
a-BHC			%	90			70-130	Pass	
Aldrin			%	91			70-130	Pass	
b-BHC			%	92			70-130	Pass	
d-BHC			%	81			70-130	Pass	
Dieldrin			%	93			70-130	Pass	
Endosulfan I			%	100			70-130	Pass	
Endosulfan II			%	92			70-130	Pass	
Endosulfan sulphate			%	83			70-130	Pass	
Endrin			%	94			70-130	Pass	
Endrin aldehyde			%	71			70-130	Pass	
Endrin ketone			%	77			70-130	Pass	
g-BHC (Lindane)			%	81			70-130	Pass	
Heptachlor			%	93			70-130	Pass	
Heptachlor epoxide			%	93			70-130	Pass	
Hexachlorobenzene			%	78			70-130	Pass	
Methoxychlor			%	77			70-130	Pass	
LCS - % Recovery									
Polychlorinated Biphenyls (PCB)									
Aroclor-1260			%	72			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	71			70-130	Pass	
Cadmium			%	71			70-130	Pass	
Chromium			%	73			70-130	Pass	
Copper			%	77			70-130	Pass	
Lead			%	78			70-130	Pass	
Mercury			%	87			70-130	Pass	
Nickel			%	75			70-130	Pass	
Zinc			%	79			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl04634	NCP	%	100			70-130	Pass	
Acenaphthylene	S14-Jl04634	NCP	%	98			70-130	Pass	
Anthracene	S14-Jl04634	NCP	%	100			70-130	Pass	
Benz(a)anthracene	S14-Jl04634	NCP	%	102			70-130	Pass	
Benzo(a)pyrene	S14-Jl04634	NCP	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	S14-JI04634	NCP	%	83			70-130	Pass	
Benzo(g.h.i)perylene	S14-JI04634	NCP	%	101			70-130	Pass	
Benzo(k)fluoranthene	S14-JI04634	NCP	%	107			70-130	Pass	
Chrysene	S14-JI04634	NCP	%	106			70-130	Pass	
Dibenz(a.h)anthracene	S14-JI04634	NCP	%	101			70-130	Pass	
Fluoranthene	S14-JI04634	NCP	%	102			70-130	Pass	
Fluorene	S14-JI04634	NCP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-JI04634	NCP	%	101			70-130	Pass	
Naphthalene	S14-JI04634	NCP	%	99			70-130	Pass	
Phenanthrene	S14-JI04634	NCP	%	98			70-130	Pass	
Pyrene	S14-JI04634	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-JI07666	CP	%	87			70-130	Pass	
TRH C10-C14	S14-JI07666	CP	%	89			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-JI07666	CP	%	91			70-130	Pass	
Toluene	S14-JI07666	CP	%	88			70-130	Pass	
Ethylbenzene	S14-JI07666	CP	%	85			70-130	Pass	
m&p-Xylenes	S14-JI07666	CP	%	89			70-130	Pass	
o-Xylene	S14-JI07666	CP	%	87			70-130	Pass	
Xylenes - Total	S14-JI07666	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-JI07666	CP	%	115			70-130	Pass	
TRH C6-C10	S14-JI07666	CP	%	93			70-130	Pass	
TRH >C10-C16	S14-JI07666	CP	%	93			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls (PCB)				Result 1					
Aroclor-1260	S14-JI05633	NCP	%	128			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-JI07677	CP	%	80			70-130	Pass	
Cadmium	S14-JI07677	CP	%	77			70-130	Pass	
Chromium	S14-JI07677	CP	%	84			70-130	Pass	
Copper	S14-JI07677	CP	%	94			70-130	Pass	
Lead	S14-JI07677	CP	%	75			70-130	Pass	
Mercury	S14-JI07677	CP	%	82			70-130	Pass	
Nickel	S14-JI07677	CP	%	69			70-130	Fail	
Zinc	S14-JI07677	CP	%	96			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-JI07679	CP	%	98			70-130	Pass	
Toluene	S14-JI07679	CP	%	95			70-130	Pass	
Ethylbenzene	S14-JI07679	CP	%	99			70-130	Pass	
m&p-Xylenes	S14-JI07679	CP	%	101			70-130	Pass	
o-Xylene	S14-JI07679	CP	%	101			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-JI07679	CP	%	116			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S14-JI07679	CP	%	99			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.1-Dichloroethene	S14-JI07679	CP	%	101			70-130	Pass	
1.1.1-Trichloroethane	S14-JI07679	CP	%	99			70-130	Pass	
1.1.1.2-Tetrachloroethane	S14-JI07679	CP	%	91			70-130	Pass	
1.1.2-Trichloroethane	S14-JI07679	CP	%	100			70-130	Pass	
1.1.2.2-Tetrachloroethane	S14-JI07679	CP	%	107			70-130	Pass	
1.2-Dibromoethane	S14-JI07679	CP	%	102			70-130	Pass	
1.2-Dichlorobenzene	S14-JI07679	CP	%	96			70-130	Pass	
1.2-Dichloroethane	S14-JI07679	CP	%	101			70-130	Pass	
1.2-Dichloropropane	S14-JI07679	CP	%	100			70-130	Pass	
1.2.3-Trichloropropane	S14-JI07679	CP	%	97			70-130	Pass	
1.2.4-Trimethylbenzene	S14-JI07679	CP	%	93			70-130	Pass	
1.3-Dichlorobenzene	S14-JI07679	CP	%	94			70-130	Pass	
1.3-Dichloropropane	S14-JI07679	CP	%	101			70-130	Pass	
1.3.5-Trimethylbenzene	S14-JI07679	CP	%	93			70-130	Pass	
1.4-Dichlorobenzene	S14-JI07679	CP	%	94			70-130	Pass	
2-Butanone (MEK)	S14-JI07679	CP	%	101			70-130	Pass	
4-Chlorotoluene	S14-JI07679	CP	%	95			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S14-JI07679	CP	%	112			70-130	Pass	
Bromobenzene	S14-JI07679	CP	%	93			70-130	Pass	
Bromochloromethane	S14-JI07679	CP	%	95			70-130	Pass	
Bromodichloromethane	S14-JI07679	CP	%	90			70-130	Pass	
Bromoform	S14-JI07679	CP	%	91			70-130	Pass	
Bromomethane	S14-JI07679	CP	%	86			70-130	Pass	
Carbon disulfide	S14-JI07679	CP	%	79			70-130	Pass	
Carbon Tetrachloride	S14-JI07679	CP	%	87			70-130	Pass	
Chlorobenzene	S14-JI07679	CP	%	94			70-130	Pass	
Chloroethane	S14-JI07679	CP	%	96			70-130	Pass	
Chloroform	S14-JI07679	CP	%	94			70-130	Pass	
Chloromethane	S14-JI07679	CP	%	101			70-130	Pass	
cis-1.2-Dichloroethene	S14-JI07679	CP	%	83			70-130	Pass	
cis-1.3-Dichloropropene	S14-JI07679	CP	%	88			70-130	Pass	
Dibromochloromethane	S14-JI07679	CP	%	84			70-130	Pass	
Dibromomethane	S14-JI07679	CP	%	99			70-130	Pass	
Dichlorodifluoromethane	S14-JI07679	CP	%	110			70-130	Pass	
Isopropyl benzene (Cumene)	S14-JI07679	CP	%	100			70-130	Pass	
Methylene Chloride	S14-JI07679	CP	%	99			70-130	Pass	
Styrene	S14-JI07679	CP	%	90			70-130	Pass	
Tetrachloroethene	S14-JI07679	CP	%	93			70-130	Pass	
trans-1.2-Dichloroethene	S14-JI07679	CP	%	98			70-130	Pass	
trans-1.3-Dichloropropene	S14-JI07679	CP	%	88			70-130	Pass	
Trichloroethene	S14-JI07679	CP	%	94			70-130	Pass	
Trichlorofluoromethane	S14-JI07679	CP	%	96			70-130	Pass	
Vinyl chloride	S14-JI07679	CP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-JI07682	CP	%	95			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-JI07682	CP	%	88			70-130	Pass	
Toluene	S14-JI07682	CP	%	84			70-130	Pass	
Ethylbenzene	S14-JI07682	CP	%	80			70-130	Pass	
m&p-Xylenes	S14-JI07682	CP	%	79			70-130	Pass	
o-Xylene	S14-JI07682	CP	%	78			70-130	Pass	
Xylenes - Total	S14-JI07682	CP	%	79			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl07682	CP	%	127			70-130	Pass	
TRH C6-C10	S14-Jl07682	CP	%	106			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl07692	CP	%	96			70-130	Pass	
Cadmium	S14-Jl07692	CP	%	79			70-130	Pass	
Chromium	S14-Jl07692	CP	%	86			70-130	Pass	
Copper	S14-Jl07692	CP	%	87			70-130	Pass	
Lead	S14-Jl07692	CP	%	79			70-130	Pass	
Mercury	S14-Jl07692	CP	%	81			70-130	Pass	
Nickel	S14-Jl07692	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl07699	CP	%	78			70-130	Pass	
TRH C10-C14	S14-Jl07699	CP	%	77			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl07699	CP	%	85			70-130	Pass	
Toluene	S14-Jl07699	CP	%	81			70-130	Pass	
Ethylbenzene	S14-Jl07699	CP	%	77			70-130	Pass	
m&p-Xylenes	S14-Jl07699	CP	%	80			70-130	Pass	
o-Xylene	S14-Jl07699	CP	%	78			70-130	Pass	
Xylenes - Total	S14-Jl07699	CP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl07699	CP	%	114			70-130	Pass	
TRH C6-C10	S14-Jl07699	CP	%	86			70-130	Pass	
TRH >C10-C16	S14-Jl07699	CP	%	83			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-Jl07701	CP	%	115			70-130	Pass	
4.4'-DDD	S14-Jl07701	CP	%	95			70-130	Pass	
4.4'-DDE	S14-Jl07701	CP	%	98			70-130	Pass	
4.4'-DDT	S14-Jl07701	CP	%	84			70-130	Pass	
a-BHC	S14-Jl07701	CP	%	91			70-130	Pass	
Aldrin	S14-Jl07701	CP	%	89			70-130	Pass	
b-BHC	S14-Jl07701	CP	%	89			70-130	Pass	
d-BHC	S14-Jl07701	CP	%	88			70-130	Pass	
Dieldrin	S14-Jl07701	CP	%	95			70-130	Pass	
Endosulfan I	S14-Jl07701	CP	%	90			70-130	Pass	
Endosulfan II	S14-Jl07701	CP	%	97			70-130	Pass	
Endosulfan sulphate	S14-Jl07701	CP	%	93			70-130	Pass	
Endrin	S14-Jl07701	CP	%	94			70-130	Pass	
Endrin aldehyde	S14-Jl07701	CP	%	86			70-130	Pass	
Endrin ketone	S14-Jl07701	CP	%	114			70-130	Pass	
g-BHC (Lindane)	S14-Jl07701	CP	%	88			70-130	Pass	
Heptachlor	S14-Jl07701	CP	%	93			70-130	Pass	
Heptachlor epoxide	S14-Jl07701	CP	%	110			70-130	Pass	
Hexachlorobenzene	S14-Jl07701	CP	%	95			70-130	Pass	
Methoxychlor	S14-Jl07701	CP	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl07561	NCP	mg/kg	0.70	0.70	2.0	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S14-Jl07561	NCP	mg/kg	0.80	0.90	3.0	30%	Pass	
Fluorene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S14-Jl07561	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S14-Jl07561	NCP	mg/kg	1.0	1.0	4.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl07665	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl07665	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl07665	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl07665	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl07665	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl07665	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl07665	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl07665	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl07665	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-Jl07665	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl07665	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-Jl07665	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl07665	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jl07665	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl07665	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jl07665	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl07668	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endrin	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-Jl07668	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-Jl07668	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-Jl07668	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-Jl07668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-Jl07668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-Jl07668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-Jl07668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-Jl07668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-Jl07668	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Ion Exchange Properties				Result 1	Result 2	RPD			
Cation Exchange Capacity	M14-Jl05896	NCP	meq/100g	11	8.5	23	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl07676	CP	mg/kg	7.4	8.2	10	30%	Pass	
Cadmium	S14-Jl07676	CP	mg/kg	0.5	0.6	15	30%	Pass	
Chromium	S14-Jl07676	CP	mg/kg	25	23	6.0	30%	Pass	
Copper	S14-Jl07676	CP	mg/kg	26	25	6.0	30%	Pass	
Lead	S14-Jl07676	CP	mg/kg	23	23	1.0	30%	Pass	
Mercury	S14-Jl07676	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-Jl07676	CP	mg/kg	8.9	9.8	10	30%	Pass	
Zinc	S14-Jl07676	CP	mg/kg	76	74	3.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl07678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-Jl07678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-Jl07678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-Jl07678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-Jl07678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.3-Dichlorobenzene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S14-Jl07678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl07681	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-Jl07681	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-Jl07681	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-Jl07681	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Xylenes - Total	S14-Jl07681	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C10	S14-Jl07681	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl07681	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-Jl07681	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-Jl07681	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-Jl07681	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-Jl07684	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-Jl07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-Jl07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-Jl07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
a-BHC	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-JI07684	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-JI07684	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-JI07684	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-JI07684	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-JI07684	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-JI07684	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-JI07684	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-JI07684	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-JI07684	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-JI07691	CP	mg/kg	5.3	7.5	33	30%	Fail	Q15
Cadmium	S14-JI07691	CP	mg/kg	0.7	0.4	41	30%	Fail	Q15
Chromium	S14-JI07691	CP	mg/kg	23	24	1.0	30%	Pass	
Copper	S14-JI07691	CP	mg/kg	13	11	21	30%	Pass	
Lead	S14-JI07691	CP	mg/kg	15	12	24	30%	Pass	
Mercury	S14-JI07691	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S14-JI07691	CP	mg/kg	11	14	28	30%	Pass	
Zinc	S14-JI07691	CP	mg/kg	67	81	19	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-JI07697	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S14-JI07697	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S14-JI07697	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S14-JI07697	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-JI07697	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S14-JI07697	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S14-JI07697	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S14-JI07697	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S14-JI07697	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S14-JI07697	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-JI07697	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S14-JI07697	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-JI07697	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S14-JI07697	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S14-JI07697	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S14-JI07697	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-JI07700	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-JI07700	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-JI07700	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-JI07700	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls (PCB)				Result 1	Result 2	RPD			
Aroclor-1016	S14-JI07700	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1232	S14-JI07700	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S14-JI07700	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S14-JI07700	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S14-JI07700	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S14-JI07700	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref : ASET40257/ 43437 / 1 - 19
Your ref : 424407
NATA Accreditation No: 14484

WORLD RECOGNISED ACCREDITATION

15 July 2014

Eurofins | MGT
Unit F3, Building F, 16 Mars Road
Lane Cove NSW 2066

Attn: Dr Robert Symons

Dear Robert

Asbestos Identification
This report presents the results of nineteen samples, forwarded by Eurofins | MGT on 10 July 2014, for analysis for asbestos.

1.Introduction: Nineteen samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method.
(Safer Environment Method 1 and Australian Standard AS 4964-2004.)

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia.

3. Results : **Sample No. 1. ASET40257 / 43437 / 1. #9 - SP - HA01(0.3 - 0.4) - Jl07664.**
Approx dimensions 9.2 cm x 8.6 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET40257 / 43437 / 2. QC21 - Jl07665.
Approx dimensions 9.2 cm x 8.7 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET40257 / 43437 / 3. #9 - SP - HA02(0 - 0.1) - Jl07666.
Approx dimensions 8.9 cm x 8.6 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 4. ASET40257 / 43437 / 4. #9 - HA05(0 - 0.1) - Jl07670.
Approx dimensions 9.2 cm x 8.7 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 5. ASET40257 / 43437 / 5. #9 - HA06(0 - 0.1) - Jl07671.
Approx dimensions 9.3 cm x 8.7 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.
No asbestos detected.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635
PHONE: (02) 99872183 FAX: (02)99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

Sample No. 6. ASET40257 / 43437 / 6. #9 -HA07(0 - 0.1) - Jl07673.
Approx dimensions 9.2 cm x 8.7 cm x 8.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET40257 / 43437 / 7. #9 - HA08(0 - 0.1) - Jl07676.
Approx dimensions 8.9 cm x 8.7 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 8. ASET40257 / 43437 / 8. #9 - SD - SS03 - Jl07679.
Approx dimensions 8.6 cm x 8.5 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 9. ASET40257 / 43437 / 9. #9 - SD - SS04 - Jl07680.
Approx dimensions 9.2 cm x 8.6 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, synthetic mineral fibres and fragments of coal like material.
No asbestos detected.

Sample No. 10. ASET40257 / 43437 / 10. #22 - A - SS01 - Jl07688.
Approx dimensions 8.6 cm x 8.4 cm x 8.2 cm
The sample consisted of a mixture of soil, stones, wood chips, plant matter and fragments of shale.
No asbestos detected.

Sample No. 11. ASET40257 / 43437 / 11. #22 - A - SS02 - Jl07689.
Approx dimensions 8.3 cm x 8.1 cm x 7.8 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 12. ASET40257 / 43437 / 12. #22 - A - SS03 - Jl07690.
Approx dimensions 8.5 cm x 7.8 cm x 7.6 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of cement.
No asbestos detected.

Sample No. 13. ASET40257 / 43437 / 13. #22 - F - SS04 - Jl07691.
Approx dimensions 9.4 cm x 9.1 cm x 8.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, cement and brick.
No asbestos detected.

Sample No. 14. ASET40257 / 43437 / 14. #22 - A - SS06 - Jl07693.
Approx dimensions 9.1 cm x 8.6 cm x 8.5 cm
The sample consisted of a mixture of sandy clayish soil, stones, plant matter, fragments of plaster and shale.
No asbestos detected.

Sample No. 15. ASET40257 / 43437 / 15. #28 - TP04(0 - 0.1) - Jl07694.
Approx dimensions 8.7 cm x 8.4 cm x 8.2 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 16. ASET40257 / 43437 / 16. #29 - TP05(0 - 0.1) - JI07695.
Approx dimensions 9.1 cm x 8.7 cm x 8.4 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 17. ASET40257 / 43437 / 17. #18 - SD - SS01 - JI07697.
Approx dimensions 8.7 cm x 8.5 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 18. ASET40257 / 43437 / 18. #8 - SS01 - JI07698.
Approx dimensions 8.7 cm x 8.5 cm x 8.3 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fibres^ and fragments of bitumen.
Chrysotile^ (Approximate weight= 0.001g) asbestos detected.
Approximate total weight of asbestos = 0.001g.
Approximate total asbestos weight in AF(Loose fibres) = 0.001g.
Approximate total weight of soil = 738g.
Approximate w/w % = 0.0001%

Sample No. 19. ASET40257 / 43437 / 19. #3 - F - SS24 - JI07700.
Approx dimensions 8.8 cm x 8.7 cm x 8.6 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Analysed and reported by,

Laxman Dias. BSc
Analyst / Approved Identifier
Approved Signatory

WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibre bundle/s of relevant asbestos detected in Soil/ Dust.

All samples indicating " No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report	**424407-W**
Client Reference	BOX HILL 43376
Received Date	Jul 08, 2014

Client Sample ID			**RINSATE**
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S14-Jl07702**
Date Sampled			**Jul 07, 2014**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.02	mg/L	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	RINSATE Water S14-Jl07702 Jul 07, 2014
Polycyclic Aromatic Hydrocarbons			
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	117
p-Terphenyl-d14 (surr.)	1	%	121
Heavy Metals			
Arsenic	0.005	mg/L	< 0.005
Cadmium	0.0005	mg/L	< 0.0005
Chromium	0.005	mg/L	< 0.005
Copper	0.005	mg/L	< 0.005
Lead	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.005	mg/L	< 0.005
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 11, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 08, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 11, 2014	7 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Jul 11, 2014	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8	Sydney	Jul 08, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 424407
Phone: 02 8245 0300
Fax:

Received: Jul 8, 2014 10:40 AM
Due: Jul 15, 2014
Priority: 5 Day
Contact Name: Kasey Hills

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
#9-SP-HA01 (0-0.1)	Jul 07, 2014		Soil	S14-Jl07663				X						
#9-SP-HA01 (0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07664	X	X							X	
QC21	Jul 07, 2014		Soil	S14-Jl07665	X	X							X	
#9-SP-HA02(0-0.1)	Jul 07, 2014		Soil	S14-Jl07666	X	X						X	X	
#9-SP-HA02(0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07667				X						
#9-G-HA04(0-0.1)	Jul 07, 2014		Soil	S14-Jl07668	X					X	X			

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	JBS & G (NSW & WA) Pty Ltd	**Order No.:**		**Received:**	Jul 8, 2014 10:40 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	424407	**Due:**	Jul 15, 2014
		Phone:	02 8245 0300	**Priority:**	5 Day
		Fax:		**Contact Name:**	Kasey Hills
Client Job No.:	BOX HILL 43376				

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
#9-G-HA04(0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07669	X		X		X					
#9-HA05(0-0.1)	Jul 07, 2014		Soil	S14-Jl07670	X	X						X	X	
#9-HA06(0-0.1)	Jul 07, 2014		Soil	S14-Jl07671	X	X						X	X	
#9-HA06(0.2-0.3)	Jul 07, 2014		Soil	S14-Jl07672				X						
#9-HA07(0-0.1)	Jul 07, 2014		Soil	S14-Jl07673	X	X						X	X	
#9-HA07(0.3-0.4)	Jul 07, 2014		Soil	S14-Jl07674				X						
#9-HA07(0.5-0.6)	Jul 07, 2014		Soil	S14-Jl07675				X						
#9-HA08(0-0.1)	Jul 07, 2014		Soil	S14-Jl07676	X	X						X	X	
#9-AST-SS01	Jul 07, 2014		Soil	S14-Jl07677	X								X	

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
#9-S-SS02	Jul 07, 2014		Soil	S14-Jl07678	X							X	X	X
#9-SD-SS03	Jul 07, 2014		Soil	S14-Jl07679	X	X						X	X	X
#9-SD-SS04	Jul 07, 2014		Soil	S14-Jl07680	X	X						X	X	X
#9-SD-SS05	Jul 07, 2014		Soil	S14-Jl07681	X							X	X	X
#16-SD-HA01(0-0.1)	Jul 07, 2014		Soil	S14-Jl07682	X							X	X	X
#16-SD-HA01(0.2-0.3)	Jul 07, 2014		Soil	S14-Jl07683				X						
#16-SD-HA02(0-0.1)	Jul 07, 2014		Soil	S14-Jl07684	X							X	X	
#16-SD-HA03(0-0.1)	Jul 07, 2014		Soil	S14-Jl07685	X							X	X	X
#16-SD-	Jul 07, 2014		Soil	S14-Jl07686				X						

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Eurofins | mgt Client Manager: Jean Heng

Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
HA03(0.2-0.3)														
#16-SD-HA04(0-0.1)	Jul 07, 2014		Soil	S14-Jl07687	X							X	X	
#22-A-SS01	Jul 07, 2014		Soil	S14-Jl07688		X								
#22-A-SS02	Jul 07, 2014		Soil	S14-Jl07689		X								
#22-A-SS03	Jul 07, 2014		Soil	S14-Jl07690		X								
#22-F-SS04	Jul 07, 2014		Soil	S14-Jl07691	X	X						X	X	
#22-S-SS05	Jul 07, 2014		Soil	S14-Jl07692	X							X	X	X
#22-A-SS06	Jul 07, 2014		Soil	S14-Jl07693		X								
#28-TP04 (0-0.1)	Jul 07, 2014		Soil	S14-Jl07694	X	X						X	X	
#29-TP05 (0-	Jul 07, 2014		Soil	S14-Jl07695	X	X						X	X	

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Sample Detail					% Moisture	Asbestos - WA guidelines	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Eurofins | mgt Suite 13	Eurofins | mgt Suite 7	Volatile Organics
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271							X							
Sydney Laboratory - NATA Site # 18217					X	X		X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
External Laboratory														
0.1)														
#29-SED01	Jul 07, 2014		Soil	S14-Jl07696	X							X	X	
#18-SD-SS01	Jul 07, 2014		Soil	S14-Jl07697	X	X						X	X	
#8-SS01	Jul 07, 2014		Soil	S14-Jl07698	X	X				X	X			
#3-SD-SS23	Jul 07, 2014		Soil	S14-Jl07699	X								X	
#3-F-SS24	Jul 07, 2014		Soil	S14-Jl07700	X	X						X	X	X
#16-G-HA05	Jul 07, 2014		Soil	S14-Jl07701	X					X	X			
RINSATE	Jul 07, 2014		Water	S14-Jl07702									X	

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Chromium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	%	80			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	88			70-130	Pass	
Toluene	%	83			70-130	Pass	
Ethylbenzene	%	93			70-130	Pass	
m&p-Xylenes	%	93			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	78			70-130	Pass	
TRH C6-C10	%	87			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	97			70-130	Pass	
Acenaphthylene	%	91			70-130	Pass	
Anthracene	%	103			70-130	Pass	
Benz(a)anthracene	%	73			70-130	Pass	
Benzo(a)pyrene	%	85			70-130	Pass	
Benzo(b&j)fluoranthene	%	85			70-130	Pass	
Benzo(g.h.i)perylene	%	85			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	73			70-130	Pass	
Fluoranthene	%	102			70-130	Pass	
Fluorene	%	89			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	77			70-130	Pass	
Naphthalene	%	111			70-130	Pass	
Phenanthrene	%	98			70-130	Pass	
Pyrene	%	108			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	94			70-130	Pass	
Cadmium	%	94			70-130	Pass	
Chromium	%	97			70-130	Pass	
Copper	%	87			70-130	Pass	
Lead	%	96			70-130	Pass	
Mercury	%	74			70-130	Pass	
Nickel	%	94			70-130	Pass	
Zinc	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S14-Jl07895	NCP	%	73			70-130	Pass	
TRH C10-C14	S14-Jl07993	NCP	%	102			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S14-Jl07895	NCP	%	83			70-130	Pass	
Toluene	S14-Jl07895	NCP	%	79			70-130	Pass	
Ethylbenzene	S14-Jl07895	NCP	%	88			70-130	Pass	
m&p-Xylenes	S14-Jl07895	NCP	%	90			70-130	Pass	
o-Xylene	S14-Jl07895	NCP	%	89			70-130	Pass	
Xylenes - Total	S14-Jl07895	NCP	%	90			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S14-Jl07895	NCP	%	75			70-130	Pass	
TRH C6-C10	S14-Jl07895	NCP	%	82			70-130	Pass	
TRH >C10-C16	S14-Jl07993	NCP	%	118			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S14-Jl02750	NCP	%	95			70-130	Pass	
Acenaphthylene	S14-Jl02750	NCP	%	93			70-130	Pass	
Anthracene	S14-Jl02750	NCP	%	94			70-130	Pass	
Benz(a)anthracene	S14-Jl02750	NCP	%	77			70-130	Pass	
Benzo(a)pyrene	S14-Jl02750	NCP	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	S14-Jl02750	NCP	%	94			70-130	Pass	
Benzo(g.h.i)perylene	S14-Jl02750	NCP	%	93			70-130	Pass	
Benzo(k)fluoranthene	S14-Jl02750	NCP	%	99			70-130	Pass	
Chrysene	S14-Jl02750	NCP	%	95			70-130	Pass	
Dibenz(a.h)anthracene	S14-Jl02750	NCP	%	81			70-130	Pass	
Fluoranthene	S14-Jl02750	NCP	%	95			70-130	Pass	
Fluorene	S14-Jl02750	NCP	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl02750	NCP	%	88			70-130	Pass	
Naphthalene	S14-Jl02750	NCP	%	108			70-130	Pass	
Phenanthrene	S14-Jl02750	NCP	%	94			70-130	Pass	
Pyrene	S14-Jl02750	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl07515	NCP	%	93			70-130	Pass	
Cadmium	S14-Jl07515	NCP	%	95			70-130	Pass	
Chromium	S14-Jl07515	NCP	%	119			70-130	Pass	
Copper	M14-Jl05185	NCP	%	88			70-130	Pass	
Lead	S14-Jl07515	NCP	%	125			70-130	Pass	
Mercury	S14-Jl07515	NCP	%	77			70-130	Pass	
Nickel	S14-Jl07515	NCP	%	119			70-130	Pass	
Zinc	M14-Jl05185	NCP	%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S14-Jl07894	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S14-Jl07991	NCP	mg/L	0.33	0.33	<1	30%	Pass	
TRH C15-C28	S14-Jl07991	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jl07991	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S14-Jl07894	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S14-Jl07894	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S14-Jl07894	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S14-Jl07894	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S14-Jl07894	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S14-Jl07894	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S14-Jl07894	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S14-Jl07894	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	S14-Jl07894	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S14-Jl07991	NCP	mg/L	0.26	0.21	21	30%	Pass	

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Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C16-C34	S14-Jl07991	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jl07991	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S14-Jl07991	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	S14-Jl05102	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Copper	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Lead	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S14-Jl05102	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	S14-Jl05102	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Jean Heng	Client Services
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Kasey Hills
Client job number:	BOX HILL 43376
COC number:	02244-46
Turn around time:	5 Day
Date/Time received:	Jul 8, 2014 10:40 AM
Eurofins | mgt reference:	**424407**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 12.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

CEC conducted at Eurofins | mgt Melbourne | Asbestos bag not received for sample #16-SD-HA03(0-0.1), thus ASB analysis cancelled

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Kasey Hills - khills@jbsg.com.au.

Eurofins | mgt Sample Receipt

02244

CHAIN OF CUSTODY

JBS&G

#424407

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB
SEND REPORT TO: TC, KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: khenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tgreer@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	sPOCAS	CEC	pH	metals	OCPs	VOCs	NOTES:
#9-SP-HA01 (0-0.1)	Soil	7/7/14		B+J											B7 = TRH/BTEX
#9-SP-HA01 (0.3-0.4)				"		X		X							PAH, metals
QC21				"		X		X							
#9-SP-HA02 (0-0.1)				"		X	X	X							B13 = OCP/PCB
#9-SP-HA02 (0.3-0.4)				"											
#9-G-HA04 (0-0.1)				J								X	X		Asbestos = NEPC [illegible]
#9-G-HA04 (0.3-0.4)				"						X	X				
#9-HA05 (0-0.1)				B+J		X	X	X							
#9-HA06 (0-0.1)				"		X	X	X							
#9-HA06 (0.2-0.3)															
#9-HA07 (0-0.1)						X	X	X							
#9-HA07 (0.3-0.4)															
#9-HA07 (0.5-0.6)															
#9-HA08 (0-0.1)						X	X	X							
#9-AST-SS01				J		X									
#9-S-SS02				"		X	X							X	
#9-SD-SS03				B+J		X	X	X						X	
#9-SD-SS04				"		X	X	X						X	
#9-SD-SS05				"		X	X							X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Greer DATE: 7/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 8/7/14 10.40am OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP 12.5 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02245

CHAIN OF CUSTODY

JBS&G

#424407

PROJECT NO.: 43376	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC
SEND REPORT TO: TC, KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: tcreek@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) Kharleson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	B13	Asbestos	VOCs	metals	OCPs	NOTES:
#16-SD-HA01 (0-0.1)	Soil	7/7/14		B+J		X	X		X			
#16-SD-HA01 (0.2-0.3)	↓	↓		↓								
#16-SD-HA02 (0-0.1)						X	X					
#16-SD-HA03 (0-0.1)						X	X	X	X			
#16-SD-HA03 (0.2-0.3)												
#16-SD-HA04 (0-0.1)				↓		X	X					
#22-A-SS01				B				X				
#22-A-SS02				"				X				
#22-A-SS03				"				X				
#22-F-SS04				J		X	X	X				
#22-S-SS05				"		X	X		X			
#22-A-SS06				B				X				
#28-TP04 (0-0.1)				B+J		X	X	X				
#29-TP05 (0-0.1)				"		X	X	X				
#29-SED01				J		X	X					
#18-SD-SS01				B+J		X	X	X				
#8-SS01								X		X	X	
#3-SD-SS23						X						
#3-F-SS24	↓	↓		↓		X	X	X	X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Creek DATE: 7/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 8/7/14 10:40am OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP 12.5 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

02246

CHAIN OF CUSTODY

JBS&G

#424407

PROJECT NO.: U3326	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC, LB
SEND REPORT TO: TC, KH SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Klenderson@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013) tcrease@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B7	metals	OCs	NOTES:
#16-G-HA05	Soil	7/7		J			X	X	
Rinsate	Water	''				X			

RELINQUISHED BY:	METHOD OF SHIPMENT.	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Crease DATE: 7/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 8/7/14 10 40am OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP 12.5 deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: **Ken Henderson**

Report **424406-W**
Client Reference BOX HILL 43376
Received Date Jul 08, 2014

Client Sample ID			**MW01**	**MW02**	**MW04**	**QC01**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-Jl07625**	**S14-Jl07626**	**S14-Jl07627**	**S14-Jl07628**
Date Sampled			**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	94	95	95	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	MW01 Water S14-Jl07625 Jul 07, 2014	MW02 Water S14-Jl07626 Jul 07, 2014	MW04 Water S14-Jl07627 Jul 07, 2014	QC01 Water S14-Jl07628 Jul 07, 2014
Volatile Organics						
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	94	95	95	96
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	MW01 Water S14-Jl07625 Jul 07, 2014	MW02 Water S14-Jl07626 Jul 07, 2014	MW04 Water S14-Jl07627 Jul 07, 2014	QC01 Water S14-Jl07628 Jul 07, 2014
Organochlorine Pesticides						
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	80	83	85	86
Tetrachloro-m-xylene (surr.)	1	%	< 1	83	86	87
Organophosphorus Pesticides (OP)						
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Demeton (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl azinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Profenofos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Prothiofos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Stirophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	80	86	79	83
Total Nitrogen Set (as N)						
Nitrate & Nitrite (as N)	0.01	mg/L	0.16	0.12	0.27	0.12
Total Kjeldahl Nitrogen (as N)	0.1	mg/L	1.0	1.0	0.8	0.8
Total Nitrogen (as N)	0.1	mg/L	1.2	1.1	1.1	0.9
Phosphorus	0.1	mg/L	2.1	2.4	6.5	2.4
Alkali Metals						
Potassium	0.5	mg/L	41	20	63	22

Client Sample ID			MW01	MW02	MW04	QC01
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S14-Jl07625	S14-Jl07626	S14-Jl07627	S14-Jl07628
Date Sampled			Jul 07, 2014	Jul 07, 2014	Jul 07, 2014	Jul 07, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.003	0.031	0.003
Cadmium (filtered)	0.0001	mg/L	0.0002	< 0.0001	0.0005	< 0.0001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	< 0.001	0.002	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.029	0.002	0.18	0.002
Zinc (filtered)	0.005	mg/L	0.038	0.017	0.019	0.006

Client Sample ID			TRIP SPIKE	TRIP BLANK	RINSATE (GME)
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S14-Jl07629	S14-Jl07630	S14-Jl07631
Date Sampled			Jul 04, 2014	Jul 04, 2014	Jul 07, 2014
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	< 0.1
TRH C29-C36	0.1	mg/L	-	-	< 0.1
TRH C10-36 (Total)	0.1	mg/L	-	-	< 0.1
BTEX					
Benzene	0.001	mg/L	79%	< 0.001	< 0.001
Toluene	0.001	mg/L	84%	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	82%	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	85%	< 0.002	< 0.002
o-Xylene	0.001	mg/L	85%	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	85%	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	102	86	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	-	-	< 0.02
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	-	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	-	< 0.0001
a-BHC	0.0001	mg/L	-	-	< 0.0001
Aldrin	0.0001	mg/L	-	-	< 0.0001
b-BHC	0.0001	mg/L	-	-	< 0.0001
d-BHC	0.0001	mg/L	-	-	< 0.0001
Dieldrin	0.0001	mg/L	-	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	-	< 0.0001

Client Sample ID			TRIP SPIKE	TRIP BLANK	RINSATE (GME)
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S14-JI07629**	**S14-JI07630**	**S14-JI07631**
Date Sampled			**Jul 04, 2014**	**Jul 04, 2014**	**Jul 07, 2014**
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Endosulfan II	0.0001	mg/L	-	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	-	< 0.0001
Endrin	0.0001	mg/L	-	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	-	< 0.0001
Heptachlor	0.0001	mg/L	-	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	-	< 0.0001
Toxaphene	0.01	mg/L	-	-	< 0.01
Dibutylchlorendate (surr.)	1	%	-	-	85
Tetrachloro-m-xylene (surr.)	1	%	-	-	86
Organophosphorus Pesticides (OP)					
Chlorpyrifos	0.002	mg/L	-	-	< 0.002
Coumaphos	0.002	mg/L	-	-	< 0.002
Demeton (total)	0.004	mg/L	-	-	< 0.004
Diazinon	0.002	mg/L	-	-	< 0.002
Dichlorvos	0.002	mg/L	-	-	< 0.002
Dimethoate	0.002	mg/L	-	-	< 0.002
Disulfoton	0.002	mg/L	-	-	< 0.002
Ethoprop	0.002	mg/L	-	-	< 0.002
Fenitrothion	0.002	mg/L	-	-	< 0.002
Fensulfothion	0.002	mg/L	-	-	< 0.002
Fenthion	0.002	mg/L	-	-	< 0.002
Methyl azinphos	0.002	mg/L	-	-	< 0.002
Malathion	0.002	mg/L	-	-	< 0.002
Methyl parathion	0.002	mg/L	-	-	< 0.002
Mevinphos	0.002	mg/L	-	-	< 0.002
Monocrotophos	0.02	mg/L	-	-	< 0.02
Parathion	0.002	mg/L	-	-	< 0.002
Phorate	0.002	mg/L	-	-	< 0.002
Profenofos	0.002	mg/L	-	-	< 0.002
Prothiofos	0.002	mg/L	-	-	< 0.002
Ronnel	0.002	mg/L	-	-	< 0.002
Stirophos	0.002	mg/L	-	-	< 0.002
Trichloronate	0.002	mg/L	-	-	< 0.002
Triphenylphosphate (surr.)	1	%	-	-	80
Heavy Metals					
Arsenic	0.005	mg/L	-	-	< 0.005
Cadmium	0.0005	mg/L	-	-	< 0.0005
Chromium	0.005	mg/L	-	-	< 0.005
Copper	0.005	mg/L	-	-	< 0.005
Lead	0.005	mg/L	-	-	< 0.005
Mercury	0.0001	mg/L	-	-	< 0.0001
Nickel	0.005	mg/L	-	-	< 0.005
Zinc	0.005	mg/L	-	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite 6 (filtered metals)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 14, 2014	7 Day
- Method: E004 Petroleum Hydrocarbons (TPH)			
BTEX	Sydney	Jul 14, 2014	14 Day
- Method: E029/E016 BTEX			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jul 14, 2014	7 Day
- Method: LM-LTM-ORG2010			
Metals M8 filtered	Sydney	Jul 08, 2014	28 Day
- Method: E020/E030 Filtered Metals in Water & E026 Mercury			
Volatile Organics	Sydney	Jul 14, 2014	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Eurofins | mgt Suite 14			
Organochlorine Pesticides	Sydney	Jul 11, 2014	7 Day
- Method: E013 Organochlorine Pesticides (OC)			
Organophosphorus Pesticides (OP)	Sydney	Jul 11, 2014	7 Day
- Method: E014 Organophosphorus Pesticides (OP)			
Eurofins | mgt Suite 19			
Total Nitrogen Set (as N)			
Nitrate & Nitrite (as N)	Sydney	Jul 08, 2014	28 Day
- Method: E037 /E051 NOx (as N)			
Total Kjeldahl Nitrogen (as N)	Sydney	Jul 08, 2014	7 Day
- Method: E039/E053 Unfiltered Total Kjeldahl Nitrogen as N			
Phosphorus	Sydney	Jul 08, 2014	180 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Alkali Metals	Sydney	Jul 08, 2014	180 Day
- Method: E022/E030 Unfiltered Cations in Water			
Eurofins | mgt Suite 6			
Metals M8	Sydney	Jul 08, 2014	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			

Company Name: JBS & G (NSW & WA) Pty Ltd
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Client Job No.: BOX HILL 43376

Order No.:
Report #: 424406
Phone: 02 8245 0300
Fax:

Received: Jul 8, 2014 10:40 AM
Due: Jul 15, 2014
Priority: 5 Day
Contact Name: Kasey Hills

Eurofins | mgt Client Manager: Jean Heng

Sample Detail					BTEX	Eurofins | mgt Suite 19	Eurofins | mgt Suite 14	Eurofins | mgt Suite 6	Eurofins | mgt Suite 6 (filtered metals)	Volatile Organics
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
External Laboratory										
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
MW01	Jul 07, 2014		Water	S14-Jl07625		X	X		X	X
MW02	Jul 07, 2014		Water	S14-Jl07626		X	X		X	X
MW04	Jul 07, 2014		Water	S14-Jl07627		X	X		X	X
QC01	Jul 07, 2014		Water	S14-Jl07628		X	X		X	X
TRIP SPIKE	Jul 04, 2014		Water	S14-Jl07629	X					
TRIP BLANK	Jul 04, 2014		Water	S14-Jl07630	X					
RINSATE (GME)	Jul 07, 2014		Water	S14-Jl07631			X	X		

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgment.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

eurofins | mgt

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.005			0.005	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.005			0.005	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Nitrogen Set (as N)							
Nitrate & Nitrite (as N)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.1			0.1	Pass	
Method Blank							
Phosphorus	mg/L	< 0.1			0.1	Pass	
Method Blank							
Alkali Metals							
Potassium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.005			0.005	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0005			0.0005	Pass	
Cadmium (filtered)	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	mg/L	< 0.005			0.005	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.005			0.005	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.005			0.005	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.005			0.005	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	88			70-130	Pass	
TRH C10-C14	%	105			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	99			70-130	Pass	
o-Xylene	%	97			70-130	Pass	
Xylenes - Total	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	93			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
TRH >C10-C16	%	111			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	102			75-125	Pass	
1.1-Dichloroethene	%	106			70-130	Pass	
1.1.1-Trichloroethane	%	108			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	106			70-130	Pass	
1.1.2-Trichloroethane	%	108			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	119			70-130	Pass	
1.2-Dibromoethane	%	113			70-130	Pass	
1.2-Dichlorobenzene	%	101			70-130	Pass	
1.2-Dichloroethane	%	110			70-130	Pass	
1.2-Dichloropropane	%	104			70-130	Pass	
1.2.3-Trichloropropane	%	114			70-130	Pass	
1.2.4-Trimethylbenzene	%	98			70-130	Pass	
1.3-Dichlorobenzene	%	100			70-130	Pass	
1.3-Dichloropropane	%	109			70-130	Pass	
1.3.5-Trimethylbenzene	%	98			70-130	Pass	
1.4-Dichlorobenzene	%	100			70-130	Pass	
2-Butanone (MEK)	%	114			70-130	Pass	
4-Chlorotoluene	%	104			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	118			70-130	Pass	
Bromobenzene	%	105			70-130	Pass	
Bromochloromethane	%	99			70-130	Pass	
Bromodichloromethane	%	108			70-130	Pass	
Bromoform	%	123			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Bromomethane	%	90			70-130	Pass	
Carbon disulfide	%	107			70-130	Pass	
Carbon Tetrachloride	%	105			70-130	Pass	
Chlorobenzene	%	100			70-130	Pass	
Chloroethane	%	101			70-130	Pass	
Chloroform	%	97			70-130	Pass	
Chloromethane	%	83			70-130	Pass	
cis-1.2-Dichloroethene	%	85			70-130	Pass	
cis-1.3-Dichloropropene	%	101			70-130	Pass	
Dibromochloromethane	%	109			70-130	Pass	
Dibromomethane	%	111			70-130	Pass	
Dichlorodifluoromethane	%	111			70-130	Pass	
Isopropyl benzene (Cumene)	%	106			70-130	Pass	
Methylene Chloride	%	100			70-130	Pass	
Styrene	%	96			70-130	Pass	
Tetrachloroethene	%	101			70-130	Pass	
trans-1.2-Dichloroethene	%	104			70-130	Pass	
trans-1.3-Dichloropropene	%	101			70-130	Pass	
Trichloroethene	%	102			70-130	Pass	
Trichlorofluoromethane	%	110			70-130	Pass	
Vinyl chloride	%	115			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	100			70-130	Pass	
4.4'-DDD	%	75			70-130	Pass	
4.4'-DDE	%	75			70-130	Pass	
4.4'-DDT	%	75			70-130	Pass	
a-BHC	%	100			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	100			70-130	Pass	
d-BHC	%	75			70-130	Pass	
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	125			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	75			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	100			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	75			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Total Nitrogen Set (as N)							
Nitrate & Nitrite (as N)	%	105			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	84			70-130	Pass	
LCS - % Recovery							
Phosphorus	%	87			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Potassium	%	85			70-130	Pass	
LCS - % Recovery							
Heavy Metals							

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Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic			%	99			70-130	Pass	
Arsenic (filtered)			%	104			70-130	Pass	
Cadmium			%	98			70-130	Pass	
Cadmium (filtered)			%	111			70-130	Pass	
Chromium			%	101			70-130	Pass	
Chromium (filtered)			%	105			70-130	Pass	
Copper			%	100			70-130	Pass	
Copper (filtered)			%	105			70-130	Pass	
Lead			%	99			70-130	Pass	
Lead (filtered)			%	108			70-130	Pass	
Mercury			%	108			70-130	Pass	
Mercury (filtered)			%	98			70-130	Pass	
Nickel			%	100			70-130	Pass	
Nickel (filtered)			%	105			70-130	Pass	
Zinc			%	100			70-130	Pass	
Zinc (filtered)			%	104			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S14-Jl07625	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S14-Jl07625	CP	%	101			70-130	Pass	
Spike - % Recovery									
Total Nitrogen Set (as N)				Result 1					
Total Kjeldahl Nitrogen (as N)	S14-Jl06711	NCP	%	72			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phosphorus	S14-Jl07626	CP	%	92			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Potassium	S14-Jl07626	CP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-Jl07626	CP	%	94			70-130	Pass	
Arsenic (filtered)	S14-Jl07626	CP	%	114			70-130	Pass	
Cadmium	S14-Jl07626	CP	%	101			70-130	Pass	
Cadmium (filtered)	S14-Jl07626	CP	%	113			70-130	Pass	
Chromium	S14-Jl07626	CP	%	99			70-130	Pass	
Chromium (filtered)	S14-Jl07626	CP	%	107			70-130	Pass	
Copper	S14-Jl07626	CP	%	92			70-130	Pass	
Copper (filtered)	S14-Jl07626	CP	%	97			70-130	Pass	
Lead	S14-Jl07626	CP	%	94			70-130	Pass	
Lead (filtered)	S14-Jl07626	CP	%	102			70-130	Pass	
Mercury	S14-Jl07626	CP	%	102			70-130	Pass	
Mercury (filtered)	S14-Jl07626	CP	%	94			70-130	Pass	
Nickel	S14-Jl07626	CP	%	93			70-130	Pass	
Nickel (filtered)	S14-Jl07626	CP	%	100			70-130	Pass	
Zinc	S14-Jl07626	CP	%	94			70-130	Pass	
Zinc (filtered)	S14-Jl07626	CP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M14-Jl03520	NCP	%	101			70-130	Pass	
Cadmium	M14-Jl03520	NCP	%	105			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	S14-Jl08701	NCP	%	103			70-130	Pass	
Copper	S14-Jl08701	NCP	%	99			70-130	Pass	
Lead	M14-Jl03520	NCP	%	103			70-130	Pass	
Mercury	M14-Jl03520	NCP	%	100			70-130	Pass	
Nickel	S14-Jl08701	NCP	%	99			70-130	Pass	
Zinc	S14-Jl08701	NCP	%	101			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Nitrogen Set (as N)				Result 1	Result 2	RPD			
Total Kjeldahl Nitrogen (as N)	S14-Jl06711	NCP	mg/L	0.50	0.60	14	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphorus	S14-Jl07625	CP	mg/L	2.1	2.0	1.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Potassium	S14-Jl07625	CP	mg/L	41	41	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-Jl07625	CP	mg/L	0.031	0.031	1.0	30%	Pass	
Arsenic (filtered)	S14-Jl07625	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S14-Jl07625	CP	mg/L	0.0068	0.0072	6.0	30%	Pass	
Cadmium (filtered)	S14-Jl07625	CP	mg/L	0.0002	0.0002	<1	30%	Pass	
Chromium	S14-Jl07625	CP	mg/L	0.26	0.28	7.0	30%	Pass	
Chromium (filtered)	S14-Jl07625	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S14-Jl07625	CP	mg/L	0.26	0.27	6.0	30%	Pass	
Copper (filtered)	S14-Jl07625	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Lead	S14-Jl07625	CP	mg/L	0.21	0.23	8.0	30%	Pass	
Lead (filtered)	S14-Jl07625	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S14-Jl07625	CP	mg/L	0.0013	0.0014	6.0	30%	Pass	
Mercury (filtered)	S14-Jl07625	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl07625	CP	mg/L	0.57	0.61	8.0	30%	Pass	
Nickel (filtered)	S14-Jl07625	CP	mg/L	0.029	0.028	3.0	30%	Pass	
Zinc	S14-Jl07625	CP	mg/L	2.4	2.5	7.0	30%	Pass	
Zinc (filtered)	S14-Jl07625	CP	mg/L	0.038	0.037	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S14-Jl07627	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S14-Jl07627	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S14-Jl07627	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S14-Jl07627	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S14-Jl07627	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S14-Jl07627	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Nitrogen Set (as N)				Result 1	Result 2	RPD			
Nitrate & Nitrite (as N)	S14-Jl07628	CP	mg/L	0.12	0.12	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M14-Jl03519	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Cadmium	M14-Jl03519	NCP	mg/L	< 0.0005	< 0.0005	<1	30%	Pass	
Chromium	S14-Jl08693	NCP	mg/L	0.047	0.048	1.0	30%	Pass	
Copper	S14-Jl08693	NCP	mg/L	0.39	0.34	12	30%	Pass	
Lead	M14-Jl03519	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

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Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	M14-Jl03519	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S14-Jl08693	NCP	mg/L	0.022	0.021	8.0	30%	Pass	
Zinc	S14-Jl08693	NCP	mg/L	0.63	0.56	11	30%	Pass	

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Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Jean Heng	Client Services
Bob Symons	Senior Analyst-Inorganic (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Dr. Bob Symons

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Sample Receipt Advice

Company name:	**JBS & G (NSW & WA) Pty Ltd**
Contact name:	Kasey Hills
Client job number:	BOX HILL 43376
COC number:	02243
Turn around time:	5 Day
Date/Time received:	Jul 8, 2014 10:40 AM
Eurofins | mgt reference:	**424406**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 12.5 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Organic samples had Teflon liners.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Jean Heng on Phone : (+61) (2) 9900 8400 or by e.mail: JeanHeng@eurofins.com.au

Results will be delivered electronically via e.mail to Kasey Hills - khills@jbsg.com.au.

Eurofins | mgt Sample Receipt

02243

CHAIN OF CUSTODY

424406

PROJECT NO.: 43276	LABORATORY BATCH NO.:
PROJECT NAME: Box Hill	SAMPLERS: TC tcreese@jbsg.com.au
SEND REPORT TO: KH, TC SEND INVOICE TO: GNG	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL:
DATE NEEDED BY: standard	QC LEVEL: NEPM (2013) khenderson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B6	B14	B19	VOCs	BTEX	NOTES:
MW01	Water	7/7/14		amber, vials, bottles		X	X	X	X		B6 = TRH/BTEX
MW02	↓	↓		↓		X	X	X	X		8 metals
MW04						X	X	X	X		
QC01						X	X	X	X		B14 = OCP/OPP
Trip spike				vials						X	
Trip blank				''						X	B19 = nutrients
Rinsate [redacted] (GNG)				'' + amber/bottle		X	X				

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Creese DATE: 7/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Jasmine DATE: 8/7/14 10:40am OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP [illegible] deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
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CERTIFICATE OF ANALYSIS **112771**

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Henderson, Tyler Creese

Sample log in details:

Your Reference:	**43376, Box Hill**	
No. of samples:	1 Water	
Date samples received / completed instructions received	08/07/2014	/ 08/07/2014

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	15/07/14	/ 11/07/14
Date of Preliminary Report:	Not Issued	

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112771-1 QC01/A 07/07/2014 Water
Date extracted	-	9/07/2014
Date analysed	-	10/07/2014
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112771-1 QC01/A 07/07/2014 Water
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	121
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	102

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date extracted	-	9/07/2014
Date analysed	-	10/07/2014
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	121
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	102

svTRH (C10-C40) in Water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date extracted	-	09/07/2014
Date analysed	-	09/07/2014
TRHC $_{10}$ - C $_{14}$	µg/L	<50
TRHC $_{15}$ - C $_{28}$	µg/L	<100
TRHC $_{29}$ - C $_{36}$	µg/L	<100
TRH>C $_{10}$ - C $_{16}$	µg/L	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	µg/L	<50
TRH>C $_{16}$ - C $_{34}$	µg/L	<100
TRH>C $_{34}$ - C $_{40}$	µg/L	<100
Surrogate o-Terphenyl	%	85

OCP in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112771-1 QC01/A 07/07/2014 Water
Date extracted	-	09/07/2014
Date analysed	-	10/07/2014
HCB	µg/L	<0.2
alpha-BHC	µg/L	<0.2
gamma-BHC	µg/L	<0.2
beta-BHC	µg/L	<0.2
Heptachlor	µg/L	<0.2
delta-BHC	µg/L	<0.2
Aldrin	µg/L	<0.2
Heptachlor Epoxide	µg/L	<0.2
gamma-Chlordane	µg/L	<0.2
alpha-Chlordane	µg/L	<0.2
Endosulfan I	µg/L	<0.2
pp-DDE	µg/L	<0.2
Dieldrin	µg/L	<0.2
Endrin	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endosulfan II	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	89

OP Pesticides in water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date extracted	-	09/07/2014
Date analysed	-	10/07/2014
Diazinon	µg/L	<0.2
Dimethoate	µg/L	<0.2
Chlorpyriphos-methyl	µg/L	<0.2
Ronnel	µg/L	<0.2
Chlorpyriphos	µg/L	<0.2
Fenitrothion	µg/L	<0.2
Bromophos ethyl	µg/L	<0.2
Ethion	µg/L	<0.2
Surrogate TCMX	%	89

HM in water - dissolved		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date prepared	-	09/07/2014
Date analysed	-	09/07/2014
Arsenic-Dissolved	µg/L	3
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	2
Zinc-Dissolved	µg/L	5

Cations in water Dissolved		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date digested	-	09/07/2014
Date analysed	-	09/07/2014
Potassium - Dissolved	mg/L	18

Metals in Waters - Total		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date prepared	-	09/07/2014
Date analysed	-	09/07/2014
Phosphorus - Total	mg/L	2.5

Miscellaneous Inorganics		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date prepared	-	09/07/2014
Date analysed	-	09/07/2014
Total Nitrogen in water	mg/L	1.1

Method ID	Methodology Summary
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Inorg-055/062	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen.

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-W1	10/07/2014
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	106%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	101%
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	107%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	111%
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	120%
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	100%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	100%
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	101%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	87	[NT]	[NT]	LCS-W1	111%
Surrogate toluene-d8	%		Org-013	102	[NT]	[NT]	LCS-W1	99%
Surrogate 4-BFB	%		Org-013	102	[NT]	[NT]	LCS-W1	106%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-W1	10/07/2014
TRHC_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	104%
TRHC_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	104%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	108%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	106%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	100%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	104%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	103%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	87	[NT]	[NT]	LCS-W1	140%
Surrogate toluene-d8	%		Org-016	102	[NT]	[NT]	LCS-W1	98%
Surrogate 4-BFB	%		Org-016	102	[NT]	[NT]	LCS-W1	91%

QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
TRHC_{10} - C_{14}	µg/L	50	Org-003	<50	112771-1	<50 || <50	LCS-W1	92%
TRHC_{15} - C_{28}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	87%
TRHC_{29} - C_{36}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	100%
TRH>C_{10} - C_{16}	µg/L	50	Org-003	<50	112771-1	<50 || <50	LCS-W1	92%
TRH>C_{16} - C_{34}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	87%
TRH>C_{34} - C_{40}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	100%
Surrogate o-Terphenyl	%		Org-003	105	112771-1	85 || 100 || RPD: 16	LCS-W1	126%

QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	112771-1	10/07/2014 || 10/07/2014	LCS-W1	10/07/2014
HCB	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	98%
gamma-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
beta-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	74%
Heptachlor	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	69%
delta-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	84%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	75%
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]

QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Endosulfan I	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
pp-DDE	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	76%
Dieldrin	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	81%
Endrin	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	62%
pp-DDD	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	77%
Endosulfan II	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
pp-DDT	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	93%
Methoxychlor	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Surrogate TCMX	%		Org-005	88	112771-1	89 || 97 || RPD: 9	LCS-W1	102%

QUALITY CONTROL OP Pesticides in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	112771-1	10/07/2014 || 10/07/2014	LCS-W1	10/07/2014
Diazinon	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Dimethoate	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Chlorpyriphos-methyl	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Ronnel	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Chlorpyriphos	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	LCS-W1	95%
Fenitrothion	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	LCS-W1	102%
Bromophos ethyl	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Ethion	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	LCS-W1	101%
Surrogate TCMX	%		Org-008	88	112771-1	89 || 97 || RPD: 9	LCS-W1	102%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	3 || [N/T]	LCS-W1	99%
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	112771-1	<0.1 || [N/T]	LCS-W1	101%
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	<1 || [N/T]	LCS-W1	101%
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	<1 || [N/T]	LCS-W1	102%
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	<1 || [N/T]	LCS-W1	98%
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.05	112771-1	<0.05 || <0.05	LCS-W1	100%
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	2 || [N/T]	LCS-W1	100%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	5 || [N/T]	LCS-W1	99%

QUALITY CONTROL Cations in water Dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Potassium - Dissolved	mg/L	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-W1	106%

QUALITY CONTROL Metals in Waters - Total	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Phosphorus - Total	mg/L	0.05	Metals-020 ICP-AES	<0.05	[NT]	[NT]	LCS-W1	98%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Total Nitrogen in water	mg/L	0.1	Inorg-055/062	<0.1	[NT]	[NT]	LCS-W1	95%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney NSW 2000

ph: 02 8245 0300
Fax: 02 8245 0399

Attention: K Henderson, Tyler Creese

Sample log in details:

Your reference:	**43376, Box Hill**
Envirolab Reference:	**112771**
Date received:	08/07/2014
Date results expected to be reported:	**15/07/14**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	1 Water
Turnaround time requested:	Standard
Temperature on receipt (°C)	13.5
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
12 Ashley Street
Chatswood
NSW 2067

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: KH, TC   SEND INVOICE TO: GNG
DATE NEEDED BY: Standard
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: TC
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100   EMAIL: khenderson@jbsg.com.au
QC LEVEL: NEPM (2013)   fcreese@jbsg.com.au

COMBO SUITES

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	SOIL - 4	SOIL – 4L	SOIL – 4A	SOIL - 5	SOIL 5A	SOIL 5B	SOIL - 12	WATER – 1m	WATER – 2L	WATER – 3L	~~[illegible]~~	OCP/OPPs	VOCs	nutrients	NOTES:
(1) QC01/A	Water	7/7/14		vials, amber, bottles									X			X	X	X	X	m = metals ~~[illegible]~~ TRH/BTEX nutrients = total N total P K

ENVIROLAB
Envirolab Service
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 112771
Date Received: 8/7/14
Time Received: 9:00
Received by: KS
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: F Creese DATE: 8/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: Kevin DATE: 8/7/14. 9:00 OF: ELS	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Envirolab

Soil Combos
3 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/
3A – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/)/Asbestos
4 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4L - TRH/BTEX/PAH(Trace Level)/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4A - TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)/Asbestos

Soil Combos continued
5 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
5A - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Asbestos
5B - TRH/BTEX/PAH/OCP/OPP/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
12 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/TCLP(PAH & 6 Metals)

Water Combos
1m - TRH/BTEX/ 8 metals
2L - TRH/BTEX/PAH low/Pb
3L - TRH/BTEX/PAH/8 metals

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12 Ashley St Chatswood NSW 2067
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CERTIFICATE OF ANALYSIS 111738

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Henderson, Tyler Creese

Sample log in details:

Your Reference:	**43376, Box Hill**		
No. of samples:	2 soils		
Date samples received / completed instructions received	18/06/14	/	18/06/14

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	25/06/14	/	25/06/14
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

ACCREDITED FOR TECHNICAL COMPETENCE

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	111738-1	111738-2
Your Reference	-------------	QC01/A	QC02/A
Date Sampled	------------	17/06/2014	17/06/2014
Type of sample		soil	soil
Date extracted	-	19/06/2014	19/06/2014
Date analysed	-	27/06/2014	27/06/2014
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	105

svTRH (C10-C40) in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111738-1 QC01/A 17/06/2014 soil	111738-2 QC02/A 17/06/2014 soil
Date extracted	-	19/06/2014	19/06/2014
Date analysed	-	19/06/2014	19/06/2014
TRHC $_{10}$ - C $_{14}$	mg/kg	<50	<50
TRHC $_{15}$ - C $_{28}$	mg/kg	<100	<100
TRHC $_{29}$ - C $_{36}$	mg/kg	<100	<100
TRH>C $_{10}$-C $_{16}$	mg/kg	<50	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	mg/kg	<50	<50
TRH>C $_{16}$-C $_{34}$	mg/kg	<100	<100
TRH>C $_{34}$-C $_{40}$	mg/kg	<100	<100
Surrogate o-Terphenyl	%	83	92

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------ ------------	111738-1 QC01/A 17/06/2014 soil	111738-2 QC02/A 17/06/2014 soil
Date extracted	-	19/06/2014	19/06/2014
Date analysed	-	19/06/2014	19/06/2014
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	91	104

Organochlorine Pesticides in soil			
Our Reference:	UNITS	111738-1	111738-2
Your Reference	-------------	QC01/A	QC02/A
Date Sampled	------------	17/06/2014	17/06/2014
Type of sample		soil	soil
Date extracted	-	19/06/2014	19/06/2014
Date analysed	-	21/06/2014	21/06/2014
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	75	83

PCBs in Soil			
Our Reference:	UNITS	111738-1	111738-2
Your Reference	-------------	QC01/A	QC02/A
Date Sampled	------------	17/06/2014	17/06/2014
Type of sample		soil	soil
Date extracted	-	19/06/2014	19/06/2014
Date analysed	-	21/06/2014	21/06/2014
Arochlor 1016	mg/kg	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	75	83

Acid Extractable metals in soil			
Our Reference:	UNITS	111738-1	111738-2
Your Reference	-------------	QC01/A	QC02/A
Date Sampled	------------	17/06/2014	17/06/2014
Type of sample		soil	soil
Date digested	-	19/06/2014	19/06/2014
Date analysed	-	19/06/2014	19/06/2014
Arsenic	mg/kg	<4	30
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	8	21
Copper	mg/kg	12	23
Lead	mg/kg	9	20
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	3	7
Zinc	mg/kg	15	38

Moisture			
Our Reference:	UNITS	111738-1	111738-2
Your Reference	-------------	QC01/A	QC02/A
Date Sampled	------------	17/06/2014	17/06/2014
Type of sample		soil	soil
Date prepared	-	19/06/2014	19/06/2014
Date analysed	-	20/06/2014	20/06/2014
Moisture	%	13	16

Asbestos ID - soils NEPM*			
Our Reference:	UNITS	111738-1	111738-2
Your Reference	-------------	QC01/A	QC02/A
Date Sampled	------------	17/06/2014	17/06/2014
Type of sample		soil	soil
Date analysed	-	25/06/2014	25/06/2014
Sample mass tested	g	653.61g	508.32g
Sample Description	-	Brown coarse-grained soil & rocks	Red coarse-grained clay soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected
ACM>7mm*	-	None	None
ACM<7mm*	-	None	None
Fibrous Asb(FA)/Asb Fines(AF)	-	None	None
Asbestos ww%* Note	-	<0.001	<0.001
Comments	-	Refer to back page	Refer to back page

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-007	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit between 0.01g/kg (0.001% w/w) to 0.1g/kg (0.01% w/w). This form of analysis is outside the scope of NATA accreditation. Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-2	19/06/2014
Date analysed	-			22/06/2014	111738-1	27/06/2014 || 27/06/2014	LCS-2	22/06/2014
TRH C_6 - C_9	mg/kg	25	Org-016	<25	111738-1	<25 || <25	LCS-2	114%
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	111738-1	<25 || <25	LCS-2	114%
Benzene	mg/kg	0.2	Org-016	<0.2	111738-1	<0.2 || <0.2	LCS-2	114%
Toluene	mg/kg	0.5	Org-016	<0.5	111738-1	<0.5 || <0.5	LCS-2	117%
Ethylbenzene	mg/kg	1	Org-016	<1	111738-1	<1 || <1	LCS-2	113%
m+p-xylene	mg/kg	2	Org-016	<2	111738-1	<2 || <2	LCS-2	114%
o-Xylene	mg/kg	1	Org-016	<1	111738-1	<1 || <1	LCS-2	115%
naphthalene	mg/kg	1	Org-014	<1	111738-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	124	111738-1	93 || 91 || RPD: 2	LCS-2	122%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-2	19/06/2014
Date analysed	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-2	19/06/2014
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	111738-1	<50 || <50	LCS-2	103%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	111738-1	<100 || <100	LCS-2	112%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	111738-1	<100 || <100	LCS-2	88%
TRH $>C_{10}$-C_{16}	mg/kg	50	Org-003	<50	111738-1	<50 || <50	LCS-2	103%
TRH $>C_{16}$-C_{34}	mg/kg	100	Org-003	<100	111738-1	<100 || <100	LCS-2	112%
TRH $>C_{34}$-C_{40}	mg/kg	100	Org-003	<100	111738-1	<100 || <100	LCS-2	88%
Surrogate o-Terphenyl	%		Org-003	86	111738-1	83 || 89 || RPD: 7	LCS-2	95%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-2	19/06/2014
Date analysed	-			20/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-2	20/06/2014
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	LCS-2	96%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	LCS-2	96%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	LCS-2	94%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	LCS-2	93%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	LCS-2	95%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	LCS-2	91%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	111738-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	111738-1	<0.05 || <0.05	LCS-2	102%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	95	111738-1	91 || 93 || RPD: 2	LCS-2	92%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-2	19/06/2014
Date analysed	-			21/06/2014	111738-1	21/06/2014 || 21/06/2014	LCS-2	21/06/2014
HCB	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	64%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	80%
Heptachlor	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	78%
delta-BHC	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	79%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	94%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	94%
Dieldrin	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	82%
Endrin	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	62%
pp-DDD	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	84%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	LCS-2	68%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	80	111738-1	75 || 83 || RPD: 10	LCS-2	76%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-2	19/06/2014
Date analysed	-			21/06/2014	111738-1	21/06/2014 || 21/06/2014	LCS-2	21/06/2014
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	111738-1	<0.1 || <0.1	LCS-2	105%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	111738-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	80	111738-1	75 || 83 || RPD: 10	LCS-2	93%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-5	19/06/2014
Date analysed	-			19/06/2014	111738-1	19/06/2014 || 19/06/2014	LCS-5	19/06/2014
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	111738-1	<4 || <4	LCS-5	99%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	111738-1	<0.4 || <0.4	LCS-5	108%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	111738-1	8 || 7 || RPD: 13	LCS-5	103%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	111738-1	12 || 10 || RPD: 18	LCS-5	101%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	111738-1	9 || 8 || RPD: 12	LCS-5	99%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	111738-1	<0.1 || <0.1	LCS-5	93%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	111738-1	3 || 2 || RPD: 40	LCS-5	102%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	111738-1	15 || 10 || RPD: 40	LCS-5	103%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			19/06/2014
Date analysed	-			19/06/2014
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Asbestos ID - soils NEPM*	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

Report Comments:

Asbestos-ID in soil NEPM;
This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney NSW 2000

ph: 02 8245 0300
Fax: 02 8245 0399

Attention: K Henderson, Tyler Creese

Sample log in details:

Your reference:	**43376, Box Hill**
Envirolab Reference:	**111738**
Date received:	18/06/14
Date results expected to be reported:	**25/06/14**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	2 soils
Turnaround time requested:	Standard
Temperature on receipt (°C)	11.0
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

02209

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: K. Henderson, TC   SEND INVOICE TO: GNG
DATE NEEDED BY: Standard

LABORATORY BATCH NO.:
SAMPLERS: TC, EP
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100   EMAIL: khenderson@jbsg.com.au
QC LEVEL: NEPM (2013)   tcreese@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	8 metals	PAHs	TRH/BTEX	OCP	PCB	Asbestos	NOTES:
1	QC01/A	Soil	17/6/14		Bag + Jar		X	X	X	X	X	X	
2	QC02/A	"	"		"		X	X	X	X	X	X	

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 111738
Date Received: 18.06.14
Time Received: 13.30
Received by: LSB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: BWC DATE: 17/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: LSB DATE: 18.06.14 OF: ELS	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 111910

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Henderson, Tyler Creese

Sample log in details:

Your Reference:	**43376, Box Hill**	
No. of samples:	2 soils	
Date samples received / completed instructions received	20/06/14	/ 20/06/14

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	27/06/14	/ 27/06/14
Date of Preliminary Report:	Not Issued	

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111910-1 QC03/A 19/06/2014 soil	111910-2 QC04/A 19/06/2014 soil
Date extracted	-	23/06/2014	23/06/2014
Date analysed	-	24/06/2014	24/06/2014
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	88

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	111910-1	111910-2
Your Reference	-------------	QC03/A	QC04/A
Date Sampled	------------	19/06/2014	19/06/2014
Type of sample		soil	soil
Date extracted	-	23/06/2014	23/06/2014
Date analysed	-	24/06/2014	24/06/2014
TRHC $_{10}$ - C $_{14}$	mg/kg	<50	<50
TRHC $_{15}$ - C $_{28}$	mg/kg	<100	<100
TRHC $_{29}$ - C $_{36}$	mg/kg	<100	<100
TRH>C $_{10}$-C $_{16}$	mg/kg	<50	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	mg/kg	<50	<50
TRH>C $_{16}$-C $_{34}$	mg/kg	<100	<100
TRH>C $_{34}$-C $_{40}$	mg/kg	<100	<100
Surrogate o-Terphenyl	%	90	88

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111910-1 QC03/A 19/06/2014 soil	111910-2 QC04/A 19/06/2014 soil
Date extracted	-	23/06/2014	23/06/2014
Date analysed	-	25/06/2014	25/06/2014
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	104	99

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111910-1 QC03/A 19/06/2014 soil	111910-2 QC04/A 19/06/2014 soil
Date extracted	-	23/06/2014	23/06/2014
Date analysed	-	24/06/2014	24/06/2014
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	83	82

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111910-1 QC03/A 19/06/2014 soil	111910-2 QC04/A 19/06/2014 soil
Date extracted	-	23/06/2014	23/06/2014
Date analysed	-	24/06/2014	24/06/2014
Arochlor 1016	mg/kg	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	83	82

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111910-1 QC03/A 19/06/2014 soil	111910-2 QC04/A 19/06/2014 soil
Date digested	-	24/06/2014	24/06/2014
Date analysed	-	24/06/2014	24/06/2014
Arsenic	mg/kg	7	7
Cadmium	mg/kg	<0.4	0.4
Chromium	mg/kg	19	21
Copper	mg/kg	8	18
Lead	mg/kg	26	26
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	5	13
Zinc	mg/kg	10	36

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111910-1 QC03/A 19/06/2014 soil	111910-2 QC04/A 19/06/2014 soil
Date prepared	-	23/06/2014	23/06/2014
Date analysed	-	24/06/2014	24/06/2014
Moisture	%	12	15

Asbestos ID - soils NEPM* Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	111910-1 QC03/A 19/06/2014 soil
Date analysed	-	26/06/2014
Sample mass tested	g	718.0g
Sample Description	-	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit 0.1g/kg
Trace Analysis	-	No respirable fibres detected
ACM>7mm*	-	None
ACM<7mm*	-	None
Fibrous Asb(FA)/Asb Fines(AF)	-	None
Asbestos ww%* Note	-	<0.001
Comments	-	See back page

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-007	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit between 0.01g/kg (0.001% w/w) to 0.1g/kg (0.01% w/w). This form of analysis is outside the scope of NATA accreditation. Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/06/2014	[NT]	[NT]	LCS-9	23/06/2014
Date analysed	-			24/06/2014	[NT]	[NT]	LCS-9	24/06/2014
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-9	107%
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-9	107%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-9	107%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-9	107%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-9	107%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-9	107%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-9	110%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	96	[NT]	[NT]	LCS-9	92%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/06/2014	[NT]	[NT]	LCS-9	23/06/2014
Date analysed	-			24/06/2014	[NT]	[NT]	LCS-9	24/06/2014
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-9	130%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-9	135%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-9	75%
TRH $>C_{10}$-C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-9	130%
TRH $>C_{16}$-C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-9	135%
TRH $>C_{34}$-C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-9	75%
Surrogate o-Terphenyl	%		Org-003	92	[NT]	[NT]	LCS-9	113%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/06/2014	[NT]	[NT]	LCS-11	23/06/2014
Date analysed	-			23/06/2014	[NT]	[NT]	LCS-11	23/06/2014
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-11	105%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-11	108%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-11	108%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-11	106%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-11	109%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-11	95%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-11	90%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	97	[NT]	[NT]	LCS-11	98%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/06/2014	[NT]	[NT]	LCS-11	23/06/2014
Date analysed	-			24/06/2014	[NT]	[NT]	LCS-11	24/06/2014
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	83%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	105%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	90%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	93%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	89%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	92%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	102%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	99%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	109%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-11	108%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	96	[NT]	[NT]	LCS-11	84%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/06/2014	[NT]	[NT]	LCS-11	23/06/2014
Date analysed	-			24/06/2014	[NT]	[NT]	LCS-11	24/06/2014
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-11	130%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	96	[NT]	[NT]	LCS-11	92%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			23/06/2014	[NT]	[NT]	LCS-2	24/06/2014
Date analysed	-			24/06/2014	[NT]	[NT]	LCS-2	24/06/2014
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-2	99%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-2	107%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	103%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	103%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	101%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-2	98%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	102%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	103%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			23/06/2014
Date analysed	-			24/06/2014
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Asbestos ID - soils NEPM*	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

Report Comments:

This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Asbestos ID was analysed by Approved Identifier:	Matt Mansfield
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney NSW 2000

ph: 02 8245 0300
Fax: 02 8245 0399

Attention: K Henderson, Tyler Creese

Sample log in details:

Your reference:	**43376, Box Hill**
Envirolab Reference:	**111910**
Date received:	20/06/14
Date results expected to be reported:	**27/06/14**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	2 soils
Turnaround time requested:	Standard
Temperature on receipt (°C)	16.4
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

02212

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: K.henderson, TC   SEND INVOICE TO: GNG
DATE NEEDED BY: Standard

LABORATORY BATCH NO.:
SAMPLERS: TC, GP, LB
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100   EMAIL: tcreece@jbsg.com.au
QC LEVEL: NEPM (2013)   khenderson@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	8 metals	PAHs	BTEX/TRH	OCP/PCBs	Asbestos	NOTES
1.	QC03/A	Soil	19/6/14		B+J		X	X	X	X	X	
2.	QC04/A	"	19/6/14		B+J		X	X	X	X		

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 111910
Date Received: 20-6-14
Time Received: 12:30
Received by: DF
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Gregg DATE: 19/6/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: D. Ford DATE: 20.6.14 OF: ELS	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 112111

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Henderson, Tyler Creese

Sample log in details:

Your Reference:	**43376, Box Hill**	
No. of samples:	4 soils	
Date samples received / completed instructions received	25/06/14	/ 25/06/14

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	2/07/14	/ 1/07/14
Date of Preliminary Report:	Not Issued	

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112111-1 QC05/A 20/06/2014 soil	112111-2 QC06/A 23/06/2014 soil	112111-3 QC07/A 24/06/2014 soil	112111-4 QC08/A 24/06/2014 soil
Date extracted	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Date analysed	-	28/06/2014	28/06/2014	28/06/2014	28/06/2014
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	89	89	88	86

svTRH (C10-C40) in Soil					
Our Reference:	UNITS	112111-1	112111-2	112111-3	112111-4
Your Reference	-------------	QC05/A	QC06/A	QC07/A	QC08/A
Date Sampled	------------	20/06/2014	23/06/2014	24/06/2014	24/06/2014
Type of sample		soil	soil	soil	soil
Date extracted	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Date analysed	-	26/06/2014	26/06/2014	27/06/2014	27/06/2014
TRHC $_{10}$ - C $_{14}$	mg/kg	<50	<50	<50	<50
TRHC $_{15}$ - C $_{28}$	mg/kg	<100	<100	<100	<100
TRHC $_{29}$ - C $_{36}$	mg/kg	<100	<100	<100	<100
TRH>C $_{10}$-C $_{16}$	mg/kg	<50	<50	<50	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH>C $_{16}$-C $_{34}$	mg/kg	<100	<100	<100	<100
TRH>C $_{34}$-C $_{40}$	mg/kg	<100	<100	<100	<100
Surrogate o-Terphenyl	%	90	89	89	85

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112111-1 QC05/A 20/06/2014 soil	112111-2 QC06/A 23/06/2014 soil	112111-3 QC07/A 24/06/2014 soil	112111-4 QC08/A 24/06/2014 soil
Date extracted	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Date analysed	-	28/06/2014	28/06/2014	28/06/2014	28/06/2014
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	91	96	90	89

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112111-1 QC05/A 20/06/2014 soil	112111-2 QC06/A 23/06/2014 soil	112111-3 QC07/A 24/06/2014 soil	112111-4 QC08/A 24/06/2014 soil
Date extracted	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Date analysed	-	27/06/2014	27/06/2014	27/06/2014	27/06/2014
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	0.2
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	95	96	92

PCBs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112111-1 QC05/A 20/06/2014 soil	112111-2 QC06/A 23/06/2014 soil	112111-3 QC07/A 24/06/2014 soil	112111-4 QC08/A 24/06/2014 soil
Date extracted	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Date analysed	-	27/06/2014	27/06/2014	27/06/2014	27/06/2014
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	100	95	96	92

Acid Extractable metals in soil					
Our Reference:	UNITS	112111-1	112111-2	112111-3	112111-4
Your Reference	-------------	QC05/A	QC06/A	QC07/A	QC08/A
Date Sampled	------------	20/06/2014	23/06/2014	24/06/2014	24/06/2014
Type of sample		soil	soil	soil	soil
Date digested	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Date analysed	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Arsenic	mg/kg	<4	<4	9	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	7	20	11
Copper	mg/kg	2	<1	33	17
Lead	mg/kg	5	7	15	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	6	5
Zinc	mg/kg	3	5	60	33

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112111-1 QC05/A 20/06/2014 soil	112111-2 QC06/A 23/06/2014 soil	112111-3 QC07/A 24/06/2014 soil	112111-4 QC08/A 24/06/2014 soil
Date prepared	-	26/06/2014	26/06/2014	26/06/2014	26/06/2014
Date analysed	-	27/06/2014	27/06/2014	27/06/2014	27/06/2014
Moisture	%	8.4	11	15	19

Asbestos ID - soils NEPM* Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112111-1 QC05/A 20/06/2014 soil	112111-2 QC06/A 23/06/2014 soil	112111-3 QC07/A 24/06/2014 soil	112111-4 QC08/A 24/06/2014 soil
Date analysed	-	30/06/2014	30/06/2014	30/06/2014	30/06/2014
Sample mass tested	g	717.60g	787.00g	617.10g	473.00g
Sample Description	-	Brown fine-grained soil	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected
ACM>7mm*	-	None	None	None	None
ACM<7mm*	-	None	None	None	None
Fibrous Asb(FA)/Asb Fines(AF)	-	None	None	None	None
Asbestos ww%* Note	-	<0.001	<0.001	<0.001	<0.001
Comments	-	See back page	See back page	See back page	See back page

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-007	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit between 0.01g/kg (0.001% w/w) to 0.1g/kg (0.01% w/w). This form of analysis is outside the scope of NATA accreditation. Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/06/2014	[NT]	[NT]	LCS-2	26/06/2014
Date analysed	-			28/06/2014	[NT]	[NT]	LCS-2	28/06/2014
TRHC_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-2	88%
TRHC_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-2	88%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-2	91%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-2	91%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-2	87%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-2	86%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-2	88%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	99	[NT]	[NT]	LCS-2	95%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/06/2014	[NT]	[NT]	LCS-2	26/06/2014
Date analysed	-			27/06/2014	[NT]	[NT]	LCS-2	27/06/2014
TRHC_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-2	86%
TRHC_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	72%
TRHC_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	99%
TRH>C_{10}-C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-2	86%
TRH>C_{16}-C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	72%
TRH>C_{34}-C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	99%
Surrogate o-Terphenyl	%		Org-003	93	[NT]	[NT]	LCS-2	98%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/06/2014	[NT]	[NT]	LCS-1	26/06/2014
Date analysed	-			28/06/2014	[NT]	[NT]	LCS-1	28/06/2014
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	102%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	106%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	105%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	102%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	103%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	95%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-1	102%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	92	[NT]	[NT]	LCS-1	90%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/06/2014	[NT]	[NT]	LCS-2	26/06/2014
Date analysed	-			27/06/2014	[NT]	[NT]	LCS-2	27/06/2014
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	91%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	78%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	88%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	90%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	108%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	92%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	93%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	87%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	83%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	112%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	96	[NT]	[NT]	LCS-2	93%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/06/2014	[NT]	[NT]	LCS-2	26/06/2014
Date analysed	-			27/06/2014	[NT]	[NT]	LCS-2	27/06/2014
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-2	98%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	96	[NT]	[NT]	LCS-2	90%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			26/06/2014	[NT]	[NT]	LCS-5	26/06/2014
Date analysed	-			26/06/2014	[NT]	[NT]	LCS-5	26/06/2014
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-5	99%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-5	105%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	105%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	103%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	102%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-5	99%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	105%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-5	105%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Asbestos ID - soils NEPM*	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

Report Comments:

Asbestos-ID in soil: NEPM
This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Sample 112111-4
Note: All samples analysed as received. However, samples are below the minimum 500mL sample volume as per the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
12 Ashley Street
Chatswood
NSW 2067

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: TC, KH | SEND INVOICE TO: G,NG
DATE NEEDED BY: Standard
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: TC
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100
EMAIL: Khenderson@jbsg.com.au, treese@jbsg.com.au
QC LEVEL: NEPM (2013)

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	SOIL - 4	SOIL - 4L	SOIL - 4A	SOIL - 5	SOIL 5A	SOIL 5B	SOIL - 12	WATER - 1m	WATER - 2L	WATER - 3L
1	QC05/A	Soil	20/6/14		Jar + Bag						X					
2	QC06/A	↓	23/6/14		↓						X					
3	QC07/A	↓	24/6/14		↓						X					
4	QC08/A	↓	11		↓						X					

NOTES:
Envirolab Services, 12 Ashley St, Chatswood NSW 2067, Ph: (02) 9910 6200
Job No: 112111
Date Received: 25/06
Time Received: 13:00
Received by: SK
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:
NAME: T. Clerk DATE: 24/6/14
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: Sophie
DATE:
OF: ELS
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes....... No .... Intact .... Broken ....
COOLER TEMP .... deg C
COOLER SEAL – Yes....... No .... Intact .... Broken ....
COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Envirolab

Soil Combos
3 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/
3A – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/)/Asbestos
4 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4L - TRH/BTEX/PAH(Trace Level)/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4A - TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)/Asbestos

Soil Combos continued
5 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
• 5A - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Asbestos
5B - TRH/BTEX/PAH/OCP/OPP/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
12 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/TCLP(PAH & 6 Metals)

Water Combos
1m - TRH/BTEX/ 8 metals
2L - TRH/BTEX/PAH low/Pb
3L - TRH/BTEX/PAH/8 metals

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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CERTIFICATE OF ANALYSIS 112508

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: TC, KH

Sample log in details:

Your Reference:	**43375, Box Hill**	
No. of samples:	7 Soils	
Date samples received / completed instructions received	01/07/2014	/ 03/07/2014

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	10/07/14	/ 10/07/14
Date of Preliminary Report:	Not Issued	

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

ACCREDITED FOR TECHNICAL COMPETENCE

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-1 QC09/A Soil	112508-2 QC10/A Soil	112508-3 QC11/A Soil	112508-4 QC12/A Soil	112508-5 QC13/A Soil
Date extracted	-	7/07/2014	7/07/2014	7/07/2014	7/07/2014	7/07/2014
Date analysed	-	9/07/2014	9/07/2014	9/07/2014	9/07/2014	9/07/2014
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	127	124	130	129	134

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-6 QC14/A Soil	112508-7 QC15/A Soil
Date extracted	-	7/07/2014	7/07/2014
Date analysed	-	9/07/2014	9/07/2014
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	133	135

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	112508-1	112508-2	112508-3	112508-4	112508-5
Your Reference	-------------	QC09/A	QC10/A	QC11/A	QC12/A	QC13/A
Type of sample	------------	Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
Date analysed	-	08/07/2014	08/07/2014	08/07/2014	08/07/2014	08/07/2014
TRHC $_{10}$ - C $_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC $_{15}$ - C $_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC $_{29}$ - C $_{36}$	mg/kg	<100	<100	<100	150	<100
TRH>C $_{10}$-C $_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C $_{16}$-C $_{34}$	mg/kg	<100	<100	<100	130	<100
TRH>C $_{34}$-C $_{40}$	mg/kg	<100	<100	<100	110	<100
Surrogate o-Terphenyl	%	90	96	90	93	90

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	112508-6	112508-7
Your Reference	-------------	QC14/A	QC15/A
Type of sample	------------	Soil	Soil
Date extracted	-	07/07/2014	07/07/2014
Date analysed	-	08/07/2014	08/07/2014
TRHC $_{10}$ - C $_{14}$	mg/kg	<50	<50
TRHC $_{15}$ - C $_{28}$	mg/kg	<100	<100
TRHC $_{29}$ - C $_{36}$	mg/kg	<100	<100
TRH>C $_{10}$-C $_{16}$	mg/kg	<50	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	mg/kg	<50	<50
TRH>C $_{16}$-C $_{34}$	mg/kg	<100	<100
TRH>C $_{34}$-C $_{40}$	mg/kg	<100	<100
Surrogate o-Terphenyl	%	91	85

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-1 QC09/A Soil	112508-2 QC10/A Soil	112508-3 QC11/A Soil	112508-4 QC12/A Soil	112508-5 QC13/A Soil
Date extracted	-	7/07/2014	7/07/2014	7/07/2014	7/07/2014	7/07/2014
Date analysed	-	7/07/2014	7/07/2014	7/07/2014	7/07/2014	7/07/2014
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.3	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.14	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	1.2	NIL (+)VE
Surrogate p-Terphenyl-d14	%	101	110	98	101	117

PAHs in Soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-6 QC14/A Soil	112508-7 QC15/A Soil
Date extracted	-	7/07/2014	7/07/2014
Date analysed	-	7/07/2014	7/07/2014
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	109	98

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-1 QC09/A Soil	112508-2 QC10/A Soil	112508-3 QC11/A Soil	112508-4 QC12/A Soil	112508-5 QC13/A Soil
Date extracted	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
Date analysed	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	94	88	90	87

Organochlorine Pesticides in soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-6 QC14/A Soil	112508-7 QC15/A Soil
Date extracted	-	07/07/2014	07/07/2014
Date analysed	-	07/07/2014	07/07/2014
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	90	85

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-1 QC09/A Soil	112508-2 QC10/A Soil	112508-3 QC11/A Soil	112508-4 QC12/A Soil	112508-5 QC13/A Soil
Date extracted	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
Date analysed	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	88	94	88	90	87

PCBs in Soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-6 QC14/A Soil	112508-7 QC15/A Soil
Date extracted	-	07/07/2014	07/07/2014
Date analysed	-	07/07/2014	07/07/2014
Arochlor 1016	mg/kg	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	90	85

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-1 QC09/A Soil	112508-2 QC10/A Soil	112508-3 QC11/A Soil	112508-4 QC12/A Soil	112508-5 QC13/A Soil
Date digested	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
Date analysed	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
Arsenic	mg/kg	10	<4	7	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	22	4	18	16	4
Copper	mg/kg	16	7	29	35	<1
Lead	mg/kg	25	6	20	19	3
Mercury	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Nickel	mg/kg	10	3	8	11	<1
Zinc	mg/kg	57	16	64	69	2

Acid Extractable metals in soil Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-6 QC14/A Soil	112508-7 QC15/A Soil
Date digested	-	07/07/2014	07/07/2014
Date analysed	-	07/07/2014	07/07/2014
Arsenic	mg/kg	10	4
Cadmium	mg/kg	0.5	<0.4
Chromium	mg/kg	28	8
Copper	mg/kg	8	6
Lead	mg/kg	17	11
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	3	3
Zinc	mg/kg	15	13

Moisture Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-1 QC09/A Soil	112508-2 QC10/A Soil	112508-3 QC11/A Soil	112508-4 QC12/A Soil	112508-5 QC13/A Soil
Date prepared	-	07/07/2014	07/07/2014	07/07/2014	07/07/2014	07/07/2014
Date analysed	-	08/07/2014	08/07/2014	08/07/2014	08/07/2014	08/07/2014
Moisture	%	18	22	15	22	16

Moisture Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-6 QC14/A Soil	112508-7 QC15/A Soil
Date prepared	-	07/07/2014	07/07/2014
Date analysed	-	08/07/2014	08/07/2014
Moisture	%	14	13

Asbestos ID - soils NEPM* Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-1 QC09/A Soil	112508-2 QC10/A Soil	112508-3 QC11/A Soil	112508-4 QC12/A Soil	112508-5 QC13/A Soil
Date analysed	-	10/07/2014	10/07/2014	10/07/2014	10/07/2014	10/07/2014
Sample mass tested	g	533.70g	575.60g	705.70g	789.70g	592.80g
Sample Description	-	Brown coarse-grained soil & rocks	White fine-grained powdery soil	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey coarse-grained sandy soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected
ACM>7mm*	-	None	None	None	None	None
ACM<7mm*	-	None	None	None	None	None
Fibrous Asb(FA)/Asb Fines(AF)	-	None	None	None	None	None
Asbestos ww%* Note	-	<0.001	<0.001	<0.001	<0.001	<0.001
Comments	-	See back page	See back page	See back page	See back page	See back page

Asbestos ID - soils NEPM* Our Reference: Your Reference Type of sample	UNITS ------------- ------------	112508-7 QC15/A Soil
Date analysed	-	10/07/2014
Sample mass tested	g	651.50g
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected
ACM>7mm*	-	None
ACM<7mm*	-	None
Fibrous Asb(FA)/Asb Fines(AF)	-	None
Asbestos ww%* Note	-	<0.001
Comments	-	See back page

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-007	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit between 0.01g/kg (0.001% w/w) to 0.1g/kg (0.01% w/w). This form of analysis is outside the scope of NATA accreditation. Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			07/07/2014	112508-1	7/07/2014 || 7/07/2014	LCS-4	07/07/2014
Date analysed	-			09/07/2014	112508-1	9/07/2014 || 9/07/2014	LCS-4	09/07/2014
TRH C_6 - C_9	mg/kg	25	Org-016	<25	112508-1	<25 || <25	LCS-4	101%
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	112508-1	<25 || <25	LCS-4	101%
Benzene	mg/kg	0.2	Org-016	<0.2	112508-1	<0.2 || <0.2	LCS-4	97%
Toluene	mg/kg	0.5	Org-016	<0.5	112508-1	<0.5 || <0.5	LCS-4	108%
Ethylbenzene	mg/kg	1	Org-016	<1	112508-1	<1 || <1	LCS-4	101%
m+p-xylene	mg/kg	2	Org-016	<2	112508-1	<2 || <2	LCS-4	100%
o-Xylene	mg/kg	1	Org-016	<1	112508-1	<1 || <1	LCS-4	102%
naphthalene	mg/kg	1	Org-014	<1	112508-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	135	112508-1	127 || 126 || RPD: 1	LCS-4	102%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			07/07/2014	112508-1	07/07/2014 || 07/07/2014	LCS-4	07/07/2014
Date analysed	-			08/07/2014	112508-1	08/07/2014 || 08/07/2014	LCS-4	08/07/2014
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	112508-1	<50 || <50	LCS-4	103%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	112508-1	<100 || <100	LCS-4	119%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	112508-1	<100 || <100	LCS-4	104%
TRH >C_{10}-C_{16}	mg/kg	50	Org-003	<50	112508-1	<50 || <50	LCS-4	103%
TRH >C_{16}-C_{34}	mg/kg	100	Org-003	<100	112508-1	<100 || <100	LCS-4	119%
TRH >C_{34}-C_{40}	mg/kg	100	Org-003	<100	112508-1	<100 || <100	LCS-4	104%
Surrogate o-Terphenyl	%		Org-003	89	112508-1	90 || 88 || RPD: 2	LCS-4	98%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			07/07/2014	112508-1	7/07/2014 || 7/07/2014	LCS-3	07/07/2014
Date analysed	-			07/07/2014	112508-1	7/07/2014 || 7/07/2014	LCS-3	07/07/2014
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	LCS-3	108%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	LCS-3	107%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	LCS-3	108%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	LCS-3	105%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	LCS-3	108%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	LCS-3	106%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	112508-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	112508-1	<0.05 || <0.05	LCS-3	115%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	101	112508-1	101 || 104 || RPD: 3	LCS-3	98%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			07/07/2014	112508-1	07/07/2014 || 07/07/2014	LCS-4	07/07/2014
Date analysed	-			07/07/2014	112508-1	07/07/2014 || 07/07/2014	LCS-4	07/07/2014
HCB	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	74%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	104%
Heptachlor	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	83%
delta-BHC	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	84%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	82%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	88%
Dieldrin	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	92%
Endrin	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	81%
pp-DDD	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	96%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	LCS-4	102%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	88	112508-1	88 || 86 || RPD: 2	LCS-4	82%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			07/07/2014	112508-1	07/07/2014 || 07/07/2014	LCS-4	07/07/2014
Date analysed	-			07/07/2014	112508-1	07/07/2014 || 07/07/2014	LCS-4	07/07/2014
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	112508-1	<0.1 || <0.1	LCS-4	96%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	112508-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	88	112508-1	88 || 86 || RPD: 2	LCS-4	89%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			07/07/2014	112508-1	07/07/2014 || 07/07/2014	LCS-7	07/07/2014
Date analysed	-			07/07/2014	112508-1	07/07/2014 || 07/07/2014	LCS-7	07/07/2014
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	112508-1	10 || 10 || RPD: 0	LCS-7	89%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	112508-1	<0.4 || <0.4	LCS-7	96%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	112508-1	22 || 23 || RPD: 4	LCS-7	94%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	112508-1	16 || 16 || RPD: 0	LCS-7	94%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	112508-1	25 || 24 || RPD: 4	LCS-7	92%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	112508-1	<0.1 || <0.1	LCS-7	85%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	112508-1	10 || 11 || RPD: 10	LCS-7	94%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	112508-1	57 || 62 || RPD: 8	LCS-7	93%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Asbestos ID - soils NEPM*	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

Report Comments:

Asbestos-ID in soil; NEPM
This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Asbestos ID was analysed by Approved Identifier: Paul Ching
Asbestos ID was authorised by Approved Signatory: Lulu Guo

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

JBS & G (NSW & WA) Pty Ltd	ph: 02 8245 0300
Level 1, 50 Margaret St	Fax: 02 8245 0399
Sydney NSW 2000	

Attention: TC, KH

Sample log in details:

Your reference:	**43375, Box Hill**
Envirolab Reference:	**112508**
Date received:	01/07/2014
Date results expected to be reported:	**10/07/14**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	7 Soils
Turnaround time requested:	Standard
Temperature on receipt (°C)	7.8
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

COC 3/7 11:44

Envirolab Services Pty Ltd
12 Ashley Street
Chatswood
NSW 2067

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 52776	LABORATORY BATCH NO.:
PROJECT NAME: 130E Hill	SAMPLERS: TC
SEND REPORT TO: TC, KH SEND INVOICE TO: JBS&G	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@jbsg.com.au / tcreeze@jbsg.com.au
DATE NEEDED BY: Standard	QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

COMBO SUITES

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	SOIL - 4	SOIL - 4L	SOIL - 4A	SOIL - 5	SOIL 5A	SOIL 5B	SOIL - 12	WATER - 1m	WATER - 2L	WATER - 3L	NOTES:
1.	QC09/A	Soil			B+J						X						WA Guidelines
2.	QC10/A										X						
3.	QC11/A										X						
4.	QC12/A										X						
5.	QC13/A										X						
6	QC14/A				Jar					X							
7.	QC15/A				B+J						X						

ENVIROLAB Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 112506
Date Received: 3.7.14 (c.o.c) 1.7.14 (samples)
Time Received: 13:44   14:00
Received by: D.F.
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T.Creeze DATE: 30/6/14	CONSIGNMENT NOTE NO.	NAME: Daniel Ford DATE: 3.7.14 (c.o.c) 1.7.14 (samples)	COOLER SEAL – Yes...... No ...... Intact .... Broken ....
OF: JBS&G	TRANSPORT CO.	OF: ELS	COOLER TEMP ...... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes...... No ...... Intact .... Broken ....
OF:	TRANSPORT CO	OF:	COOLER TEMP ...... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Envirolab

Soil Combos
3 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/
3A – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/)/Asbestos
4 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4L - TRH/BTEX/PAH(Trace Level)/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4A - TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)/Asbestos

Soil Combos continued
✓ 5 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
• 5A - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Asbestos
5B - TRH/BTEX/PAH/OCP/OPP/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
12 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/TCLP(PAH & 6 Metals)

Water Combos
1m - TRH/BTEX/ 8 metals
2L - TRH/BTEX/PAH low/Pb
3L - TRH/BTEX/PAH/8 metals

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12 Ashley St Chatswood NSW 2067
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www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 112602

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: Tyler Creese

Sample log in details:

Your Reference:	**43376, Box Hill**		
No. of samples:	3 Soils		
Date samples received / completed instructions received	04/07/2014	/	04/07/2014

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	15/07/14	/	16/07/14
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

Asbestos ID - soils NEPM* Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112602-1 QC16/A 2/07/2014 Soil
Date analysed	-	11/07/2014
Sample mass tested	g	834.30g
Sample Description	-	Grey course-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected
ACM>7mm*	-	None
ACM<7mm*	-	None
Fibrous Asb(FA)/Asb Fines(AF)	-	None
Asbestos ww%* Note	-	<0.001
Comments	-	See back page

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	112602-1	112602-3
Your Reference	-------------	QC16/A	QC18/A
Date Sampled	------------	2/07/2014	3/07/2014
Type of sample		Soil	Soil
Date extracted	-	8/07/2014	8/07/2014
Date analysed	-	9/07/2014	9/07/2014
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	109	105

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	112602-1	112602-3
Your Reference	-------------	QC16/A	QC18/A
Date Sampled	------------	2/07/2014	3/07/2014
Type of sample		Soil	Soil
Date extracted	-	08/07/2014	08/07/2014
Date analysed	-	09/07/2014	09/07/2014
TRHC $_{10}$ - C $_{14}$	mg/kg	<50	<50
TRHC $_{15}$ - C $_{28}$	mg/kg	<100	<100
TRHC $_{29}$ - C $_{36}$	mg/kg	<100	<100
TRH>C $_{10}$-C $_{16}$	mg/kg	<50	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	mg/kg	<50	<50
TRH>C $_{16}$-C $_{34}$	mg/kg	<100	<100
TRH>C $_{34}$-C $_{40}$	mg/kg	<100	<100
Surrogate o-Terphenyl	%	85	84

PAHs in Soil			
Our Reference:	UNITS	112602-1	112602-3
Your Reference	-------------	QC16/A	QC18/A
Date Sampled	------------	2/07/2014	3/07/2014
Type of sample		Soil	Soil
Date extracted	-	08/07/2014	08/07/2014
Date analysed	-	9/07/2014	9/07/2014
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	95	87

Organochlorine Pesticides in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112602-1 QC16/A 2/07/2014 Soil	112602-2 QC17/A 2/07/2014 Soil	112602-3 QC18/A 3/07/2014 Soil
Date extracted	-	08/07/2014	08/07/2014	08/07/2014
Date analysed	-	09/07/2014	09/07/2014	09/07/2014
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	81	82

Organophosphorus Pesticides Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112602-2 QC17/A 2/07/2014 Soil
Date extracted	-	08/07/2014
Date analysed	-	09/07/2014
Diazinon	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Surrogate TCMX	%	81

PCBs in Soil			
Our Reference:	UNITS	112602-1	112602-3
Your Reference	-------------	QC16/A	QC18/A
Date Sampled	------------	2/07/2014	3/07/2014
Type of sample		Soil	Soil
Date extracted	-	08/07/2014	08/07/2014
Date analysed	-	09/07/2014	09/07/2014
Arochlor 1016	mg/kg	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	84	82

Acid Extractable metals in soil				
Our Reference:	UNITS	112602-1	112602-2	112602-3
Your Reference	-------------	QC16/A	QC17/A	QC18/A
Date Sampled	------------	2/07/2014	2/07/2014	3/07/2014
Type of sample		Soil	Soil	Soil
Date digested	-	08/07/2014	08/07/2014	08/07/2014
Date analysed	-	08/07/2014	08/07/2014	08/07/2014
Arsenic	mg/kg	6	8	4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	11	28	11
Copper	mg/kg	32	17	7
Lead	mg/kg	18	23	7
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	45	7	2
Zinc	mg/kg	130	43	23

Moisture				
Our Reference:	UNITS	112602-1	112602-2	112602-3
Your Reference	-------------	QC16/A	QC17/A	QC18/A
Date Sampled	------------	2/07/2014	2/07/2014	3/07/2014
Type of sample		Soil	Soil	Soil
Date prepared	-	08/07/2014	08/07/2014	08/07/2014
Date analysed	-	09/07/2014	09/07/2014	09/07/2014
Moisture	%	11	14	15

Phenoxy Acid Herbicides in Soil		
Our Reference:	UNITS	112602-2
Your Reference	-------------	QC17/A
Date Sampled	------------	2/07/2014
Type of sample		Soil
Date extracted	-	11/07/2014
Date analysed	-	11/07/2014
Clopyralid	mg/kg	<0.5
3,5-Dichlorobenzoic acid	mg/kg	<0.5
o-chlorophenoxy acetic acid	mg/kg	<0.5
4-CPA	mg/kg	<0.5
Dicamba	mg/kg	<0.5
MCPP	mg/kg	<0.5
MCPA	mg/kg	<0.5
Dichlorprop	mg/kg	<0.5
2,4-D	mg/kg	<0.5
Bromoxynil	mg/kg	<0.5
Triclopyr	mg/kg	<0.5
2,4,5-TP	mg/kg	<0.5
2,4,5-T	mg/kg	<0.5
MCPB	mg/kg	<0.5
Dinoseb	mg/kg	<0.5
2,4-DB	mg/kg	<0.5
Ioxynil	mg/kg	<0.5
Picloram	mg/kg	<0.5
DCPA (Chlorthal) Diacid	mg/kg	<0.5
Acifluorfen	mg/kg	<0.5
2,4,6-T	mg/kg	<0.5
2,6-D	mg/kg	<0.5
2.4- DCPA	%	96

Method ID	Methodology Summary
ASB-007	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit between 0.01g/kg (0.001% w/w) to 0.1g/kg (0.01% w/w). This form of analysis is outside the scope of NATA accreditation. Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
Ext-054	Analysed by MPL Envirolab

QUALITY CONTROL Asbestos ID - soils NEPM*	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			08/07/2014	[NT]	[NT]	LCS-4	08/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-4	09/07/2014
TRHC $_{6}$ - C $_{9}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-4	119%
TRHC $_{6}$ - C $_{10}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-4	119%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-4	116%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-4	122%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-4	120%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-4	118%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-4	122%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	111	[NT]	[NT]	LCS-4	114%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			08/07/2014	[NT]	[NT]	LCS-4	08/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-4	09/07/2014
TRHC $_{10}$ - C $_{14}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	88%
TRHC $_{15}$ - C $_{28}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	90%
TRHC $_{29}$ - C $_{36}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	87%
TRH>C $_{10}$-C $_{16}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	88%
TRH>C $_{16}$-C $_{34}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	90%
TRH>C $_{34}$-C $_{40}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	87%
Surrogate o-Terphenyl	%		Org-003	83	[NT]	[NT]	LCS-4	95%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			08/07/2014	[NT]	[NT]	LCS-4	08/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-4	09/07/2014
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	101%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	106%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	100%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	98%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	98%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	92%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-4	103%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	94	[NT]	[NT]	LCS-4	98%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			08/07/2014	[NT]	[NT]	LCS-4	08/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-4	09/07/2014
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	90%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	86%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	78%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	87%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	89%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	89%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	90%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	81%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	96%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-4	88%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	77	[NT]	[NT]	LCS-4	82%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			08/07/2014	[NT]	[NT]	LCS-4	08/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-4	09/07/2014
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-4	94%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-4	78%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-4	90%
Surrogate TCMX	%		Org-008	77	[NT]	[NT]	LCS-4	79%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			08/07/2014	[NT]	[NT]	LCS-4	08/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-4	09/07/2014
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-4	96%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	77	[NT]	[NT]	LCS-4	83%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			08/07/2014	[NT]	[NT]	LCS-6	08/07/2014
Date analysed	-			08/07/2014	[NT]	[NT]	LCS-6	08/07/2014
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-6	95%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-6	102%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-6	99%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-6	99%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-6	95%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-6	107%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-6	99%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-6	97%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Phenoxy Acid Herbicides in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			11/07/2014	112602-2	11/07/2014 || 11/07/2014	LCS-1	11/07/2014
Date analysed	-			11/07/2014	112602-2	11/07/2014 || 11/07/2014	LCS-1	11/07/2014
Clopyralid	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
3,5-Dichlorobenzoic acid	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
o-chlorophenoxy acetic acid	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
4-CPA	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
Dicamba	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
MCPP	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	LCS-1	106%
MCPA	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	LCS-1	95%
Dichlorprop	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
2,4-D	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	LCS-1	118%
Bromoxynil	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
Triclopyr	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
2,4,5-TP	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
2,4,5-T	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	LCS-1	95%
MCPB	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]

QUALITY CONTROL Phenoxy Acid Herbicides in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Dinoseb	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	LCS-1	109%
2,4-DB	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
Ioxynil	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
Picloram	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
DCPA (Chlorthal) Diacid	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
Acifluorfen	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
2,4,6-T	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
2,6-D	mg/kg	0.5	Ext-054	<0.5	112602-2	<0.5 || <0.5	[NR]	[NR]
2.4- DCPA	%	60	Ext-054	<60	112602-2	96 || 100 || RPD: 4	LCS-1	96%

Report Comments:

This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Herbicides in soil analysed by MPL Laboratories. Report No.152851.

Asbestos ID was analysed by Approved Identifier: Paul Ching
Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
12 Ashley Street
Chatswood
NSW 2067

JBS&G

CHAIN OF CUSTODY

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: TC, KH — SEND INVOICE TO: GNG
DATE NEEDED BY: Standard
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: TC, CB
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 — EMAIL: Khenderson@jbsg.com.au; tcreese@jbsg.com.au
QC LEVEL: NEPM (2013)

COMBO SUITES

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	SOIL - 4	SOIL - 4L	SOIL - 4A	SOIL - 5	SOIL 5A	SOIL 5B	SOIL - 12	WATER - 1m	WATER - 2L	WATER - 3L	Herbicides	metals	OCP/OPPs	NOTES
1	QC16/A	Soil	2/7		B + J						X									
2	QC17/A	↓	2/7		J												X	X	X	
3	QC18/A	↓	2/7		J					X										

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 112602
Date Received: 4/7/14
Time Received: 17:30
Received by: PT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: T. Creese DATE: 4/7/14 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: PT DATE: 4/7/14 OF: ELS	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes....... No .... Intact .... Broken .... COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Soil Combos
3 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/
3A – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/)/Asbestos
4 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4L - TRH/BTEX/PAH(Trace Level)/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4A - TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)/Asbestos

Soil Combos continued
5 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
5A - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Asbestos
5B - TRH/BTEX/PAH/OCP/OPP/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
12 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/TCLP(PAH & 6 Metals)

Water Combos
1m - TRH/BTEX/ 8 metals
2L - TRH/BTEX/PAH low/Pb
3L - TRH/BTEX/PAH/8 metals

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CERTIFICATE OF ANALYSIS **112770**

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Henderson, Tyler Creese

Sample log in details:

Your Reference:	**43376, Box Hill**		
No. of samples:	3 Soils		
Date samples received / completed instructions received	08/07/2014	/	08/07/2014

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	15/07/14	/	11/07/14
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference:	UNITS	112770-3
Your Reference	-------------	QC21/A
Date Sampled	------------	7/07/2014
Type of sample		soil
Date extracted	-	9/07/2014
Date analysed	-	10/07/2014
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	101

svTRH (C10-C40) in Soil		
Our Reference:	UNITS	112770-3
Your Reference	-------------	QC21/A
Date Sampled	------------	7/07/2014
Type of sample		soil
Date extracted	-	09/07/2014
Date analysed	-	10/07/2014
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10}-C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16}-C_{34}	mg/kg	<100
TRH >C_{34}-C_{40}	mg/kg	<100
Surrogate o-Terphenyl	%	86

PAHs in Soil		
Our Reference:	UNITS	112770-3
Your Reference	-------------	QC21/A
Date Sampled	------------	7/07/2014
Type of sample		soil
Date extracted	-	9/07/2014
Date analysed	-	10/07/2014
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Benzo(a)pyrene TEQ NEPM B1	mg/kg	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE
Surrogate p-Terphenyl-d14	%	93

Organochlorine Pesticides in soil				
Our Reference:	UNITS	112770-1	112770-2	112770-3
Your Reference	-------------	QC19/A	QC20/A	QC21/A
Date Sampled	------------	4/07/2014	4/07/2014	7/07/2014
Type of sample		soil	soil	soil
Date extracted	-	09/07/2014	09/07/2014	09/07/2014
Date analysed	-	10/07/2014	10/07/2014	10/07/2014
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	74	74	76

PCBs in Soil		
Our Reference:	UNITS	112770-3
Your Reference	-------------	QC21/A
Date Sampled	------------	7/07/2014
Type of sample		soil
Date extracted	-	09/07/2014
Date analysed	-	10/07/2014
Arochlor 1016	mg/kg	<0.1
Arochlor 1221	mg/kg	<0.1
Arochlor 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1
Surrogate TCLMX	%	76

Acid Extractable metals in soil				
Our Reference:	UNITS	112770-1	112770-2	112770-3
Your Reference	-------------	QC19/A	QC20/A	QC21/A
Date Sampled	------------	4/07/2014	4/07/2014	7/07/2014
Type of sample		soil	soil	soil
Date digested	-	09/07/2014	09/07/2014	09/07/2014
Date analysed	-	09/07/2014	09/07/2014	09/07/2014
Arsenic	mg/kg	4	10	9
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	14	23	27
Copper	mg/kg	7	12	20
Lead	mg/kg	140	19	29
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	4	7	15
Zinc	mg/kg	31	37	85

Moisture				
Our Reference:	UNITS	112770-1	112770-2	112770-3
Your Reference	-------------	QC19/A	QC20/A	QC21/A
Date Sampled	------------	4/07/2014	4/07/2014	7/07/2014
Type of sample		soil	soil	soil
Date prepared	-	09/07/2014	09/07/2014	09/07/2014
Date analysed	-	09/07/2014	09/07/2014	09/07/2014
Moisture	%	3.5	12	10

Asbestos ID - soils NEPM* Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112770-3 QC21/A 7/07/2014 soil
Date analysed	-	11/07/2014
Sample mass tested	g	814.90g
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected
ACM>7mm*	-	None
ACM<7mm*	-	None
Fibrous Asb(FA)/Asb Fines(AF)	-	None
Asbestos ww%* Note	-	<0.001
Comments	-	See back page

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-007	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit between 0.01g/kg (0.001% w/w) to 0.1g/kg (0.01% w/w). This form of analysis is outside the scope of NATA accreditation. Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-1	10/07/2014
TRHC_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	116%
TRHC_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	116%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-1	107%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-1	115%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	114%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-1	121%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	122%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	109	[NT]	[NT]	LCS-1	111%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-1	10/07/2014
TRHC_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	102%
TRHC_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	113%
TRHC_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	102%
TRH>C_{10}-C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	102%
TRH>C_{16}-C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	113%
TRH>C_{34}-C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	102%
Surrogate o-Terphenyl	%		Org-003	87	[NT]	[NT]	LCS-1	97%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-1	10/07/2014
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	97%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	95%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	94%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	93%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	93%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-1	90%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-1	107%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	92	[NT]	[NT]	LCS-1	91%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-1	10/07/2014
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	89%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	87%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	98%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	91%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	86%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	81%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	97%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	92%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	83%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-1	105%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	74	[NT]	[NT]	LCS-1	79%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-1	10/07/2014
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-1	82%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	74	[NT]	[NT]	LCS-1	76%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			09/07/2014	[NT]	[NT]	LCS-2	09/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-2	09/07/2014
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-2	93%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-2	101%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	99%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	96%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	96%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-2	102%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	99%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	99%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

QUALITY CONTROL Asbestos ID - soils NEPM*	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

Report Comments:

This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney NSW 2000

ph: 02 8245 0300
Fax: 02 8245 0399

Attention: K Henderson, Tyler Creese

Sample log in details:

Your reference:	**43376, Box Hill**
Envirolab Reference:	**112770**
Date received:	08/07/2014
Date results expected to be reported:	**15/07/14**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	3 Soils
Turnaround time requested:	Standard
Temperature on receipt (°C)	13.5
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Envirolab Services Pty Ltd
12 Ashley Street
Chatswood
NSW 2067

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: KH, TC
SEND INVOICE TO: G.NG
DATE NEEDED BY: standard
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: TC, LB
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100
EMAIL: khenderson@jbsg.com.au tcreese@jbsg.com.au
QC LEVEL: NEPM (2013)

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	SOIL - 4	SOIL – 4L	SOIL – 4A	SOIL - 5	SOIL 5A	SOIL 5B	SOIL - 12	WATER – 1m	WATER – 2L	WATER – 3L	metals	OCPs	NOTES:
1	QC19/A	Soil	4/7/14		J												X	X	5A
2	QC20/A	"	4/7/14		J												X	X	= TRH/BTEX, PAH, metals, OCP, PCBs, Asbestos
3	QC21/A	"	7/7/14		B+J						X								

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 112770
Date Received: 8/7/14
Time Received: ~~1500~~ 9.00
Received by: LK
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:
NAME: T-Creese DATE: 8/7/14
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: Kevin
DATE: 8/7/14 9:00
OF: ELS
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes....... No .... Intact .... Broken ....
COOLER TEMP .... deg C
COOLER SEAL – Yes....... No .... Intact .... Broken ....
COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Envirolab

Soil Combos
3 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/
3A – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/)/Asbestos
4 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4L - TRH/BTEX/PAH(Trace Level)/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4A - TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)/Asbestos

Soil Combos continued
5 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
5A - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Asbestos
5B - TRH/BTEX/PAH/OCP/OPP/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
12 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/TCLP(PAH & 6 Metals)

Water Combos
1m - TRH/BTEX/ 8 metals
2L - TRH/BTEX/PAH low/Pb
3L - TRH/BTEX/PAH/8 metals

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS **112771**

Client:
JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: K Henderson, Tyler Creese

Sample log in details:

Your Reference:	**43376, Box Hill**		
No. of samples:	1 Water		
Date samples received / completed instructions received	08/07/2014	/	08/07/2014

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	15/07/14	/	11/07/14
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ------------- ------------	112771-1 QC01/A 07/07/2014 Water
Date extracted	-	9/07/2014
Date analysed	-	10/07/2014
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1

VOCs in water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	121
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	102

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date extracted	-	9/07/2014
Date analysed	-	10/07/2014
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	121
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	102

svTRH (C10-C40) in Water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date extracted	-	09/07/2014
Date analysed	-	09/07/2014
TRHC $_{10}$ - C $_{14}$	µg/L	<50
TRHC $_{15}$ - C $_{28}$	µg/L	<100
TRHC $_{29}$ - C $_{36}$	µg/L	<100
TRH>C $_{10}$ - C $_{16}$	µg/L	<50
TRH>C $_{10}$ - C $_{16}$ less Naphthalene (F2)	µg/L	<50
TRH>C $_{16}$ - C $_{34}$	µg/L	<100
TRH>C $_{34}$ - C $_{40}$	µg/L	<100
Surrogate o-Terphenyl	%	85

OCP in water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date extracted	-	09/07/2014
Date analysed	-	10/07/2014
HCB	µg/L	<0.2
alpha-BHC	µg/L	<0.2
gamma-BHC	µg/L	<0.2
beta-BHC	µg/L	<0.2
Heptachlor	µg/L	<0.2
delta-BHC	µg/L	<0.2
Aldrin	µg/L	<0.2
Heptachlor Epoxide	µg/L	<0.2
gamma-Chlordane	µg/L	<0.2
alpha-Chlordane	µg/L	<0.2
Endosulfan I	µg/L	<0.2
pp-DDE	µg/L	<0.2
Dieldrin	µg/L	<0.2
Endrin	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endosulfan II	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	89

OP Pesticides in water		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date extracted	-	09/07/2014
Date analysed	-	10/07/2014
Diazinon	µg/L	<0.2
Dimethoate	µg/L	<0.2
Chlorpyriphos-methyl	µg/L	<0.2
Ronnel	µg/L	<0.2
Chlorpyriphos	µg/L	<0.2
Fenitrothion	µg/L	<0.2
Bromophos ethyl	µg/L	<0.2
Ethion	µg/L	<0.2
Surrogate TCMX	%	89

HM in water - dissolved		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date prepared	-	09/07/2014
Date analysed	-	09/07/2014
Arsenic-Dissolved	µg/L	3
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	2
Zinc-Dissolved	µg/L	5

Cations in water Dissolved		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date digested	-	09/07/2014
Date analysed	-	09/07/2014
Potassium - Dissolved	mg/L	18

Metals in Waters - Total		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date prepared	-	09/07/2014
Date analysed	-	09/07/2014
Phosphorus - Total	mg/L	2.5

Miscellaneous Inorganics		
Our Reference:	UNITS	112771-1
Your Reference	-------------	QC01/A
Date Sampled	------------	07/07/2014
Type of sample		Water
Date prepared	-	09/07/2014
Date analysed	-	09/07/2014
Total Nitrogen in water	mg/L	1.1

Method ID	Methodology Summary
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Inorg-055/062	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen.

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-W1	10/07/2014
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	106%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	101%
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	107%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	111%
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	120%
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	100%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	100%
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	101%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	87	[NT]	[NT]	LCS-W1	111%
Surrogate toluene-d8	%		Org-013	102	[NT]	[NT]	LCS-W1	99%
Surrogate 4-BFB	%		Org-013	102	[NT]	[NT]	LCS-W1	106%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	[NT]	[NT]	LCS-W1	10/07/2014
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	104%
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	104%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	108%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	106%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	100%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	104%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	103%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	87	[NT]	[NT]	LCS-W1	140%
Surrogate toluene-d8	%		Org-016	102	[NT]	[NT]	LCS-W1	98%
Surrogate 4-BFB	%		Org-016	102	[NT]	[NT]	LCS-W1	91%

QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	112771-1	<50 || <50	LCS-W1	92%
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	87%
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	100%
TRH >C_{10} - C_{16}	µg/L	50	Org-003	<50	112771-1	<50 || <50	LCS-W1	92%
TRH >C_{16} - C_{34}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	87%
TRH >C_{34} - C_{40}	µg/L	100	Org-003	<100	112771-1	<100 || <100	LCS-W1	100%
Surrogate o-Terphenyl	%		Org-003	105	112771-1	85 || 100 || RPD: 16	LCS-W1	126%

QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	112771-1	10/07/2014 || 10/07/2014	LCS-W1	10/07/2014
HCB	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	98%
gamma-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
beta-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	74%
Heptachlor	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	69%
delta-BHC	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	84%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	75%
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]

QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Endosulfan I	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
pp-DDE	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	76%
Dieldrin	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	81%
Endrin	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	62%
pp-DDD	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	77%
Endosulfan II	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
pp-DDT	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	LCS-W1	93%
Methoxychlor	µg/L	0.2	Org-005	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Surrogate TCMX	%		Org-005	88	112771-1	89 || 97 || RPD: 9	LCS-W1	102%

QUALITY CONTROL OP Pesticides in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			10/07/2014	112771-1	10/07/2014 || 10/07/2014	LCS-W1	10/07/2014
Diazinon	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Dimethoate	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Chlorpyriphos-methyl	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Ronnel	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Chlorpyriphos	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	LCS-W1	95%
Fenitrothion	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	LCS-W1	102%
Bromophos ethyl	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	[NR]	[NR]
Ethion	µg/L	0.2	Org-008	<0.2	112771-1	<0.2 || <0.2	LCS-W1	101%
Surrogate TCMX	%		Org-008	88	112771-1	89 || 97 || RPD: 9	LCS-W1	102%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	112771-1	09/07/2014 || 09/07/2014	LCS-W1	09/07/2014
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	3 || [N/T]	LCS-W1	99%
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	112771-1	<0.1 || [N/T]	LCS-W1	101%
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	<1 || [N/T]	LCS-W1	101%
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	<1 || [N/T]	LCS-W1	102%
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	<1 || [N/T]	LCS-W1	98%
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.05	112771-1	<0.05 || <0.05	LCS-W1	100%
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	2 || [N/T]	LCS-W1	100%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	112771-1	5 || [N/T]	LCS-W1	99%

QUALITY CONTROL Cations in water Dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Potassium - Dissolved	mg/L	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-W1	106%

QUALITY CONTROL Metals in Waters - Total	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Phosphorus - Total	mg/L	0.05	Metals-020 ICP-AES	<0.05	[NT]	[NT]	LCS-W1	98%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Date analysed	-			09/07/2014	[NT]	[NT]	LCS-W1	09/07/2014
Total Nitrogen in water	mg/L	0.1	Inorg-055/062	<0.1	[NT]	[NT]	LCS-W1	95%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Services Pty Ltd
12 Ashley Street
Chatswood
NSW 2067

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 43376
PROJECT NAME: Box Hill
SEND REPORT TO: ~~ED~~ KH, TC SEND INVOICE TO: GNG
DATE NEEDED BY: Standard
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: TC
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: Khenderson@jbsg.com.au / fcreese@jbsg.com.au
QC LEVEL: NEPM (2013)

COMBO SUITES

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	SOIL - 4	SOIL – 4L	SOIL – 4A	SOIL - 5	SOIL 5A	SOIL 5B	SOIL - 12	WATER – 1m	WATER – 2L	WATER – 3L	~~[illegible]~~	OCP/OPPs	VOCs	nutrients	NOTES:
1	QC01/A	Water	7/7/14		Vials, amber, bottles									X			X	X	X	X	1m = metals ~~[illegible]~~ TRH/BTEX
																					nutrients = total N total P K

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 112771
Date Received: 8/7/14
Time Received: 9:00
Received by: LS
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:
NAME: F.Creese DATE: 8/7/14
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: Kevin
DATE: 8/7/14. 9:00
OF: ELS
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes....... No .... Intact .... Broken ....
COOLER TEMP .... deg C
COOLER SEAL – Yes....... No .... Intact .... Broken ....
COOLER TEMP .... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Soil Combos
3 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/
3A – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/)/Asbestos
4 – TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4L - TRH/BTEX/PAH(Trace Level)/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)
4A - TRH/BTEX/PAH/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Phenolics (Total)/Asbestos

Soil Combos continued
5 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
5A - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/Asbestos
5B - TRH/BTEX/PAH/OCP/OPP/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg
12 - TRH/BTEX/PAH/OCP/PCB/As,Cd,Cr,Cu,Ni,Pb,Zn,Hg/TCLP(PAH & 6 Metals)

Water Combos
1m - TRH/BTEX/ 8 metals
2L - TRH/BTEX/PAH low/Pb
3L - TRH/BTEX/PAH/8 metals

Appendix D: Logs

Well No: MW01

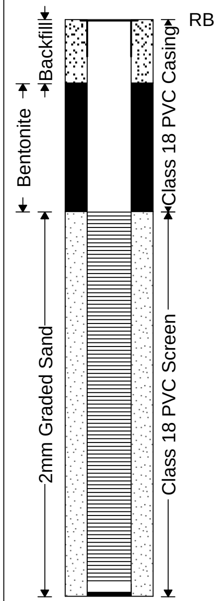
Project No: 43376
Client: APP Corporation
Project Name: 43376 Box Hill North DSI+RAP
Site Address: Box Hill, NSW

Date: 26/06/14
Contractor: Rockwell Drilling Services
Drill Rig: Geoprobe
Method: Solid Flight Auger, Hammer
Total Hole Depth (mbgs): 4.5

Eastings (MGA): -
Northings (MGA): -
Reference Level: -
Elevation: Surface (m) - **TOC (m):** -
Bore Diameter (mm): 100

Water Level Initial (mbgs): -
Water Level Static (mbgs): -
Casing Type/Surface Finish: Roadbox
Screen Diameter (mm): 75 **Screen Length (m):** 3.0
Casing Diameter (mm): 75 **Casing Length (m):** 1.5

SUBSURFACE PROFILE			SAMPLE				
Depth (m)	**Graphic Log**	**Lithologic Description**	**Sample ID**	**PID (ppm)**	**Sample Type**	**Comments**	**Well Construction**
0.0		Ground Surface					
		FILL (FL) Silty CLAY/Topsoil, brown, heterogeneous, firm, medium plasticity, dry.				No odours, stains or ACM observed.	
		CLAY (CL) Silty CLAY, medium-brown, heterogeneous, firm, medium plasticity, dry.				No odours, stains or ACM observed.	
1.0							
		SHALE (SH) Weathered SHALE, grey-brown, hard, dry.					
2.0							
3.0						No odours, stains or ACM observed.	
4.0							
		End of Hole at 4.5 m bgs Refusal on shale				No odours, stains or ACM observed.	
5.0							
6.0							
7.0							
8.0							
9.0							
10.0							



Method Solid Flight Auger	*Sample Type -*	*Reference Level -*	*Casing Type/Surface Finish -*	*Log Details -*
HA - Hand Auger	*U - Undisturbed tube sample*	*AHD - Australian Height Datum*	*PVC 18 - Class 18 PVC*	*Logged By:* Tyler Creese
SFA - Solid Flight Auger	*D - Disturbed sample*	*BGS - Below Ground Surface*	*MT - Monument*	*Project Manager:* Ken Coles
HFA - Hollow Flight Auger	*CS - Core sample*	*TOC - Top of Casing*	*RB - Roadbox*	
PT - Push Tube			*SP - Stickup/Standpipe*	
AH - Air Hammer				

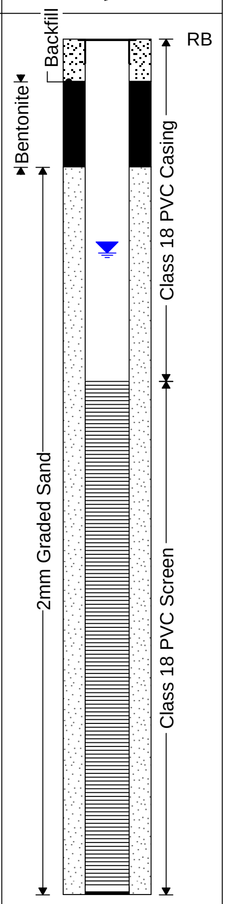
NOTE: This bore log is for environmental assessment purposes only and is not intended to provide geotechnical information

Well No: MW02

Project No: 43376
Client: APP Corporation
Project Name: 43376 Box Hill North DSI+RAP
Site Address: Box Hill, NSW

Date: 26/06/14	**Eastings (MGA):** -	**Water Level Initial (mbgs):** -
Contractor: Rockwell Drilling Services	**Northings (MGA):** -	**Water Level Static (mbgs):** -
Drill Rig: Geoprobe	**Reference Level:** -	**Casing Type/Surface Finish:** Roadbox
Method: Solid Flight Auger, Hammer	**Elevation: Surface (m)** - **TOC (m):** -	**Screen Diameter (mm):** 75 **Screen Length (m):** 6.0
Total Hole Depth (mbgs): 10.0	**Bore Diameter (mm):** 100	**Casing Diameter (mm):** 75 **Casing Length (m):** 4.0

SUBSURFACE PROFILE			SAMPLE				
Depth (m)	**Graphic Log**	**Lithologic Description**	**Sample ID**	**PID (ppm)**	**Sample Type**	**Comments**	**Well Construction**
		Ground Surface					
0.0		**Silty CLAY (CL)** Silty CLAY, red-brown, heterogeneous, firm, medium plasticity, dry.				No odours, stains or ACM observed.	
1.0		**SHALE (SH)** Weathered SHALE, red, hard, dry.					
2.0							
3.0							
4.0							
5.0						No odours, stains or ACM observed.	
6.0							
7.0							
8.0							
9.0							
10.0		**End of Hole at 10 m bgs** Program depth					
11.0							
12.0							
13.0							
14.0							
15.0							



Method Solid Flight Auger	*Sample Type -*	*Reference Level -*	*Casing Type/Surface Finish -*	*Log Details -*
HA - Hand Auger	*U - Undisturbed tube sample*	*AHD - Australian Height Datum*	*PVC 18 - Class 18 PVC*	*Logged By:* Tyler Creese
SFA - Solid Flight Auger	*D - Disturbed sample*	*BGS - Below Ground Surface*	*MT - Monument*	*Project Manager:* Ken Coles
HFA - Hollow Flight Auger	*CS - Core sample*	*TOC - Top of Casing*	*RB - Roadbox*	
PT - Push Tube			*SP - Stickup/Standpipe*	
AH - Air Hammer				

NOTE: This bore log is for environmental assessment purposes only and is not intended to provide geotechnical information

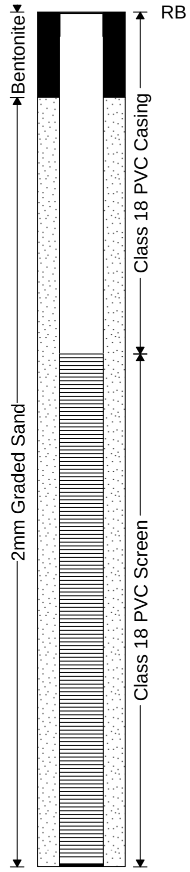
JBS&G	**Well No: MW03**	**Project No:** 43376 **Client:** APP Corporation **Project Name:** 43376 Box Hill North DSI+RAP **Site Address:** Box Hill, NSW

Date: 26/06/14	**Eastings (MGA):** -	**Water Level Initial (mbgs):** -
Contractor: Rockwell Drilling Services	**Northings (MGA):** -	**Water Level Static (mbgs):** -
Drill Rig: Geoprobe	**Reference Level:** -	**Casing Type/Surface Finish:** Roadbox
Method: Solid Flight Auger, Hammer	**Elevation: Surface (m)** - **TOC (m):** -	**Screen Diameter (mm):** 75 **Screen Length (m):** 6.0
Total Hole Depth (mbgs): 10.0	**Bore Diameter (mm):** 100	**Casing Diameter (mm):** 75 **Casing Length (m):** 4.0

SUBSURFACE PROFILE | **SAMPLE**

Depth (m)	Lithologic Description	Sample ID	PID (ppm)	Sample Type	Comments
0.0	Ground Surface				
0.0	**TOPSOIL (TS)** TOPSOIL, reworked natural.				No odours, stains or ACM observed.
1.0	**Silty CLAY (CL)** Silty CLAY, light-brown to red, heterogeneous, firm, medium plasticity, dry.				No odours, stains or ACM observed.
1.5	**SHALE (SH)** SHALE, grey-brown, dry.				No odours, stains or ACM observed.
5.5	**SANDSTONE (SS)** SANSTONE, dry.				No odours, stains or ACM observed.
10.0	**End of Hole at 10 m bgs** Program depth				

Well Construction



Method Solid Flight Auger	*Sample Type* -	*Reference Level* -	*Casing Type/Surface Finish* -	*Log Details* -
HA - Hand Auger	*U - Undisturbed tube sample*	*AHD - Australian Height Datum*	*PVC 18 - Class 18 PVC*	*Logged By:* Tyler Creese
SFA - Solid Flight Auger	*D - Disturbed sample*	*BGS - Below Ground Surface*	*MT - Monument*	*Project Manager:* Ken Coles
HFA - Hollow Flight Auger	*CS - Core sample*	*TOC - Top of Casing*	*RB - Roadbox*	
PT - Push Tube			*SP - Stickup/Standpipe*	
AH - Air Hammer				

NOTE: This bore log is for environmental assessment purposes only and is not intended to provide geotechnical information

JBS&G

Well No: MW04

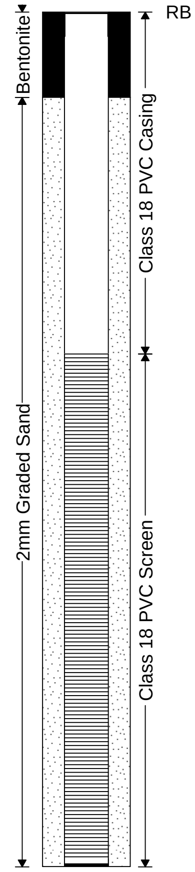
Project No: 43376
Client: APP Corporation
Project Name: 43376 Box Hill North DSI+RAP
Site Address: Box Hill, NSW

Date: 26/06/14
Contractor: Rockwell Drilling Services
Drill Rig: Geoprobe
Method: Solid Flight Auger, Hammer
Total Hole Depth (mbgs): 10.0

Eastings (MGA): -
Northings (MGA): -
Reference Level: -
Elevation: Surface (m) - **TOC (m):** -
Bore Diameter (mm): 100

Water Level Initial (mbgs): -
Water Level Static (mbgs): -
Casing Type/Surface Finish: Roadbox
Screen Diameter (mm): 75 **Screen Length (m):** 6.0
Casing Diameter (mm): 75 **Casing Length (m):** 4.0

SUBSURFACE PROFILE			SAMPLE				
Depth (m)	**Graphic Log**	**Lithologic Description**	**Sample ID**	**PID (ppm)**	**Sample Type**	**Comments**	**Well Construction**
		Ground Surface					
0.0		**Silty CLAY (CL)** Silty CLAY, reworked natural, red-brown, heterogeneous, firm, medium plasticity, dry.				No odours, stains or ACM observed.	
1.0		**Silty CLAY (CL)** As above, natural, not reworked.				No odours, stains or ACM observed.	
2.0		**Weathered SHALE (SH)** Weathered SHALE (SH), grey-brown, heterogeneous, dry.					
3.0						No odours, stains or ACM observed.	
4.0		**SHALE (SH)** SHALE, grey.					
5.0						No odours, stains or ACM observed.	
6.0		**SANDSTONE (SS)** SANSTONE, grey-brown.					
7.0							
8.0						No odours, stains or ACM observed.	
9.0							
10.0		**End of Hole at 10 m bgs** Program depth					
11.0							
12.0							
13.0							
14.0							
15.0							



Method Solid Flight Auger	*Sample Type -*	*Reference Level -*	*Casing Type/Surface Finish -*	*Log Details -*
HA - Hand Auger	*U - Undisturbed tube sample*	*AHD - Australian Height Datum*	*PVC 18 - Class 18 PVC*	*Logged By:* Tyler Creese
SFA - Solid Flight Auger	*D - Disturbed sample*	*BGS - Below Ground Surface*	*MT - Monument*	*Project Manager:* Ken Coles
HFA - Hollow Flight Auger	*CS - Core sample*	*TOC - Top of Casing*	*RB - Roadbox*	
PT - Push Tube			*SP - Stickup/Standpipe*	
AH - Air Hammer				

NOTE: This bore log is for environmental assessment purposes only and is not intended to provide geotechnical information

Well No: MW05

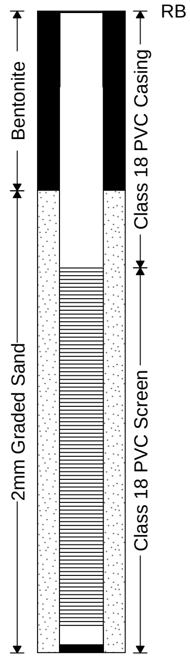
Project No: 43376
Client: APP Corporation
Project Name: 43376 Box Hill North DSI+RAP
Site Address: Box Hill, NSW

Date: 27/06/14
Contractor: Rockwell Drilling Services
Drill Rig: Geoprobe
Method: Solid Flight Auger, Hammer
Total Hole Depth (mbgs): 2.5

Eastings (MGA): -
Northings (MGA): -
Reference Level: -
Elevation: Surface (m) - **TOC (m):** -
Bore Diameter (mm): 100

Water Level Initial (mbgs): -
Water Level Static (mbgs): -
Casing Type/Surface Finish: Roadbox
Screen Diameter (mm): 75 **Screen Length (m):** 1.5
Casing Diameter (mm): 75 **Casing Length (m):** 1.0

SUBSURFACE PROFILE			SAMPLE				
Depth (m)	**Graphic Log**	**Lithologic Description**	**Sample ID**	**PID (ppm)**	**Sample Type**	**Comments**	**Well Construction**
		Ground Surface					RB
0.0		**Silty CLAY (CL)** Silty CLAY, red-brown, heterogeneous, firm, medium plasticity, dry.				No odours, stains or ACM observed.	
1.0							
		Weathered SHALE (SH) Weathered SHALE (SH), red-brown, heterogeneous, dry.				No odours, stains or ACM observed.	
2.0							
		Weathered SHALE (SH) As above, damp.				No odours, stains or ACM observed.	
		End of Hole at 2.5 m bgs Refusal on shale.					
3.0							
4.0							
5.0							



Method Solid Flight Auger	*Sample Type -*	*Reference Level -*	*Casing Type/Surface Finish -*	*Log Details -*
HA - Hand Auger	*U - Undisturbed tube sample*	*AHD - Australian Height Datum*	*PVC 18 - Class 18 PVC*	*Logged By:* Tyler Creese
SFA - Solid Flight Auger	*D - Disturbed sample*	*BGS - Below Ground Surface*	*MT - Monument*	*Project Manager:* Ken Coles
HFA - Hollow Flight Auger	*CS - Core sample*	*TOC - Top of Casing*	*RB - Roadbox*	
PT - Push Tube			*SP - Stickup/Standpipe*	
AH - Air Hammer				

NOTE: This bore log is for environmental assessment purposes only and is not intended to provide geotechnical information

Lot#	Date	Type*		Sample ID	Top Depth	Bottom Depth	Lithologic_Type	Lithological Description	Comments	PID (ppm)	Additional Notes
	25/06/2014		TP01	#1-TP01 0-0.1	0	0.3	Fill Silty SAND	Gravelly, Silty Sand, dark brown, heterogeneous, damp, medium density, poorly graded, inclusions of bitumen, bituminous gravel (30-50% anthropogenic inclusions).	No odours, staining or ACM observed.	0	Stockpile at this location (0.4 m high)
				#1-TP01 0.4-0.5	0.3	0.6	Fill Silty SAND	Gravelly, Silty Sand, dark brown, heterogeneous, damp, medium density, poorly graded, inclusions of silty clay, bitumen, bituminous gravel (30-50% anthropogenic inclusions).	No odours, staining or ACM observed.	0	
				#1-TP01 0.6-0.7	0.6	0.8	Silty CLAY	Silty Clay, orange-grey, heterogeneous, non-plastic, stiff, moist, inclusions of shale.	No odours, staining or ACM observed.	0	
	25/06/2014		TP02	#1-TP02 0-0.1	0	0.3	Fill Clayey SILT	Clayey Silt, dark brown, heterogeneous, non-plastic, soft, moist, inclusions of gravel and ACM.	ACM observed. No odours or staining observed.	-	East of cinder-block building, and beside driveway.
				#1-TP02 0.7-0.8	0.3	0.9	Fill Silty CLAY	Silty Clay, reworked natural, orange with grey and brown mottles, heterogeneous, medium plasticity, stiff, damp, inclusions of shale gravel and grass roots (total 30-50%).	No odours, staining or ACM observed.	-	End of excavation at 0.9 m due to services
	25/06/2014		TP03	#1-TP03 0-0.1	0	0.6	Fill SILT	Silt, brown, heterogeneous, loose, damp, inclusions of glass, clay and grass roots.	No odours, staining or ACM observed.	-	
				#1-TP03 0.4-0.5	0	0.6	Fill SILT	Silt, brown, heterogeneous, loose, damp, inclusions of glass, clay and grass roots.	No odours, staining or ACM observed.	-	Field, east of dam and west of buildings.
					0.6	0.7	Silty CLAY	Silty Clay, orange with grey mottles, heterogeneous, low plasticity, firm, damp with inclusions of shale.	No odours, staining or ACM observed.	-	
	25/06/2014		TP04	#1-G-TP04 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, inclusions of asphalt gravel.	No odours, staining or ACM observed.	0	
		G		#1-TP04 0.3-0.4	0.3	0.5	Fill Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
					0.5	0.7	Silty CLAY	Silty Clay, light brown, heterogeneous, low plasticity, hard, damp.	No odours, staining or ACM observed.	0	
	25/06/2014	SD	TP05	#1-SD-TP05 0-0.1	0	0.5	Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, hard, damp.	No odours, staining or ACM observed.	0	
	25/06/2014	SD	TP06	#1-SD-TP06 0-0.1, #1-TP06 0.4-0.5	0	0.5	Fill SAND	Gravelly, Clayey Sand, brown-grey, heterogeneous, damp, with asphaltic gravel and bitumen.	No odours, staining or ACM observed.	0.3-0.4	
				#1-TP06 0.7-0.8	0.5	0.8	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	25/06/2014	A	SS01	#1-SS01 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown, heterogeneous with inclusions of concrete, bitumen	No odours, staining or ACM observed.	0.3	
	25/06/2014	A	SS02	#1-SS02 0-0.1	0	0.1	Clayey SAND	Gravelly clayey sand, brown, heterogeneous	No odours, staining or ACM observed.	0	
	25/06/2014	SD/A	SS03	#1-SS03 0.2-0.3	0	0.3	Clayey SAND	Gravelly clayey sand, brown, heterogeneous	No odours, staining or ACM observed.	0	
	25/06/2014	S	SS04	#1-S-SS04 0-0.1	0	0.1	fill sandy CLAY	Gravelly sandy clay, brown, heterogeneous with ceramic fragment	No odours, staining or ACM observed.	0	
	25/06/2014	0	SS05	#1-0-SS05 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	0	Composite of 4 subsamples
	25/06/2014	0	SS06	#1-0-SS06 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	0	Composite of 4 subsamples
	25/06/2014	0	SS07	#1-0-SS07 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	0	Composite of 4 subsamples
#1	25/06/2014	0	SS08	#1-0-SS08 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	0	Composite of 4 subsamples
	4/07/2014	A	SS09	#1-A-SS09 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS10	#1-A-SS10 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS11	#1-SS11 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS12	#1-SS12 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS13	#1-SS13 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS14	#1-SS14 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS15	#1-SS15 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS16	#1-SS16 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS17	#1-SS17 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS18	#1-SS18 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS19	#1-SS19 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	A	SS20	#1-A-SS20 0-0.1	0	0.1	Fill Clayey SAND	Gravelly clayey sand, brown	No odours or staining	-	ACM fragments observed surrounding buildings
	4/07/2014	G	SS21	#1-G-SS21 0-0.1	0	0.1	Fill Silty CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	
	4/07/2014	G	SS22	#1-G-SS22 0-0.1	0	0.1	Fill Silty CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	
	4/07/2014	A	SS23	#1-A-SS23 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro house
	4/07/2014	A	SS24	#1-A-SS24 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro house
	4/07/2014	A	SS25	#1-A-SS25 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro shed
	4/07/2014	A	SS26	#1-A-SS26 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro shed
	4/07/2014	A	SS27	#1-A-SS27 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro house
	4/07/2014	A	SS28	#1-A-SS28 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro house
	4/07/2014	A	SS29	#1-A-SS29 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours or staining	-	ACM fragments observed at sample location
	4/07/2014	A	SS30	#1-A-SS30 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro house
	4/07/2014	A	SS31	#1-A-SS31 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation surrounding fibro shed
	4/07/2014	A	SS32	#1-A-SS32 0-0.1	0	0.1	Fill Sily CLAY	Silty clay, brown	No odours or staining	-	ACM fragments observed at sample location
	26/06/2014	SP	TP01	#2-TP01 0-0.1 #2-TP01 0.4-0.5	0	0.5	Fill SILT	Silt, reworked natural, brown-black, heterogeneous, loose, moist, inclusions of organic matter and tree roots.	No odours, staining or ACM observed.	- -	Mounded soil in garden bed, west of house.
					0.5	0.7	CLAY	Clay, red-brown, heterogeneous, low-plasticity, soft, moist.	No odours, staining or ACM observed.	-	
	26/06/2014	SP	TP02	#2-TP02 0-0.1	0	0.3	Fill SILT	Silt, reworked natural, dark brown, heterogeneous, loose, damp, inclusions of organic matter and tree roots.	No odours, staining or ACM observed.	-	Mounded soil in garden bed, west of house.
					0.3	0.6	CLAY	Clay, red-brown, heterogeneous, low plasticity, soft, moist.	No odours, staining or ACM observed.	-	
	26/06/2014	G	TP03	#2-TP03 0-0.1	0	0.3	SILT	Silt, grey-brown, heterogeneous, loose, damp, inclusions of grass roots and shale fragments.	No odours, staining or ACM observed.	-	
				#2-TP03 0.4-0.5	0.3	0.6	CLAY	Clay, red-brown, heterogeneous, low plasticity, damp, inclusions of shale.	No odours, staining or ACM observed.	-	
#2	2/07/2014	0	SS01	#2-0-SS01 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS02	#2-0-SS02 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS03	#2-0-SS03 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS04	#2-0-SS04 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS05	#2-0-SS05 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS06	#2-0-SS06 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS07	#2-0-SS07 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS08	#2-0-SS08 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	SD	SS01	#3-SD-SS01 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected at surface debris west of dam
	2/07/2014	A	SS02	#3-A-SS02 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected in yard behind house at western end of lot
	2/07/2014	A	SS03	#3-A-SS03 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected in yard behind house at western end of lot
	2/07/2014	A	SS04	#3-A-SS04 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected in yard behind house at western end of lot
	2/07/2014	0	SS05	#3-0-SS05 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS06	#3-0-SS06 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS07	#3-0-SS07 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS08	#3-0-SS08 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS09	#3-0-SS09 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS10	#3-0-SS10 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS11	#3-0-SS11 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS12	#3-0-SS12 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	0	SS13	#3-0-SS13 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	2/07/2014	A	SS15	#3-A-SS15 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected at debris in central portion of lot
	2/07/2014	A	SS16	#3-A-SS16 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected at debris in central portion of lot
	2/07/2014	A	SS17	#3-A-SS17 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected at debris in central portion of lot
	2/07/2014	S	SS18	#3-S-SS18 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected to investigate potential surface staining at buildings in cer
	2/07/2014	F	SS19	#3-S-SS19 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected at fire pit
	2/07/2014	S	SS20	#3-S-SS20 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected to investigate potential surface staining at buildings in cer
	2/07/2014	S	SS21	#3-S-SS21 0-0.1	0	0.1	Silty CLAY	Silty clay, brown, heterogeneous, firm	No odours, staining or ACM observed.	-	Collected to investigate potential surface staining at buildings in cer
#3	7/07/2014	SD	SS23	#3-SD-SS23 0-0.1	0	0.1	Sandy CLAY	Sandy Clay, brown, heterogeneous.	No odours, staining or ACM observed.	0	Collected at surface debris/old car at NW portion of lot
	7/07/2014	F	SS24	#3-F-SS24 0-0.1	0	0.1	Fill Sandy CLAY	Sandy Clay, brown, heterogeneous, inclusions of ash.	No odours, staining or ACM observed.	0.3	Collected at fire pit at NW portion of lot
	26/06/2014	SD	TP01	#3-SD-TP01 0-0.1	0	0.3	SILT	Silt, grey-brown, heterogeneous, loose, dry, inclusions of grass roots.	No odours, staining or ACM observed.	-	
				#3-SD-TP01 0.3-0.4	0.3	0.5	CLAY	Clay, orange-brown, heterogeneous, low-plasticity, stiff.	No odours, staining or ACM observed.	-	
	26/06/2014	SD	TP02	#3-SD-TP02 0-0.1	0	0.1	SILT	Silt, grey-brown, heterogeneous, loose, damp, inclusions of shale and grass roots.	No odours, staining or ACM observed.	-	
					0.1	0.4	CLAY	Clay, orange-brown, heterogeneous, low-plasticity, stiff.	No odours, staining or ACM observed.	-	
	26/06/2014	SD	TP03	#3-SD-TP03 0-0.1 #3-SD-TP03 0.3-0.4	0	0.5	Fill SILT	Silt, grey-brown, heterogeneous, loose, damp, inclusions of bricks, concrete, plastic, cement tiles and charcoal.	No odours, staining or ACM observed.	- -	
					0.5	0.6	CLAY	Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	27/06/2014	G	TP04	#3-TP04 0-0.1	0	0.4	Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
				#3-TP04 0.5-0.6	0.4	0.6	Silty CLAY	Gravelly Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	27/06/2014		TP05	#3-TP05 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.3	0.5	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	27/06/2014		TP06	#3-TP06 0-0.1	0	0.5	Fill CLAY	Gravelly Silty Clay, grey-brown, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	-	
				#3-TP06 0.5-0.6	0.5	0.8	Fill Silty CLAY	Gravelly Silty Clay, reworked natural, light grey-red, inclusions of brown silty clay and shale.	No odours, staining or ACM observed.	-	
					0.8	1.2	Silty CLAY	Gravelly Silty Clay, red-grey, inclusions of brown silty clay and shale.	No odours, staining or ACM observed.	-	
				#3-TP06 1.3-1.4	1.2	1.5	Silty CLAY	Silty Clay, orange-grey, heterogeneous, low plasticity, stiff, damp, inclusions of grey weathered shale.	No odours, staining or ACM observed.	-	
	27/06/2014		TP07	#3-TP07 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, reworked natural, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Sample #3-SED01 collected from nearby location (saturated silty clay)
				#3-TP07 0.3-0.4	0.2	0.4	Silty CLAY	Gravelly Silty Clay, light grey, heterogeneous, damp, inclusions of shale.	No odours, staining or ACM observed.	0	

	25/06/2014	SP	TP01	#4-SP-TP01 0-0.1	0	0.5	Fill SILT	Silt, reworked natural, grey-brown, heterogeneous, very loose, dry inclusions of grass roots and gravel.	No odours, staining or ACM observed.	-	
					0.5	0.7	SILT	Silt, grey-brown, heterogeneous, medium density, damp, inclusions of grass roots and gravel.	No odours, staining or ACM observed.	-	Stockpile (0.5 m high), east of house,
				#4-SP-TP01 0.7-0.8	0.7	0.8	Silty CLAY	Silty Clay, orange, heterogeneous, firm, moist.	No odours, staining or ACM observed.	-	
	25/06/2014		TP02	#4--TP02 0-0.1	0	0.2	SILT	Silt, brown, heterogeneous, loose, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	Field south of house.
					0.2	0.4	Silty CLAY	Silty Clay, orange-brown with red mottles, heterogeneous, non-plastic, damp.	No odours, staining or ACM observed.	-	
	25/06/2014	V	TP03	#4-V-TP03	0	0.3	SILT	Silt, brown, heterogeneous, loose, damp, inclusions of gravel and grass roots.	No odours, staining or ACM observed.	-	Field south of house, near southern fence.
				#4-V-TP03	0.3	0.4	Silty CLAY	Silty Clay, orange-brown, heterogeneous, low plasticity, damp.	No odours, staining or ACM observed.	-	
	25/06/2014	V	TP04		0	0.5	Silty CLAY	Silty Clay, brown, heterogeneous, low-medium plasticity, firm.	No odours, staining or ACM observed.	-	
	25/06/2014	SP	TP05	#4-SP-TP05 0-0.1 #4-SP-TP05 0.5-0.6	0	0.6	Fill Sandy CLAY	Gravelly, Sandy Clay, brown, heterogeneous, low-plasticity, firm, damp, inclusions of brick, ceramics, steel and plastic (approximately 15% anthropogenic).	No odours, staining or ACM observed.	0 0	Stockpile (0.6 m high)
					0.6	0.9	Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	25/06/2014	G	TP06	#4-G-TP06 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	0	Edge of dam. Sample #4-SED01 collected from nearby dam
				#4-G-TP06 0.2-0.3	0.1	0.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	0	(saturated sample)
	25/06/2014	SD	TP07	#4-SD-TP07 0-0.1 #4-SD-TP07 0.4-0.5	0	0.6	Fill Silty CLAY	Silty Clay/Topsoil, dark brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0 0	
					0.6	0.8	Fill Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, damp.	No odours, staining or ACM observed.	-	
	25/06/2014		TP08		0	0.1	Fill GRAVEL	Road base/gravel.	No odours, staining or ACM observed.	-	
				#4--TP08 0.2-0.3	0.1	0.4	Fill GRAVEL	Road base/gravel, with brown-orange silty clay.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
#4	3/07/2014	O	SS01	#4-O-SS01 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS02	#4-O-SS02 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS03	#4-O-SS03 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS04	#4-O-SS04 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS05	#4-O-SS05 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS06	#4-O-SS06 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS07	#4-O-SS07 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS08	#4-O-SS08 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS09	#4-O-SS09 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	O	SS10	#4-O-SS10 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Composite of 4 subsamples
	3/07/2014	A	SS11	#4-A-SS11 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS12	#4-A-SS12 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS13	#4-A-SS13 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS14	#4-A-SS14 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS15	#4-A-SS15 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS16	#4-A-SS16 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS17	#4-A-SS17 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS18	#4-A-SS18 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS19	#4-A-SS19 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	A	SS20	#4-A-SS20 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Asbestos investigation around farm builidngs
	3/07/2014	G	SS21	#4-G-SS21 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	
	3/07/2014	G	HA01	#5-HA01 0-0.1	0	0.3	Silty CLAY	Silty Clay, brown-orange, heterogeneous, firm, damp.	No odours, staining or ACM observed.	0	
	3/07/2014	G	HA02	#5-HA02 0-0.1	0	0.3	Silty CLAY	Silty Clay, brown-orange, heterogeneous, firm, damp.	No odours, staining or ACM observed.	0	
	3/07/2014		SS01	#5-SS01 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown.	No odours, staining or ACM observed.	0	Building footing - east.
	3/07/2014		SS02	#5-SS02 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown.	No odours, staining or ACM observed.	0	Building footing - west.
#5	3/07/2014	A	SS03	#5-A-SS03 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay/Topsoil	No odours, staining or ACM observed.	0	Eastern side of chicken coop
	3/07/2014	A	SS04	#5-A-SS04 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay/Topsoil, inclusions of ACM.	ACM observed. No odours or staining observed.	0	Western side of chicken coop
	3/07/2014	O	SS05	#5-O-SS05 0-0.1	0	0.1	Sandy CLAY	Sandy Clay/Topsoil, brown.	No odours, staining or ACM observed.	0	Composite of 4 subsamples
	3/07/2014	O	SS06	#5-O-SS06 0-0.1	0	0.1	Sandy CLAY	Sandy Clay/Topsoil, brown.	No odours, staining or ACM observed.	0	Composite of 4 subsamples
	3/07/2014	O	SS07	#5-O-SS07 0-0.1	0	0.1	Sandy CLAY	Sandy Clay/Topsoil, brown.	No odours, staining or ACM observed.	0	Composite of 4 subsamples
	27/06/2014		TP01	#6-TP01 0-0.1	0	0.2	Topsoil	Topsoil, dark brown, heterogeneous, loose, damp, inclusions of sand and grass roots.	No odours, staining or ACM observed.	-	
					0.2	0.4	Silty CLAY	Sand, grey, heterogeneous, loose, damp, inclusions of sandstone.	No odours, staining or ACM observed.	-	
				#6-TP01 0.5-0.6	0.4	0.6	SAND	Sand, yellow, heterogeneous, loose, damp, inclusions of sandstone.	No odours, staining or ACM observed.	-	
	27/06/2014		TP02	#6-TP02 0-0.1	0	0.15	Topsoil	Topsoil, brown-black, heterogeneous, medium dense, moist, inclusions of sand.	No odours, staining or ACM observed.	-	
					0.15	0.4	Silty SAND	Silty Sand, grey, heterogeneous, loose, moist.	No odours, staining or ACM observed.	-	
					0.4	0.8	Silty SAND	Silty Sand, yellow-brown, heterogeneous, loose, moist, inclusions of clay and sandstone.	No odours, staining or ACM observed.	-	
	27/06/2014		TP03	#6-TP03 0-0.1	0	0.3	Topsoil	Topsoil, brown-black, heterogeneous, loose, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	Field previously used as orchard.
					0.3	0.5	Clayey SAND	Clayey Sand, grey-brown, heterogeneous, loose, damp, inclusions of grass roots and sandstone.	No odours, staining or ACM observed.	-	
					0.5	0.7	Clayey SAND	Clayey Sand, yellow, heterogeneous, loose, damp, inclusions of clay and sandstone.	No odours, staining or ACM observed.	-	
	27/06/2014	V	TP04		0	0.4	Topsoil	Topsoil/Silty Clay, brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
					0.4	0.6	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	27/06/2014	V	TP05		0	0.4	Topsoil	Topsoil/Silty Clay, brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
					0.4	0.6	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, inclusions of shale.	No odours, staining or ACM observed.	-	
	27/06/2014		TP06	#6-TP06 0-0.1	0	0.4	Fill Topsoil	Topsoil/Silty Clay, reworked natural, brown, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	27/06/2014	IF	SS01	#6-IF-SS01 0-0.1	0	0.1	SAND	Sand, grey-brown, soft	No odours, staining or ACM observed.	0	
	27/06/2014	0	SS02	#6-O-SS02 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS03	#6-O-SS03 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS04	#6-O-SS04 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS05	#6-O-SS05 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
#6	27/06/2014	0	SS06	#6-O-SS06 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown with shale	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS07	#6-O-SS07 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS08	#6-O-SS08 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS09	#6-O-SS09 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS10	#6-O-SS10 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS11	#6-O-SS11 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS12	#6-O-SS12 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS13	#6-O-SS013 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	S	SS14	#6-S-SS014 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown with asphaltic gravel	No odours, staining or ACM observed.	0	
	27/06/2014	S	SS15	#6-S-SS015 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown with asphaltic gravel	No odours, staining or ACM observed.	0	
	27/06/2014	S	SS16	#6-S-SS016 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Sample collected beside a drum
	27/06/2014	0	SS17	#6-O-SS017 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS18	#6-O-SS018 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS19	#6-O-SS019 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	0	SS20	#6-O-SS020 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Composite of four subsamples
	27/06/2014	A	SS21	#6-A-SS021 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Sample collected around chicken house
	27/06/2014	A	SS22	#6-A-SS022 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Sample collected around chicken house
	27/06/2014	A	SS23	#6-A-SS023 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Sample collected around chicken house
	27/06/2014	A	SS24	#6-A-SS024 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Sample collected around chicken house
	27/06/2014	A	SS25	#6-A-SS025 0-0.1	0	0.1	Silty CLAY	Sandy silty clay, brown, heterogeneous	No odours, staining or ACM observed.	0	Sample collected around chicken house

	27/06/2014	G	TP01	#7-TP01 0-0.1	0	0.4	Fill Silty CLAY	Gravelly Silty Clay/Topsoil, brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
				#7-TP01 0.4-0.5	0.4	0.6	Silty CLAY	Gravelly Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
	27/06/2014		TP02	#7-TP02 0-0.1	0	0.2	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Sample S-SED01 collected nearby (saturated sample).
				#7-TP02 0.3-0.4	0.2	0.5	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	0	
	27/06/2014	SP	TP03	#7-TP03 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, reworked natural, red-brown, heterogeneous, firm.	No odours, staining or ACM observed.	0	Sample collected at stockpile
					0.2	0.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, firm.	No odours, staining or ACM observed.	0	
#7	27/06/2014	V	TP04	#7-TP04 0-0.1	0	0.3	Topsoil	Topsoil, inclusions of roots and charcoal.	No odours, staining or ACM observed.	0	
					0.2	0.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, firm, medium plasticity, damp.	No odours, staining or ACM observed.	0	
	27/06/2014	V	TP05	#7-TP05 0-0.1	0	0.2	Topsoil	Topsoil, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.2	0.4	Silty CLAY	Silty Clay, light-brown, heterogeneous, firm, medium plasticity.	No odours, staining or ACM observed.	-	
	27/06/2014	A	SS01	#7-ASS01 0-0.1	0	0.1	Topsoil	Topsoil, brown, damp		0	
	27/06/2014		SS02	#7-ASS02 0-0.1	0	0.1	Topsoil	Topsoil, brown, damp		0	
	7/07/2014		SS01	#8-SS01 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown, grassed area	No odours, staining or ACM observed.	-	
	1/07/2014	SP	TP01	#8-SP-TP01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay/Topsoil, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.3	0.7	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	1/07/2014	V	TP02		0	0.3	Silty CLAY	Silty Clay/Topsoil, brown.	No odours, staining or ACM observed.	-	
					0.3	0.6	Silty CLAY	Silty Clay, red brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	1/07/2014	G	TP03	#8-TP03 0-0.1	0	0.2	Fill CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, dry, inclusions of brick, sandstone and wood (10% anthropogenic inclusions).	No odours, staining or ACM observed.	0	Raised ground (0.15 m)
#8				#8-TP03 0.3-0.4	0.3	0.8	CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	1/07/2014	G	TP04	#8-TP04 0-0.1 #8-TP04 0.3-0.4	0	0.4	Fill CLAY	Silty Clay/Road base, brown.	No odours, staining or ACM observed.	0	
					0.4	0.8	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	1/07/2014	V	TP05		0	0.2	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
					0.2	0.5	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	1/07/2014	V	TP06		0	0.2	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown	No odours, staining or ACM observed.	-	
					0.2	0.5	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	7/07/2014	SD	HA01	#9-SP-HA01 0-0.1	0.0	0.1	Fill SILT	Silt, brown-grey, heterogeneous, loose-medium dense, dry, inclusions of charcoal and sheet plastic.	No odours, staining or ACM observed.	-	Sample collecetd near surface debris
				#9-SP-HA01 0.3-0.4	0.1	0.4	SILT	Silt, brown, heterogeneous, medium dense, damp.	No odours, staining or ACM observed.	-	
	7/07/2014	SD	HA02	#9-SP-HA02 0-0.1	0	0.1	Fill SILT	Silt, brown-grey, heterogeneous, medium dense, damp, inclusions of twine, MDF, grass roots.	No odours, staining or ACM observed.	-	Sample collecetd near surface debris
				#9-SP-HA02 0.3-0.4	0.1	0.4	SILT	Silt, brown, heterogeneous, medium dense, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	
	7/07/2014	V	HA03		0	0.2	Fill SILT	Silt, reworked natural, brown, heterogeneous, medium dense, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	
					0.2	0.5	Silty CLAY	Silty Clay, red-brown, heterogeneous, low plasticity, firm, moist.	No odours, staining or ACM observed.	-	
	7/07/2014	G	HA04	#9-G-HA04 0-0.1	0	0.2	Fill Clayey SILT	Clayey Silt, reworked natural, brown-black, heterogeneous, medium dense, wet, inclusions of clay.	No odours, staining or ACM observed.	-	
				#9-G-HA04 0.3-0.4	0.2	0.5	Silty CLAY	Silty Clay, orange-brown, heterogeneous, low plasticity, soft, moist, inclusions of gravel.	No odours, staining or ACM observed.	-	
	7/07/2014		HA05	#9-HA05 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, dark brown, heterogeneous, low plasticity, soft, wet, inclusions of gravel.	No odours, staining or ACM observed.	-	
					0.1	0.4	Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, wet.	No odours, staining or ACM observed.	-	
	7/07/2014	A	HA06	#9-HA06 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, orange-brown, heterogeneous, non-plastic, hard, dry, inclusions of shale.	No odours, staining or ACM observed.	-	Farm dam, also inspection for potential ACM
				#9-HA06 0.2-0.3	0.1	0.4	Silty CLAY	Silty Clay, orange-brown, heterogeneous, low plasticity, soft, moist, inclusions of shale.	No odours, staining or ACM observed.	-	
	7/07/2014	A	HA07	#9-HA07 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, grey-brown, heterogeneous, non-plastic, hard, dry, inclusions of shale.	No odours, staining or ACM observed.	-	Farm dam, also inspection for potential ACM
				#9-HA07 0.3-0.4	0.1	0.4	Fill Silty CLAY	Silty Clay, reworked natural, grey-brown, heterogeneous, non-plastic, hard, moist, inclusions of shale.	No odours, staining or ACM observed.	-	
				#9-HA07 0.5-0.6	0.4	0.6	Fill CLAY	Clay, reworked natural, grey, with orange and brown mottles, heterogeneous, medium plasticity, soft, damp, inclusions of shale.	No odours, staining or ACM observed.	-	
	7/07/2014		HA08	#9-HA08 0-0.1	0	0.2	Clayey SILT	Clayey Silt, brown-black, heterogeneous, loose, wet, inclusions of sheet plastic and shale fragments.	No odours, staining or ACM observed.	-	
					0.2	0.5	Silty CLAY	Silty Clay, orange-brown, heterogeneous, low plasticity, soft, saturated, inclusions of shale fragments.	No odours, staining or ACM observed.	-	
	7/07/2014	AST	SS01	#9-AST-SS01 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	
#18	7/07/2014	S	SS02	#9-S-SS02 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay	No odours or ACM observed.	-	Sample at surface staining
	7/07/2014	SD	SS03	#9-SD-SS03 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	Surface debris - tyres, bottles, drums
	7/07/2014	SD	SS04	#9-SD-SS04 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	Surface debris - tractor, drums
	7/07/2014	SD	SS05	#9-SD-SS05 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	Surface debris - machinery (compressor)
	23/06/2014	G	TP01	#9-G-TP01 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, dry.	No odours, staining or ACM observed.	0	
				#9-G-TP01 0.2-0.3	0.2	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, dry, inclusions of orange clay.	No odours, staining or ACM observed.	0	
				#9-G-TP01 0.3-0.4	0.3	0.6	Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
	23/06/2014		TP02	#9-TP02 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, dry.	No odours, staining or ACM observed.	0	
				#9-TP02 0.3-0.4	0.2	0.4	Fill Silty CLAY	Silty Clay, light brown, heterogeneous, low plasticity, firm, dry, inclusions of orange clay.	No odours, staining or ACM observed.	0	
				#9-TP02 0.4-0.5	0.4	0.7	Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, stiff.	No odours, staining or ACM observed.	0	
	23/06/2014	V	TP03		0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.3	0.5	Fill Silty CLAY	Silty Clay, reworked natural, orange-light brown, heterogeneous, low-medium plasticity, firm.	No odours, staining or ACM observed.	0	
					0.5	0.7	Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	0	
	23/06/2014		TP04	#9-TP04 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, dry-damp.	No odours, staining or ACM observed.	0	
				#9-TP04 0.4-0.5	0.4	0.7	Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, stiff.	No odours, staining or ACM observed.	0	
	23/06/2014		TP05	#9-TP05 0-0.1	0	0.4	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, dry.	No odours, staining or ACM observed.	0	Market garden, ploughed.
				#9-TP05 0.4-0.5	0.4	0.6	Fill Silty CLAY	Silty Clay, orange-light brown, heterogeneous, low-medium plasticity, firm, dry.	No odours, staining or ACM observed.	0	
				#9-TP05 0.7-0.8	0.6	0.8	Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, stiff.	No odours, staining or ACM observed.	0	
	23/06/2014	A	TP06	#9-A-TP06 0-0.1 #9-A-TP06 0.4-0.5	0	0.6	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Stockpiled material next to dam, inspect for possible ACM
				#9-A-TP06 0.8-0.9	0.6	1	Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
	23/06/2014		TP07	#9-TP07 0-0.1 #9-TP07 0.9-1.0	0	1	Fill Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	Dam wall. No sediment sample possible, banks too steep (3.0m hig
	23/06/2014	A	TP08	#9-TP08 0-0.1	0	0.4	Silty CLAY	Silty Clay, orange-light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Dam wall, inspect for possible ACM
				#9-TP08 0.4-0.5 #9-TP08 0.9-1.0	0.4	1.3	Silty CLAY	Gravelly Silty Clay, orange-light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#9-TP08 1.4-1.5	1.3	1.5	Silty CLAY	Silty Clay, orange-grey, heterogeneous, medium plasticity, firm, damp-moist.	No odours, staining or ACM observed.	0	
	2/07/2014		TP01	#10-TP01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Possible former dam (infilled)
				#10-TP01 0.3-0.4	0.3	0.6	Silty CLAY	Silty Clay/Topsoil, red-brown, heterogeneous, medium plasticity, firm-stiff.	No odours, staining or ACM observed.	0	
	2/07/2014		TP02	#10-TP02 0-0.1	0	1	Silty CLAY	Silty Clay with shale, red-grey, heterogeneous, firm.	No odours, staining or ACM observed.	0	Farm dam
				#10-TP02 0.3-0.4	0	1	Fill Silty CLAY	Silty Clay with shale, reworked natural, red-grey, heterogeneous, firm.	No odours, staining or ACM observed.	0	
				#10-TP02 1.1-1.2	1	1.5	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	2/07/2014	V	TP03		0	0.2	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural.	No odours, staining or ACM observed.	-	
					0.2	0.5	Silty CLAY	Silty Clay, light-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	2/07/2014		TP04	#10-TP04 0-0.1	0	0.2	Fill Topsoil	Topsoil, gravel, bitumen.	No odours, staining or ACM observed.	0	Old road.
				#10-TP04 0.2-0.3	0.2	0.5	Silty CLAY	Silty Clay, grey-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	30/06/2014	S	TP01	#11-S-TP01 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay/Topsoil, dark brown.	No ACM observed.	0	Surface stains. Oil on grass beside driveway.
				#11-S-TP01 0.3-0.4	0.1	0.4	Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, brown-grey, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	1/07/2014		TP02	#11-TP02 0-0.1	0	0.2	Fill Silty CLAY	Sandy Silty Clay, grey-dark, brown, heterogeneous, medium plasticity, firm, damp, inclusions of gravel.	No odours, staining or ACM observed.	0.3	
				#11-TP02 0.3-0.4	0.2	0.4	Gravelly CLAY	Gravelly clay, brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	0	
#10	1/07/2014	V	TP03		0	0.3	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, dark-brown, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
					0.3	0.5	Silty CLAY	Silty Clay, light grey, heterogeneous, medium-high plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	1/07/2014	SP	TP04	#11-SP-TP04			Fill Silty CLAY	Silty Clay, reworked natural, light brown-grey, inclusions of shale.	No odours, staining or ACM observed.	-	Stockpile (0.8 m), no fire pit observed.
	1/07/2014	V	TP05		0	0.5	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	-	
					0.5	0.7	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	1/07/2014		TP06	#11-TP06 0-0.1	0	0.7	Fill Silty CLAY	Silty Clay and Shale (80%), reworked natural, dark grey-brown, heterogeneous, non-plastic, firm, dry.	No odours, staining or ACM observed.	0	Sample #11-SED01 collected nearby (saturated sample)
				#11-TP06 0.8-0.9	0.7	1.9	Fill Silty CLAY	Silty Clay, reworked natural, red-grey, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#11-TP06 2.0-2.1	1.9	2.5	Silty CLAY	Silty Clay, red-grey, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	1/07/2014		TP07	#11-TP07 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, reworked natural, orange, heterogeneous, firm, medium plasticity, damp.	No odours, staining or ACM observed.	0	
				#11-TP07 0.3-0.4	0.2	1	Silty CLAY	Silty Clay, orange, heterogeneous, firm, medium plasticity, damp.	No odours, staining or ACM observed.	-	
	1/07/2014	G	TP08	#11-TP08 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, dark brown, heterogeneous, low plasticity, soft-firm, damp.	No odours, staining or ACM observed.	0	
				#11-TP08	0.3	0.6	Silty CLAY	Silty Clay, dark brown, heterogeneous, medium-high plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	1/07/2014	G	TP09	#11-G-TP09 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay/Topsoil, brown, heterogeneous, low plasticity, soft-firm, damp.	No odours, staining or ACM observed.	0	
				#11-G-TP09 0.4-0.5	0.3	0.7	Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, soft-firm, damp.	No odours, staining or ACM observed.	0	

	30/06/2014	G	TP01	#12-G-TP01 0-0.1 #12-G-TP01 0.4-0.5	0	0.5	Silty CLAY	Silty Clay, brown, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.5	0.5	SANDSTONE	Sandstone, white-red.	No odours, staining or ACM observed.	-	
	30/06/2014	V	TP02		0	0.5	Silty CLAY	Sandy Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
					0.5	0.7	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	30/06/2014		TP03	#12-TP03 0-0.1	0	0.3	Silty CLAY	Silty Clay/Topsoil, brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	Sample #12-SED01 collected at east end of dam (saturated sample)
				#12-TP03 0.4-0.5	0.3	0.5	Silty CLAY	Silty Clay/Topsoil, orange-grey, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	30/06/2014	V	TP04		0	0.4	Silty CLAY	Silty Clay/Topsoil, brown.	No odours, staining or ACM observed.	-	
					0.4	0.6	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	30/06/2014	SD	TP05	#12-SD-TP05 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, orange-grey, heterogeneous, medium plasticity, firm, damp, inclusions of brick, ceramic and wood.	No odours, staining or ACM observed.	0	
	30/06/2014	SD	TP05	#12-SD-TP05 0.3-0.4	0.3	0.7	Silty CLAY	Silty Clay, orange-grey, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
#12	4/07/2014	A	SS01	#12-A-SS01 0-0.1	0	0.1	Topsoil	Silty Clay/Topsoil, brown.	No odours or staining.	-	Asbestos investigation for greenhouse on adjoining lot. Some asbestos fragments ob served near sample location SS01
	4/07/2014	A	SS02	#12-A-SS02 0-0.1	0	0.1	Topsoil	Silty Clay/Topsoil, brown.	No odours or staining.	-	Asbestos investigation for greenhouse on adjoining lot
	4/07/2014	A	SS03	#12-A-SS03 0-0.1	0	0.1	Topsoil	Silty Clay/Topsoil, brown.	No odours, staining or ACM observed.	-	Asbestos investigation for greenhouse on adjoining lot
	4/07/2014	A	SS04	#12-A-SS04 0-0.1	0	0.1	Topsoil	Silty Clay/Topsoil, brown.	No odours, staining or ACM observed.	-	Asbestos investigation for greenhouse on adjoining lot
	4/07/2014	A	SS05	#12-A-SS05 0-0.1	0	0.1	Topsoil	Silty Clay/Topsoil, brown.	No odours, staining or ACM observed.	-	Asbestos investigation for greenhouse on adjoining lot
	4/07/2014	SD	SS06	#12-SD-SS06 0-0.1	0	0.1	Fill Sandy CLAY	Gravelly sandy clay fill	No odours, staining or ACM observed.	-	Surface debris includes drums
	4/07/2014	SD	SS07	#12-SD-SS07 0-0.1	0	0.1	Fill Sandy CLAY	Gravelly sandy clay fill	No odours or staining. Suspected ACM fragment observed.	-	Surface debris includes drums, sample collected from small stockpile (0.5 m high)
	4/07/2014	SD	SS08	#12-SD-SS08 0-0.1	0	0.1	Fill Sandy CLAY	Gravelly sandy clay fill	No odours, staining or ACM observed.	-	Surface debris includes machinery
	4/07/2014	AST	SS09	#12-AST-SS090-0.1	0	0.1	Fill Sandy CLAY	Gravelly sandy clay fill	No odours, staining or ACM observed.	-	Surface debris includes drums
	30/06/2014	G	TP01	#13-TP01 0-0.1	0	0.5	Fill Silty CLAY	Silty Clay, reworked natural, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#13-TP01 0.5-0.6	0.5	0.7	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
	30/06/2014		TP02	#13-TP02 0-0.1	0	0.5	Fill Silty CLAY	Sandy, Silty Clay, reworked natural, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#13-TP02 0.5-0.6	0.5	0.7	Sandy CLAY	Gravelly, Sandy Clay, brown, heterogeneous, low plasticity, firm, damp, inclusions of sandstone.	No odours, staining or ACM observed.	0	
	30/06/2014	SP	TP03	#13-SP-TP03 0-0.1	0	0.6	Fill Silty CLAY	Silty Clay, reworked natural, brown, heterogeneous, low-medium plasticity, soft-firm, dry with traces of steel and glass.	No odours, staining or ACM observed.	0	Stockpile 0.5m high, grassed.
				#13-SP-TP03 0.4-0.5	0	0.6	Fill Silty CLAY	Silty Clay, reworked natural, brown, heterogeneous, low-medium plasticity, soft-firm, dry with traces of steel and glass.	No odours, staining or ACM observed.	0	
				#13-SP-TP03 0.8-0.9	0.6	1	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
#13	30/06/2014		TP04	#13-TP04 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, low-medium plasticity, firm.	No odours, staining or ACM observed.	0	Sample #13-SED01 collected nearby (saturated sample)
				#13-TP04 0.4-0.5	0.2	0.9	Fill Silty CLAY	Silty Clay, reworked natural, red-brown, heterogeneous, firm, medium plasticity, damp.	No odours, staining or ACM observed.	0	
				#13-TP04	0.9	1.3	Silty CLAY	Silty Clay, red-brown, heterogeneous, firm, medium plasticity, damp.	No odours, staining or ACM observed.	-	
	30/06/2014		TP05	#13-TP05 0-0.1	0	0.6	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, low plasticity, firm.	No odours, staining or ACM observed.	0	
				#13-TP05 0.7-0.8	0.6	0.9	Fill Silty CLAY	Silty Clay, reworked natural, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#13-TP05	0.9	1.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	30/06/2014		TP06	#13-TP06 0-0.1 #13-TP06 0.9-1.0 #13-TP06 1.9-2.0	0	2	Fill Silty CLAY	Gravelly Silty Clay, reworked natural, red-brown, heterogeneous, low-medium plasticity, firm, damp, inclusions of sandstone.	No odours, staining or ACM observed.	0	EOH @ 2.0 m - unstable walls
	30/06/2014	SD	TP07	#13-SD-TP07 0-0.1	0	0.2	SILT	Silt/Topsoil, brown, heterogeneous.	No odours, staining or ACM observed.	-	EOH @ 0.2 m - refusal on sandstone
				#13-SD-TP07	0.2	0.2	SANDSTONE	Sandstone, red.	No odours, staining or ACM observed.	-	
	3/07/2014	G	TP01	#14-G-TP01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, damp-dry, inclusions of roots.	No odours, staining or ACM observed.	0	Paddock.
				#14-G-TP01 0.3-0.4	0.3	0.4	Silty CLAY	Silty Clay, light brown, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.4	0.4	SANDSTONE	Sandstone.	No odours, staining or ACM observed.	0	
	3/07/2014	SP	TP02	#14-SP-TP02 0-0.1	0	0.4	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Surface debris/stockpile of bricks, wood, steel (0.2 m high)
#14					0.4	0.6	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
	3/07/2014	V	TP03	#14-V-TP03	0	0.2	Silty CLAY	Silty Clay/Topsoil, light brown, heterogeneous, low plasticity, firm.	No odours, staining or ACM observed.	-	
				#14-V-TP03	0.2	0.5	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	3/07/2014	SD	TP04	#14-SD-TP04 0-0.1	0	0.4	Silty CLAY	Silty Clay, light brown, heterogeneous, low-medium plasticity, firm-stiff, damp.	No odours, staining or ACM observed.	0	Surface debris of trailer, rubber, old machinery, timber.
	3/07/2014	G	TP05	#14-G-TP05 0-0.1	0	0.5	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Near to creek.
	3/07/2014	V	TP06		0	0.5	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	1/07/2014		TP01	#15-TP01 0-0.1	0	0.3	Silty CLAY	Silty Clay/Topsoil, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
					0.3	0.6	Silty CLAY	Silty Clay, light brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	1/07/2014		TP02	#15-TP02 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, reworked natural, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#15-TP02 0.2-0.3	0.2	0.5	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
#15	1/07/2014		TP03	#15-TP03 0.1-0.2	0	0.4	Fill Silty CLAY	Silty Clay, reworked natural, red-brown, heterogeneous, low plasticity, firm, dry.	No odours, staining or ACM observed.	0	Small stockpile (0.3 m)
					0.4	0.7	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	1/07/2014	G	TP04	#15-TP04 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay/Topsoil, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.2	0.5	Silty CLAY	Silty Clay, light brown-red, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	1/07/2014	A	SS01	#15-A-SS01 0-0.1	0	0.1	Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.		Sample collected near fibro shed, walls in good condition with no fragments observed on ground
	7/07/2014	SD	HA01	#16-SD-HA01 0-0.1	0	0.2	Fill CLAY	Sandy Clay, brown.	No odours, staining or ACM observed.	0	Debris - drums
				#16-SD-HA01 0.2-0.3	0.2	0.3	Silty CLAY	Silty Clay, light brown.	No odours, staining or ACM observed.	0	
	7/07/2014	SD	HA02	#16-SD-HA02 0-0.1	0	0.3	Silty CLAY	Silty Clay, light brown.	No odours, staining or ACM observed.	0	Debris - ash
	7/07/2014	SD	HA03	#16-SD-HA03 0-0.1	0	0.3	Silty CLAY	Silty Clay, light brown.	No odours, staining or ACM observed.	0	Debris - ash, bottles, drums, tyres, wood
				#16-SD-HA03 0.2-0.3	0.2	0.3	Silty CLAY	Silty Clay, light brown.	No odours, staining or ACM observed.	0	
	7/07/2014	SD	HA04	#16-SD-HA04 0-0.1	0	0.3	Silty CLAY	Silty Clay, light brown.	No odours, staining or ACM observed.	0	Near water tank - debris (bottles)
	7/07/2014	G	HA05	#16-G-HA05 0-0.1	0	0.3	Silty CLAY	Silty Clay, light brown.	No odours, staining or ACM observed.	0	
	23/06/2014		TP01	#16-TP01 0-0.1	0	0.15	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	CSS = natural material from site.
				#16-TP01 0.4-0.5	0.15	2	SANDSTONE	Crushed sandstone, light brown, heterogeneous, firm.	No odours, staining or ACM observed.	0	
	23/06/2014		TP01	#16-TP01 2.1-2.2	2	2.2	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
#16	23/06/2014		TP02	#16-TP02 0.0-0.1 #16-TP02 0.9-1.0	0	1.2	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	0	Sample #16-SED01 collected nearby (saturated silty clay)
				#16-TP02 1.4-1.5	1.2	1.5	Silty CLAY	Silty Clay, orange-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	23/06/2014	SD	TP03	#16-TP03 0.0-0.1	0	0.2	Fill Topsoil	Topsoil, dark grey-brown, heterogeneous, soft, inclusions of burnt material.	No odours, staining or ACM observed.	0	Burned area near stockpiles.
				#16-TP03 0.3-0.4	0.2	0.5	Silty CLAY	Silty Clay, orange, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	23/06/2014	SD	TP04	#16-TP04 0.0-0.1	0	0.2	Fill Sandy CLAY	Sandy Clay, brown, heterogeneous, firm, medium grain size, inclusions of vegetative matter.	No odours, staining or ACM observed.	0	Stockpile of wood, drums and bitumen.
				#16-TP04 0.2-0.3	0.2	0.5	Silty CLAY	Silty Clay, light-brown, heterogeneous, low plasticity, hard, dry-damp.	No odours, staining or ACM observed.	0	
	23/06/2014	V	TP05		0	0.2	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	-	
					0.2	0.4	Silty CLAY	Silty Clay, orange-brown, heterogeneous, low plasticity, stiff.	No odours, staining or ACM observed.	-	
	23/06/2014	V	TP06		0	0.2	Topsoil	Topsoil, dark brown, heterogeneous, non-plastic, firm, damp.	No odours, staining or ACM observed.	-	
					0.2	0.5	Silty CLAY	Silty Clay, light brown-orange, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	23/06/2014	V	TP07		0	0.2	Sandy CLAY	Sandy Clay/Topsoil, brown, heterogeneous, low-plasticity, soft, dry.	No odours, staining or ACM observed.	-	
					0.2	0.2	Silty CLAY	Silty Clay and sandstone, orange, heterogeneous, firm/hard.	No odours, staining or ACM observed.	-	

	20/06/2014	SP	TP01	#17-SP-TP01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp, with inclusions of roots.	No odours, staining or ACM observed.	0	At stockpile of wood
				#17-SP-TP01 0.3-0.4	0.3	0.6	Silty CLAY	Silty Clay, orange, heterogeneous, low plasticity, firm-stiff.	No odours, staining or ACM observed.	0	
	20/06/2014	SP	TP02	#17-SP-TP02 0-0.1, #17-SP-TP02 0.3-0.4	0	0.4	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, orange, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	23/06/2014	SD	TP03	#17-TP03 0-0.1	0	0.2	Fill Topsoil	Gravelly Topsoil, brown, dry.	No odours, staining or ACM observed.	0	Bank next to dam.
				#17-TP03 0.2-0.3	0.2	0.3	Fill Sandy CLAY	Gravelly, Sandy Clay, light brown, heterogeneous, non plastic, firm, inclusions of sandstone.	No odours, staining or ACM observed.	0	
				#17-TP03 0.4-0.5	0.3	0.8	Fill Silty CLAY	Silty Clay, reworked natural, light brown-orange, heterogeneous, medium-plasticity, firm, damp, inclusions of sandstone.	No odours, staining or ACM observed.	0	
				#17-TP03 0.9-1.0	0.8	1.9	Fill Silty CLAY	Silty Clay, reworked natural, light brown-orange, heterogeneous, medium-plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#17-TP03 1.9-2.0	0.9	2.2	Silty CLAY	Silty Clay, light brown-orange, heterogeneous, medium-plasticity, firm, damp.	No odours, staining or ACM observed.	0	
#17	23/06/2014		TP04	#17-TP04 0-0.1	0	0.2	Fill Sandy CLAY	Gravelly, Sandy Clay, brown, firm, dry.	No odours, staining or ACM observed.	0	Dam wall
				#17-TP04 0.3-0.4	0.2	0.6	Silty CLAY	Silty Clay, light brown-orange, heterogeneous, high plasticity, stiff, damp.	No odours, staining or ACM observed.	0	
	23/06/2014		TP05	#17-TP05 0-0.1	0	0.25	Fill Sandy CLAY	Gravelly, Sandy Clay, brown, heterogeneous, low-plasticity, firm, dry, inclusions of shale.	No odours, staining or ACM observed.	0	Dam wall
				#17-TP05 0.3-0.4	0.25	0.5	Silty CLAY	Silty Clay, orange-brown, heterogeneous, medium-high plasticity, stiff, damp.	No odours, staining or ACM observed.	0	
	20/06/2014	G	SS01	#17-A-SS01 0-0.1	0	0.1	Silty CLAY	Silty Clay, red-brown, heterogeneous,	No odours, staining or ACM observed.	0	
	2/07/2014	AST	SS01	#17-AST-SS01 0-0.1	0	0.1	Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	
	2/07/2014	AST	SS02	#17-AST-SS02 0-0.1	0	0.1	Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	
	2/07/2014	SD	SS03	#17-SD-SS03 0-0.1	0	0.1	Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	Sample collected near machinery
	2/07/2014	SD	SS04	#17-SD-SS04 0-0.1	0	0.1	Silty CLAY	Silty Clay	No odours, staining or ACM observed.	-	Sample collected near machinery
	2/07/2014	A	SS05	#17-A-SS05 0-0.1	0	0.1	Silty CLAY	Brown silty clay and gravel	No odours, staining or ACM observed.	-	Sample collected near shed
	2/07/2014	A	SS06	#17-A-SS06 0-0.1	0	0.1	Mulch	Brown mulch and gravel	No odours, staining or ACM observed.	-	Sample collected near shed
	7/07/2014	SD	SS01	#18-SD-SS01 0-0.1	0	0.1	Silty CLAY	Silty Clay, light-brown, heterogeneous.	No odours, staining or ACM observed.	0	Collected beside shed (concrete floor interior)
	26/06/2014		TP01	#18-TP01 0-0.1						-	East side of dam. EOH - high dam wall >2m), too deep to natural.
				#18-TP01 0.8-0.9	0	1	Fill Clayey SILT	Clayey Silt, reworked natural, grey-brown, heterogeneous, medium dense, dry, inclusions of shale (30-50%).	No odours, staining or ACM observed.	-	
#18	26/06/2014		TP02	#18-TP02 0-0.1	0	0.4	Fill SILT	Silt, light grey, heterogeneous, very loose, dry, inclusions of grass roots.	No odours or ACM observed. Patch of blue staining on :	-	Base of SP
					0.4	1.2	CLAY	Clay, red-brown, heterogeneous, low-plasticity, stiff, damp.	No odours, staining or ACM observed.	-	Base of SP
	26/06/2014	G	TP03		0	0.3	Fill SILT	Silt, dark-brown, loose, heterogeneous, damp, inclusions of plastic sheeting.	No odours, staining or ACM observed.	-	South-eastern corner of paddock.
				#18-TP03 0.3-0.4	0.3	0.4	CLAY	Clay, orange-brown, low-plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	26/06/2014	G, SED	SED01	#18-SED01	0	0.1	Fill CLAY	Saturated reworked clay (sediment)	No odours, staining or ACM observed.	-	From NW corner of dam at west portion of lot
	26/06/2014	G, SED	SED02	#18-SED02	0	0.1	Fill CLAY	Saturated reworked clay (sediment)	No odours, staining or ACM observed.	-	From dam at NE portion of lot
	24/06/2014		TP01	#19-TP01 0-0.1, #19-TP01 0.4-0.5	0	0.5	Fill Silty CLAY	Silty Clay, brown, heterogeneous, firm, medium plasticity, damp.	No odours, staining or ACM observed.	0	Small SP beside dam, 0.2m high.
				#19-TP01 0.7-0.8	0.5	0.8	Fill Silty CLAY	Silty Clay, red-brown, heterogeneous, firm, medium plasticity.	No odours, staining or ACM observed.	0	
	24/06/2014		TP02	#19-TP02 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft, dry.	No odours, staining or ACM observed.	0	HA. Pumpkin crop, no backhoe access (above ground irrigation)
					0.3	0.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	24/06/2014		TP04	#19-TP04 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft, dry.	No odours, staining or ACM observed.	0	Ploughed area, no crop.
#19				#19-TP04 0.3-0.4	0.3	0.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	24/06/2014		TP05	#19-TP05 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft, dry.	No odours, staining or ACM observed.	0	
					0.3	0.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	24/06/2014	G	TP06	#19-TP06 0-0.1	0	0.3	Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#19-TP06 0.3-0.4	0.3	0.5	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	0	
	24/06/2014	G, SED	SED01	#19-SED01 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, saturated	No odours, staining or ACM observed.	-	
	24/06/2014		TP01	#20-TP01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft, damp.	No odours, staining or ACM observed.	0	
				#20-TP01 0.3-0.4	0.3	0.7	Fill Silty CLAY	Silty Clay, reworked natural, red-dark grey, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0.1	
				#20-TP01 1.0-1.1	0.7	1.2	Fill Silty CLAY	Silty Clay, reworked natural, red-dark grey, heterogeneous, medium plasticity, firm, inclusions of grey shale.	No odours, staining or ACM observed.	0	EOH- refusal on shale
	24/06/2014	SP	TP02	#20-SP-TP02 0-0.1	0	0.15	Fill Gravelly SAND	Gravelly Sand, light brown, inclusions of concrete, asphalt and gravel.	No odours, staining or ACM observed.	0.1	
				#20-SP-TP02 0.5-0.6	0.15	0.7	Fill Gravelly SAND	Gravelly Sand, light brown, damp, inclusions of sandstone, wood, concrete, asphalt and gravel.	No odours, staining or ACM observed.	0.1	EOH- surface level, irrigation services beneath.
	24/06/2014		TP03	#20-TP03 0-0.1, #20-TP03 0.4-0.5	0	0.7	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp, inclusions of plastic piping, foam, brick, fabric, concrete.	No odours, staining or ACM observed.	0	
				#20-TP03 0.8-0.9	0.7	1.1	Silty CLAY	Silty Clay, brown, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
				#20-TP03 1.2-1.3	1.1	1.4	Silty CLAY	Silty Clay, light brown-orange, heterogeneous, medium-high plasticity, stiff, inclusions of shale.	No odours, staining or ACM observed.	0	
	24/06/2014		TP04	#20-TP04 0-0.1, #20-TP04 0.2-0.3	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft, damp.	No odours, staining or ACM observed.	0	
				#20-TP04 0.3-0.4	0.3	0.4	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium-high plasticity, stiff, damp.	No odours, staining or ACM observed.	0	
	24/06/2014	SP	TP05	#20-SP-TP05 0-0.1, #20-SP-TP05 0.4-0.5	0	0.7	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, damp, inclusions of vegetative matter, bones and dark clay.	No staining or ACM observed. Organic odour.	0	
				#20-SP-TP05 0.9-1.0	0.7	1	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, damp, inclusions of vegetative matter, bones and dark clay and dark grey moist soil (approximately 70%).	No ACM observed. Stains and organic odour observed.	0.9	EOH - approximate base of SP. Water mains below.
	24/06/2014		TP06	#20-TP06 0-0.1, #20-TP06 0.3-0.4	0	0.4	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No staining or ACM observed. Organic odour.	0	Agricultural area, no crops at the moment.
					0.4	0.6	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No ACM observed. Stains and organic odour observed.	-	
	24/06/2014		TP07	#20-TP07 0-0.1, #20--TP07 0.3-0.4	0	0.4	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft, damp.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	24/06/2014		TP08	#20-TP08 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low-medium plasticity, firm, dry.	No odours, staining or ACM observed.	0	
					0.3	0.4	Silty CLAY	Silty Clay, orange.	No odours, staining or ACM observed.	-	HA - no backhoe access (pipes)
#20	24/06/2014		TP09	#20-TP09 0-0.1, #20-TP09 0.8-0.9	0	1.3	Fill Clayey SAND	Clayey Sand, grey-brown, heterogeneous, loose, soft, medium grain size, inclusions of brick, concrete, tin, plastic, ceramic.	No odours, staining or ACM observed.	0	
					1.3	1.3	Silty CLAY	Silty Clay, red-brown.	No odours, staining or ACM observed.	-	Grassed SP with concrete (1.3 m)
	24/06/2014	SP	TP10	#20-TP10 0.4-0.5	0	1	Fill Clayey SAND	Clayey Sand, brown, heterogeneous, firm inclusions of tyres, bricks, steel, plastic, fabric, timber.	No odours, staining or ACM observed.	0	Stockpile (1.0 m) - tyres, concrete, brick, etc.
					1	1	Silty CLAY	Silty Clay, red-brown, heterogeneous.	No odours, staining or ACM observed.	-	
	24/06/2014		TP11	#20-TP11 0-0.1	0	0.8	Fill Silty CLAY	Silty Clay, brown, heterogeneous, firm, inclusions of iron, brick, concrete, plastic, ceramic, steel, fabric.	No odours, staining or ACM observed.	0.1	
				#20-TP11 0.9-1.0	0.8	1	Fill Silty CLAY	Silty Clay, dark brown, heterogeneous, firm, inclusions of iron, brick, concrete, plastic, ceramic, steel, fabric.	No odours, staining or ACM observed.	0.3	
	24/06/2014		TP12	#20-TP12 0-0.1	0	0.3	Fill Sandy CLAY	Sandy Clay, brown, heterogeneous, medium plasticity, firm, inclusions of steel, ceramic, glass.	No odours, staining or ACM observed.	0	Apparently material from scraping out dams. Stockpile - steel,
	24/06/2014		TP12	#20-TP12 0.6-0.7	0.3	0.7	Fill Silty CLAY	Silty Clay, light-grey, heterogeneous, inclusions of plastic.	No odours, staining or ACM observed.	0	tyres, etc.
	26/06/2014	SD	SS01	#20-SD-SS01 0-0.1	0	0.1	Fill Silty CLAY	Gravelly silty clay, brown-grey with asphaltic gravel	Dark staining, hydrocarbon odour, no ACM	0.6	
	26/06/2014	AST	SS02	#20-AST-SS02 0-0.1	0	0.1	Fill Silty CLAY	Gravelly silty clay, brown-grey with asphaltic gravel	Dark staining, hydrocarbon odour, no ACM	3.8	
	26/06/2014	AST	SS03	#20-AST-SS03 0-0.1	0	0.1	Fill Silty CLAY	Gravelly silty clay, brown-grey with asphaltic gravel	Dark staining, hydrocarbon odour, no ACM	1.0	
	26/06/2014	SD	SS04	#20-SD-SS04 0-0.1	0	0.1	Fill Silty CLAY	Silty clay, brown, heterogeneous, damp, moderate plasticity with gravel	No odours, staining or ACM observed.	0	
	26/06/2014	SD	SS05	#20-SD-SS05 0-0.1	0	0.1	Fill Silty CLAY	Silty clay, brown, heterogeneous, damp, moderate plasticity with gravel	No odours, staining or ACM observed.	0	
	26/06/2014	AST	SS06	#20-AST-SS06 0-0.1	0	0.1	Fill Silty CLAY	Gravelly sand, brown, loose with plastic and foam	No odours, staining or ACM observed.	0	
	26/06/2014	SD	SS07	#20-SD-SS07 0-0.1	0	0.1	Fill SAND	Sandy fill with rust/dark material (container floor)	No odours, staining or ACM observed.	0	
	26/06/2014	SD	SS08	#20-SD-SS08 0-0.1	0	0.1	Fill CLAY	Sandy clay, brown, moist with gravel, plastic	No odours, staining or ACM observed.	0	
	26/06/2014	SD	SS09	#20-SD-SS09 0-0.1	0	0.1	Fill CLAY	Sandy clay, brown, moist with gravel, plastic and foam	No odours, staining or ACM observed.	0	
	26/06/2014	SD	SS10	#20-SD-SS10 0-0.1	0	0.1	Fill CLAY	Silty clay, borwn, damp-moist	No odours, staining or ACM observed.	0	
	26/06/2014	SD	SS11	#20-SD-SS11 0-0.1	0	0.1	Fill CLAY	Silty clay, borwn, damp-moist	No odours, staining or ACM observed.	0	
	26/06/2014	SD	SS12	#20-SD-SS12 0-0.1	0	0.1	Fill CLAY	Silty clay, borwn, damp-moist	No odours, staining or ACM observed.	0	

	2/07/2014		TP01	#21-TP01 0-0.1	0	2	Fill Silty CLAY	Silty Clay, reworked natural, brown with orange and grey mottles, heterogeneous, non plastic, stiff, damp, inclusions of shale.	No odours, staining or ACM observed.	-	Dam wall; Sample #21-SED01 collected between TP01 and TP02 (saturated sample)
				#21-TP01 0.4-0.5							
				#21-TP01 1.9-2.0							
	2/07/2014		TP02	#21-TP02 0-0.1	0	0.2	Fill Clayey SILT	Clayey Silt, reworked natural, grey-brown, heterogeneous, loose, dry.	No odours, staining or ACM observed.	-	Dam wall
				#21-TP02 0.3-0.4	0.2	2	Fill Silty CLAY	Silty Clay, reworked natural, brown with orange and grey mottles, heterogeneous, low plasticity, firm, damp, inclusions of shale.	No odours, staining or ACM observed.	-	Dam wall
				#21-TP02 1.9-2.0							
	2/07/2014	V	TP03		0	0.3	Fill SILT	Silt, reworked natural, grey-brown, heterogeneous, dry, loose, inclusions of grass roots weathered shale.	No odours, staining or ACM observed.	-	Paddock, possible infilled former creek
					0.3	0.5	SILT	Silt, grey-brown, heterogeneous, medium density, damp.	No odours, staining or ACM observed.	-	
	2/07/2014	V	TP04		0	0.2	Fill SILT	Silt, reworked natural, grey-brown, heterogeneous, loose, damp, inclusions of grass roots, shale and gravel.	No odours, staining or ACM observed.	-	Paddock
					0.2	0.5	SILT	Silt, grey-brown, heterogeneous, medium density, damp.	No odours, staining or ACM observed.	-	
	3/07/2014	V	TP05		0	0.2	Fill SILT	Silt, reworked natural, brown-black, heterogeneous, loose, damp, inclusions of grass roots and clay.	No odours, staining or ACM observed.	-	Paddock
					0.2	0.5	SILT	Silt, brown, heterogeneous, medium density, damp.	No odours, staining or ACM observed.	-	
#21	3/07/2014	SP	TP06	#21-SP-TP06 0-0.1	0	1.2	Fill SAND	Silty Sand with sandstone boulders, grey-brown, heterogeneous, very loose, inclusions of ACM, roofing tiles, terracotta pot fragments, steel, gravel and concrete.	ACM observed. No odours or staining observed.	0	
				#21-SP-TP06 0.4-0.5							
				#21-SP-TP06 1.3-1.4	1.2	1.5	Silty CLAY	Silty Clay, brown-black, heterogeneous, loose, damp.	No odours, staining or ACM observed.	0	
	3/07/2014		TP07	#21--TP07 0.3-0.4	0	1	Fill Sandy CLAY	Gravelly, Sandy Clay, brown, heterogeneous, low plasticity, firm, damp, inclusions of sandstone, ceramics, concrete, bricks, plastic, steel and glass (approximately 20% anthropogenic inclusions).	No odours, staining	0	2 ACM fragments on surface in vicinity of TP07, TP08 & TP09
				#21-TP07 1.0-1.1	1	1.3	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining	0	
	3/07/2014		TP08	#21-TP08 0.3-0.4	0	1	Fill Sandy CLAY	Gravelly, Sandy Clay, brown, heterogeneous, low plasticity, firm, damp, inclusions of sandstone, ceramics, concrete, bricks, plastic, steel and glass (approximately 20% anthropogenic inclusions).	No odours, staining	0	2 ACM fragments on surface in vicinity of TP07, TP08 & TP09
				#21-TP08 1.0-1.1	1	1.3	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining	0	
	3/07/2014		TP09	#21-TP09 0.3-0.4	0	1	Fill CLAY	Gravelly, Sandy Clay, brown, heterogeneous, low plasticity, firm, damp, inclusions of sandstone, ceramics, concrete, bricks, plastic, steel and glass (approximately 20% anthropogenic inclusions).	No odours, staining	0	2 ACM fragments on surface in vicinity of TP07, TP08 & TP09
				#21-TP09 1.0-1.1	1	1.3	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, stiff, damp.	No odours, staining	0	
	3/07/2014	G	TP10	#21-G-TP10 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay/Topsoil, reworked natural, brown-red/brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
					0.2	0.5	Silty CLAY	Silty Clay/Topsoil, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	3/07/2014	G	TP11	#21-G-TP11 0-0.1	0	0.4	Fill Silty CLAY	Silty Clay/Topsoil, soft- firm, low-plasticity, damp.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, brown-orange, heterogeneous, medium plasticity, stiff, damp.	No odours, staining or ACM observed.	-	
	3/07/2014	A	SS01	#21-SS01 0-0.1	0	0.1	Fill Sandy CLAY	Sandy clay	No odours or staining, ACM fragments observed.	-	Steel/plastic debris also observed
	7/07/2014	A	SS01	#22-A-SS01 0-0.1	0	0.1	Fill Gravelly CLAY	Gravelly clay, brown, heterogeneous, firm.	No odours, staining or ACM observed.	0	Samples collected along ACM pipe
	7/07/2014	A	SS02	#22-A-SS02 0-0.1	0	0.1	Fill Gravelly CLAY	Gravelly clay, brown, heterogeneous, firm.	No odours, staining or ACM observed.	0	Samples collected along ACM pipe
	7/07/2014	A	SS03	#22-A-SS03 0-0.1	0	0.1	Fill Gravelly CLAY	Gravelly clay, brown, heterogeneous, firm.	No odours, staining or ACM observed.	0	Samples collected along ACM pipe
	7/07/2014	F	SS04	#22-F-SS04 0-0.1	0	0.1	Fill Silty CLAY	Gravelly, silty clay, brown, inclusions of ash.	No odours, staining or ACM observed.	0.4	Fire pit and drum
	7/07/2014	A	SS05	#22-A-SS05 0-0.1	0	0.1	Silty CLAY	Silty clay, brown.	Staining observed. No odours, or ACM observed.	1.9	ACM fragments observed
	7/07/2014	A	SS06	#22-A-SS06 0-0.1	0	0.1	Silty CLAY	Silty clay, brown.	ACM observed. No odours or staining observed.	0	
	2/07/2014		TP01	#22-TP01 0-0.1	0	0.3	Fill Clayey SILT	Clayey Silt, reworked natural, grey-brown, heterogeneous, loose, dry.	No odours, staining or ACM observed.	-	Dam wall
				#22-TP01 0.3-0.4 #22-TP01 1.9-2.0	0.3	2	Fill Silty CLAY	Silty Clay, reworked natural, orange with brown mottles, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	-	
#22	2/07/2014		TP02	#22-TP02 0-0.1	0	0.6	Fill Silty CLAY	Silty Clay, reworked natural, brown-grey, heterogeneous, medium plasticity, moist, inclusions of grass roots and shale.	No odours, staining or ACM observed.	-	Dam wall
				#22-TP02 0.3-0.4							
				#22-TP02 1.9-2.0	0.6	2	CLAY	Clay, light grey, heterogeneous, medium plasticity, firm, moist, inclusions of shale.	No odours, staining or ACM observed.	-	
	3/07/2014	G	TP03	#22-G-TP03 0-0.1	0	0.4	Fill Sandy CLAY	Sandy Clay/Topsoil, reworked natural, brown, heterogeneous, low plasticity, soft-firm, inclusions of roots.	No odours, staining or ACM observed.	0	
				#22-G-TP03 0.4-0.5	0.4	0.7	Sandy CLAY	Silty, Sandy Clay, brown, heterogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	3/07/2014		TP04	#22-TP04 0-0.1	0	0.4	Silty CLAY	Silty Clay, brown-orange, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	Sample #21-SED01 collected near TP04 (saturated silty clay)
				#22-TP04 0.4-0.5	0.4	0.6	Silty CLAY	Silty Clay, brown-orange, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	4/07/2014		HA01	#23-HA01 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, red-brown	No odours, staining or ACM observed.	-	Farm Dam; sample #23-SED01 collected nearby from east dam wall (saturated silty clay)
#23	4/07/2014		HA02	#23-HA02 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, red-brown	No odours, staining or ACM observed.	-	Farm Dam
	4/07/2014		HA03	#23-HA03 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, red-brown	No odours, staining or ACM observed.	-	Farm Dam
	4/07/2014		HA04	#23-HA04 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, red-brown	No odours, staining or ACM observed.	-	Farm Dam
	4/07/2014	G	HA05	#23-G-HA05 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, brown	No odours, staining or ACM observed.	-	
	26/06/2014	SP	TP01	#24-SP-TP01 0-0.1	0	0.2	Fill Clayey SILT	Clayey Silt, reworked natural, dark brown, heterogeneous, loose, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	Wood and corrugated iron stockpile west of shed.
				#24-SP-TP01 0.3-0.4	0.2	0.5	Silty CLAY	Silty Clay, brown with orange mottles, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	-	
	26/06/2014		TP02	#24-TP02 0-0.1	0	0.3	Fill Clayey SILT	Clayey Silt, grey-brown, heterogeneous, loose, damp, inclusions of grass roots and plastic.	No odours, staining or ACM observed.	-	In field north of dam.
				#24-TP02 0.3-0.4	0.3	0.6	CLAY	Clay, orange-brown, heterogeneous, low-plasticity, firm, moist, inclusions of charcoal.	No odours, staining or ACM observed.	-	
	26/06/2014		TP03	#24-TP03 0-0.1	0	0.5	Fill SILT	Silt, reworked natural, brown, heterogeneous, loose, damp, inclusions of grass roots and clay.	No odours, staining or ACM observed.	-	Southern side of dam.
					1	1.5	CLAY	Clay, grey-brown with orange mottles, heterogeneous, low-plasticity, soft, saturated.	No odours, staining or ACM observed.	-	
#24	26/06/2014	V	TP04		0	0.2	Fill SILT	Silt, reworked natural, dark brown, heterogeneous, medium dense, damp, inclusions of grass roots, clay and gravel.	No odours, staining or ACM observed.	-	
					0.2	0.5	Silty CLAY	Silty Clay, red-brown with orange mottles, heterogeneous, soft, damp.	No odours, staining or ACM observed.	-	
	4/07/2014	G	SS01	#24-G-SS01 0-0.1	0	0.1	Fill Silt	Silt, reworked natural	No odours, staining or ACM observed.	-	
	4/07/2014	AST	SS02	#24-AST-SS02 0-0.1	0	0.1	Fill Silt	Silt, reworked natural	No odours, staining or ACM observed.	-	Sample collected at AST, possibly a water tank
	4/07/2014	SP	SS03	#24-SS03 0-0.1	0	0.1	Fill Silt	Silt, reworked natural	No odours, staining or ACM observed.	-	Sample collected from beneath ACM sheets and wood pallets
	19/06/2014	V	TP01		0	0.4	Fill SILT	Silt, reworked natural, grey-brown, heterogeneous, loose, damp, inclusions of grass.	No odours, staining or ACM observed.	-	
					0.4	0.7	CLAY	Clay, orange-brown, homogeneous, low-medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	19/06/2014		TP02		0	0.2	SILT	Silt, grey-brown, heterogeneous, loose, dry.	No odours, staining or ACM observed.	-	
				#25--TP02 0.3-0.4	0.2	0.4	CLAY	Clay, orange-brown, heterogeneous, low-medium plasticity, firm, damp, inclusions of charcoal (10-20%) and gravel (20-35%).	No odours, staining or ACM observed.	-	
#25					0.4	0.7	Gravelly CLAY	Gravelly Clay, red-brown, homogeneous, low plasticity, damp.	No odours, staining or ACM observed.	-	
	4/07/2014	F	SS01	#25-F-SS01 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Sample collected at burn pit
	4/07/2014	S	SS02	#25-S-SS02 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Sample collected beside car port
	4/07/2014	SD	SS03	#25-SD-SS03 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Sample collected from area of misc surface debris
	4/07/2014	SD	SS04	#25-SD-SS04 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown	No odours, staining or ACM observed.	-	Sample collected near farm machinery
	4/07/2014	G	SS05	#25-SD-SS04 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, brown	No odours, staining or ACM observed.	-	Sample collected near farm machinery

#26	20/06/2014	G	HA01	#26-HA01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft-firm, moist-wet.	No odours, staining or ACM observed.	0	Soft moist grass outside residence
				#26-HA01 0.3-0.4	0.3	0.7	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft-firm, moist-wet.	No odours, staining or ACM observed.	0	
					0.7	0.8	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	20/06/2014	G	HA02	#26-HA02 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, reworked natural, red-brown	No odours, staining or ACM observed.	0	
	20/06/2014	SED	SED01	#26-SED01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, saturated	No odours, staining or ACM observed.	0	
	20/06/2014		SS01	#26-SS01 0-0.1	0	0.3	Fill Silty CLAY	Gravelly Silty Clay, brown with asphaltic gravels	No odours, staining or ACM observed.	1.6	
	20/06/2014		SS02	#26-SS02 0-0.1	0	0.3	Fill Silty CLAY	Gravelly Silty Clay, dark brown with bituminous inclusions	No odours, staining or ACM observed.	2.8	
	19/06/2014	G	TP01	#26-TP01 0-0.1	0	0.4	Fill Silty SAND	Silty Sand, brown, heterogeneous, fine, loose, damp, inclusions of roots, igneous gravels, shale fragments.	No odours, staining or ACM observed.	0	
				#26-TP01 0.4-0.5	0.4	0.8	Silty CLAY	Silty Clay, red-brown, heterogeneous, low plasticity, stiff, damp, inclusions of igneous gravels and shale fragments.	No odours, staining or ACM observed.	0	
	19/06/2014	V	TP02		0	0.3	Silty CLAY	Silty Clay, grey-brown, heterogeneous, non-plastic, soft, dry.	No odours, staining or ACM observed.	-	
					0.3	0.6	CLAY	Clay, orange-brown, homogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	-	
	20/06/2014		TP03	#26-TP03 0-0.1	0	0.15	Fill Silty CLAY	Silty Clay, reworked natural, grey-brown with red mottles, heterogeneous, non-plastic, soft, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	Near to dam, slight mound
					0.15	0.4	Fill Silty CLAY	Silty Clay, reworked natural, grey-brown with brown and orange mottles, heterogeneous, non-plastic, soft, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	
				#26-TP03 0.5-0.6	0.4	0.7	Silty CLAY	Silty Clay, orange, heterogeneous, low plasticity, soft, moist, inclusions of grass roots.	No odours, staining or ACM observed.	-	
	20/06/2014		TP04	#26-TP04 0-0.1	0	0.2	Fill SAND	Sand, light grey, heterogeneous, fine grained, sub-rounded, very loose, dry, inclusions of grass.	No odours, staining or ACM observed.	0	Imported sand
				#26-TP04 0.5-0.6	0.2	0.6	Fill Sandy SILT	Sandy Silt, dark grey, heterogeneous, fine grained, sub-rounded, loose, dry.	No odours, staining or ACM observed.	0	
				#26-TP04 0.7-0.8	0.6	0.9	Silty CLAY	Silty Clay, orange-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	20/06/2014		TP05	#26-TP05 0-0.1	0	0.1	Fill SAND	Sand, grey, heterogeneous, medium grained, sub-rounded, very loose, damp, inclusions of grass roots.	No odours, staining or ACM observed.	-	Imported sand
				#26-TP05 0.2-0.3	0.1	0.3	Fill Sandy SILT	Sandy Silt, brown-grey, heterogeneous, fine grained, sub-rounded, loose, moist.	No odours, staining or ACM observed.	-	
				#26-TP05 0.6-0.7	0.3	0.8	Silty CLAY	Silty Clay, brown with red mottles, heterogeneous, low plasticity, soft, moist.	No odours, staining or ACM observed.	-	
	20/06/2014		TP06	#26-TP06 0-0.1	0	0.2	Fill SAND	Sand, white, heterogeneous, fine grained, sub-rounded, very loose, dry, inclusions of grass.	No odours, staining or ACM observed.	0	Imported sand
					0.2	0.3	Fill SILT	Silt, grey-brown, heterogeneous, fine grained, loose, dry, inclusions of gravel.	No odours, staining or ACM observed.	0	
				#26-TP06 0.5-0.6	0.3	1.8	Fill Gravelly SILT	Gravelly Silty Clay, red-brown, heterogeneous, loose, soft, dry, inclusions of igneous gravels.	No odours, staining or ACM observed.	0	
				#26-TP06 2.0-2.1	1.8	2.1	CLAY	Clay, brown-red-grey, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	0	
#27	19/06/2014	G	TP01	#27-G-TP01 0.1-0.2	0	0.2	SILT	Silt, brown, heterogeneous, fine, loose, dry, inclusions of roots.	No odours, staining or ACM observed.	0	
				#27-G-TP01 0.3-0.4	0.2	0.5	CLAY	Clay, red brown, homogeneous, low plasticity, firm, damp,	No odours, staining or ACM observed.	0	
	19/06/2014		TP02	#27-TP02 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, reworked natural brown, heterogeneous, low plasticity, soft, damp, inclusions of roots.	No odours, staining or ACM observed.	0	
				#27-TP02 0.3-0.4	0.3	0.75	Fill Silty CLAY	Silty Clay, reworked natural brown with grey mottles, heterogeneous, low-medium plasticity, soft, damp, inclusions of roots.	No odours, staining or ACM observed.	0	
				#27-TP02 0.75-0.85	0.75	1	Fill Silty CLAY	Silty Clay, reworked natural grey-brown, low plasticity, soft, damp, homogeneous.	No odours, staining or ACM observed.	-	
					1	1.7	Fill Silty CLAY	Silty Clay, reworked natural grey-brown, low plasticity, soft, moist, homogeneous.	No odours, staining or ACM observed.	-	
				#27-TP02 1.9-2.0	1.7	2	Silty CLAY	Silty Clay, brown with grey and orange mottles, homogeneous, medium-high plasticity, soft, moist.	No odours, staining or ACM observed.	-	
	19/06/2014		TP03	#27-TP03 0-0.1	0	0.3	Silty CLAY	Silty Clay, brown, heterogeneous, non-plastic, soft, damp, inclusions of roots.	No odours, staining or ACM observed.	0	
				#27-TP03 0.3-0.4	0.3	0.8	Silty CLAY	Silty Clay, light grey-brown, heterogeneous, low-plasticity, soft, damp, inclusions of roots.	No odours, staining or ACM observed.	0	
				#27-TP03 0.8-0.9	0.8	0.9	Silty CLAY	Silty Clay, grey-brown, heterogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	19/06/2014	G	TP04	#27-TP04 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, brown-grey, heterogeneous, non-plastic, soft, dry, inclusions of plastic.	No odours, staining or ACM observed.	-	
				#27-TP04 0.3-0.4	0.3	0.5	CLAY	Clay, yellow-brown, homogeneous, low plasticity, stiff, damp/	No odours, staining or ACM observed.	-	
	19/06/2014		TP05	#27-TP05 0-0.1	0	0.9	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, soft, damp, inclusions of igneous gravels, concrete fragments, glass fragments, grass roots and shale fragments (approximately 10% anthropogenic inclusions).	No odours, staining or ACM observed.	-	
				#27-TP05 0.9-1.0	0.9	1.1	SILT	Silt, light brown, heterogeneous, fine grained, loose, inclusions of grass roots.	No odours, staining or ACM observed.	-	
				#27-TP05 1.2-1.3	1.1	1.3	Silty CLAY	Silty Clay, light brown with orange mottles, heterogeneous, low plasticity, stiff, dry, inclusions of grass roots.	No odours, staining or ACM observed.	-	
	19/06/2014		TP06	#27-TP06 0-0.1	0	1	Fill Silty CLAY	Silty Clay, brown-orange, heterogeneous, low plasticity, firm, damp, inclusions of grass roots.	No odours, staining or ACM observed.	0	
				#27-TP06 1.0-1.1	1	1.3	Fill SILT	Silt, light brown, heterogeneous, fine grained, loose, dry-damp, inclusions of grass roots.	No odours, staining or ACM observed.	0	
					1.3	1.6	Silty CLAY	Silty Clay, brown-orange, homogeneous, low plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	20/06/2014		TP07	#27-TP07 0-0.1	0	0.4	SILT	Silt, grey-brown, homogeneous, fine, loose, dry, inclusions of grass roots.	No odours, staining or ACM observed.	-	
				#27-TP07 0.4-0.5	0.4	0.8	Silty CLAY	Silty Clay, red-brown with orange and grey mottles, heterogeneous, low plasticity, soft, damp.	No odours, staining or ACM observed.	-	
	18/06/2014	A, S	SS01	#27-SS01 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown, heterogeneous, damp, low plasticity, soft, incl. grass roots	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	18/06/2014	A, S	SS02	#27-SS02 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown, heterogeneous, damp, low plasticity, soft, incl. grass roots	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	18/06/2014	A, S	SS03	#27-SS03 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown, heterogeneous, damp, low plasticity, soft, incl. grass roots	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	18/06/2014	A, S	SS04	#27-SS04 0-0.1	0	0.1	Fill Silt	Silt, light brown, heterogeneous, dry, fine, loose, incl. wood fragments, gravel	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	18/06/2014	A, S	SS05	#27-SS05 0-0.1	0	0.1	Fill Silty SAND	Silty Sand, brown, heterogeneous, damp, fine-med	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	18/06/2014	A, S	SS06	#27-SS06 0-0.1	0	0.1	Fill SAND	Sand, fine, brown, heterogeneous, damp, fine-med	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	18/06/2014	A, S	SS07	#27-SS07 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, brown, heterogeneous, damp, low plasticity, soft, incl. grass roots	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	18/06/2014	A, S	SS08	#27-SS08 0-0.1	0	0.1	Fill Silty SAND	Silty Sand, brown, heterogeneous, dry, fine, loose	No odours, staining or ACM observed.	-	Investigate possible staining, ACM at shed area
	19/06/2014	A	SS09	#27-SS09 0-0.1	0	0.1	SILT	Silt, brown, heterogeneous, dry, fine, loose	No odours, staining or ACM observed.	-	
	19/06/2014	SP	SS10	#27-SS10 0-0.1	0	0.1	SILT	Silt, brown, heterogeneous, dry, fine, loose	No odours, staining or ACM observed.	-	
#28	18/06/2014	SP	TP01	#28-SP-TP01 0-0.1	0	0.5	Fill Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp, inclusions of ceramics, ACM, brick, glass and dark brown topsoil.	ACM observed. No odours or staining observed.	0	ACM observed on surface of stockpile (5-6 fragments, scattered)
				#28-SP-TP01 0.5-0.6, #28-SP-TP01 0.9-1.0	0.5	1.5	Fill CLAY	Clay, red-brown with grey mottles, heterogeneous, medium plasticity, hard, damp, inclusions of roots and igneous gravels.	No odours, staining or ACM observed.	0	
				#28-SP-TP01 1.5-1.6, #28-SP-TP01 1.6-1.7	1.5	1.7	Fill Silty SAND	Silty Sand, brown, heterogeneous, fine-medium grained, loose, dry, inclusions of igneous gravel.	No odours, staining or ACM observed.	0	
				#28-SP-TP01 1.9-2.0	1.7	2	Fill CLAY	Clay, red-brown with grey mottles, heterogeneous, low plasticity, soft, damp, inclusions of shale and roots.	No odours, staining or ACM observed.	0	
	18/06/2014		TP02	#28-TP02 0.1-0.2	0	0.3	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, soft, dry, inclusions of roots.	No odours, staining or ACM observed.	0	Farm dam
				#28-TP02 0.3-0.4	0.3	0.6	Fill CLAY	Clay, reworked natural, red-brown with grey mottles, heterogeneous, low plasticity, firm, damp, inclusions of shale.	No odours, staining or ACM observed.	0	
	18/06/2014	SP	TP03	#28-SP-TP03 0.1-0.2	0	0.6	Fill Silty CLAY	Gravelly, Silty Clay, red-brown with grey mottles, heterogeneous, low plasticity, firm, damp, inclusions of glass, plastic, tiles, pipe, igneous gravels, concrete, PVC, bitumen.	No odours, staining or ACM observed.	0	
				#28-SP-TP03 0.6-0.7	0.6	1	Fill Silty CLAY	Silty Clay, dark brown, heterogeneous, low plasticity, soft, damp, inclusions of bitumen and glass.	No odours, staining or ACM observed.	0	
				#28-SP-TP03 1-1.1	1	1.4	Fill Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, soft, damp, inclusions of glass and igneous gravels.	No odours, staining or ACM observed.	0	
				#28-SP-TP03 1.5-1.6	1.4	1.6	CLAY	Clay, red-brown, homogeneous, medium plasticity, damp, firm.	No odours, staining or ACM observed.	0	
	7/07/2014		TP04	#28-TP04 0-0.1	0	0.3	Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	18/06/2014	G	SED01	#28-G-SED01 0-0.1	0	0.3	Fill Silty CLAY	Silty Clay, reworked natural, brown, heterogeneous, low plasticity, soft, saturated, inclusions of red river-stone gravels (approximately 40%).	No odours, staining or ACM observed.	0	HA sample, area too soft for backhoe.
				#28-G-SED01 0.4-0.5	0.3	0.5	Fill Silty CLAY	Silty Clay, reworked natural, brown, heterogeneous, low plasticity, soft, saturated, inclusions of red river-stone gravels (approximately 40%).	No odours, staining or ACM observed.	0	
	18/06/2014		SED02	#28-G-SED02 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, reworked natural, brown, heterogeneous, low plasticity, soft, saturated, inclusions of gravel	No odours, staining or ACM observed.	0	

#29	18/06/2014	V	TP01		0	0.25	Fill SILT	Silt, brown, heterogeneous, loose, fine, dry, inclusions of igneous gravel	No odours, staining or ACM observed.	0	
					0.25	0.6	Fill Silty CLAY	Silty Clay, reworked natural, red-brown with grey mottles, heterogeneous, low plasticity, firm, damp, inclusions of igneous gravel.	No odours, staining or ACM observed.	0	
	18/06/2014		TP02	#29-TP02 0.15-0.2	0	0.3	Fill Silty SAND	Silty SAND, brown, heterogeneous, fine grained, loose, damp, inclusions of igneous gravels, bricks, rubber, grass roots and cement fragments.	No odours, staining or ACM observed.	0	
				#29-TP02 0.3-0.4	0.3	0.9	CLAY	Clay, brown, heterogeneous, low plasticity, soft, damp, inclusions of roots.	No odours, staining or ACM observed.	0	
	18/06/2014	V	TP03		0	0.3	Fill Silty SAND	Silty Sand, brown, heterogeneous, fine, loose, dry, inclusions of igneous gravel and roots.	No odours, staining or ACM observed.	0	
					0.3	0.8	SILT	Silt, red-brown, heterogeneous, low plasticity, firm, damp, inclusions of roots and igneous gravels.	No odours, staining or ACM observed.	0	
	18/06/2014		TP04	#29-TP04 0-0.1	0	0.3	Fill Topsoil	Topsoil, light brown, heterogeneous, low plasticity, soft, inclusions of wood and roots.	No odours, staining or ACM observed.	0	
				#29-TP04 0.3-0.4	0.3	0.6	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	7/07/2014		TP05	#29-TP05 0-0.1	0	0.3	Silty CLAY	Silty Clay, brown, heterogeneous, medium plasticity, firm.	No odours, staining or ACM observed.	0	Sample #29-SED01 collected nearby (saturated silty clay)
	18/06/2014	G	SS01	#29-H-SS01 0-0.1	0	0.1	Topsoil	Topsoil and silty clay, brown, heterogeneous, soft	No odours, staining or ACM observed.	0	
	18/06/2014	S	SS01	#29-S-SS02 0-0.1	0	0.1	Topsoil	Topsoil and silty clay, brown, heterogeneous, soft	No odours, staining or ACM observed.	0	
#30	17/06/2014		TP01	#30-TP01 0.1-0.2	0	0.3	Fill Sandy CLAY	Sandy Clay/Topsoil, dark brown, heterogeneous, soft.	No odours, staining or ACM observed.	0	Farm dam
				#30-TP01 0.3-0.4	0.3	0.4	Fill Silty CLAY	Silty Clay, light brown, heterogeneous, firm, low plasticity, damp.	No odours, staining or ACM observed.	0	
				#30-TP01 0.5-0.6	0.4	0.7	Silty CLAY	Silty Clay, light brown-grey, heterogeneous, damp,	No odours, staining or ACM observed.	0	
	17/06/2014	G	TP02	#30-G-TP02 0.1-0.2	0	0.3	Fill Silty GRAVEL	Silty Gravel, brown, heterogeneous, fine, loose, dry, inclusions of roots.	No odours, staining or ACM observed.	0	
				#30-G-TP02 0.3-0.4	0.3	0.4	Silty CLAY	Silty Clay, brown, homogeneous, firm, non-plastic, hard.	No odours, staining or ACM observed.	0	
				#30-G-TP02 0.5-0.6	0.4	0.7	Silty CLAY	Silty Clay, red-brown, homogeneous, firm, non-plastic, hard.	No odours, staining or ACM observed.	0	
	17/06/2014	SP	TP03	#30-SP-TP03 0.1-0.2	0	0.2	Fill Silty SAND	Silty Sand, brown, heterogeneous, fine, loose, damp, inclusions of roots.	No odours, staining or ACM observed.	0	
				#30-SP-TP03 0.3-0.4	0.2	0.4	Silty CLAY	Silty Clay, brown, homogeneous, low plasticity, hard, damp.	No odours, staining or ACM observed.	0	
				#30-SP-TP03 0.5-0.6	0.4	0.7	CLAY	Clay, brown-red, homogeneous, damp, low plasticity, firm.	No odours, staining or ACM observed.	0	
	17/06/2014		TP04	#30-TP04 0.1-0.2	0	0.2	Fill Silty CLAY	Silty Clay, grey-red, heterogeneous, low plasticity, firm, damp, inclusions of shale fragments.	No odours, staining or ACM observed.	0	EOH - refusal on shale
				#30-TP04 0.3-0.4	0.2	0.4	SHALE	Shale, grey-red.	No odours, staining or ACM observed.	0	
	17/06/2014	G	TP05	#30-G-TP05 0.1-0.2	0	0.2	Silty CLAY	Silty Clay, brown, homogeneous, non plastic, stiff, dry.	No odours, staining or ACM observed.	0	
				#30-G-TP05 0.3-0.4	0.2	0.6	CLAY	Clay, red-brown, homogeneous, low plasticity, damp, firm.	No odours, staining or ACM observed.	0	
	17/06/2014		HA01	#30-HA01 0-0.1 #30-HA01 0.3-0.4	0	0.5	Fill Silty SAND	Silty Sand/Topsoil, brown, homogeneous, fine, loose, dry.	No odours, staining or ACM observed.	0	Approximately 5 m east of septic tank.
					0.5	0.7	CLAY	Clay, red-brown, homogeneous, low plasticity, damp, firm.	No odours, staining or ACM observed.	0	
	17/06/2014	F	SS01	#30-F-SS01 0-0.1	0	0.1	Sill SAND	Ashey Sand fill, light-dark grey with pieces of steel, wood, plastic	Some staining, no ACM	0.6	
#31	17/06/2014		TP01	#31-TP01 0-0.1, #31-TP01 0.4-0.5	0	0.4	Fill Silty SAND	Silty Clay, brown, heterogeneous, low plasticity, firm, dry.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, red-brown, heterogeneous, medium-plasticity, firm, damp.	No odours, staining or ACM observed.	0	
	17/06/2014		TP02	#31-TP02 0-0.1	0	0.2	Fill Silty CLAY	Silty Clay, brown, heterogeneous, low plasticity, firm, dry, inclusions of shale, asphaltic cobbles (approximately 40%).	No odours, staining or ACM observed.	0	Bank/Road (1 m)
				#31-TP02 0.3-0.4	0.2	0.5	Fill Silty SAND	Silty Clay, brown, heterogeneous, low plasticity, firm, dry, inclusions of shale, asphaltic cobbles (approximately 40%) and light brown to red silty clay inclusions.	No odours, staining or ACM observed.	0	
				#31-TP02	0.5	0.7	Silty CLAY	Silty Clay, light brown-red, heterogeneous, stiff, high plasticity, damp.	No odours, staining or ACM observed.	-	
	17/06/2014		TP03	#31-TP03 0-0.1, #31-TP03 0.3-0.4	0	0.4	Fill Silty CLAY	Silty Clay, reworked natural, red-brown, heterogeneous, medium plasticity, stiff, dry, inclusions of grey shale.	No odours, staining or ACM observed.	0	
					0.4	0.6	Silty CLAY	Silty Clay, red-brown, heterogeneous, stiff, high plasticity, damp.	No odours, staining or ACM observed.	-	
	17/06/2014		TP04	#31--TP04 0-0.1	0	0.2	Fill Silty SAND	Silty Sand, brown, homogeneous, damp, fine, loose.	No odours, staining or ACM observed.	0	
				#31--TP04 0.3-0.4	0.2	0.7	CLAY	Clay, red-brown, homogeneous, medium plasticity, damp, stiff.	No odours, staining or ACM observed.	0	
	17/06/2014	G	SS01	#31-G-SS01 0-0.1	0	0.1	Silty CLAY	Silty Clay, light brown, hard, low plasticity, dry	No odours, staining or ACM observed.	0	
	17/06/2014	S	SS02	#31-S-SS02 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, dark brown with asphaltic gravel	No odours, staining or ACM observed.	0	
	17/06/2014	SD	SS03	#31-SD-SS03 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, dark brown, soft	No odours, staining or ACM observed.	0	
	17/06/2014	G	SS04	#31-H-SS04 0-0.1	0	0.1	Fill Silty CLAY	Silty Clay, dark brown, heterogeneous, soft, low plasticity	No odours, staining or ACM observed.	0	Sample #31-SED01 collected nearby (saturated silty clay)

*Refer to Figure 4A for sample code.

Appendix F: QA/QC Tables

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

Field ID	Sample Depth	Sample Date	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)	Benzo(a)pyrene TEQ (medium bound)	Benzo(a)pyrene TEQ (upper bound)	Benzo(a)pyrene TEQ (WHO)	Benzo(b,k)fluoranthene	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Carcinogenic PAHs as B(a)P TPE	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	PAHs (Sum of Total)	Total +ve PAHs
			Metals & Metalloids								Polycyclic Aromatic Hydrocarbons																								
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.4	1	1	1	0.05	1	1	0.1	0.1	0.1	0.1	0.05	0.5	0.5	0.5	0.5	0.2	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.5		
#1-G-SS21	0-0.1	4/07/2014	3.4	<0.4	16	7.7	44	<0.05	<5	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19	Duplicate of #1-SS21	4/07/2014	4.2	<0.4	17	8.1	160	<0.05	<5	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	21	0	6	5	114	0	0	-55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	4	<0.4	14	7	140	<0.1	4	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	16	0	-13	-10	104	0	0	-64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP03	0-0.1	25/06/2014	13	<0.4	23	17	28	<0.05	11	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	15	<0.4	28	20	29	1.3	18	**250**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	14	0	20	16	4	0	0	113	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	10	<0.4	22	16	25	<0.1	10	57	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	-
	RPD	%	-26	0	-4	-6	-11	0	0	-20	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
#3-O-SS07	0-0.1	2/07/2014	11	<0.4	22	16	32	<0.05	8.5	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC17	Duplicate of #3-O-SS07	2/07/2014	7	<0.4	25	18	24	<0.05	7.4	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-44	0	13	12	-29	0	0	-42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC17/A	Triplicate of #3-O-SS07	2/07/2014	8	<0.4	28	17	23	<0.1	7	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-32	0	24	6	-33	0	0	-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP02	0-0.1	26/06/2014	7.2	<0.4	15	30	19	<0.05	7.3	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	7.4	<0.4	17	27	19	<0.05	7.3	64	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	3	0	13	-11	0	0	0	-9	0	0	0	0	0	0	0	0	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	7	<0.4	18	29	20	<0.1	8	64	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	-
	RPD	%	-3	0	18	-3	5	0	0	-9	0	0	0	0	0	-	-	-	0	0	-	0	-	0	0	0	0	0	-	0	0	0	-	-	-
#3-TP04	0-0.1	27/06/2014	12	<0.4	49	21	36	<0.05	12	66	<0.5	<0.5	<0.5	<0.5	1	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	0.605	<0.5	<0.5	1	<0.5	5.25	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	10	<0.4	34	21	27	<0.05	9.5	49	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	0.605	<0.5	<0.5	1	<0.5	5.25	-
	RPD	%	-18	0	-36	0	-29	0	0	-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	5	<0.4	16	35	19	<0.1	11	69	<0.1	<0.1	<0.1	<0.1	0.14	-	-	-	<0.5	0.3	-	0.2	-	0.1	<0.1	0.1	<0.1	0.2	-	<0.1	<0.1	0.2	-	-	1.2
	RPD	%	**-82**	0	**-102**	50	-62	0	0	4	0	0	0	0	**-113**	-	-	-	0	0	-	0	-	0	0	0	0	**-86**	-	0	0	**-86**	-	-	-
#6-TP02	0-0.1	27/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	8.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0.00	0.00													
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	<4	<0.4	4	<1	3	<0.1	<1	2	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	0	0	0	0	0	0	0	**-124**	0	0	0	0	0	-	-	-	0	0															
#9-SP-HA01	0.3-0.4	7/07/2014	10	0.5	25	19	31	<0.05	12	90	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	5.1	0.7	23	20	29	<0.05	14	95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	3.75	-
	RPD	%	-65	0	-8	5	-7	0	0	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	9	<0.4	27	20	29	<0.1	15	85	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	-11	0	8	5	-7	0	0	-6	0	0	0	0	0	-	-	-	0	0	-	0	-	0	0	0	0	0	-	0	0	0	-	-	-
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	6.1	<0.4	12	40	18	0.07	59	*180*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	1.5	-
	RPD	%	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	0.00	-
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	6	<0.4	11	32	18	<0.1	*45*	130	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	**-2**	**#VALUE!**	**-9**	**-22**	**0**	**#VALUE!**	**-27**	**-32**	0	0	0	0	0	-	-	-	0	0	-	0	-	0	0	0	0	0	-	0	0	0	-	-	-
#12-TP05	0-0.1	30/06/2014	6	<0.4	9.7	8.3	20	<0.05	<5	29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	2.4	<0.4	9.8	<5	8.8	<0.05	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	-86	0	1	0	-78	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	4	<0.4	8	6	11	<0.1	3	13	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	-40	0	-19	-32	-58	0	0	-76	0	0	0	0	0	-	-	-	0	0	-	0	-	0	0	0	0	0	-	0	0	0	-	-	0
#13-TP01	0-0.1	30/06/2014	12	<0.4	33	8.5	19	<0.05	<5	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	15	<0.4	38	8.9	23	<0.05	5.4	21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	22	0	14	5	19	0	0	10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	10	0.5	28	8	17	<0.1	3	15	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	-18	0	-16	-6	-11	0	0	-24																									
#17-TP04	0-0.1	23/06/2014	3	<0.4	6.6	<5	6.8	<0.05	<5	8.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	4.1	<0.4	8.5	<5	8.1	<0.05	<5	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	31	0	25	0	17	0	0	13																									
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	<4	<0.4	7	<1	7	<0.1	<1	5	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	0	0	6	0	3	0	0	-50																									
#18-TP02	0-0.1	26/06/2014	3.7	<0.4	6.6	8.4	6.9	0.15	<5	22	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	<4	<0.4	4	7	6	0.2	3	16	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	0	0	-55	0	-15	0	0	105																									
#19-TP01	0-0.1	24/06/2014	6.6	<0.4	21	33	22	<0.05	11	72	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	7.7	<0.4	20	33	25	<0.05	9.7	66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	15	0	-5	0	13	0	0	-9																									
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	4	<0.4	11	17	13	<0.1	5	33	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	-49	0	-63	-64	-51	0	0	-74																									
#20-TP01	0-0.1	24/06/2014	14	<0.4	29	48	21	0.06	8.7	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	15	<0.4	29	47	20	<0.05	7.8	93	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	7	0	0	-2	-5	0	0	-7																									
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	9	<0.4	20	33	15	<0.1	6	60	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	-43	0	-37	-37	-33	0	0	-50																									
#22-G-TP03	0-0.1	3/07/2014	2.7	<0.4	6.9	7.1	<5	<0.05	<5	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	2.5	<0.4	7	8	<5	<0.05	<5	21	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	-8	0	1	12	0	0	0	-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-															
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	4	<0.4	11	7	7	<0.1	2	23	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	39	0	46	-1	0	0	0	4																									
#25-G-SS05	0-0.1	4/07/2014	7.6	0.8	23	12	17	<0.05	6.2	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	7.1	0.8	26	12	20	<0.05	7.9	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-7	0	12	0	16	0	0	3	-	-	-	-	-	-	-	-	-	-															
QC20/A	Triplicate of #25-SS05	4/07/2014	10	<0.4	23	12	19	<0.1	7	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	27	0	0	0	11	0	0	-5	-	-	-	-	-	-	-	-	-	-															
#27-G-TP01	0.1-0.2	19/06/2014	7.8	0.6	26	18	28	<0.05	13	27	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	6.9	0.7	21	38	21	<0.05	16	55	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	-12	0	-21	71	-29	0	0	68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	7	0.4	21	18	26	<0.1	13	36	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	-
	RPD	%	-11	0	-21	0	-7	0	0	29									-	-															
#27-TP07	0-0.1	20/06/2014	<2	<0.4	<5	<5	<5	<0.05	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	<2	<0.4	<5	<5	6	<0.05	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	<4	<0.4	4	2	5	<0.1	1	3	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0				0	0															-
#29-TP04	0-0.1	18/06/2014	6.2	0.6	31	9	21	<0.05	5.7	7.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	7	0.6	27	8.2	22	<0.05	<5	8.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	12	0	-14	-9	5	0	0	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	7	<0.4	19	8	26	<0.1	5	10	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	12	0	-48	-12	21	0	0	23	0	0	0	0	0	-	-	-	-	-	-	0.00	-	0	0	0	0	0	-	0	0	0	-	-	-
#31-TP01	0-0.1	17/06/2014	5.5	<0.4	14	34	16	<0.05	14	67	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	6.6	0.7	18	41	20	<0.05	17	88	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	18	0	25	19	22	0	0	27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	<4	<0.4	8	12	9	<0.1	3	15	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	0	0	-55	-96	-56	0	0	-127	0	0	0	0	0	-	-	-	0	0	-	0	-	0	0	0	0	0	-	0	0	0	-	-	-
#31-TP03	0-0.1	17/06/2014	7.9	0.6	29	23	21	<0.05	7.3	39	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	11	1.1	33	22	28	<0.05	13	46	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.605	<0.5	<0.5	<0.5	<0.5	5.25	-
	RPD	%	33	0	13	-4	29	0	0	16		0.00	0.00	0.00	0.00	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	30	<0.4	21	23	20	<0.1	7	38	<0.1	<0.1	<0.1	<0.1	<0.05	-	-	-	<0.5	<0.2	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	0
	RPD	%	117	0	-32	0	-5	0	0	-3	0	0	0	0	0	-	-	-	0	0	-	0	-	0	0	0	0	0	-	0	0	0	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

JBS&G

			BTEX								TPHs (NEPC 1999)						TRHs (NEPC 2013)								Polychlorinated Biphenyls								
			Benzene	Ethylbenzene	BTEX (Sum of Total)	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	Xylene (Sum of Total)	>C10-C36 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10 - C16 less Naphthalene (F2)	>C10-C40 (Sum of Total)	C6-C10 Fraction	C6 - C10 less BTEX (F1)	Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	PCBs (Sum of Total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1		0.1	0.2	0.1	0.3			20	20	50	50	50	50	100	100	50		20	20	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	
Field ID	**Sample Depth**	**Sample Date**																															
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-
#1-TP03	0-0.1	25/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
#3-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
QC17	Duplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-	-	-	-	-	-
QC17/A	Triplicate of #3-O-SS07	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#3-TP02	0-0.1	26/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-							
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0					
#3-TP04	0-0.1	27/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	50	<50	<50	100	100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00						
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	150	-	<50	130	110	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%	0	0	-	-	-	-	-	-	-	0	0	0	**100**	0	0	**26**	**10**	0	0	0	0	0	0	0	0	0	0	0	0		
#6-TP02	0-0.1	27/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
#9-SP-HA01	0.3-0.4	7/07/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	-	-	-	-	-	-	-	-	-	-
	RPD	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%	0																														
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	0	<20	0	0	0	<0	0	0	0	0	0	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#12-TP05	0-0.1	30/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%	0	0																													
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#17-TP04	0-0.1	23/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#18-TP02	0-0.1	26/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#19-TP01	0-0.1	24/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#20-TP01	0-0.1	24/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#25-G-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-
	RPD	%																															
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-
	RPD	%																															
#27-G-TP01	0.1-0.2	19/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00																								
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#27-TP07	0-0.1	20/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#29-TP04	0-0.1	18/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%	0.00	0.00																													
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#31-TP01	0-0.1	17/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															
#31-TP03	0-0.1	17/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	<0.1	<0.1	0.3	<0.1	<0.2	<0.1	<0.3	0.15	60	<20	<20	<50	<50	<50	<50	<100	<100	<50	125	<20	<20	<0.05	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5
	RPD	%																															
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	<0.2	<1	-	<0.5	<2	<1	-	-	-	<25	<50	<100	<100	-	<50	<100	<100	<50	-	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
	RPD	%																															

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organochlorine Pesticides																							
			Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	alpha-Chlordane	delta-BHC	Chlordane	DDD	gamma-Chlordane	DDE	DDT	DDT+DDE+DDD (Sum of Total)	Dieldrin	Endosulfan alpha	Endosulfan beta	Endosulfan Sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05		0.05	0.05	0.1	0.05	0.1	0.05	0.1	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	1
Field ID	**Sample Depth**	**Sample Date**																								
#1-G-SS21	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC19	Duplicate of #1-SS21	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QC19/A	Triplicate of #1-SS21	4/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%	0	-	0	0	-	0	-	0	-	0	0	-	0	0	0	0	0	0	-	0	0	0	0	-
#1-TP03	0-0.1	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%	0	0	0	0	-	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#3-O-SS07	0-0.1	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.062	<0.05	<0.2	<1
QC17	Duplicate of #3-O-SS07	2/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								0.00
QC17/A	Triplicate of #3-O-SS07	2/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#3-TP02	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%			0	0	0	0																		
#3-TP04	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%	0	0	0	0	-	0		0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0
#6-TP02	0-0.1	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA01	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#11-TP06	0-0.1	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#12-TP05	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#13-TP01	0-0.1	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#17-TP04	0-0.1	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#18-TP02	0-0.1	26/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#19-TP01	0-0.1	24/06/2014	<0.05	0.285	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.12	<0.05	0.17	0.26	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	<0.05	0.215	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	0.08	<0.05	0.13	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#20-TP01	0-0.1	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#22-G-TP03	0-0.1	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#25-G-SS05	0-0.1	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC20	Duplicate of #25-SS05	4/07/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC20/A	Triplicate of #25-SS05	4/07/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#27-G-TP01	0.1-0.2	19/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#27-TP07	0-0.1	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#29-TP04	0-0.1	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
#31-TP01	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								
#31-TP03	0-0.1	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	<0.05	0.05	<0.05	<0.05	-	<0.05	<0.1	<0.05	-	<0.05	<0.05	0.075	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1
	RPD	%																								
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-
	RPD	%																								

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Organophosphorus Pesticides																									
			Azinphos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Mevinphos	Monocrotophos	Parathion	Parathion methyl	Phorate	Profenofos	Prothiofos	Ronnel	Stirophos	Trichloronate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.5	1	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	10	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5
Field ID	**Sample Depth**	**Sample Date**																										
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1-TP03	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-O-SS07	0-0.1	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC17	Duplicate of #3-O-SS07	2/07/2014	<0.5	-	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	RPD	%	0.00	-	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
QC17/A	Triplicate of #3-O-SS07	2/07/2014	-	<0.1	<0.1	<0.1	-	-	<0.1	-	<0.1	-	<0.1	-	<0.1	-	-	-	-	-	-	-	-	-	-	<0.1	-	-
	RPD	%	-	-	-	-	-	-	0	-	0	-	0	-	0	-	-	-	-	-	-	-	-	-	-	0	-	-
#3-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#9-SP-HA01	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#12-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#17-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#18-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#19-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#20-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#25-G-SS05	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-G-TP01	0.1-0.2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#27-TP07	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#29-TP04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#31-TP03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A - Soil Analytical Results
Project Number: 43376
Project Name: Box Hill North DSI RAP

			Herbicides & Fungicides																Asbestos
			2,4,5-T	2,4-D	2,4-DB	Bromoxynil	Clopyralid	Dicamba	Dichloroprop	Dinitro-o-cresol	Dinoseb	Fenoprop	MCPA	MCPB	Mecoprop	Picloram	Actril (Ioxynil)	Triclopyr	Asbestos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ww%
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	<0.001
Field ID	**Sample Depth**	**Sample Date**																	
#1-G-SS21	0-0.1	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC19	Duplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
QC19/A	Triplicate of #1-SS21	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#1-TP03	0-0.1	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC09	Duplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC09/A	Triplicate of #1-TP03 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#3-O-SS07	0-0.1	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC17	Duplicate of #3-O-SS07	2/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.001
	RPD	**%**	0.00	0.00	0.00	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	-	0.00
QC17/A	Triplicate of #3-O-SS07	2/07/2014	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.001
	RPD	**%**	0	0	0	0	0	0	0	-	0	0	0	0	-	-	-	-	0
#3-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC11	Duplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC11/A	Triplicate of #3-TP02 (0-0.1)	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#3-TP04	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC12	Duplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC12/A	Triplicate of #3 TP04 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#6-TP02	0-0.1	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC13	Duplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC13/A	Triplicate of #6-TP02 (0-0.1)	27/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#9-SP-HA01	0.3-0.4	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC21	Duplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC21/A	Triplicate of #9-SP-HA01 (0.3-0.4)	7/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#11-TP06	0-0.1	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC16	Duplicate of #11-TP06 (0-0.1)	1/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC16/A	Triplicate of #11-TP06 (0-0.1)	2/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#12-TP05	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC15	Duplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC15/A	Triplicate of #12-TP05 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#13-TP01	0-0.1	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
QC14	Duplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC14/A	Triplicate of #13-TP01 (0-0.1)	30/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#17-TP04	0-0.1	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC06	Duplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC06/A	Triplicate of #17-TP04 (0-0.1)	23/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#18-TP02	0-0.1	26/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC10/A	Triplicate of #18-TP02 (0-0.1)	25/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#19-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC08	Duplicate of #19-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC08/A	Triplicate of #19 -TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#20-TP01	0-0.1	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC07	Duplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC07/A	Triplicate of #20-TP01 (0-0.1)	24/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#22-G-TP03	0-0.1	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
QC18	Duplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC18/A	Triplicate of #22-TP03 (0-0.1)	3/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#25-G-SS05	0-0.1	4/07/2014	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	0
QC20	Duplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC20/A	Triplicate of #25-SS05	4/07/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#27-G-TP01	0.1-0.2	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	Duplicate of #27-G-TP01 (0.1-0.2)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC04/A	Triplicate of #27-G-TP01 (0.1-0.2)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#27-TP07	0-0.1	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC05	Duplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC05/A	Triplicate of #27-TP07 (0-0.1)	20/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#29-TP04	0-0.1	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC03	Duplicate of #29 TP04 (0-0.1)	18/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC03/A	Triplicate of #29 TP04 (0-0.1)	19/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#31-TP01	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC01	Duplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC01/A	Triplicate of #31 TP01 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
#31-TP03	0-0.1	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
QC02	Duplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00
QC02/A	Triplicate of #31 TP03 (0-0.1)	17/06/2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001
	RPD	**%**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

Field Blanks (WATER)
Filter: ALL

			SDG	423678	423743	423820	424036	424180	424407	422457	422618	422618	422956	423116	423382	423382	423678	423743	423820	424036	424180	422131	422618	422956	423116	423382
			Field_ID	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TB140623-7
			Sampled_Date-Time	30/06/2014	1/07/2014	2/07/2014	3/07/2014	4/07/2014	7/07/2014	18/06/2014	19/06/2014	20/06/2014	23/06/2014	25/06/2014	26/06/2014	27/06/2014	30/06/2014	1/07/2014	2/07/2014	3/07/2014	4/07/2014	16/06/2014	19/06/2014	23/06/2014	25/06/2014	23/06/2014
			Sample_Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B
Chem_Group	**ChemName**	**Units**	**EQL**																							
	Total Nitrogen in water	µg/l	100																							
BTEX	Benzene	µg/l	1	<1	<1	<1	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Ethylbenzene	µg/l	1	<1	<1	<1	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/l	1	<1	<1	<1	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Xylene (m & p)	µg/l	2	<2	<2	<2	<200	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/l	1	<1	<1	<1	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Xylene (Total)	µg/l	3	<3	<3	<3	<300	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Chlorinated Alkanes	1,1,1,2-tetrachloroethane	µg/L	1																							
	1,1,1-trichloroethane	µg/L	1																							
	1,1,2,2-tetrachloroethane	µg/L	1																							
	1,1,2-trichloroethane	µg/L	1																							
	1,1-dichloroethane	µg/L	1																							
	1,2,3-trichloropropane	µg/L	1																							
	1,2-dibromo-3-chloropropane	µg/L	1																							
	1,2-dichloroethane	µg/L	1																							
	1,2-dichloropropane	µg/L	1																							
	1,3-dichloropropane	µg/L	1																							
	2,2-dichloropropane	µg/L	1																							
	bromodichloromethane	µg/L	1																							
	Carbon tetrachloride	µg/L	1																							
	Chloroform	µg/L	1																							
	dibromochloromethane	µg/L	1																							
	Chloroethane	µg/L	10																							
	Chloromethane	µg/L	10																							
	Dichlorodifluoromethane	µg/L	10																							
	Trichlorofluoromethane	µg/L	10																							
Chlorinated Alkenes	1,1,2,2-tetrachloroethylene	µg/L	1																							
	1,1-Dichloroethene	µg/L	1																							
	1,1-dichloropropene	µg/L	1																							
	2-chlorotoluene	µg/L	1																							
	4-chlorotoluene	µg/L	1																							
	cis-1,2-dichloroethene	µg/L	1																							
	cis-1,3-dichloropropene	µg/L	1																							
	trans-1,2-dichloroethene	µg/L	1																							
	trans-1,3-dichloropropene	µg/L	1																							
	Trichloroethene	µg/L	1																							
	Vinyl Chloride	µg/L	10																							
Chlorinated Benzenes	1,2,3-trichlorobenzene	µg/L	1																							
	1,2,4-trichlorobenzene	µg/L	1																							
	1,2-Dichlorobenzene	µg/L	1																							
	1,3-dichlorobenzene	µg/L	1																							
	1,4-dichlorobenzene	µg/L	1																							
	Hexachlorobenzene	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
Major Cations	Potassium - Dissolved (Filtered)	mg/l	0.5																							
Metals & Metalloids	Arsenic (Total)	µg/l	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5										
	Arsenic (Total) (Filtered)	µg/L	1																							
	Cadmium	µg/l	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5										
	Cadmium (Filtered)	µg/L	0.1																							
	Chromium (Total)	µg/l	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5										
	Chromium (Total) (Filtered)	µg/L	1																							
	Copper	µg/l	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5										
	Copper (Filtered)	µg/L	1																							
	Lead	µg/l	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5										
	Lead (Filtered)	µg/L	1																							
	Mercury (Inorganic)	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Mercury (Inorganic) (Filtered)	µg/L	0.05																							
	Nickel	µg/l	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5										
	Nickel (Filtered)	µg/L	1																							
	Zinc	µg/l	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5										
	Zinc (Filtered)	µg/L	1																							
Miscellaneous Hydrocarbons	1,2-dibromoethane	µg/L	1																							
	Bromoform	µg/L	1																							
	Bromomethane	µg/L	10																							
	Cyclohexane	µg/L	1																							
	Dibromomethane	µg/L	1																							
Miscellaneous Industrial Chemicals	Hexachlorobutadiene	µg/L	1																							
Monocyclic Aromatic Hydrocarbons	1,2,4-trimethyl benzene	µg/L	1																							
	1,3,5-trimethyl benzene	µg/L	1																							
	4-isopropyl toluene	µg/L	1																							
	Bromobenzene	µg/L	1																							
	isopropylbenzene	µg/L	1																							
	n-butyl benzene	µg/L	1																							
	n-propyl benzene	µg/L	1																							
	sec-butyl benzene	µg/L	1																							
	styrene	µg/L	1																							
	tert-butyl benzene	µg/L	1																							
Non-Metallic Inorganics	Phosphorus	µg/l	50																							
Organochlorine Pesticides	Aldrin	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	alpha-BHC	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	beta-BHC	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	alpha-Chlordane	µg/L	0.2																							
	delta-BHC	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Chlordane	µg/l	1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1	<1	<1										
	DDD	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	gamma-Chlordane	µg/L	0.2																							
	DDE	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	DDT	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Dieldrin	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Endosulfan alpha	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Endosulfan beta	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Endosulfan Sulphate	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Endrin	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Endrin aldehyde	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Endrin ketone	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Heptachlor	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Heptachlor Epoxide	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Lindane	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Methoxychlor	µg/l	0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										
	Toxaphene	µg/l	10	<10	<10	<10	<10	<10		<10	<10	<10	<10	<10	<10	<10										
Organophosphorus Pesticides	Bromophos-ethyl	µg/L	0.2																							
	Chlorpyrifos	µg/L	0.2																							
	Chlorpyrifos-methyl	µg/L	0.2																							
	Diazinon	µg/L	0.2																							
	Dimethoate	µg/L	0.2																							
	Ethion	µg/L	0.2																							
	Fenitrothion	µg/L	0.2																							
	Ronnel	µg/L	0.2																							

Field Blanks (WATER)			SDG	423678	423743	423820	424036	424180	424407	422457	422618	422618	422956	423116	423382	423382	423678	423743	423820	424036	424180	422131	422618	422956	423116	423382
Filter: ALL			Field_ID	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	RINSATE	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TB140623-7
			Sampled_Date-Time	30/06/2014	1/07/2014	2/07/2014	3/07/2014	4/07/2014	7/07/2014	18/06/2014	19/06/2014	20/06/2014	23/06/2014	25/06/2014	26/06/2014	27/06/2014	30/06/2014	1/07/2014	2/07/2014	3/07/2014	4/07/2014	16/06/2014	19/06/2014	23/06/2014	25/06/2014	23/06/2014
			Sample_Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B
Polychlorinated Biphenyls	Aroclor 1016	µg/l	5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5										
	Aroclor 1232	µg/l	5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5										
	Aroclor 1242	µg/l	5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5										
	Aroclor 1248	µg/l	5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5										
	Aroclor 1254	µg/l	5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5										
	Aroclor 1260	µg/l	5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5										
	PCBs (Total)	µg/l	5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5	<5										
Polycyclic Aromatic Hydrocarbons	Acenaphthene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Acenaphthylene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Anthracene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Benz(a)anthracene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Benzo(a)pyrene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Benzo(b,j)fluoranthene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Benzo(g,h,i)perylene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Benzo(k)fluoranthene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Chrysene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Dibenz(a,h)anthracene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Fluoranthene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Fluorene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Indeno(1,2,3-c,d)pyrene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Naphthalene	µg/l	1	<20	<20	<20	<100	<20	<20	<20	<20	<20	<20	<20	<20	<20										
	Phenanthrene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	Pyrene	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
	PAHs (Total)	µg/l	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1										
Surrogate	Surrogate Bromochloromethane	µg/L	1																							
	Surrogate Chlorobenzene-D5	µg/L	1																							
TPHs (NEPC 1999)	C6-C9 Fraction	µg/l	10	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20										
	C10-C14 Fraction	µg/l	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50										
	C15-C28 Fraction	µg/l	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100										
	C29-C36 Fraction	µg/l	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100										
	C10-C36 Fraction (Total)	µg/l	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100										
TRHs (NEPC 2013)	>C10-C16 Fraction	µg/l	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50										
	>C16-C34 Fraction	µg/l	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100										
	>C34-C40 Fraction	µg/l	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100										
	>C10 - C16 less Naphthalene (F2)	µg/l	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50										
	C6-C10 Fraction	µg/l	10	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20										
	C6 - C10 less BTEX (F1)	µg/l	10	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20										

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Box Hill	**PROJECT NO:** 43376
FIELD DATES: 17/6/14	**FIELD STAFF:** T.C, ER

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD: Zero / iso

DATE	TIME	READING (ppm$_v$)	COMMENTS
17/6/14	7:30am	0.0	Zeroed (carbon) + calibrated (isobutylene)

DECONTAMINATION SUMMARY

EQUIPMENT: Hand auger + shovel

	Y	N	NA
1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

New gloves used for each sample.

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Box Hill	**PROJECT NO:** 43376
FIELD DATES: 17/6/14 → 20/6/14	**FIELD STAFF:** T.C, ER, LB

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD: Zero / iso

DATE	TIME	READING (ppm$_v$)	COMMENTS
17/6/14	7:30am	0.0	Zeroed (carbon) + calibrated (isobutylene)
18/6/14	"	"	"
19/6/14	"	"	"
20/6/14	"	"	"

DECONTAMINATION SUMMARY			
EQUIPMENT: Hand auger + shovel			
1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

New gloves used for each sample.

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Box Hill	PROJECT NO: 43376
FIELD DATES: 23/6/14	FIELD STAFF: TC

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD:

DATE	TIME	READING (ppm$_v$)	COMMENTS
23/6/14	7:00 am	0.0	Zeroed (carbon), calibrated (isobutylene)

DECONTAMINATION SUMMARY

EQUIPMENT: Handauger, shovel

1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

New gloves used for each sample

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Box Hill	**PROJECT NO:** 43376
FIELD DATES: 23/6/14	**FIELD STAFF:** TC

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD:

DATE	TIME	READING (ppm$_v$)	COMMENTS
23/6/14	7:00 am	0.0	Zeroed (carbon), calibrated (isobutylene)
24/6/14	7:30 am	0.0	Zeroed (carbon), calibrated (iso)

DECONTAMINATION SUMMARY

EQUIPMENT: Handauger, shovel

	Y	N	NA
1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

New gloves used for each sample

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Box Hill	**PROJECT NO:** 43376
FIELD DATES: 23/6/14 → 27/6/14	**FIELD STAFF:** TC

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD:

DATE	TIME	READING (ppm$_v$)	COMMENTS
23/6/14	7:00am	0.0	Zeroed (carbon), calibrated (isobutylene)
24/6/14	7:30am	0.0	Zeroed (carbon), calibrated (iso)
25/6/14	7:00	0.0	Zeroed (carbon) + calibrated
26/6/14	7:15	0.0	Zeroed (carbon) + calibrated
27/6/14	7:30	0.0	Zeroed (carbon) + calibrated

DECONTAMINATION SUMMARY

EQUIPMENT: Handauger, shovel, trowel.

1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

New gloves used for each sample

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Box Hill	**PROJECT NO:** 63376
FIELD DATES: 30/6/14 to 4/7/14	**FIELD STAFF:** TC, CB

CALIBRATION SUMMARY
EQUIPMENT: PID
CALIBRATION STANDARD:

DATE	TIME	READING (ppm_v)	COMMENTS
30/6/14	7:30am	0.00	Zeroed + Calibrated (Carbon +130)
1/7/14	"	"	"
2/7/14	"	"	"
3/7/14	"	"	"
4/7/14	"	"	"

DECONTAMINATION SUMMARY

EQUIPMENT: Hand auger, shovel, trowel, bailer

1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

New gloves used for each sample

Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME: Box Hill	**PROJECT NO:** 63376
FIELD DATES: 7/7/14	**FIELD STAFF:** TC, LB

CALIBRATION SUMMARY
EQUIPMENT: PID, WQM
CALIBRATION STANDARD:

	DATE	TIME	READING (ppm$_v$)	COMMENTS
WQM	7/7/14	8:00	—	Calibrated
PID	7/7/14	8:00	0-0	Zeroed + Calibrated

DECONTAMINATION SUMMARY

EQUIPMENT: IP, hand auger, shovel

1. Was the equipment decontaminated appropriately prior to sampling at each location?	Y	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	NA
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	NA
4. Was phosphate-free detergent used to wash the equipment?	Y	N	NA
5. Was the equipment rinsed with clean water?	Y	N	NA
6. Was the equipment then rinsed with deionised water?	Y	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	Y	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

New gloves + tubing used ~~at~~ for each sample

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Appendix 19

Remediation Action Plan

E.J. Cooper and Son Pty Ltd
Remediation Action Plan

Box Hill North, NSW

15 April 2015
43376/59205 (Rev 5)
JBS&G

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E.J. Cooper and Son Pty Ltd
Remediation Action Plan

Box Hill North, NSW

15 April 2015
43376/59205 (Rev 5)
JBS&G

Table of Contents

List of Abbreviations vii

Executive Summary viii

1. Introduction 1

    1.1 Introduction and Background 1

    1.2 Objectives 2

2. Site Conditions and Description 3

    2.1 Site Identification 3

    2.2 Site Description 5

    2.3 Surrounding Land use 5

    2.4 Topography 5

    2.5 Geology 5

    2.6 Hydrology 6

    2.7 Hydrogeology 6

    2.8 Acid Sulfate Soils 6

    2.9 Proposed Development 6

3. Summary Site History 8

    3.1 Site History 8

    3.2 Previous Investigations 8

        3.2.1 JBS, PSI 2013 8

        3.2.2 JBS&G, DSI 2014 9

4. Data Gaps 11

    4.1 Background 11

    4.2 Data Gaps 11

        4.2.1 Site Inspection 11

        4.2.2 Six Lots Not Previously Investigated 11

        4.2.3 Farm Dams 13

        4.2.4 Hydroponic installation (Map Reference #23) 13

        4.2.5 ASTs 14

        4.2.6 Delineation Sampling 14

        4.2.7 Footprint of former structures 15

        4.2.8 Stockpile Sampling 16

5. Remedial Options 17
5.1 Remediation Objectives 17
5.2 Extent of contamination 17
5.2.1 Data Gaps 25
5.3 Possible Remedial Options 25
5.4 Discussion of Options 26
5.5 Preferred Remediation Option 26
6. Remedial Plan 49
6.1 Notifications 49
6.2 Define the Boundary of Contamination 49
6.2.1 Data Gaps 49
6.3 Expected Sequence of Works 49
6.4 Site Establishment 49
6.5 Demolition of Structures 50
6.6 Farm Dam Dewatering & Sediment Removal 50
6.7 Cap and Containment 51
6.8 Impacted Materials Remediation Works 52
6.8.1 Soil Asbestos Remedial Works 52
6.8.1.1 Asbestos 'Sparrow' Picking 52
6.8.2 Hydrocarbon and Heavy Metal Remedial Works 53
6.8.3 Delineation of Excavations 53
6.8.4 Backfilling of Excavations 53
6.8.5 Offsite Disposal of Material 53
6.8.6 Imported Fill Material 54
6.8.7 Stockpiles 54
6.9 Environmental Management Plan (EMP) 54
6.10 Air Monitoring 54
6.11 ASTs 54
7. Validation Plan 55
7.1 Data Quality Objectives 55
7.1.1 State the Problem 55
7.1.2 Identify the Decision 55

7.1.3 Identify Inputs to the Decision ... 56
7.1.4 Define the Boundary of Impact ... 56
7.1.5 Develop a Decision Rule ... 56
7.1.6 Summarise Decision Rules ... 56
7.1.7 Specify Limits of Decision Error ... 58
7.1.8 Optimise the Design for Obtaining Data ... 59
7.2 Soil Validation Methodology ... 59
7.2.1 Soil Sampling ... 59
7.3 Asbestos 'Sparrow Picking' ... 60
7.3.1 Surface Pick ... 60
7.3.2 Subsurface ... 61
7.3.2.1 Asbestos Picking Pad Footprints ... 61
7.3.3 Asbestos Quantification ... 62
7.4 Additional Assessment ... 62
7.5 Stockpile Sampling ... 62
7.6 ASTs ... 62
7.7 Management of Landscaped Areas ... 63
7.8 Cap and Containment ... 63
7.9 Less Sensitive Land uses ... 64
7.10 Hazardous Building Materials and Asbestos Clearance ... 64
7.11 Debris and Anthropogenic Materials ... 64
7.12 Laboratory Analyses ... 65
8. Validation Criteria ... 67
8.1 Application of Soil Criteria ... 71
8.2 Validation Reporting ... 71
9. Contingency Plan ... 72
9.1 Changing/Staged Development Requirements ... 72
9.2 Unexpected Finds ... 72
10. Site Management Plan ... 74
10.1 Soil and Water Management ... 74
10.2 Site Access ... 74
10.3 Stockpiles ... 74

10.4 Dam & Excavation Pump-out 74
10.5 Noise 75
10.6 Vibration 75
10.7 Air Quality 75
10.7.1 Dust Control 75
10.7.2 Asbestos Air Monitoring 75
10.8 Material Transporting 75
10.9 Hazardous Materials 75
10.10 Disposal of Contaminated Soil 75
10.11 Imported Fill 75
10.12 Site Signage and Contact Numbers 76
10.13 Complaint Reporting and Resolution 76
11. Health and Safety 77
11.1 Responsibilities 77
11.1.1 Remediation Supervisor 77
11.1.2 Other Members of the Site Workforce 77
11.2 Hazards 78
11.2.1 Inhalation Hazards 78
11.2.2 Physical Hazards 78
11.3 Personal Protective Equipment 79
11.4 Monitoring procedures 80
11.5 Decontamination Procedures 81
11.6 Emergency Response 82
12. Post Remediation Site Management Plan 83
12.1 Long Term Management Plan 83
13. Regulatory Approvals/Licensing 84
14. Site Suitability 86
15. Limitations 87

Tables

Table 2.1: General Site Information 3
Table 2.2 Summary Site Details 3
Table 2.3 Summary of Precincts 7
Table 2.4 Summary of Lots not Investigated 7
Table 3.1 Summary of Site History 8
Table 4.1 Six Lots Investigation 13
Table 4.2 Delineation Assessment 15
Table 5.1 Description of Remedial Areas 18
Table 5.2 Known Stockpiles 25
Table 5.3 Remedial Approach (by AEC) 27
Table 5.4 Remedial Approach (by Lot) 29
Table 7.1 Summary of Decision Rules 56
Table 7.2 Summary of Data Quality Objectives for Soil Validation Program 59
Table 7.3 Sampling and Analytical Schedule 66
Table 8.1 Adopted Site Criteria 68
Table 8.2 Ecological based criteria 69
Table 8.3 Biosolids Based Criteria 69
Table 8.4 Management Limits Criteria 70
Table 8.5 Waste Classification Guidelines based on SCC without TCLP 70
Flowchart 9.1 Unexpected Find Protocol 73

Figures

Figure 1: Site Location
Figure 2: Site Layout
Figure 3: Precincts Layout
Figure 4: Precincts with Current Lot Boundaries
Figures 5a-5e: Previous Soil Sample Locations
Figure 6: Previous Groundwater Sample Locations
Figure 7a-7e: Previous Soil Exceedances
Figures 8a-8e: Remedial Areas
Figure 9: Known Stockpile Locations
Figure 10: Above Ground Storage Tank Locations

Appendices

Appendix A – Development Plans

Appendix B – GPS Coordinates of sample locations

List of Abbreviations

ACM – Asbestos Containing Material

AEC – Area of Environmental Concern

AST - Above Ground Storage Tank

bgs – Below Ground Surface

COPC – Contaminant of Potential Concern

DCP – Development Control Plan

DECCW - NSW Department of Environment, Climate Change and Water (now OEH)

DQI – Data Quality Indicator

DQO – Data Quality Objective

EPA – NSW Environment Protection Authority

ESA – Environmental Site Assessment

ha - Hectare

HIL - Health Investigation Level

LOR - Limit of Reporting

NOW - Office of Water (formerly Department of Water and Energy, DWE)

OEH – NSW Office of Environment and Heritage

OCPs – Organochlorine Pesticides

OPPs – Organophosphate Pesticides

PAHs – Polycyclic Aromatic Hydrocarbons

PCBs – Polychlorinated Biphenyls

RAP – Remedial Action Plan

SEPP – State Environment Protection Policy

TRH – Total Recoverable Hydrocarbons

UST - Underground Storage Tank

WHS – Work Health and Safety

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by E.J. Cooper and Son Pty Ltd (EJC, the client) c/- APP Corporation Pty Ltd (APP) to prepare a Remedial Action Plan (RAP) at land at Box Hill North, NSW (the site). The site occupies part of the land bound by Boundary Road to the west, Old Pitt Town Road to the south, Maguires Road to the north, and Janpieter Road to the east, and has an area of approximately 380 hectares. The site location is show in **Figure 1**.

It is understood that the site is proposed to be subdivided and developed comprising residential properties, commercial and retail, school and open space land uses. The site will be developed in a staged approach, with the site having been separated into nine separate Precincts (Precincts A-I).

In July 2013, JBS&G prepared the Draft Preliminary Site Investigation (PSI) report for the site (JBS 2013[1]).

Based on the results of the investigation, it was concluded that there was potential for surface and subsurface contamination to be present resulting from current and previous site use (agricultural use). The PSI identified a number of Areas/Activities of Environmental Concern (AECs) across the site.

Consequently, a DSI was completed by JBS&G (JB&G 2014[2]) which identified heavy metal, hydrocarbon and asbestos impacts to the soils at the site. Additionally, aesthetic impacts associated with asbestos and building rubble were identified at the site. Concentrations of contaminants of potential concern (COPCs) were not reported within the groundwater samples collected and analysed at the site. It was recommended that a RAP be prepared to address the identified impacts to render the site suitable for its proposed land uses.

Consequently, this RAP has been developed to address the identified impacts at the site to render the site suitable for the proposed land uses.

The objectives of the RAP are to:

- Summarise the Site characteristics;
- Define the extent of remediation required;
- Assess appropriate remediation options and select a preferred option;
- Document the remediation methodology, including the associated safety and environmental management controls;
- Establish pre-determined validation criteria relevant to the likely future land use and detail the validation program (including reporting);
- Identify the regulatory requirements relevant to the proposed remedial works; and
- Outline any potential ongoing monitoring or management requirements to ensure the continued protection of human health and the environment.

The preferred remedial option is to excavate impacted fill materials for potential onsite containment with management under an Environmental Management Plan (EMP) with excess material removed for offsite disposal. Offsite disposal of material may be required to suit the staged development to occur.

With the development to occur over the next ten years within the Precincts, the preferred remedial strategy can be applied across the site as a whole, or on a staged basis.

[1] Draft Preliminary Site Investigation, Box Hill North, NSW, JBS Environmental Pty Ltd (now JBS&G), July 2013 (JBS 2013).
[2] Detailed Site Investigation, Box Hill North, NSW, JBS&G, August 2014 (JBS&G 2014).

Subject to the successful implementation of the measures detailed in this RAP and subject to the limitations in **Section 15**, it is considered that the identified impacted soils can be remediated and validated without the need for further management.

However, should impacted material be retained at the site that does not meet the adopted land use scenario criteria then an EMP will be required to manage the potential risk to future site users.

1. Introduction

1.1 Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by E.J. Cooper and Son Pty Ltd (EJC, the client) c/- APP Corporation Pty Ltd (APP) to prepare a Remedial Action Plan (RAP) at land at Box Hill North, NSW (the site). The site occupies part of the land bound by Boundary Road to the west, Old Pitt Town Road to the south, Maguires Road to the north, and Janpieter Road to the east, and has an area of approximately 380 hectares. The site location is show in **Figure 1**.

The site is proposed to be subdivided and developed comprising residential properties, commercial and retail, school and open space land uses. The site will be developed in a staged approach, with the site having been separated into nine separate Precincts (Precincts A-I), with the development within each Precinct also completed in a staged approach that is yet to be finalised.

In July 2013, JBS&G prepared the Draft Preliminary Site Investigation (PSI) report for the site (JBS 2013[3]).

Based on the results of the investigation, it was concluded that there was potential for subsurface contamination to be present resulting from current and previous site use (agricultural use). The PSI identified a number of Areas/Activities of Environmental Concern (AECs) across the site.

It was considered unlikely that the AECs identified would have impacted the land to a degree that would prevent planning and development of the land for the intended use(s). It was recommended that a detailed site investigation (DSI) be completed to assess the extent of contamination prior to future development.

Consequently, a DSI was completed by JBS&G (JB&G 2014[4]) which identified heavy metal, hydrocarbon and asbestos impacts within the soils are the site. Additionally, aesthetic impacts associated with asbestos and building rubble were identified at the site. Concentrations of contaminants of potential concern (COPCs) were not reported within the groundwater samples collected and analysed at the site. It was recommended that a RAP be prepared to address the identified impacts to render the site suitable for its proposed land uses.

Consequently, it was recommended that a RAP be developed to address the identified impacts at the site to render the site suitable for the proposed land uses.

It is understood that the remediation and validation is to be undertaken during the construction phases of each Precinct development. Consequently the RAP has been developed to be flexible and enable adjustment of approach to suit the staged development and changing requirements as development progress.

Review of both the RAP and future Validation reports is to be completed by a NSW EPA accredited Site Auditor.

The RAP has been developed in accordance with guidelines made and endorsed by the NSW EPA.

[3] Draft Preliminary Site Investigation, Box Hill North, NSW, JBS Environmental, Pty Ltd (now JBS&G), July 2013 (JBS 2013).

[4] Detailed Site Investigation, Box Hill North, NSW, JBS&G, August 2014 (JBS&G 2014).

1.2 Objectives

The objectives of the RAP are to:

- Summarise the Site characteristics;
- Define the extent of remediation required;
- Assess appropriate remediation options and select a preferred approach or approaches;
- Document the remediation methodology, including the associated safety and environmental management controls;
- Establish pre-determined validation criteria relevant to the likely future land uses and detail the validation program (including reporting);
- Present contingency options to enable flexibility in approaches to remediation as staged development progresses to remediation, or in the event an alternative approach is required;
- Present unexpected finds protocol to allow management of previously unidentified impacts;
- Identify the regulatory requirements relevant to the proposed remedial works; and
- Outline any potential ongoing monitoring or management requirements to ensure the continued protection of human health and the environment.

2. Site Conditions and Description

2.1 Site Identification

The location of the site is shown on **Figure 1**. Site Details are summarised in **Tables 2.1** and **2.2** and on **Figure 2**, and are described in more detail in the following sections. Precinct layouts are shown in **Figures 3** and **4**.

Table 2.1: General Site Information

Local Government Authority	The Hills Shire (formerly Baulkham Hills Shire)
Approximate co-ordinates (MGA 56) of the centre of the site	E: 305908.887, N: 6277394.06
Current Use	Rural Residential, Agricultural. Current ownership as per **Table 2.2**
Previous Use	Rural Residential, Agricultural, open space/vacant
Total Site Area	Approx. 380 ha (based on information provided by APP).
Proposed Use	Residential, Commercial/Industrial and Open Space, Recreational
Zoning	Zoning as per **Table 2.2.**

The site was inspected during the previous investigation undertaken (JBS&G 2013).

The site is located approximately 42 km northwest of Sydney's CBD within a predominantly rural residential/agricultural area. The site is comprised of 31 lots and are summarised in **Table 2.2**.

Table 2.2 Summary Site Details

Map Ref (Figs 5a, 5b, 5c, 5d, 5e)	Lot/DP	Address	Current Owner	Size (ha)	Current Zoning*	Precinct
8	9/593517	155 Boundary Road, Box Hill 2765	Brian & Susan Eveston	10.01	RU6 Transition	D
27	17/255616	8 Cataract Road, Box Hill 2765	John & Lorraine Earl	12.03	RU6 Transition	A
3	1/207750	181-191 Boundary Road, Maraylya 2765	Anthony & Angela Brisindi	11.09	RU6 Transition	I
2	2/11126	195-205 Boundary Road, Maraylya 2765	Mario Rechichi & Mary Lawler	12.07	RU6 Transition	I
9	10/593517	153 Boundary Road, Box Hill 2765	Joe & Stella Sant	10.01	RU6 Transition	D
31	4/253552	121 Old Pitt Town Road, Box Hill 2765	Eugene Kavanagh	10.02	RU6 Transition	H
14	27/255616	14 Red Gables Road, Box Hill 2765	Michael & Jane Mathers	10.02	RU6 Transition	E
16	30/255616	5 Janpieter Road, Box Hill 2765	Fred & Elaine Dominello	10.01	RU6 Transition	F
23	18/255616	6 Cataract Road, Box Hill 2765	Charlie & Mary Portelli	10.06	RU6 Transition	B
11	23/255616	6 Red Gables Road, Box Hill 2765	Garry & Mary Galea	10.01	RU6 Transition	D
21	44/255616	7 Red Gables Road, Box Hill 2765	Joseph & Steven Bugeja	10.01	RU6 Transition	C
22	43/255616	9 Red Gables Road, Box Hill 2765	Zaren & Rose Bugeja	10.01	RU6 Transition	C

Map Ref (Figs 5a, 5b, 5c, 5d, 5e)	Lot/DP	Address	Current Owner	Size (ha)	Current Zoning*	Precinct
30	2/253552	117 Old Pitt Town Road, Box Hill 2765	D & A Kavanagh, T Akuila, R & R Edwards	10.35	RU6 Transition	H
5	4/135304 A & B	97 Maguires Road, Maraylya 2765	Paul & Margaret Gaudry	12.68	RU6 Transition	I
28	41/255616	11 Janpieter Road, Box Hill 2765	Paul & Diane Sammut	10.01	RU6 Transition	C
1	1/11126	207-217 Boundary Road, Maraylya 2765	John & Daphne Cox	12.07	RU6 Transition	I
20	45/255616	5 Red Gables Road, Box Hill 2765	E, M E G & A Micallef	10.02	RU6 Transition	B
19	46/255616	5 Red Gables Road, Box Hill 2765	E, M E G & A Micallef	10.03	RU6 Transition	B
13	26/255616	12 Red Gables Road, Box Hill 2765	Charlie & Pauline D'Anastasi	10.01	RU6 Transition	E
26	21/255616	7 Cataract Road, Box Hill 2765	Vera Joy Howes	11.02	RU6 Transition	A
6	5/658286	151 Maguires Road, Maraylya 2765	Twihaven Pty Limited	12.65	RU6 Transition	G
25	16/255616	5 Cataract Road, Box Hill 2765	John Martin Camilleri	10.56	RU6 Transition	A
15	31/255616	3 Janpieter Road, Box Hill 2765	Diverse Construction Group Pty Limited	10.34	RU6 Transition	F
4	3/11126	89 Maguires Road, Maraylya 2765	Maguires Road Pty Limited	12.68	RU6 Transition	I
29	40/255616	13 Janpieter Road, Box Hill 2765	Mahmoud & Jamila Hussein	10.01	RU6 Transition	C
17	29/255616	18 Red Gables Road, Box Hill 2765	Norma Jean Pike	10.08	RU6 Transition	F
12	25/255616	10 Red Gables Road, Box Hill 2765	Sam D'Anastasi	10.01	RU6 Transition	E
7	1/564211	169 Maguires Road, Maraylya 2765	John & Joyce Saliba	12.00	RU6 Transition	G
24	15/255616	3 Cataract Road, Box Hill 2765	I & M Zalac & G & C Galdes	10.03	RU6 Transition	A
10	22/255616	4 Red Gables Road, Box Hill 2765	E.J. Cooper & Son PL	10.13	RU6 Transition	D
18	47/255616	3 Red Gables Road, Box Hill 2765	E.J. Cooper & Son PL	10.15	RU6 Transition	B

The lots investigated as part of the previous investigation (JBS&G 2014) along with the Precincts are shown on **Figure 4.**

2.2 Site Description

A detailed inspection of accessible areas of the site was conducted between 20 and 24 May 2013 as part of the PSI (JBS 2013).

The site was comprised of predominantly rural residential/agricultural land which had been subdivided into 31 separate lots of between 10 and 12.7 ha.

The majority of the site lots contained rural residences and agriculturally-related outbuildings including workshops, with agricultural fields and uncleared woodlot. The agricultural fields consisted primarily of grazing land (cattle, horse stables) and land for growing crops (market gardens). Numerous farm dams and associated creeks were also located throughout the site. An electrical transmission corridor, oriented northeast-southwest, transected the northwest portion of the site.

2.3 Surrounding Land use

The current land uses of adjacent properties or properties across adjacent roads are summarised below:

- North - Maguires Road with rural residential, vacant/agricultural land, and bushland beyond.
- East – Janpieter Road and/or rural residential and vacant/agricultural land.
- South – Old Pitt Town Road and/or rural residential and vacant/agricultural land.
- West – Boundary Road and/or rural residential and vacant/agricultural land, and Sheyville National Park approximately 0.5 km further west.

2.4 Topography

Review of the regional topographic data outlined in the previous assessment (JBS&G 2014) indicated the site lies at approximately 40 m Australian Height Datum (AHD), with an overall gradient sloping gently to the west. The general topography of the site is relatively flat to gently rolling. Numerous small creeks cross the site, connecting farm dams, with the main creek, Cataract Creek, and oriented north-south at Lot 4 DP135304A&B at the north portion of the site.

2.5 Geology

Review of the previous assessment (JBS&G 2014) indicated the site is underlain by Middle Triassic Bringelly Shale, Mittagong Formation and Ashfield Shale, all part of the Wianamatta Group. The Bringelly Shale consists of shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff. The Mittagong Formation consists of fine to medium-grained quartz-lithic sandstone. The Ashfield Shale consists of dark-grey to black claystone-siltstone and fine sandstone-siltstone laminite.

The site is located within two soil landscape groups, the residual Lucas Heights and Blacktown Soil Landscapes.

The Lucas Heights Landscape soils are typically found on gently undulating crests and ridges on plateau surfaces of the Mittagong Formation, with local reliefs of up to 30 m and shallow slopes. The soils generally consist of moderately deep hard setting yellow podzolic and yellow soloth soils. The profile is characterised by stony soil, low soil fertility and low available water capacity.

The Blacktown Soil Landscape soils are typically found on gently undulating rises overlying shales of the Wianamatta Group, with local reliefs of up to 30 m and shallow slopes. The soils generally consist of shallow to moderately deep hard setting podzolic soils, typically mottled red and brown on crests and grading to yellow on lower slopes and within drainage lines. The profile is characterised by moderately reactive highly plastic subsoils, low soil fertility and poor soil drainage.

The intrusive investigation completed recently for the various lots indicates that the majority of the site is underlain by a silty clay and shale from near the surface.

2.6 Hydrology

The site lies approximately 7 km southeast of the Hawkesbury River, and Cataract Creek (a tributary to the Hawkesbury River) lies approximately 0.5 km northeast of the site. The site is predominantly unsealed, and as such the majority of precipitation falling on the site is expected to infiltrate to the underlying soils and/or be collected by numerous small creeks which flow to existing on-site farm dams. In addition, surface runoff across the site area is expected to flow to Cataract Creek, likely via an unnamed creek (oriented north-south) at Lot 4 DP135304A&B in the northern portion of the site.

2.7 Hydrogeology

Based on the previous investigation (JBS&G 2014) completed, groundwater was anticipated to flow to the northwest towards the Hawkesbury River and/or to Cataract Creek (a tributary of the Hawkesbury River).

A total of five groundwater monitoring wells (MW1-MW5) were installed at the site, with measured depth to groundwater ranging from 2.8 m below top of casing (btoc) to 7.4 (btoc).

It should be noted that two of the monitoring wells (MW3 and MW5) were dry.

2.8 Acid Sulfate Soils

Review of the previous investigation (JBS&G 2014) indicates that there is no High or Low probability of occurrence of acid sulfate soils within the soil profile located on the site. Additionally, no evidence of acid sulfate soils were reported during the previous investigation (JBS&G 2014).

2.9 Proposed Development

The site is planned to be subdivided and developed into the following land uses:

- Approximately 290 hectares of residential land, comprising 4100 lots, including high and low density housing;
- A 5.5 hectare town centre incorporating a mix of retail, commercial and business uses;
- A 2.2 hectare school site;
- Over 77 hectares of active and passive open space; and
- New roads and infrastructure.

The development plans are provided in **Appendix A** and **Figure 3** shows the proposed future land uses. It is understood that the development stages will be completed from A through to I.

As discussed in **Section 2.2** the site have been divided into nine Precincts for the future development works.

It should be noted that there are six lots that are included in the Precinct development plans but have not been investigated due to access restrictions. These include the following:

- Lot 1 DP782360 on Boundary Road in the northwest (adjoining lot reference #3, **Figure 2**);
- The lot between Lot 23 DP255616 and Lot 25 DP255616 (on Red Gables Road);

- The lot between Lot 27 DP255616 and Lots 29 and 30 DP 255616 (on Red Gables Road);
- The lots east of Lot 43 DP255616 (access via Janpieter Road);
- The lot west of Lot 2 DP253552 (on Old Pitt Town Road); and
- The lot between Lot 2 DP253552 and Lot 4 DP253552 (on Old Pitt Town Road).

The lots and the Precincts are summarised in **Table 2.3**, and the lots not investigated are summarised in **Table 2.4** following:

Table 2.3 Summary of Precincts

Precincts	Map Reference for Lots
Precinct A	24, 25, 26, 27
Precinct B	18, 19, 20, 23
Precinct C	21, 22, 28, 29
Precinct D	8, 9, 10, 11
Precinct E	12, 13, 14
Precinct F	15, 16, 17
Precinct G	6, 7
Precinct H	30, 31
Precinct I	1, 2, 3, 4, 5

Table 2.4 Summary of Lots not Investigated

Lot Location Description and Precinct	Map Reference for Lots
Lot 1 DP782360 on Boundary Road (Precinct D)	West of Map Reference #3 (**Figure 2**)
Lot 24 DP255616 between Lot 23 DP255616 and Lot 25 DP255616 (on Red Gables Road) (Precinct E)	Located between Map References #11 and #12 (**Figure 2**)
Lot 28 DP255616 between Lot 27 DP255616 and Lots 29 and 30 DP 255616 (on Red Gables Road) (Precinct E)	Located between Map References #14 and #16/#17 (**Figure 2**)
Lots 421-425 DP1183810 east of Lot 43 DP255616 (access via Janpieter Road) (Precinct C)	Located east of Map Reference #22 (**Figure 2**)
Lot 1 DP253552 west of Lot 2 DP253552 (on Old Pitt Town Road) (Precinct H)	Located between Map References #26/#27 and #30 (**Figure 2**)
Lot 3 DP253552 between Lot 2 DP253552 and Lot 4 DP253552 (Precinct H)	Located between Map References #30 and #31 (**Figure 2**)

Refer to **Figure 4** for Precinct land uses and lots.

3. Summary Site History

3.1 Site History

Based on the historical information provided in the previous investigation (JBS&G 2013) report, the history of the site is summarised in **Table 3.1** below

Table 3.1 Summary of Site History

Period	Activity	Source
1900s to 1940s	Portions of the site are owned by an orchardist and farmers (including dairy farmers). In the 1947 aerial photograph the site is mostly open grassed agricultural land with some limited rural residential farmhouses at the northern portion of the site off of Maguires Road. Medium density woodland/scrubland also located at the northern portion of the site.	Titles and 1947 aerial photograph
1940s-1970s	Site remains mostly as open grassed agricultural land, with increasing number of farm dams at scattered locations across the site. Woodland cover at the northern portion of the site gradually decreases. The south eastern portion of the site may have been used for horse training purposes. In1978 Red Gables Road and Cataract Road appear to be under construction, and additional rural residential buildings at the northern portion of the site (between Red Gables Road and Maguires Road).	Titles and 1955, 1961, 1970 and 1978 aerial photographs
1979-1980	The site has been subdivided into its current layout, with site use predominantly remaining agricultural (market gardens).	Titles
1980s - present	The subdivision of the site as referenced for 1979-1980 is apparent (as observed in the 1986 aerial photograph) with rural residential buildings at the majority of the subdivided lots at the approximate centre and southern areas of the site (between Red Gables Road and Old Pitt Town Road, east of Cataract Road). Site use (agricultural, rural residential) appears consistent between 1980s and present.	1986, 1994 and 2005 aerial photographs, site inspection (May 2013).

3.2 Previous Investigations

3.2.1 JBS, PSI 2013

JBS was engaged by APP to conduct a PSI at land at Box Hill North, NSW.

The objectives of the investigation were to assess the potential for widespread contamination based on the current and historical site activities and to draw preliminary conclusions of the potential contamination status of the site, with the consideration of potential development of the site for residential use.

The scope of work comprised:

- Review of topography, geology and hydrogeology of the site and surrounding areas;
- Review of available Council documentation, aerial photos, legal title information, EPA records and Heritage records to identify areas of environmental concern and associated COPCs;
- Conducting a detailed inspection of 31 properties comprising the site; and
- Preparation of a PSI report.

The site investigation identified the following issues at the site:

- Areas in which asbestos fragments and asbestos containing material (ACM) piping were observed on and embedded in the ground surface, and buildings containing ACM were identified;
- Potential lead paint associated with current/historic buildings;

- Current/former workshop areas in which oil staining was observed, and at areas where petroleum products/diesel fuel were stored;
- Areas of surface debris, drums, burn pits and debris stockpiles;
- Areas where former orchards/tree nurseries were identified; and
- Areas where disturbed terrain/stockpiles and/or imported fill were observed.

Based on the results of the investigation, it was concluded that there was potential for subsurface contamination to be present resulting from current and previous site use (agricultural use). Based on the site observations and agriculturally-related site activities, it was considered that the potential for widespread contamination across the site was low, with the possible exception of asbestos.

Due to site observations at some site lots (such as large maintenance sheds, petrol/diesel and chemical storage), observations of potential commercial activities at some site lots, and limited access to some buildings and lot areas, there had been and currently was storage of Dangerous Goods at the site.

It was considered unlikely that the AECs identified would have impacted the land to a degree that would prevent planning and development of the land for the intended use(s). It was recommended that a Detailed Site Investigation (DSI) be completed to assess the extent of contamination prior to future development.

It was also recommended that, based on the age of the structures as identified on-site, and the presence of suspected ACM, a hazardous materials building inspection be conducted for all structures located on the site to enable appropriate management during future development.

3.2.2 JBS&G, DSI 2014

JBS&G Australia Pty Ltd (JBS&G) was engaged by E.J. Cooper and Son Pty Ltd (EJC, the client) c/- APP Corporation Pty Ltd (APP) to conduct DSI at the site. The previous sample locations are shown on **Figures 5a** to **5e and Figure 6**.

The scope of works completed for this assessment comprised:

- Review and summary of relevant background information;
- A detailed inspection of the site;
- Soil sampling within 31 lots within the site boundary;
- Installation and groundwater sampling from five groundwater monitoring wells;
- Analysis of selected soil and groundwater samples for various COPCs;
- A detailed site inspection for hazardous building materials and preparation of a hazardous materials assessment report; and
- Assessment and preparation of a DSI report in general accordance with guidelines made or approved by the NSW EPA.

Based on the findings of the DSI, the following conclusions were made with respect to the site:

- Fill material was encountered from the ground surface at all sampling locations and generally comprised silty clay.
- Concentrations of arsenic, chromium and/or lead were reported in some soil samples exceeding the adopted health criterion in five separate lots.

- Concentrations of carcinogenic polycyclic aromatic hydrocarbons (PAHs) (including B(a)P) were reported to exceed the adopted health criterion in one soil sample collected from one lot.
- A total of eight soil samples exceeded the ecological criterion for TRH fractions, with these located in four lots.
- A total of five soil samples exceeded the Management Limits for TRH fractions, with these located within two lots.
- Non-friable ACM was observed across the site in 11 different locations within five lots. It should be noted that lots with heavy vegetation may obscure the occurrence of additional potential ACM fragment impacts. These pose a potential future risk to site users and if weathered could pose a potential migration risk from the site. Free asbestos (FA) fibres or asbestos fines (AF) were also reported in seven soil samples analysed from four lots.
- Aesthetic impacts have been identified including ACM on ground surfaces and in surface soils (as noted above), friable asbestos in soil, as well as minor isolated surface staining and odorous soils. These areas will require management as part of future development works at the site.
- Groundwater monitoring wells were installed at five locations across the site, with three being sampled. Two of the groundwater monitoring wells were found to be dry.
- Concentrations of COPCs were either not detected or below adopted investigation levels within the groundwater samples collected, which indicates that identified soil impacts are not impacting groundwater.
- The ASTs currently present at the site require management to prevent further impacts to the site.
- A total of 20 stockpiles were reported across the site.
- The DSI did not identify any widespread or gross soil contamination, with potentially unacceptable risks from soil contamination typically localised, limited in extent, and able to be readily managed to enable all proposed land uses at the site.

The DSI recommended that a RAP be prepared to address the identified impacts to render the site suitable for its intended uses.

4. Data Gaps

4.1 Background

Based on the previous investigations (JBS 2013 & JBS&G 2014) completed there are several areas that have been identified within the Precincts that require further assessment.

There are six lots that are included in the development proposal for the new Precincts but no assessment has been completed due to access restrictions (refer **Section 2.9** and **Table 2.4**).

A hydroponic installation located in the western portion of the site was not assessed during the previous investigations due to access restrictions.

Additionally, numerous farm dams have been identified at the site, once drained these dams will require assessment.

Based on results and observations made during the previous assessment (JBS&G 2014) further investigation is warranted in several lots to assist in the delineation of identified impacts prior to remediation and validation.

4.2 Data Gaps

Based on the information provided in **Section 4.1**, there exists data gaps at the site. These include the following:

- Six lots not previously investigated;
- Former farm dams, with one dam reporting ACM present;
- Hydroponic Installation;
- Assessment of footprints of buildings to be demolished;
- Assessment of a single AST located within Lot 31; and
- Delineation of impacts within several lots prior to remediation.

Based on the above, the following sections outline the assessment of these data gap areas.

4.2.1 Site Inspection

An initial site inspection of each future Precinct should be completed prior to construction works beginning due to potential changes to the site subsequent to this RAP being prepared. The confirmatory inspections will take place to ensure the following:

- Presence of known stockpiles;
- Presence of known ASTs;
- Presence of known ACM impacted areas;
- Identification of any illegal dumping, further weathering of identified ACM sheeting; and
- Identification of any unexpected finds.

The current site conditions are provided in **Table 5.1**.

4.2.2 Six Lots Not Previously Investigated

As discussed in **Section 2.9**, a total of six current lots are included in the Precinct development that have not been assessed due to access restrictions (refer **Table 2.4**). These lots include:

- Lot 1 DP782360 on Boundary Road in the northwest (adjoining lot reference #3, **Figure 2**);

- The lot between Lot 23 DP255616 and Lot 25 DP255616 (on Red Gables Road);
- The lot between Lot 27 DP255616 and Lots 29 and 30 DP 255616 (on Red Gables Road);
- The lots east of Lot 43 DP255616 (access via Janpieter Road);
- The lot west of Lot 2 DP253552 (on Old Pitt Town Road); and
- The lot between Lot 2 DP253552 and Lot 4 DP253552 (on Old Pitt Town Road).

Prior to development of the Precincts in which these lots are situated (**Figure 4**, hashed) will require assessment by an environment consultant. The assessment will involve a Phase 1 Environmental Site Assessment, detailing the history of the lot and preparation of a conceptual site model to assess the potential contamination present. The Phase 1 will require Auditor review and will detail whether further assessment is warranted.

During the development phase of works these lots will require assessment for potential environmental impacts. For each site, the Contaminated Sites: Sampling Design Guidelines (EPA 1995) has been reviewed to provide a recommended number of sampling locations. Where sites are above 5 Ha, the sampling guidelines do not provide a recommended number of sample locations. Consequently, the number of locations are to be targeted at specific AECs observed at the site. A Sampling Analysis and Quality Plan must be prepared and reviewed by the Site Auditor prior to assessment of each lot (if required).

Soil samples will be collected through either hand tools and/or an excavator.

The number of locations for each lot is provided in **Table 4.1** below:

Table 4.1 Six Lots Investigation

Lot	Approximate Lot Size (Ha unless stated)	Number of locations	Analytes
Lot 1 DP782360, west of Map Reference #3 (**Figure 2**)	2000 m^2	7	8 metals/total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylene (BTEX) PAH, Asbestos
Lot 24 DP255616 between Lot 23 DP255616 and Lot 25 DP255616, located between Map References #11 and #12 (**Figure 2**)	10	2 sample locations per hectare	8 metals/TPH/BTEX PAH, Asbestos
Lot 28 DP255616 between Lot 27 DP255616, Lot 29 and 30 DP 255616, located between Map References #14 and #16/#17 (**Figure 2**)	10	2 sample locations per hectare	8 metals/TPH/BTEX PAH, Asbestos
Lots 421-425 DP1183810 east of Lot 43 DP255616, located east of Map Reference #22 (**Figure 2**)	10	2 sample locations per hectare	8 metals/TPH/BTEX PAH, Asbestos
Lot1 DP253552 west of Lot 2 DP253552, located between Map References #26/#27 and #30 (**Figure 2**)	10	2 sample locations per hectare	8 metals/TPH/BTEX PAH, Asbestos
Lot 3 DP253552 between Lot 2 DP253552 and Lot 4 DP253552, located between Map References #30 and #31 (**Figure 2**)	10	2 sample locations per hectare	8 metals/TPH/BTEX PAH, Asbestos

4.2.3 Farm Dams

Within the sites, there exists farm dams. These will be drained and likely backfilled and areas re-shaped during the development works. After the initial draining but prior to re-shaping of the farm dams, assessment of the walls and bases of the dams is required.

An environmental consultant will complete an inspection of the drained dams and soil samples collected to assess for potential impacts including TPH, heavy metals, OCPs, ammonia and biological impacts, including E.Coli.

Additionally, potential ACM was been reported within the wall of one dam within map reference #9 (**Figure 3**) and consequently further assessment within the walls and base of this farm dam is required. Test Pits will be excavated into the dam wall and base to assess for asbestos impacts.

Test Pits completed within the dam walls must be completed at 1 sample per 50 m within the walls with at least 1 sample per wall being required. For the base of the drained dams, a base sample will be collected at a rate of 1 sample per 2500 m^2.

4.2.4 Hydroponic installation (Map Reference #23)

A hydroponic installation was located in the western portion of the site within map reference #23. This installation was not inspected or investigated during the previous investigations due to access restrictions.

Consequently, an assessment is required. During the construction works, after the installation has been decommissioned, soil samples are required to be collected within the former hydroponic site.

Test pits will be excavated in the former hydroponic installation, with assessment of asbestos and heavy metals required.

The hydroponic installation has been assumed to be approximately 500 m^2 and consequently it is considered appropriate to collect 5 samples, in accordance with the EPA 1995 sample design guidelines. Soil samples collected within the footprint of the installation will be analysed for asbestos, metals, OCPs and herbicides.

4.2.5 ASTs

During the DSI (JBS&G 2014) various ASTs were reported within several of the parcels and consequently there are potential impacts associated with the ASTs, including staining and/or odourous soils.

During the demolition stage of the development the various ASTs identified will be removed and disposed of offsite. During this process an environmental consultant will oversee the removal works to assess for any impacts to the surrounding area.An AST was reported within map reference #31 at the site but was not assessed during the previous investigation due to access restrictions.

Where ASTs have been present at the site, validation sampling will be completed below the base of the former AST regardless of aesthetic observations.

Where stained and/or odourous soil around the ASTs are observed, then further assessment is required to assess potential for leaks. Test pits will be completed using an excavator with samples collected within and below the identified impacts. Further validation will be required for delineation sampling.

Test pit samples will be analysed for heavy metals, TPH/BTEX, volatile organic compounds (VOCs) and PAHs.

Validation samples will be analysed for heavy metals, TPH/BTEX, VOCs and PAHs and will be collected on a frequency of 1 validation sample per 10 m linear of walls and 1 base validation sample per 25 m^2.

4.2.6 Delineation Sampling

Based on the previous investigation (JBS&G 2014), there are several areas which require further assessment to delineate identified impacts. Should further impacts that require remediation be reported during any further assessments then these should be addressed in the subsequent investigation reports and provided to the appointed site auditor for review.

These are summarised in **Table 4.2** below:

Table 4.2 Delineation Assessment

Lot	Location	Description	COPCs	Assessment	Sampling Frequency
1	A – around SS20 location	Structure contained lead paint, surface soils around property require further assessment	Lead	Surface Sampling	Initial sampling 1 m out from each wall of building, then at 5m out
3	A – around TP03 location	ACM on surface and in fill material Additional site inspection for ACM in long grass areas associated with TP04/TP05	ACM	Test Pitting & Inspection	4x test pits 5 m around initial location
6	Orchard	EIL exceedance in orchard requires further assessment	Metals	Surface Sampling	4x test pits 5 m around initial location
7	A – around SS01 location	ACM on surface and inspection of entire lot	ACM	Test Pitting	4x test pits 5 m around initial location. Extended if further asbestos identified.
8	G – around TP03 and TP04 location	ACM observed adjacent to dog kennels and a potentially filled gully	ACM, Aesthetic impacts	Test Pitting	4x test pits 5 m around initial location. Assessment of gully size and further test pitting
19/20	SP-around TP12 & TP05/06 locations	Animal remains	Biological Hazards including E.Coli, f coli and salmonella and heavy metals	Test Pitting	4x test pits 5 m around initial locations of animal remains
27	Dog Kennels	Dog Kennels potentially contain hazardous building materials	ACM, metals, TPH/BTEX	Site Inspection and surface sampling	4x test pits 5 m around initial location of dog kennels.
29	SP location Around TP02	Stockpiles of anthropogenic materials and anthropogenic materials in surface soils	ACM	Stockpile Sampling and test pitting	1 sample per 25 m^3 up to 200 m^3. 4x test pits within initial location to assess material

4.2.7 Footprint of former structures

The development of the Precincts will involve the demolition of all the current buildings at the site. The demolition works are to be completed by be an appropriate demolition contractor with appropriate controls and management plans in place.

Subsequent to the demolition and removal of building materials, assessment within the footprints of the former structures will be required, using hand tools to assess the potential surface impacts from hazardous building materials as well as zinc and nickel due to run-off from building structures. Samples must be collected on a 20 m grid from within the former building footprints for lead asbestos, OCP and PCB analysis. Additionally, samples must be collected from no more than 1 m outside of the former building footprint on a 20 m grid to assess for potential for zinc, nickel, lead paint flakes and ACM fragments.

Additionally, an inspection of the footprint for visible lead paint flakes, staining and ACM fragments must be completed by a suitably qualified environmental consultant.

4.2.8 Stockpile Sampling

The stockpiles and the required remediation that have been identified at the site are provided in **Section 5**. However, should further stockpiles be generated (i.e. illegal dumping) subsequent to this RAP or if waste classification is required then further sampling as per **Table 7.3** will be required.

It should be noted that in certain lots there are more than one stockpile of material. For the purpose of this RAP the visual representation on the figures, reference is given to a single stockpile location. However, more than one stockpile may be present at these locations. Consequently, all stockpile material within each lot must be remediated as per the requirements in this RAP.

5. Remedial Options

5.1 Remediation Objectives

The remediation objectives are outlined as follows:

- Removal of unacceptable risks to human health and the environment from the identified asbestos, hydrocarbon and heavy metal impacted fill material at the site;
- Validate the remedial works in accordance with the relevant NSW EPA Guidelines and with reference to the adopted site criteria; and
- Document the validation process.

The RAP is consistent with the following guidelines and legislation:

- *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites, NSW Office of Environment and Heritage, August 2011* (OEH 2011).
- *Contaminated Sites: Guidelines for NSW Site Auditor Scheme, April 2006* (DEC 2006).
- *National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council, 2013* (NEPC 2013).
- *Managing Land Contamination, Planning Guidelines, SEPP 55 – Remediation of Land;* (DUAP 1998).
- *Code of Practice for the Safe Removal of Asbestos, 2nd Edition, National Occupational Health and Safety Commission, April 2005* (NOHSC 2005).
- Work, Health and Safety Act 2011.
- *How to Safely Remove Asbestos: Code of Practice*. WorkCover 2012.
- *Waste Classification Guidelines Part 1: Classifying Waste.* NSW EPA, December 2014 (EPA 2014).
- *Use and Disposal of Biosolids Products "Stabilisation Grade A Product",* NSW EPA (1997).
- *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, Department of Health Western Australia, May 2009 (DoH 2009).
- Guidelines for the Assessment of On-site Containment of Contaminated Soil, Australian and New Zealand Environment and Conservation Council, September 1999 (ANZECC 1999).

5.2 Extent of contamination

Based on the findings of the previous investigations (JBS 2013, JBS&G 2014) and subject to the limitations of those investigations the extent of contamination is outlined in the following section. The exceedances of the adopted HIL land use criteria are shown in **Figures 7a-7e**.

The boundaries of the remediation area shall be determined by the remedial excavation works. It is possible that contaminated soils, if identified, will require to be additionally chased out from the walls and base of the excavations formed by the removal of the impacted materials.

The known areas of remediation are shown in **Table 5.1** following and in **Figures 8a-8e, 9 and 10.** The exceedances reported, depth and the likely AEC that is the potential cause of the exceedances are provided in **Table 5.1.**

Table 5.1 Description of Remedial Areas

Precinct	Lots	Lot Description	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Impact Depth (m)	Suspected Source AEC	Further Comments
I	**1/11126 207-217 Boundary Road, Maraylya (#1 on Figure 5a & 7a)**	Residential Property, with several sheds. Stockpiles of building materials were present in the eastern portion of the lot. Several structures appeared to consist of ACM.	EILs: 2x copper, 3x nickel, 8x zinc HILs: 1x Chromium (VI) ACM in soil -4	2 samples from 17 for copper reported above EIL with 410 mg/kg in 1-SS02 (0.0-0.1 m) and 320 mg/kg in 1-A-SS10 (0.0-0.1 m). 3 samples from 17 for nickel above EIL with 63 mg/kg in 1-SS02 (0.0-0.1 m), 33 mg/kg in 1-A-SS10 (0.0-0.1 m) and 31 mg/kg in 1-SS15 (0.0-0.1 m) 8 samples from 17 for zinc above the EIL with 1100 mg/kg in 1-SS02 (0.0-0.1 m), 260 mg/kg in 1-SS04 (0.0-0.1 m), 180 mg/kg in 1-O-SS07 (0.0-0.1 m), 2300 mg/kg in 1-SS18 (0.0-0.1 m), 690 mg/kg in 1-TP02 (0.0-0.1 m), 370 mg/kg in 1-TP04 (0.0-0.1 m). 1 sample from 17 for Cr reported above the HIL-A with 120 mg/kg in 1-SS02 (0-0.1)/ 4 samples from 25 with asbestos in soil (1-SS01 (0-0.1 m), 1-A-SS 09 (0-0.1 m), 1-A-SS20 (0-0.1 m) and 1-A-SS28 (0-0.1 m)). All other results below adopted criteria	0.1 m	Building structures including lead paint flaking	ACM reported in surface soil
I	**1/207750 181-191 Boundary Road, Maraylya (#3 on Figure 5a & 7a)**	Residential Property, with several sheds. Stockpiles of building materials were present including drums. A burnt car was present adjacent to Boundary Road. The site appeared to have been used as a former orchard.	EILs: 1x copper, 3x zinc ACM in soil – 1	1 sample from 27 for copper reported above EIL with 240 mg/kg in 3-S-SS20 (0.0-0.1 m) 3 samples from 27 for zinc reported above EIL with 610 mg/kg in 3-S-SS18 (0.0-0.1 m), 580mg/kg in 3-S-SS20 (0.0-0.1 m) and 380 mg/kg in 3-TP03 (0.0-0.1 m). 1 sample from 14 with asbestos in soil (3-TP03 (0-0.1 m)). All other results below adopted criteria	0.1 m	Drum and shed present on lot	Bricks, concrete, plastic, cement tiles and charcoal present in fill

Precinct	Lots	Lot Description	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Impact Depth (m)	Suspected Source AEC	Further Comments
I	**3/11126 89 Maguires Road, Maraylya (#4 on Figure 5a & 7a)**	An abandoned residential property and sheds were present. The site appeared to have used as an orchard	EILs: 2x zinc	2 samples from 10 for zinc reported above EIL with 230 mg/kg in 4-SD-TP07 (0.0-0.1 m) and 230 mg/kg in 4-SD-TP07 (0.0-0.1 m) All other results below adopted criteria	0.1 m	Stockpiled material	Bricks, concrete, plastic, cement tiles and charcoal present in fill
I	**4/135304 A & B 97 Maguires Road, Maraylya (#5 on Figure 5a & 7a)**	Residential property with chicken coops.	ACM – Aesthetics	All results below adopted criteria. ACM in surface soils.	Surface (<0.1 m)	Building adjacent	ACM reported in surface soil
G	**5/658286 151 Maguires Road, Maraylya (#6 on Figure 5a & 7a)**	Residential property with storage shed used for machinery vehicles. Some staining was observed in the shed. Farm dams were	EILs: 1x nickel, 2x zinc	2 samples from 23 for zinc reported above EIL with 260 mg/kg in 6-O-SS12 (0.0-0.1 m) and 6500 mg/kg in 6-S-SS16 (0.0-0.1 m) 1 sample from 23 for nickel reported above the EIL with 67 for 6-S-SS16 (0.0-0.1 m). All other results below adopted criteria	0.1 m	Stormwater runoff from adjacent building	Some sandstone inclusions
G	**1/564211 169 Maguires Road, Maraylya (#7 on Figure 5a & 7a)**	Farm dam at north portion of site with stockpiles of building materials (including a large stockpile of roofing tiles) scattered near the dam	ACM in soil – 1	1 sample from 4 with asbestos in soil (7-SS01 (0-0.1 m)). All other results below adopted criteria	0.1 m	Waste disposal in paddock	-
D	**9/593517 155 Boundary Road, Box Hill (#8 on Figure 5a & 7a)**	Residential property with Sheds and dog kennels present, with wood stockpiles present behind house	ACM in soil – 1	1 sample from 3 with asbestos in soil (8-SS01 (0-0.1 m)). All results below adopted criteria	0.1 m	Dog Kennels	Brick and wood reported in fill
D	**10/593517 153 Boundary Road, Box Hill (#9 on Figure 5a & 7a)**	A residence, with various sheds containing equipment including drums. Some staining reported in these	EILs: 1x nickel and zinc ESL: 2x TRH >C10-C16 2x TRH >C16-C34 1x TRH >C34-C40	1 sample from 19 for nickel (reported above EIL with 75 mg/kg in 9-TP08 (0.0-0.1 m)) and zinc (reported above EIL with 530 in 9-TP08 (0.0-0.1 m)) 2 samples from 17 for TRH >C10-C16, >C16-C34 and/or >C34-C40 above ESLs (samples #9-AST-SS01	0.1 m	Hydrocarbon and metals impacts associated with AST	Some plastic, AST

Precinct	Lots	Lot Description	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Impact Depth (m)	Suspected Source AEC	Further Comments
		areas. An AST (petrol) was present. A dam was present.	Management Limits: 1x TRH >C10-C16 2x TRH >C16-C34	(0-0.1) and #9-SD-SS04 (0-0.1)), with TRH ranging between 140 mg/kg and 53 000 mg/kg 2 samples from 17 for TRH >C10-C16 and/or >C16-C36 above Management Limits (samples #9-AST-SS01 (0-0.1) and #9-SD-SS04 (0-0.1)), with TRH ranging between 2500 mg/kg and 53 000 mg/kg All other results below adopted criteria.		and drum storage.	
D	**22/255616 4 Red Gables Road, Box Hill (#10 on Figure 5a & 7a)**	Residential property with farm dams present.	EILs: 1x zinc	1 sample from 6 for zinc reported above EIL with 200 mg/kg in 10-SD-SS02 (0.0-0.1 m) All other results below adopted criteria	0.1 m	Stockpiled material	-
D	**23/255616 6 Red Gables Road, Box Hill (#11 on Figure 5b & 7b)**	Residential property with sheds. Disused machinery stored in shed. Fire pit present adjacent to property and farm dams present.	EILs: 1x zinc	1 sample from 7 for zinc reported above EIL with 2800 mg/kg in 11-TP02 (0.0-0.1 m) All other results below adopted criteria	0.1 m	Disused machinery store	Some gravel inclusions
E	**25/255616 10 Red Gables Road, Box Hill (#12 on Figures 5b & 7b)**	Residential property, with greenhouse. AST present and potential ACM within residence.	EILs: 1x zinc	1 sample from 8 for zinc reported above EIL with 1600 mg/kg in 12-AST-SS09 (0.0-0.1 m) All other results below adopted criteria	0.1 m	Buildings and stockpiled material. ACM associated with building materials	Bricks and ceramics present in fill AST
E	**26/255616 Red Gables Road, Box Hill (#13 on Figure 5b & 7b)**	Farm dam present, with scrap metal observed adjacent.	None	All results below adopted criteria	-	Anthropogenic impacts in fill material	Steel and glass in the fill material

Precinct	Lots	Lot Description	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Impact Depth (m)	Suspected Source AEC	Further Comments
F	**30/255616 5 Janpieter Road, Box Hill (#16 on Figure 5b & 7b)**	Residential property, with storage sheds. Building material stockpiles observed in the northwest portion of the lot. Multiple drums and old machinery observed in central-southern portion of the lot. Farm dams present	ESL: 1x TRHs EILs: 1x zinc	1 of 11 samples for TRH (C_{16}-C_{34}) reported above the ESL at 1600 mg/kg in 16-SD-HA01 (0.0-0.1 m). 1 sample from 10 for zinc reported above EIL with 1100 mg/kg in 16-SD-HA04 (0.0-0.1 m) All other results below adopted criteria	0.1 m	Drums and stored machinery	-
F	**29/255616 18 Red Gables Road, Box Hill (#17 on Figure 5b & 7b)**	Residential property with building material/wood stockpile observed in	EILs: 1x copper, nickel zinc HIL: 1 x lead	1 of 11 samples reported lead above the HIL-A with 530 mg/kg in 17-SD-SS03 (0.0-0.1) 1 of 11 samples reported zinc above the EIL with 660 mg/kg, copper with 180 mg/kg and nickel with 35 mg/kg in 17-SD-SS03 (0.0-0.1) All other results below adopted criteria	0.2 m	Machinery	ASTs present adjacent to storage sheds
B	**47/255616 3 Red Gables Road, Box Hill (#18 on Figure 5b & 7b)**	Farm dam present, with sheds adjacent to residence	EILs: 1x zinc	1 of 6 samples analysed for zinc reported above EIL with 280 mg/kg) in 18-SD-SS01 (0.0-0.1)	0.1 m	Dam wall	Blue staining in stockpile
B	**45/255616 5 Red Gables Road, Box Hill and 46/255616 5 Red Gables Road, Box Hill (#19 and #20 on 5b & 7b & 7d)**	General landscaped property, with various vegetated stockpiles of material that were used for fertilizer soils. Multiple old machinery and equipment present across the property including drums. An AST was present. A farm dam was present in the	EILs: 4x zinc, 1x nickel HIL: 1x lead HSLs: 4x TRH Management Limits: 3x TRH	1 of 32 samples for lead reported above HIL-A and HIL-C with 650 mg/kg in 20-SD-SS07 (0.0-0.1 m) 2 of 32 samples for TRH (C_{10}-C_{16}) reported above ESLs with 310 mg/kg in 20-SD-SS01 (0.0-0.1 m) and 12000 mg/kg in 20-AST-SS02 (0.0-0.1 m) 1 of 32 samples for TRH (C_{10}-C_{16}) reported above Management Limits with 12000 mg/kg in 20-AST-SS02 (0.0-0.1 m) 4 of 32 samples for TRH (C_{16}-C_{34}) reported above HSLs with 19000 mg/kg in 20-SD-SS01 (0.0-0.1 m),	0.1-1.0 m	ASTs, machinery storage and drums.	Animal Remains identified. AST and Drums. Organic odours reported

Precinct	Lots	Lot Description	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Impact Depth (m)	Suspected Source AEC	Further Comments
		southern end of the property and contained tyres.		26000 mg/kg in 20-AST-SS02 (0.0-0.1 m), 11000 mg/kg in 20-AST-SS07 (0.0-0.1 m) and 1400 mg/kg in #20-SS11 (0-0.1 m) 3 of 32 samples for TRH (C_{16}-C_{34}) reported above Management Limits with 19000 mg/kg in 20-SD-SS01 (0.0-0.1 m), 26000 mg/kg in 20-AST-SS02 (0.0-0.1 m), 11000 mg/kg in 20-AST-SS07 (0.0-0.1 m). 1 of 32 samples for TRH (C_{34}-C_{40}) reported above HSLs with 14000 mg/kg in 20-SD-SS01 (0.0-0.1 m) 5 of 32 samples for zinc reported above EIL with 1800 mg/kg in 20-SD-SS07 (0.0-0.1 m), 210 mg/kg in 20-SD-SS08 (0.0-0.1 m), 220 mg/kg in 20-SS11 (0.0-0.1 m), 240 mg/kg in 20-SD-SS12 (0.0-0.1 m) and 680 mg/kg in #20-TP05 (0.9-1.0 m) 3 of 32 samples for nickel reported above EIL with 62 mg/kg in 20-SD-SS07 (0.0-0.1 m), 41 mg/kg in 20-SD-SS08 (0.0-0.1 m), 37 mg/kg in 20-TP09 (0.8-0.9).			
C	**44/255616 7 Red Gables Road, Box Hill (#21 on Figure 5b & 7b)**	Residential property in the southern portion of the site. Stockpiles of building material, including ACM present south of the residence. Farm dams present.	EIL: 1x zinc ESL: 1x PAHs	1 of 9 samples for zinc reported above EIL with 910 mg/kg in 21-SS01 (0.0-0.1 m) 1 of 7 samples for PAHs (benzo(a)pyrene) reported above ESL with 1.5 mg/kg in 21-SS01 (0.0-0.1 m)	0.1 m	Storage shed. ACM associated with filling of dam wall	ACM on surface reported
C	**43/255616 9 Red Gables Road, Box Hill (#22 on Figure 5b & 7b)**	Residential property, with an ACM pipe located along driveway to residence. Farm dams present and staining	EILs: 1x zinc ESL: 1x TRH	1 of 7 samples for zinc reported above EIL with 180 mg/kg in 22-S-SS05 (0.0-0.1 m) 1 of 5 samples for TRH (C_{16}-C_{34}) above ESL with 1700 mg/kg in 22-S-SS05 (0.0-0.1 m) All other results below adopted criteria	0.1 m	Metal storage shed	Staining reported ACM on surface reported Dam wall present

Precinct	Lots	Lot Description	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Impact Depth (m)	Suspected Source AEC	Further Comments
		observed within a storage shed.					
A	**15/255616 3 Cataract Road, Box Hill (#24 on Figure 5c & 7c)**	Vegetated property with farm dams.	EIL: 2x zinc	2 of 7 samples for zinc reported above EIL with 310 mg/kg in 24-AST-SS02 (0.0-0.1 m) and 180 mg/kg in #24-SP-TP01 (0.0-0.1 m) All other results below adopted criteria	0.1 m	AST. ACM associated with building adjacent	AST Wood and corrugated iron
A	**16/255616 5 Cataract Road, Box Hill (#25 on Figure 5c & 7c & 7e)**	Residential property with storage shed. Old machinery and cars present around shed. A burn pit was present adjacent to the shed.	EIL: 1x arsenic, 1x copper, 3x zinc HIL: 1x chromium 1x arsenic	1 of 6 samples for arsenic reported above the HIL-A and EIL with 270 mg/kg in 25-F-SS01 (0.0-0.1 m). 1 of 6 samples for chromium reported above the HIL-A with 140 mg/kg in 25-F-SS01 (0.0-0.1 m). 1 of 6 samples for copper reported above the EIL with 240 mg/kg in 25-F-SS01 (0.0-0.1 m). 3 of 6 samples for zinc reported above the EIL with 300 mg/kg in 25-F-SS01 (0.0-0.1 m), 390 mg/kg in 25-S-SS02 (0.0-0.1 m) and 400 mg/kg in 25-SD-SS04 (0.0-0.1 m)	0.1 m	Farm machinery	Charcoal in fill material
A	**21/255616 7 Cataract Road, Box Hill (#26 on Figure 5c & 7c)**	Property was used for horse training in the central area. Residence and storage sheds were present. Sheds used for storage of agricultural chemicals.	EIL: 1x zinc	1 of 6 samples for zinc reported above the EIL with 260 mg/kg in 26-SS02 (0.0-0.1 m).	0.1 m	Storage shed	-
A	**17/255616 8 Cataract Road, Box Hill (#27 on Figure 5c & 7c)**	Residential property, with concrete floored sheds and farm dams. ACM used to construct dog kennels and stockpiles of anthropogenic materials observed.	1x nickel	1 of 8 samples for zinc reported above the EIL with 33 mg/kg in 27-TP0515 (0.0-0.1 m).	0.1 m	Fill material	Suspected ACM within stockpiles

Precinct	Lots	Lot Description	Exceedances Above Adopted Criterion	Concentrations (mg/kg)	Impact Depth (m)	Suspected Source AEC	Further Comments
		Staining observed on concrete floor of sheds					
C	**41/255616 11 Janpieter Road, Box Hill (#28 on Figure 5c & 7c)**	Open vegetated property with farm dams	None	All results below adopted criteria	Surface Soils (<0.1 m)	ACM associated with stockpiled material and within the fill material, likely buried demolition materials	ACM reported in fill material and stockpiled material
H	**2/253552 117 Old Pitt Town Road, Box Hill (#30 on Figure 5c & 7c & 7e)**	A car park and tennis court. A burn pit was present adjacent to the tennis court car park. A farm dam was present. A stockpile of household goods such as furniture and organic matter was located adjacent to the residential property on the lot.	EILs: 1x arsenic, 1x copper, 1X chromium 1x zinc HIL: 1x arsenic, 1x chromium	1 of 7 samples for arsenic reported above HIL-A and EIL with 700 mg/kg in 30-F-SS01 (0.0-0.1 m) 1 of 7 samples for copper reported above EIL with 1100 mg/kg in 30-F-SS01 (0.0-0.1 m) 1 of 7 samples for zinc reported above the EIL with 290 mg/kg in 30-F-SS01 (0.0-0.1 m) 1 of 7 samples for chromium reported above HIL-A and EIL with 240 mg/kg in 30-F-SS01 (0.0-0.1 m)	0.1 m	Machinery and farm equipment and the dam	-
-	**# 2, 14, 15, 23, 29 and 31. and 15**	Subject to unexpected finds protocol.					

In addition to these areas, there are anthropogenic materials within fill material that may require remediation and this is outlined in **Section 7**.

Additionally, ASTs present at the site will need to be removed and disposed of in accordance with **Section 7** and the relevant standards.

A total of 20 stockpiles were identified at the site during the previous investigation and will require management during the proposed development. During the inspections completed as part of the previous assessment (JBS&G 2014) none of the stockpiles were reported above 200 m^3.

The known stockpile locations are shown on **Figure 9**. The identified stockpiles are summarised in **Table 5.2** following.

Table 5.2 Known Stockpiles

Precinct	Lot	Stockpile	Exceedances	Comments
A	Lot 17 DP255616 (#27)	2x stockpile	-	ACM and building materials
A	Lot 15 DP255616 (#24)	1x stockpile	-	ACM and metal sheeting
B	Lot 47 DP255616 (#18)	1x stockpile	EIL	Blue staining
B	Lot 46 DP255616 (#19)	1x stockpile	EIL	Animal remains, staining and odours
B	Lot 45 DP255616 (#20)	1x stockpile		
C	Lot 44 DP255616 (#21)	2x stockpile	EIL	Building materials and building materials
C	Lot 41 DP255616 (#28)	2x stockpiles	-	ACM and building materials
C	Lot 40 DP255616 (#29)	1x stockpile	-	Building materials
D	Lot 9 DP593517 (#8)	1x stockpile	-	ACM
D	Lot 23 DP255616 (#11)	1x stockpile	-	-
E	Lot 25 DP255616 (#12)	1x stockpile	EIL	Drums, machinery, ACM
E	Lot 26 DP255616 (#13)	1x stockpile	-	Scrap metal stockpile
E	Lot 27 DP255616 (#14)	1x stockpile	-	Scrap metal stockpile
F	Lot 29 DP255616 (#17)	1x stockpile	HIL/EIL	Machinery
F	Lot 30 DP255616 (#16)	2x stockpile	-	-
G	Lot 1 DP564211 (#7)	1x stockpile	-	
H	Lot 2 DP253552 (#30)	1x stockpile	-	-
I	Lot 3 DP11126 (#4)	2x stockpiles	EIL	Building materials and ACM

5.2.1 Data Gaps

In addition to the remedial areas outlined there exists data gap areas at the site and these are discussed further in **Section 4**.

5.3 Possible Remedial Options

The Contaminated Sites: *Guidelines for the NSW Auditor Scheme* (DEC 2006) states that that soil remediation and management is implemented in the following preferred order in NSW:

1. On-Site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level;

2. Off-Site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level, after which the soil is returned to the Site;

3. Removal of contaminated soil to an approved Site or facility, followed, where necessary, by replacement with clean fill; and

4. Consolidation and isolation of the soil on-Site by containment within a properly designed barrier.

NEPC (2013) considers that if the first two options above are not practicable, then on-site containment is preferred over removal and disposal, with a further alternative being implementation of a long-term management strategy to manage impacted materials on site where remediation would have no net environmental benefit or would have a net adverse environmental effect.

5.4 Discussion of Options

Within the context of the hierarchy, the development is to be staged. The preferred order of remediation may need to be adjusted for individual lots and Precincts during the staged development process. Due to development process being unknown at this stage one or more of the preferred remediation options may be utilised.

The aim of the development works would be retain as much material as possible to reduce costs and reduce material to be removed to landfill. However, this will be dependent on timing, on whether there is excess spoil or the storage areas for material to be retained at the site.

The preferred approach may change as the development progresses.

Based on the development at the site consisting of various different land uses there is scope to complete the remediation during the construction phase of works within each Precinct. The remediation strategy will consist of several options, including offsite disposal, cap and containment and onsite treatment. The application of these options will be dependent on final development designs within each Precinct but are summarised in the following sections.

5.5 Preferred Remediation Option

The preferred approach would be to retain as much material at the site as possible. With consideration to EPA's endorsed guidelines hierarchy for soil remediation options, a summary of the preferred remediation options are outlined as follows:

- 'Sparrow' picking of ACM from surface soils and disposal of ACM offsite with reuse of treated materials at the site;
- Treated materials to be placed in appropriate areas subject to the finalisation development plans;
- Excavation and offsite disposal of the impacted soils where retention at the site is not possible;
- in-situ containment of impacted soil within road reserves or less conservative land uses where the development plans allow;
- Offsite disposal of hydrocarbon impacts;
- Removal of any liquid within ASTs removed, the ASTs degassed and then removed offsite for appropriate destruction and recycling;
- Hazardous building materials to be removed by an appropriate licensed remediation contractor prior to demolition of the buildings;
- Removal of any surficial debris, such as drums and machinery; and
- Ongoing management through the development and implementation of an Environmental Management Plan (EMP) for the management of the retained contaminated materials where retained/contained onsite.

As the concept plan for the site has been divided into nine Precincts (**Section 2.9**), the remedial strategies can be applied across the site as a whole, or on a staged basis.

Excavation of the remedial areas will be completed based on particular AEC identified as per **Tables 5.1** and **5.4,** with the footprint of the AEC being remediated and validated. Consequently, the remedial areas will be varied in size, with them based on the size of the AEC footprint. Where impacts are associated with buildings, the footprint will be extended by 1 m around the building to assess for potential runoff/flaking paint etc.

The remedial area excavated must be to the depth of the known impact (as described in **Table 5.1**). The excavation will be inspected and should further evidence of impacts (staining, odours etc.) be reported then further excavation will be required, as per **Section 7**. If no further impacts are observed then validation sampling will be completed.

The stockpiles identified will required to be managed/remediated as a whole. The preferred strategy is to retain stockpiles, where appropriate, at the site. Where stockpiles have been identified to contain only ACM impacts then 'sparrow' picking of ACM from the stockpiles is considered an appropriate method for remediation to allow retention at the site without the need for further management (**Section 7.3.2**). Alternatively, the stockpiles can be disposed offsite in accordance with the NSW EPA 2014 or alternatively non 'sparrow' picked impacted stockpiles could also be placed within a containment cell within a designated area and managed under a future long term management plan.

Additionally, all building footprints must be considered during the further assessment, remediation and validation.

Building materials must be inspected and assessed prior to being demolished and demolition waste sent for recycling. An environmental consultant must inspect the material for hazardous building materials (i.e. ACM) and aesthetic impacts prior to being removed offsite for recycling as per the EPA NSW (2014). Materials removed offsite must also be documented in the Validation report.

Based on the unknown development plan for the whole site various remediation strategies could be implemented.

A summary of the remedial strategy for the site is provided in **Table 5.3** following:

Table 5.3 Remedial Approach (by AEC)

AEC	Preferred Option	Contingency
ACM in surface soils	Reuse of material at the site without ongoing management subject to Sparrow Picking	Onsite containment of non-treated impacted materials or offsite disposal
ACM in subsurface soils	Reuse of material at the site without ongoing management subject to Sparrow Picking and Quantification	Onsite containment of non-treated impacted materials or offsite disposal
ACM in stockpiles	Reuse of material at the site without ongoing management subject to Sparrow Picking and Quantification	Onsite containment of non-treated impacted materials or offsite disposal
ACM in farm dams	Reuse of material at the site without ongoing management subject to Sparrow Picking and Quantification	Onsite containment of non-treated impacted materials or offsite disposal
Hydrocarbon HIL impacts (including stockpiles)	Offsite disposal	Onsite bioremediation subject to suitable volumes of material provided
Heavy metal HIL impacts (including stockpiles)	Reuse in less sensitive land use scenarios	Onsite containment of non-treated impacted materials or
Hydrocarbon ESL impact s(including stockpiles)	Offsite disposal	Onsite bioremediation subject to suitable volumes of material
Heavy metal EIL impacts (including stockpiles)	Reuse in less sensitive land use scenarios	Onsite containment of non-treated impacted materials or offsite disposal
Building Rubble (Aesthetic)	Potential Recycling and containment	Offsite disposal
ASTs	Offsite Disposal	-
Surface Debris (Drums, concrete etc.)	Offsite Disposal	-

The remedial strategy for each lot is provided in **Table 5.4** following.

Table 5.4 Remedial Approach (by Lot)

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
A	15/255616 3 Cataract Road, Box Hill (#24 on Figure 4c)	AST.	EIL: 2x zinc	AST	Investigation beneath AST	Removal of any liquid contents from the AST as per DECCW 2009, Removal and destruction of AST, surface sampling directly beneath AST after removal and remediation (if required) EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	2x areas for EIL heavy metal impacts associated with metal sheets. Excavate to 0.1 m with footprint of former metal sheets 1x AST area, approx. excavation area 3 m x 3 m x 1 m	AST removal. Removal of hazardous building materials during demolition. Removal of EIL exceedance offsite or placement within less conservative land use areas. Validation of any management of any impacts within dam walls or below AST
		ACM associated with building adjacent	ACM	Wood and corrugated iron ACM in stockpiles	Inspection of ACM across lot	Excavation, pick and reuse of ACM impacted stockpiles or removal offsite.	Stockpiles excavated to footprint and to a 0.1 m bgs (anthropogenic materials & ACM)*	Stockpile to material tracked if to be retained at the site or disposed of offsite. Remove site debris (metal sheets)
		Dam	-	-	Investigation within dam walls	-	-	Validation of any management of any impacts within dam walls
A	16/255616 5 Cataract Road, Box Hill (#25 on Figure 4c)	Fire Pit	HIL: 1x chromium 1x arsenic	-	-	Assessment for beneficial reuse at the site in under less sensitive land use scenarios. Alternatively, excavation and disposal of HIL/HSL impacts in the surface soils	1x area for HIL heavy metal impacts associated with fire pit, excavate footprint of fire pit to at least to 0.1 m bgs	Removal of HIL/HSL exceedance offsite disposal Validation of fire pit removal

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
						Fire pit to be excavated and removed offsite.		
		Farm machinery	EIL: 1x arsenic, 1x copper, 3x zinc	-	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas. Removal of site debris including used cars, machinery and other anthropogenic materials	2x areas for EIL heavy metal impacts associated with site debris. Removal site debris and excavate footprint to 0.1 m bgs and site inspection	Validation of the removal of any old machinery and site debris
		Charcoal in fill material, ACM in stockpiles	-	-	-	Excavation, pick and reuse of ACM impacted stockpiles or removal offsite.	Stockpiles excavated to footprint and to a 0.1 m bgs(anthropogenic materials & ACM)*	Stockpile to material tracked if to be retained at the site or disposed of offsite.
		Dam	-	-	Investigation within dam walls	-	-	Validation of any management of any impacts within dam walls
A	21/255616 7 Cataract Road, Box Hill (#26 on Figure 4c)	Storage shed	EIL: 1x zinc	-	Investigation of oil staining beneath sheds	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	1x area of EIL heavy metal impact associated with storage shed, excavation of storage shed footprint to at least 0.1 m bgs	Removal of EIL exceedance offsite or placement within less conservative land use areas. Removal of shed and validation beneath for footprint of shed
		Dam	-	-	Investigation within dam walls	-	-	Validation of any management of any impacts within dam walls

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
A	17/255616 8 Cataract Road, Box Hill (#27 on Figure 4c)	Fill material and Shed	EIL: 1x nickel	-	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	1x area of EIL heavy metal impact associated with sheds runoff. Excavation of shed footprint to least 0.1 m bgs	Removal of EIL exceedance offsite or placement within less conservative land use areas after removal of sheds.
		Stockpiles	-	-	-	Excavation, pick and reuse of ACM impacted stockpiles or removal offsite	Stockpiles contained ACM* Stockpile footprint to be validated.	Stockpiles either removed offsite or placed less conservative land use areas
		Dog Kennels	-	-	Investigation of Dog Kennels	-	-	Validation of any management of any impacts within dog kennels including potential hazardous building materials.
B	18/2556166 Cataract Road, Box Hill (#23 on Figure 4b)	Dam	-	-	Investigation of Dams	No Remediation Required	-	Validation of any remediation of any impacts within dam walls
B	47/255616 3 Red Gables Road, Box Hill (#18 on Figure 4b)	Stockpile	EILs: 1x zinc	Blue staining in stockpile		Further Waste Classification of Stockpile (if required) with removal for offsite disposal. EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	EIL heavy metal impacts associated with stockpile to be excavation to 0.1 m with stockpile footprint	Stockpile to material tracked if to be retained at the site or disposed of offsite.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
							1x stockpile (EIL, staining)*	
		Dam	-	-	Investigation of Dams	-	-	Validation of any remediation of any impacts within dam walls
B	45/255616 5 Red Gables Road, Box Hill and 46/255616 5 Red Gables Road, Box Hill (#19 and #20 on Figure 4b)	ASTs	HIL: 1x lead HSLs: 4x TRH Management Limits: 3x TRH	2x AST and Drums.	Investigation beneath ASTs	Assessment for beneficial reuse at the site in under less sensitive land use scenarios. Alternatively, excavation and disposal of HIL/HSL impacts in the surface soils and stockpiles Removal of any liquid contents as per DECCW 2009, Removal and destruction of 2x AST. Removal of any aesthetic issues offsite, including staining and metal offsite	2x AST, approx. excavation area 3 m x 3 m x 1 m 3x 10 x 10 area for TPH impacts to 1.0 m	ASTs removal. Removal of EIL/HIL exceedance offsite or placement within containment cell Validation of any management of any impacts below ASTs
		TP12	-	Organic odours reported	Delineation Sampling around TP12 location (**Section 4**) Delineation Sampling around TP05/06 location	-	-	Validation of any remediation completed for delineation sampling
		Stockpiles.	-	-	-	Excavation, pick and reuse of ACM impacted stockpiles or removal offsite	1x stockpile on site #19 and 1x stockpile on site #20 (ACM and	Stockpile to material tracked if kept onsite

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
							anthropogenic material, animal remains)* Removal of stockpile to entire footprint to 0.1 m bgs	
		Machinery storage and drums	EILs: 4x zinc, 1x nickel	-	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas or removed offsite.	All stockpiles of anthropogenic materials to be removed offsite.	Removal of EIL/HIL exceedance offsite or placement within containment cell
		Animal Remains identified.	-	-	-	Excavation and disposal of any animal remains encountered	Excavation and disposal of any animal remains encountered	Validation of any remediation completed for delineation sampling
		Dams	-	-	Investigation of Dams	-	-	Validation of any management of any impacts within dams
C	44/255616 7 Red Gables Road, Box Hill (#21 on Figure 4b)	Storage shed.	EIL: 1x zinc ESL: 1x PAHs ACM in surface soils (<0.1 m)	-	-	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and containment at the site or offsite disposal Removal of any aesthetic issues offsite including ACM impacted stockpile adjacent to site shed in south of lot EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	EIL heavy metal & PAHs impacts associated with stockpiled material. Removed offsite to 0.1 m bgs of entire stockpile footprint. 1x stockpile (EIL & anthropogenic materials)* near site shed to be removed offsite. Stockpile to excavation to 0.1 m	Removal of EIL exceedance offsite or placement less conservative land use areas Validation of any management of any impacts within dams Removal of sheds ACM impacted stockpile to be treated and placed less conservative land use areas or disposed of offsite or if untreated placed in containment

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
							bgs and removed offsite.	cell. Stockpile footprint to be validated from the near the south residence and removal of surface debris.
		ACM associated with filling of dam wall & Dams	ACM in surface soils	-	Investigation of Dams	Farm dam walls to be assessed and 'sparrow picked' for ACM. ACM to be removed offsite, with dam walls contained.	'Sparrow pick' or offsite removal	Validation of any management of any impacts within dams
C	43/255616 9 Red Gables Road, Box Hill (#22 on Figure 4b)	Metal storage shed	<u>EILs:</u> 1x zinc <u>ESL:</u> 1x TRH	-	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	EIL heavy metal & TPHs impacts of entire stained area to at least 0.1 m below the visible stained depth	Removal of EIL exceedance offsite or placement less conservative land use areas. Removal of EIL/ESL exceedance of stained soils associated with buildings
		Dams	ACM in surface soils	-	-	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts	ACM Surface pick of dam walls and surrounding area within lot	Removal of asbestos offsite, or treatment and placement in less conservative land use areas or placement of un-treated material in containment Validation of any management of any impacts within dams Removal of ACM pipe if required.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
		Staining associated with Building	-	Staining reported	Further inspection of stained area associated with building	Excavation of stained surface soils due to aesthetic purposes	Excavation of stained surface soils due to aesthetic purposes	Excavation and removal of aesthetic impacts associated with stained soils
C	41/255616 11 Janpieter Road, Box Hill (#28 on Figure 4c)	ACM associated with stockpiled material	-	ACM reported in stockpiled material	-	Excavation, pick and reuse of ACM impacted stockpiles or removal offsite.	2x stockpiles (ACM and building materials)* removed offsite	Removal of asbestos offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment Stockpile to material tracked if to be retained at the site or disposed of offsite. Validation samples collected from stockpile footprints after removal.
		ACM within the fill material, likely buried demolition materials	-	ACM reported in subsurface soils	-	Surface 'sparrow picking' and excavation of surface soils for asbestos impacts at the site or offsite disposal.	ACM Surface pick of entire lot	Validation inspection after sparrow pick of surface soils for ACM Subsurface demolition waste to be excavated and removed, ACM identified to be removed.
		Dams	-	-	Investigation of Dams			Validation of any management of any impacts within dams
C	40/255616 13 Janpieter Road, Box Hill	SP Location	None	-	Delineation Sampling around SP	Excavation and disposal offsite of impacts associated with delineation sampling	1x stockpile (Building materials)*	Stockpile to material tracked if onsite

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
	(#29 on Figure 4c)				location (**Section 4**)	Removal of any aesthetic issues offsite Excavation and removal of stockpiled material	Aesthetic issues to be removed and inspection completed	Validation of any managementcompleted for delineation sampling
		TP02	None	-	Delineation sampling around TP02	Excavation and disposal offsite of impacts associated with delineation sampling	Aesthetic issues to be removed and inspection completed	Validation of any managementcompleted for delineation sampling
D	9/593517 155 Boundary Road, Box Hill (#8 on Figure 4a)	ACM in surface soils	ACM in surface soils	Brick and wood reported in fill, ACM in surface soils	Delineation Sampling around TP03 & TP04 location (**Section 4**)	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and containment at the site or offsite disposal	ACM Surface pick around dog kennels, buildings and sheds 1x stockpile (ACM)*	Removal of asbestos offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment Stockpile to material tracked if to be retained at the site or disposed of offsite. Validation of any remediation completed for delineation sampling
		Dog Kennels	-	-	Investigation of dog kennels	-	-	Validation of any management of any impacts within dog kennels
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dams

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
D	10/593517 153 Boundary Road, Box Hill (#9 on Figure 4a)	Hydrocarbon and metals impacts associated with AST and drum storage.	EILs: 1x nickel and zinc ESL: 2x TRH >C10-C16 2x TRH >C16-C34 1x TRH >C34-C40 Management Limits: 1x TRH >C10-C16 2x TRH >C16-C34	Some plastic, AST	Investigation of AST	Removal of any liquid contents from the AST as per DECCW 2009, Removal and destruction of AST Assessment for beneficial reuse at the site in under less sensitive land use scenarios. Alternatively, excavation and disposal offsite of surface impacts beneath AST	1x AST, approx. excavation area 3 m x 3 m x 1 m 1x area of EIL heavy metal impact associated with AST and drum storage. Footprint of AST and drum storage to be excavated to 0.1 m 2x area of ESL TPHs impacts associated with AST and drum storage. Footprint of AST and drum storage to be excavated to 0.1 m 1x stockpile (ACM)	Removal of AST and any aesthetic impacts. Removal of EIL/HIL exceedance offsite or placement within containment. Validation of any management of any impacts beneath AST ACM impacted stockpile disposed of offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment
		Dams	-	-	Investigation of dams	-	ACM Surface pick over dam	Validation of any management of any impacts within dams ACM impacted stockpile disposed of offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment
		ACM in surface soils	ACM in surface soils	-	-	Surface 'sparrow picking' or excavation of surface soils for	ACM Surface pick of entire lot	ACM impacted stockpile disposed of offsite or

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
						asbestos impacts and containment at the site or offsite disposal		treatment and placement in less conservative land use areas or placement of un-treated material in containment
D	22/255616 4 Red Gables Road, Box Hill (#10 on Figure 4a)	Sediment	EILs: 1x zinc	ESL exceedance within stockpiled material	-	EIL impacts are within debris piles, material will be inspected for anthropogenic materials prior to potential management at the site, with impacted materials not be placed in landscaped areas.	Removal of debris piles for EIL heavy metal impacts to 0.1 m within stockpile footprint	Removal of EIL exceedance offsite or placement within containment. Validation of removal of debris and inspection of surface soils
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dams
		Burn Pit	-	-	-	Removal of burn pit	Removal of the burn pit offsite disposal	Visual validation of removal of burn pit
D	23/255616 6 Red Gables Road, Box Hill (#11 on Figure 4b)	Disused machinery store	EILs: 1x zinc	Some gravel inclusions	-	Excavation and removal of any aesthetic issues associated machinery store EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	Footprint of machinery store area for EIL heavy metal impacts to 0.1 m Aesthetic issues (drums, debris) disposed of offsite 1x stockpile (anthropogenic material)*	Removal of AST. Removal of EIL exceedance offsite or placement within less sensitive land use areas. Stockpile to material tracked if to be retained at the site or disposed of offsite. Drums removed offsite
		AST		AST	Investigation of AST	Removal of any liquid contents from the AST as per DECCW 2009, Removal and destruction of AST	1x AST, approx. excavation area 3 m x 3 m x 1 m	Validation of any management of any impacts below AST.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
						Excavation and removal of any aesthetic issues associated with the AST		
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls
E	25/255616 10 Red Gables Road, Box Hill (#12 on Figures 4a and 4b)	Buildings and stockpiled material.	EILs: 1x zinc	Bricks and ceramics present in fill	-	Stockpiles of material to be managed onsite as part of the cap and containment. Removal of any aesthetic issues, including drums, metal offsite	1x stockpile (EIL, ACM, drums)* Aesthetic issues to be removed	Suitable evidence of stockpile management. Removal of anthropogenic materials offsite. Drums removed offsite and validation of EIL exceedances Stockpile to material tracked if to be retained at the site or disposed of offsite.
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls
		ACM associated with building materials	-	-	-	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and containment at the site or offsite disposal	Aesthetic issues to be removed ACM Surface pick of areas identified with debris, where stockpiles, drums and machinery were stored	Removal of asbestos offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment
E	26/255616 Red Gables Road, Box Hill	Anthropogenic impacts	None	Steel and glass in the fill material		Removal of any aesthetic issues offsite, including metal around the dam offsite	Aesthetic issues to be removed	Removal of anthropogenic materials offsite.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
	(#13 on Figure 4b)	in fill material					1x stockpile (scrap metal)*	Stockpile to material tracked if to be retained at the site or disposed of offsite.
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls.
E	27/255616 14 Red Gables Road, Box Hill (#14 on Figure 4b)	-	None	Anthropogenic materials reported	-	Removal of any aesthetic issues offsite, including metal offsite	Aesthetic issues to be removed 1x stockpile (scrap metal)*	Removal of anthropogenic materials offsite. Stockpile to material tracked if t to be retained at the site or disposed of offsite.
F	31/255616 3 Janpieter Road, Box Hill (#15 on Figure 4b)	Dams	None	-	Investigation of dams	No Remediation Required	-	Validation of any management of any impacts within dam walls
F	30/255616 5 Janpieter Road, Box Hill (#16 on Figure 4b)	Drums and stored machinery,	<u>ESL:</u> 1x TRHs	Anthropogenic materials reported and stockpiles of debris	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	1x area of ESL TPHs impact associated with drum storage. Drum storage area footprint to be excavated to at least 0.1 m	Removal of old machinery. Removal of EIL exceedance offsite or placement within less sensitive land use areas. Stockpile to material tracked if to be retained at the site or disposed of offsite.
		Stockpiled anthropogenic material	<u>EILs:</u> 1x zinc	-	-	Removal of any aesthetic issues offsite, including metal offsite	EIL heavy metal impacts within stockpiles, excavation	Stockpile to material tracked if to be retained at the site or disposed of offsite.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
							of stockpiles to 0.1 m of footprint 1x stockpile (anthropogenic material)*	
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls.
		Burn Pit	-	-	-	Removal of burn pit	Removal of the burn pit offsite disposal	Visual validation of removal of burn pit
F	29/255616 18 Red Gables Road, Box Hill (#17 on Figure 4b)	Machinery storage area	EILs: 1x copper, nickel zinc HIL: 1 x lead	-	-	Assessment for beneficial reuse at the site in under less sensitive land use scenarios. Alternatively, excavation and disposal of HIL/HSL impacts in the surface soils. EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas. Excavation and removal of any impacts and aesthetic issues associated with the machinery store	1x stockpile removed offsite to 0.1 m of footprint (HIL/EIL)* 1x area of EIL heavy metal impact associated with machinery. Machinery to be removed and footprint of storage area excavated to 0.1 m 1x area of HIL heavy metal impact associated with machinery. Machinery to be removed and footprint of storage area excavated to 0.1 m	Removal of stockpiled material offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment. Removal of EIL/HIL exceedance offsite or placement within containment Stockpile to material tracked if to be retained at the site or disposed of offsite.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dams
		AST	-	-	Investigation beneath AST	Removal of any liquid contents as per DECCW 2009, Removal and destruction of AST. Investigation of material beneath AST. Excavation and removal of any impacts and aesthetic issues associated with the AST and machinery store	1x AST, approx. excavation area 3 m x 3 m x 1 m	Removal of AST and investigation beneath. Validation of any management of any impacts below AST.
G	5/658286 151 Maguires Road, Maraylya (#6 on Figure 4a)	Stormwater runoff from adjacent building	EILs: 1x nickel, 2x zinc	Some sandstone inclusions	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	1x area for EIL heavy metal to be remediation around building footprint to 0.1 m	Removal of EIL exceedance offsite or placement within less sensitive land use areas. Removal of building during demolition
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls
		Orchard	-	-	Delineation sampling within orchard	-	-	Validation of any management of any impacts within the orchard
G	1/564211 169 Maguires Road, Maraylya (#7 on Figure 4a)	Waste disposal in paddock	ACM in surface soils	-	Lot inspection for visible asbestos	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and containment at the site or offsite disposal	ACM Surface pick of entire paddock dependant on further inspection 1x stockpile (anthropogenic materials)*	Removal of asbestos offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment Stockpile to material tracked if to be retained

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
								at the site or disposed of offsite.
		SS01	-	-	Delineation Sampling around SS01 location (**Section 4**)	-	-	Validation of any remediation completed for delineation sampling
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls.
H	2/253552 117 Old Pitt Town Road, Box Hill (#30 on Figure 4c)	Machinery and farm equipment	-	-	-	Excavation and removal of any impacts and aesthetic issues associated with the machinery store	1x stockpile (anthropogenic material)*	Removal of machinery Stockpile to material tracked if to be retained at the site or disposed of offsite.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
		Fire Pit	EILs: 1x arsenic, 1x copper, 1X chromium 1x zinc HIL: 1x arsenic, 1x chromium	-	-	Impacts likely associated with fire pit, with excavation and disposal of HIL/HSL impacts.	1x area of EIL heavy metal impact associated with fire pit. Fire pit to be excavated and removed to at least 0.1 m bgs 1x area of HIL heavy metal impact associated with fire pit. Fire pit to be excavated and removed to at least to 0.1 m	Removal of EIL/HIL exceedance associated with fire pit offsite
		Dam	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls.
H	4/253552 121 Old Pitt Town Road, Box Hill (#31 on Figure 4c)	AST	None	AST	Investigation beneath AST	Removal of any liquid contents from the AST as per DECCW 2009, Removal and destruction of AST, surface sampling directly beneath AST after removal.	1x AST, approx. excavation area 3 m x 3 m x 1 m	Validation of removal of the AST Validation of any management of any impacts beneath AST
		Site Debris	-	-	-	Removal of any aesthetic issues, in asphalt in dam walls, offsite	Aesthetic issues to be removed including at site debris across lot	Validation inspection of removal of aesthetic issues.
		Dam	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dam walls.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
I	1/11126 207-217 Boundary Road, Maraylya (#1 on Figure 4a)	Building structures including lead paint flaking	EILs: 2x copper, 3x nickel, 8x zinc HILs: 1x Chromium (VI)		-	Assessment for beneficial reuse at the site under less sensitive land use scenarios. Alternatively, excavation of surface soils for Cr (VI) and removal offsite. EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	Removal of hazardous building materials Removal of EIL impacts through removal offsite of stockpile and excavation of 0.1 m below stockpiles within footprint Footprint of building (sheds) for HIL impacts to 0.1 m	Removal of hazardous building materials. Removal of EIL/HIL exceedance offsite or placement within less sensitive land use areas. Stockpiles to be retained assessed for aesthetic impacts
		ACM in surface soils associated with buildings and shed in 3x areas	ACM reported in surface soils	-	-	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and containment at the site or offsite disposal.	ACM Surface pick 10 x 10 area, removal offsite of stockpiles	Removal of asbestos offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment.
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dams
		SS20	-	-	Delineation Sampling around SS20 location (**Section 4**)	-	-	Validation of any management completed for delineation sampling
I	4/135304 A & B 97 Maguires Road, Maraylya (#5 on Figure 4a)	Building adjacent	None	-	-	Removal of buildings	Removal of hazardous building materials.	Removal of hazardous building materials.

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
		ACM in surface soil at current structure	ACM in surface soils	-	-	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and containment at the site or offsite disposal	ACM Surface pick around buildings including chicken coup	Removal of asbestos offsite or treatment and placement in less conservative land use areas or placement of un-treated material in containment
		Dam	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dams
I	2/11126 195-205 Boundary Road, Maraylya (#2 on Figure 4a)	-	None	Organic matter and tree mulch	-	No Remediation Required	-	-
I	1/207750 181-191 Boundary Road, Maraylya (#3 on Figure 4a)	Drum and shed present on lot	EILs: 1x copper, 3x zinc	Bricks, concrete, plastic, cement tiles and charcoal present in fill,	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	2x areas of EIL impacts associated with drum and shed storage areas to be excavated to maximum extent of fill (i.e to natural soils)	Removal of hazardous building materials. Removal of drums Removal of EIL exceedance offsite or placement within less sensitive land use areas Removal offsite of aesthetic issues (burnt car and other aesthetic issues)
		ACM in surface soils	ACM in surface soils	ACM in fill materials (TP03)	Delineation Sampling around TP03 location (**Section 4**) and sheds	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and containment at the site or offsite disposal Removal offsite of	ACM Surface pick all lot.	Removal of asbestos offsite or treatment and placement in less conservative land use areas or placement of un-

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
					Additional site inspection for ACM in long grass areas associated with TP04/TP05	anthropogenic and ACM impacted stockpiles		treated material in containment Validation of any management completed for delineation sampling
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dams
I	3/11126 89 Maguires Road, Maraylya (#4 on Figure 4a)	Stockpiled material	EILs: 2x zinc	-	-	EIL impacts to be managed through excavation, transportation and placement of impacts in areas not designated for landscaped areas.	2 x stockpiles (EIL & ACM)*	Evidence of stockpile management Removal of EIL exceedance offsite or placement within less sensitive land use areas Stockpile to material tracked if kept to be retained at the site or disposed of offsite.
		Site Debris	-	Bricks, concrete, plastic, cement tiles and charcoal present in fill.	-	Removal of any aesthetic issues, offsite	Aesthetic issues to be removed including at site debris across lot	Validation inspection of removal of aesthetic issues.
		Dams	-	-	Investigation of dams	-	-	Validation of any management of any impacts within dams
		ACM in surface soils	ACM in surface soils	-	-	Surface 'sparrow picking' or excavation of surface soils for asbestos impacts and	ACM Surface pick around building structures and footprints	Removal of asbestos offsite or treatment and placement in less conservative land use

Precinct	Lots	Potential Source AEC	Exceedances Above Adopted Criterion	Further Comments	Further Investigation Required	Preferred Remediation Strategy	Remediation Summary	Validation required
						containment at the site or offsite disposal		areas or placement of un-treated material in containment

Notes:

***Refer to Section 5.2** and **Table 5.2** for additional detail of stockpile locations and descriptions. As reported in JBS&G 2014, none of the estimated stockpile volumes were reported to be above 200 m^3.

6. Remedial Plan

A summary of the remedial scope of works is provided in the following sections.

6.1 Notifications

Prior to remediation works activities beginning at the site, the local council must be notified of the intent to remediate the site under the Department of Urban Affairs and Planning/EPA SEPP 55 guidelines (DUAP/EPA 1998), as per **Section 13.** Additionally, after the remediation is completed at the site, the council must be notified of the completion of the works.

It is anticipated that the notification to council with be completed during the development application process.

6.2 Define the Boundary of Contamination

The site boundaries are shown on **Figures 1** and **2** and the nine Precincts are shown on **Figure 3**.

The boundaries of the identified remedial areas shall be determined by the observations made during excavation works and validation results. However, based on the observations and analytical testing undertaken as part of the previous assessment (JBS&G 2014) the extent of impacts are outlined in **Section 5.2**.

Table 5.4 outlines the extent of impacts identified that requires remediation and validation at the site.

6.2.1 Data Gaps

As discussed in **Section 4**, there exists data gaps at the site which are to be addressed prior to remediation.

6.3 Expected Sequence of Works

The anticipated sequence of works for the future project, per stage, is expected to be as follows:

- Identification of potential containment cells;
- Confirmation of development of each stage;
- Site Mobilisation;
- Removal of vegetation;
- Draining of dams
- Demolition of buildings;
- Data Gap assessments including confirmatory site inspection;
- Remediation of known impacts;
- Remediation of any unexpected finds;
- Validation sampling of subsequent excavations, unexpected finds etc;
- Reinstatement of any excavations; and
- Final Validation report.

6.4 Site Establishment

An appropriately experienced and licensed contractor is required to undertake the works, under the guidance of an appropriately qualified and experienced environmental consultant.

All safety and environmental controls are to be implemented as the first stage of remediation works.

These controls will include but not limited to:

- Locate and isolate all required utilities in the proximity of the works;
- Work area security fencing, with dust mesh on the fences;
- Site signage and contact numbers;
- Sediment fencing (attached to security fencing); and
- Stormwater runoff and sediment controls (hay bales).

6.5 Demolition of Structures

This RAP does not extend to providing an approach to demolition of structures at the site. However, demolition of structures is required to achieve future landuse objectives, and appropriate validation of the site.

Caution should be taken during demolition to ensure hazardous materials in structures, including identified lead-based paint and asbestos materials are removed appropriately.

Demolition materials should be removed off site for recycling or disposal at appropriately licensed facilities, consistent with the material content. Demolition materials containing ACM or other hazardous materials or contaminants should not be mixed with other demolition materials that are not impacted. Appropriate controls should be in place to protect human health and the surrounding environment, including measures to ensure demolition does not cause contamination of soil, surface water or groundwater.

Where no hazardous materials have been identified in the structures there is potential the materials could be crushed and utilised at the site or placed within containment cells. If the material is to be utilised at the site, the landuse of the propped area must be reviewed to ensure there are no aesthetic risks to the lot from demolition waste.

6.6 Farm Dam Dewatering & Sediment Removal

On the understanding that all water in the dams is to be removed prior to development, any water remaining in the farm dams present at the site will need to be removed. Given that the dams were likely used for agricultural purposes it is proposed to discharge the water to one or more of the creeks running through the site.

Prior to dewatering the Office of Water will need to be contacted in regards to discharging the water. Based on responses from the Office of Water, the water within the farm dams may require testing prior to discharge.

Should testing be requested/required prior to discharge, potential analyses may include the following:

- TPH;
- Heavy Metals;
- pH;
- Ammonia;
- Total Suspended Solids; and
- Biologicals, including E.Coli, Faecal coliforms and salmonella.

Appropriate sediment and erosion controls will need to be implemented prior to discharge to the creek.

Once the water has been removed from the farm dams, inspection and assessment of the dam walls and base should be undertaken, as per **Section 4**. This is further described in **Section 7**.

Samples will be compared against the criteria provided in **Section 8**. Should sample results exceed the adopted site criteria the sediment will either be disposed of offsite or excavated and placed within less conservative areas or within a containment cell. Geotechnical assessment may be required to ensure the material is geotechnically suitable.

6.7 Cap and Containment

As noted previously, there is the potential that on-site containment of impacted material at the site will be required. This is based on the potential for impacted fill material to be placed beneath new roads and pathways constructed as part of the new development and within less sensitive land use scenarios.

Containment of the impacted material and capping should be consistent with relevant EPA made or endorsed guidelines including ANZECC (1999[5]). The requirements are partly dependent on the type of materials and contaminants to be contained, and their relative mobility (potential to leach). Relatively immobile materials, such as asbestos containing material (ACM), and contaminants bound to a matrix such that they do not readily leach, can be contained without the need for impermeable liners, leachate collection and treatment systems or groundwater monitoring. It is these types of materials that are assumed to be proposed for cap and containment at the site.

Leachate analysis, including PAHs and heavy metals within materials to be contained must be analysed for TCLP to identify if they are relatively insoluble to ensure that impacts to groundwater from the site are considered to be low. If completed and found to be relatively insoluble then these materials will be considered to be suitable for cap and containment.

Capping retained contaminated material is required to prevent contaminant exposure to human and ecological receptors on the surface.

The capping should comprise the following minimum requirements:

- A marker layer placed over retained contaminated materials and/or appropriate demolition materials, to identify the top of contained material (and base of capping). A readily identifiable marker layer should be installed to provide adequate visual warning during any future ground disturbance;
- A capping layer of minimum 400 mm thick virgin excavated natural material (VENM) material or validated material from the site and relative compaction level of 85% MDD, and with an appropriate moisture content;
- If in landscaped areas, a growing medium (topsoil) layer of minimum 200 mm thickness should be placed over the capping layer. This topsoil layer should also be placed in loose layers and track-rolled by dozer or equivalent to the required 200 mm thickness and relative compaction level of 85% MDD, and with an appropriate moisture content. This topsoil layer thickness should be able to be vegetated with shallow rooted grasses and/or low shrubs;

[5] Guidelines for the Assessment of On-Site Containment of Contaminated Soils, ANZECC (1999).

- If in the paved areas, under roads or under concrete slab buildings, the new paving will act at the capping layer. Consequently, the paved layer and sub-base is considered to be appropriate for capping of impacted materials.

Based on the potential changes to site levels during development, topography and drainage will need to be considered should vegetation include deeper rooted trees. This containment method would require the implementation of an EMP both for containment within open space areas and under roads.

Should an EMP not be suitable for implementation for the roads, due to Council requirements, then only material above EIL/ESL exceedances will be placed under road reserves to prevent the need for an EMP in these areas only.

6.8 Impacted Materials Remediation Works

The extent of the impacted areas requiring remediation is described in **Section 5** and shown on **Figures 8a-8e**. A variety of remedial strategies are to be utilised within the Precincts, with the following being utilised:

- Excavation, removal and disposal of impacted materials offsite;
- Excavation, removal and placement of impacted materials within road reserves or less conservative land use areas, with material tracking required; and
- Removal of ACM from surface soils by ‘sparrow picking’.

Materials to be disposed off-site require a waste classification in accordance with the Waste Classification Guidelines (EPA 2014). Material tracking will be required for all materials transported on, to and from the site.

6.8.1 Soil Asbestos Remedial Works

The remediation and validation works of any asbestos impacted materials will be supervised by an appropriately qualified and experienced environmental consultant and undertaken by a licensed Class A asbestos removal contractor where friable asbestos is reported or a Class B asbestos removal contractor where non-friable asbestos works are required. Soil remedial works will be completed as per the following Sections.

6.8.1.1 Asbestos ‘Sparrow’ Picking

Asbestos ‘Sparrow’ picking involves the removal of visible non-friable bonded ACM fragments by hand by competent persons. This involves the inspection of an impacted area in 1 m transects and raking the top 0.1 m to identify any visible ACM.

Any suspected ACM is removed, doubled bagged and sealed for offsite removal.

Once raked and following the removal of any ACM for disposal offsite, an inspection will be completed by an experienced and suitably trained environmental consultant. If non-friable ACM is identified by the environmental consultant then further picking is required.

Any asbestos validation works must be completed in accordance with **Section 7.3.**

The aim of this method is to prevent the need for cap and containment as per **Section 6.7.** Picking of the material to below the adopted site criteria (**Section 8**) will allow the material to be retained at the site a depths greater than 0.1 m bgs without the need for management. However, should picking not be completed and material still be retained then it will need to be capped and contained and managed in accordance with an environmental management plan.

6.8.2 Hydrocarbon and Heavy Metal Remedial Works

The remediation and validation works of hydrocarbon and heavy metal impacted materials will be supervised by an appropriately qualified and experienced environmental consultant.

The validation works will be completed as per **Section 7**.

6.8.3 Delineation of Excavations

Where excavation of impacted soils is required, where they are identified either visually, from olfactory detection or through the use of a Photo-ionisation Detector (PID), shall be 'chased' out. This will be conducted under the direction and supervision of JBS&G. The procedure for undertaking this excavation activity will be by:

- Observation of the excavations and identification of potentially impacted soils;
- Excavation of impacted soils to lateral and vertical extent of field based identifiable impact, with additional break up and removal of concrete to remove soils where impact extends laterally until the soils meet the adopted validation criteria (**Section 8**); and
- Soils above the adopted site criteria will be classified as a waste and disposed offsite to an appropriately licensed waste facility or if suitable placed within road reserves and managed.

Excavation of the remedial areas will be completed by having a 10 x 10 m 'square' centred on the remedial area excavated to the depth of the known impact (as described in **Table 5.4**). The excavation will be inspected and should further evidence of impacts (staining, odours etc.) be reported then further excavation will be required. If no further impacts are observed then validation sampling will be completed.

Any unexpected finds will be managed as per **Section 9**.

6.8.4 Backfilling of Excavations

Upon confirmation of excavation validation, excavations will be reinstated using validated material from the site. No importation of VENM or excavated natural material (ENM) is proposed. Should VENM or ENM be required to be imported to the site, this will be completed as per the criteria in **Section 8** and the decision rules provided below in **Table 7.1**. Prior to importation to the site, the material must be assessed (including an inspection at the source site and appropriate sampling and analysis as per **Table 7.3**) by a suitably qualified environmental consultant, with documentation provided for its source, sampling certification and volumes.

Soil material characterisation reports will be reviewed or if no material characterisation provided, soil analytical data will be compared against the EPA endorsed criteria.

If material characterisation reports detail the imported material as VENM, ENM or other material covered by the NSW EPA exemption, or if the soil analytical data meets the above criteria, then the material is considered appropriate to be imported to the site.

If the material is classified as anything other than VENM, ENM or other material covered by the NSW EPA exemption in provided documentation, or it fails the specified criteria, then the material must not be brought to the site.

6.8.5 Offsite Disposal of Material

Impacted soils and ACM removed from remediated soil to be disposed off-Site shall require a waste classification in accordance with EAP NSW (2014) '*Waste Classification Guidelines Part 1: Classifying Waste*'. The potential presence of asbestos in fill materials must be noted in the preparation of the waste classification.

Stockpiles observed at the site on the have the potential to be retained, however, each stockpile of material must be tracked as to its final placement location.

Material to be removed offsite will be either loaded directly into trucks for offsite disposal or stored on hardstand to prevent cross contamination. All material will require material tracking.

6.8.6 Imported Fill Material

If required, VENM, ENM, or any other suitable material granted an applicable EPA Exemption under the Protection of the Environment Operations (Waste) Regulation 2014 may be imported to reinstate the excavations. Prior to importation to the site, the material must be assessed (including an inspection at the source site and appropriate sampling and analysis as per **Table 7.3**) by a suitably qualified environmental consultant, with documentation provided for its source, sampling certification and volumes.

6.8.7 Stockpiles

As discussed in **Section 5**, several lots contain stockpiles that require management. Each individual stockpile is required to be assessed for beneficial reuse in less sensitive areas. All stockpiles must be inspected for aesthetic suitability if to be reused at the site.

All material will require material tracking whether it be retained at the site or disposed of offsite at a suitable facility.

If stockpiles are to be removed for offsite disposal then they will require sampling and classification in accordance with the EPA 2014 waste guidelines.

6.9 Environmental Management Plan (EMP)

Should impacted material be retained at the site, then an environmental management plan (EMP) will be required to manage these impacts.

6.10 Air Monitoring

During any asbestos remedial works, perimeter air monitoring will be conducted. Air monitors will be set up on each of the perimeter boundaries within that particular work area.

Air monitoring will be conducted in accordance with the requirements of the National Occupational Health and Safety Commission (NOHSC) Asbestos Code of Practice and Guidance Notes, in particular, the Guidance note for the estimation of airborne asbestos fibres [NOHSC 3002:2005].

6.11 ASTs

Petroleum infrastructure identified must be removed.

Prior to the removal of the ASTs, any liquid within the AST must be pumped out by a licensed contractor and disposed of off-site as “liquid waste” in accordance with DECCW (2009).

The environmental consultant will provide supervision and validation during any petroleum infrastructure removal process. Where removal is required, the following process is to be followed:

- Observation of AST and associated fuel infrastructure excavations and identification of impacted soils;
- Observation of excavation of impacted soils to lateral and vertical extent of physically identifiable impact, with additional removal of soils where impact extends laterally and vertically; and
- Observation of impacted soils transferred to a soil stockpiling area on the site.

7. Validation Plan

Validation will be required for the following areas:

- Validation of excavations from where heavy metal, hydrocarbon and asbestos impacted soils have been removed;
- Validation of the ACM removed from the surface soils at the site;
- Validation of the removal of aesthetic issues, including ACM, stockpiles, staining and other anthropogenic materials.
- Removal of ASTs present at the site;
- Validation of footprints of stockpiles of excavated impacted material prior to being removed from the site;
- Validation of the removal/containment of impacted stockpiled materials;
- Validation of any material placed beneath road reserves or cap and contained;
- Validation of former building footprints;
- Validation of any unexpected finds identified during the remedial works; and
- Validation of any material imported to backfill the sites excavations.

7.1 Data Quality Objectives

Data quality objectives (DQOs) were developed for the validation assessment, as discussed in the following sections.

7.1.1 State the Problem

Asbestos, heavy metal and hydrocarbon impacted in-situ soils and stockpiles have been identified at the site. The identified areas require remediation followed by validation of residual soils to ensure impacted material that may pose an unacceptable level of risk to site users or an ecological risk to the surrounding environment has been successfully managed during remediation works.

7.1.2 Identify the Decision

The following decisions are required to be made during the validation works:

- Are there any unacceptable risks to future on-site receptors from any residual soil contamination following the remediation of contaminated soil or within former buildings footprints and/or retained buildings?
- Are there any aesthetic (stains/odours/asbestos) issues at the site?
- Have all data gaps been addressed?
- Has material disposed of offsite been classified in accordance with the EPA 2014 and been transported to an appropriately licensed facility?
- Has any impacted material been retained at the site and has it been suitably managed in accordance with the requirements of the RAP?
- Did any material imported on to site as backfill meet the requirements of the RAP?
- Is there any potential migration from the site?
- Is ongoing management of residual contamination necessary?

7.1.3 Identify Inputs to the Decision

The inputs to the decisions are:

- Physical observations, including visual, olfactory and PID screening results during site activities;
- Documentation to verify appropriate removal and disposal of waste;
- Soil analytical data from samples collected from the base and walls of excavations formed by the removal of impacted soils; and
- Survey plans to verify appropriate cap and containment of any remaining impacted soils and excavation areas and site boundaries.
- The soil validation acceptance criteria adopted for the landuses.

7.1.4 Define the Boundary of Impact

The individual identified remedial areas are shown on **Figures 8a-8e**.

The vertical extent of the remediation will be determined during the excavation works but further investigation works could be completed prior to ascertain the full extent of impacts, based on observations made by the environmental consultant.

7.1.5 Develop a Decision Rule

Soil analytical data will be assessed against EPA published / endorsed criteria for constituents:

- National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council, 2013 (2013).
- Guidelines for the NSW Site Auditor Scheme 2nd Edition, April 2006 (NSW DEC 2006);
- Waste Classification Guidelines. Part 1: Classifying Waste, NSW EPA, November 2014 (EPA 2014).

7.1.6 Summarise Decision Rules

The decision rules adopted to answer the decisions identified in **Section 7.1.2** are summarised in **Table 7.1.**

Table 7.1 Summary of Decision Rules

Decision Required to be made	Decision Rule
1. Are there any unacceptable risks to future on-Site receptors from any residual soil contamination following the remediation of contaminated soil and within former buildings footprints and/or retained buildings??	Soil analytical data will be compared against EPA endorsed criteria. Statistical analyses of the data in accordance with relevant guidance documents will be undertaken, if appropriate, to facilitate the decisions. The following criterion will be adopted with respect to soils: the reported concentrations are all below the Site criteria depending on landuse; If the criterion stated above is satisfied, the decision is No. If the criterion stated above is not satisfied, the decision is Yes. Statistical analyses of the data in accordance with relevant guidance documents will be undertaken, if appropriate, to facilitate the decisions. The following statistical criteria will be adopted with respect to soils: Either: the reported concentrations are all below the site criteria; Or: the average site concentration for each analyte must be below the adopted site criterion; no single analyte

Decision Required to be made	Decision Rule
	concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results must be less than 50% of the site criteria. And: the 95% upper confidence limit (UCL) [6] of the average concentration for each analyte must be below the adopted site criterion. If the statistical criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
2. Are there any aesthetic (stains/odours etc.) issues at the site?	If there are any unacceptable odours and/or discolouration (or other aesthetic indicators) the answer to the decision is Yes. Otherwise, the answer to the decision is No.
3. Have all data gaps been addressed?	As per decision rule 1.
4. Has material disposed of offsite been classified in accordance with the EPA 2014 and been transported to an appropriately licensed facility?	Soil analytical data will be compared against EPA endorsed criteria. Statistical analyses of the data in accordance with relevant guidance documents will be undertaken, if appropriate, to facilitate the decisions (as detailed above). Appropriate waste classification and disposal documents to be obtained. If the statistical criteria stated above are satisfied, the decision is Yes, or if receipts are provided recording the disposal of material to an off-site licensed facility, the decision is Yes. If criteria or statistical assessment or no disposal receipts are provided, the answer is No.
5. Has any impacted material been retained at the site and has it been suitably managed in accordance with the requirements of the RAP?	Material placed in the containment cells will be documented, with the capping layer material tracking documentation to be provided If the documentation is not provided then the answer is No. If the documentation is provided and is suitable then the answer is yes.
6. Did the material imported on to site as backfill meet the requirements of the RAP?	Soil material characterisation reports will be reviewed or if no material characterisation provided, soil analytical data will be compared against the EPA endorsed criteria. If material characterisation reports detail the imported material as VENM, ENM or other material covered by a NSW EPA waste exemption, or if the soil analytical data meets the above criteria, the answer is Yes. If the material is classified as anything other than VENM ENM or other material covered by a NSW EPA waste exemption in provided documentation, or it fails the specified criteria, the answer is No.
7. Is there any potential migration from the site?	Soil contaminant data was evaluated with the consideration of the potential for migration of contaminants via bulk disturbance of soils (ie. Dust, surface water, etc) and the potential mobility of contaminants in soil and groundwater. In the event that significant contaminant concentrations was identified and there is the potential for migration of these contaminants from the site via either bulk movement and/or migration in soil and/or groundwater, the answer to the decision was Yes. Otherwise, the answer to the decision was No..

[6] *Sampling Design Guidelines.* (NSW EPA,1995)

Decision Required to be made	Decision Rule
10. Is ongoing management of residual contamination necessary?	Was the answer to any of the above decisions Yes? If yes, a site management strategy may be required. If no, a site management strategy was not required.

7.1.7 Specify Limits of Decision Error

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW EPA, NEPC (2013), DEC (2007), appropriate indicators of data quality (DQIs used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined Data Quality Indicators (DQIs) for completeness, comparability, representativeness, precision and accuracy. The acceptable limit on decision error is 95% compliance with DQIs.

The pre-determined Data Quality Indicators (DQIs) established for the project are discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters), and are shown in **Table 7.2**.

Precision – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples for chemical COPCs. For asbestos precision is assessed by whether the identification results for duplicate samples were in agreement with the original sample.

Accuracy – measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards. Note only applied to chemical COPC.

Representativeness – expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the Site, and by using an adequate number of sample locations to characterise the Site to the required accuracy.

Comparability – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; and ensuring analysing laboratories use consistent analysis techniques; and reporting methods.

Completeness – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.

Sensitivity – expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted Site assessment criteria.

Table 7.2 Summary of Data Quality Objectives for Soil Validation Program

Data Quality Indicator	Frequency	Data Quality Criteria
Precision		
Blind duplicates (intra laboratory) Chemical analysis	1 / 20 samples	70-130%
Blind duplicates (inter laboratory) Chemical analysis	1 / 20 samples	70-130%
Asbestos Duplicates		Asbestos analysis in agreement
Accuracy		
Laboratory control samples	1 per lab batch	<LOR
Surrogate spikes	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	All samples	All samples
Samples extracted and analysed within holding times – asbestos	All samples	No holding time
Rinsate	1 per sample batch	<LOR
Trip spike	1 per sample batch	70-130%
Trip blank	1 per sample batch	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All Samples	All samples
Standard analytical methods used for all analyses	All Samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All Samples	All samples
Limits of reporting appropriate and consistent	All Samples	All samples
Completeness		
Soil description and COCs completed and appropriate	All Samples	All samples
Appropriate documentation	All Samples	All samples
Satisfactory frequency and result for QC samples	All QA/QC samples	-
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria	All samples	LOR<= Site assessment criteria

Notes: 1 – If the RPD between duplicates is greater than the pre-determined data quality criteria, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

7.1.8 Optimise the Design for Obtaining Data

The purpose of this step is to identify a resource-effective field investigation sampling design that generates data that are expected to satisfy the Site manager's decision performance criteria, as specified in the preceding steps of the DQO Process. The output of this step is the sampling design that will guide development of the field sampling and analysis plan. This step provides a general description of the activities necessary to generate and select data collection designs that satisfy decision performance criteria.

Validation will be undertaken as per the following sections.

7.2 Soil Validation Methodology

7.2.1 Soil Sampling

A suitably qualified person trained and experienced in the identification of asbestos, will be required to undertake the sampling. It should be noted that a licensed asbestos assessor will be required for the validation of any friable asbestos impacted soils.

Soil samples are proposed to be collected from the walls and base of the excavation generated by the removal of the impacted soils.

Impacted soils, where they are identified either visually, from olfactory detection or through the use of a PID, shall be 'chased' out. This will be conducted under the direction and supervision of an environmental consultant. The procedure for undertaking this excavation activity will be as follows:

- Observation of excavations and identification of impacted soils;
- Excavation of impacted soils to lateral and vertical extent of physically identifiable impact, with additional removal of soils where impact extends laterally and vertically; and
- Impacted soils transferred to a soil stockpiling area on the site or directly loaded into a truck for offsite disposal or movement for placement beneath road reserves/less sensitive land uses.

Samples should be targeted at the original exceedance depths. New nitrile gloves will be used to collect each sample. Soil samples will be immediately transferred to sample containers of appropriate composition, which are supplied by the testing laboratory. All sample containers will be clearly labelled with a sample number, sample location, sample depth, sample date and samplers initials. The sample containers will then transferred under chain-of-custody conditions to the testing laboratory. The samples will be analysed at a laboratory NATA accredited for the required analyses. Additionally, asbestos samples will be collected in accordance with current NEPM 2013 guidelines, with 500 mL samples collected.

As per the requirements of each of the remediation areas outlined in **Section 5.2**, a square around each of the remediation areas will be excavated to the target depth, as required in the previous RAP. The excavation will be inspected prior to sampling of the walls and base of each of the excavations for the relevant COPCs.

Soil samples will be screened on Site during works using a photo-ionisation detector (PID) to assess the presence of volatile organic compounds (VOCs) including petroleum hydrocarbons. Samples collected from locations targeting heavy metal impact will be screened using an x-ray fluorescence (XRF) unit.

7.3 Asbestos 'Sparrow Picking'

As discussed in **Section 6**, Where asbestos fragments have been reported within the surface soils (<0.1 m) and/or subsurface soils (>0.1 m), within stockpiles and farm dams, there is potential that asbestos 'sparrow' picking can be completed to allow for the material to be retained at the site without the need for placement under road reserves or other less sensitive areas.

It should be noted that the quantification of the amount of asbestos within the subsurface soil areas and stockpiles identified to contain asbestos fragments will need to be completed to confirm whether the picking method is appropriate. The asbestos quantification methodology is provided in **Section 7.3.3**.

7.3.1 Surface Pick

Where visible asbestos has been reported in the surface soils (<0.1 m) only, a surface pick will be completed. Prior to the surface pick, vegetation clearance should be completed for the inspections to be completed.

This will involve the walking of a designated area in 1 m perpendicular transects by suitably trained and experienced competent persons, with raking of the top 0.1 m completed. All ACM will be bagged and double sealed for disposal offsite in accordance with the EPA 2014.

Once completed an environmental consultant will inspect the area for visible asbestos with the process being repeated should visible asbestos be reported. Should the environmental consultant continue to observe visible ACM, after the third failure the surface material will be deemed unsuitable and will need to be excavated and either placed under road reserves/less sensitive landuses or disposed of offsite.

7.3.2 Subsurface

Where non-friable impacts extend deeper than the surface soils, the material can be excavated and ACM picked to acceptable levels for retention at the site under road reserves and/or less sensitive landuses.

The material would need to be excavated, followed by placement and spreading of material on approximately 10 m x10 m pads in layers, approximately 0.1 m thick.

The material placed in pads will be hand raked and inspected for the presence of ACM by a team of labourers trained in asbestos identification. Any ACM collected will be removed for off-site disposal at a suitably licensed facility. Each pad will be raked and inspected individually, with material for each pad tracked.

Once raked and following the removal of any ACM for disposal offsite, an inspection will be completed by an experienced and suitably trained environmental consultant. If non-friable ACM is identified at levels that exceed the relevant criteria by the environmental consultant then the process will be repeated until validation criteria are achieved, or a decision is made to remove the material for on-site containment or off-site disposal on the basis the process is deemed unlikely to achieve validation.

The material will be sampled at a rate of one 500 mL sample per 10 m^3, prior to being cleared for reuse. The 500 mL sample will be collected by the environmental consultant and analysed at NATA accredited laboratory for the presence/absence of asbestos.

Should the consultant determine the soil is grossly impacted by ACM (such that it is not practicable to reduce ACM to acceptable levels by picking), or if asbestos fibres (AF/FA) are detected above the limit of reporting of 0.1g/kg in the analysed soil sample(s), and/or if friable asbestos is observed at any time during the inspection process, the materials will be removed to a separate stockpile area for offsite disposal at a suitably licensed facility to accept the waste or contained appropriately on site. This material must be kept separate from non-asbestos impacted soils and will be tracked on-site.

Where the environmental consultant verifies ACM content is below the criteria in subsurface soils and no asbestos fibres (AF/FA above criterion) are detected in the collected soil samples, the material will be considered suitable for reuse on-site. It is noted that subsurface ACM impacted soils that have been validated following this process must be placed at depths greater than 0.1 m bgs where visible ACM is still present albeit at acceptable levels meeting validation criteria.

7.3.2.1 Asbestos Picking Pad Footprints

Subsequent to the picking process for subsurface soils, the pads will require validation. An inspection for visible ACM and collection of validation samples will be required to ensure no impacts remain in the pads. Samples will be collected on 10 m grid from each pad area. Should the samples contain friable asbestos the material will be excavated and disposed of offsite or placed in an area designated for containment. Should visible ACM be observed, the surface will be picked as per **Section 7.3.1**.

7.3.3 Asbestos Quantification

As discussed in **Section 7.3.1**, asbestos quantification is required to assess the concentration of visible ACM that will require 'sparrow picking'. The methodology for asbestos quantification, in accordance with the NEPC 2013 guidelines, is outlined below:

- Test Pits excavated on a 10 m grid across the impacted area of an individual lot or where ACM impacts are detected in stockpiles or dam materials. Test pits to be completed by trained and experienced environmental consultant;
- Material will be inspected for visual bonded ACM fragments;
- A 100 L sample will be collected of the representative materials observed within each test pit;
- Where more than one distinct material type is observed, separate asbestos calculations must be completed for each material type;
- The 100 L sample will be weighed using a calibrated balanced scale and the weight in kilograms (kgs) recorded; and
- The 100 L sample will be sieved using a 7 mm sieve and any ACM fragments retained in the sieve will be collected, photographed, double bagged and then weighed using the calibrated scales.

Based on the NEPC 2013 guidelines the quantity of asbestos in soil may be estimated using the following equation:

- %w/w asbestos in soil = % asbestos content x bonded ACM (kg) /soil volume (L) x soil density (kg/L).

The results of the equations for each strata will be compared with the adopted criteria in **Section 8**.

7.4 Additional Assessment

To close the data gaps outlined in **Section 4**, there are several areas that require further sampling and assessment.

Soil samples will be collected as per **Section 7.2** and compared against the relevant guidelines outlined in **Section 8**.

7.5 Stockpile Sampling

As discussed in **Section 5**, should the material in stockpiles be potentially suitable for re-use at the site from an environmental perspective, including aesthetic impacts, then the material will be assessed in accordance with the criteria in **Section 8.**

If stockpiles are to be removed for offsite disposal then they will require sampling and classification in accordance with the EPA 2014 waste guidelines.

The known stockpile locations are shown on **Figure 9**. Should further stockpiles be identified subsequent to this RAP or if waste classification sampling is required, sampling is to be completed as per **Table 7.3.**

7.6 ASTs

Petroleum infrastructure identified must be removed and validated.

Prior to the removal of the ASTs, any liquid within the AST must be pumped out by a licensed contractor and disposed of off-site as "liquid waste" in accordance with EPA (2014).

Known AST locations are shown on **Figure 10**.

The environmental consultant will provide supervision and validation during any petroleum infrastructure removal process. Where removal is required, the following process is to be followed:

- Observation of AST and associated fuel infrastructure excavations and identification of impacted soils;
- Observation of excavation of impacted soils to lateral and vertical extent of physically identifiable impact, with additional removal of soils where impact extends laterally and vertically; and
- Observation of impacted soils transferred to a soil stockpiling area on the site.

Following the removal of the AST and infrastructure, the following validation works are proposed to be completed by the environmental consultant:

- Inspection, collection and screening (by PID) of validation samples taken from the base and walls of the excavation and any fuel lines following removal of AST; and
- Assessment by collection and screening (by PID) of validation samples of excavated material for off-site disposal.

Where stained and/or odourous soil around the ASTs are observed, then further assessment is required to assess potential for leaks. Test pits will be completed using an excavator with samples collected within and below the identified impacts. Further validation will be required for delineation sampling.

Test pit samples will be analysed for heavy metals, TPH/BTEX, volatile organic compounds (VOCs) and PAHs.

Samples will be collected as outlined in **Section 7.2** and analysed as per **Table 7.3.**

7.7 Management of Landscaped Areas

Where future landscaping is to occur, it is assumed that growing media will be imported to the site that meets the VENM requirement or any other exemption provided by the NSW EPA, i.e. ENM. The importation of growing media will reduce the risk to plant life in the landscaped areas.

Material tracking must be completed to ensure that ecological impacts are not placed within the top 2 m within the landscaped areas. Material tracking is to be completed by the appointed environmental consultant, with no ecological impacts identified, as per **Section 7**, being placed within landscaped areas. The identified areas of ecological impacts must be either placed under 2 m of validated material or beneath roadways/footpaths to restrict access to flora and fauna.

7.8 Cap and Containment

Materials above adopted site criteria for landuse scenarios or have not been treated may be placed within a designated area identified during development that will require ongoing long term management through an EMP. The cap and containment will be completed as per requirements in **Section 6.8**.

Materials to be contained within a containment cell must have TCLP analysis completed to ensure protection of groundwater.

Material tracking is to be completed by the appointed remediation contractor, with the environmental consultant to validate the source and placement.

7.9 Less Sensitive Land uses

Materials that contain concentrations of COPCs that meet the landuse scenario are suitable to be placed without the need for future management. Materials to be potentially placed in areas of less conservation land uses or within road reserves, with TCLP analysis required to ensure protection of groundwater.

Material tracking is to be completed by the appointed remediation contractor, with the environmental consultant to validate the source and placement.

7.10 Hazardous Building Materials and Asbestos Clearance

Prior to demolition a hazardous building materials assessment will be required for each building. An assessment will also be required on the heritage listed buildings remaining at the Site.

The survey must be completed by an experienced hazardous material survey auditor and the following materials included in the survey:

- asbestos;
- synthetic mineral fibres;
- lead based paint; and
- polychlorinated biphenyls.

The asbestos survey will take the form of a visual inspection by experienced staff of the building. Samples will be taken as appropriate and analysed for asbestos using stereobinocular microscopy and polarised light microscopy with dispersion staining by a laboratory that is accredited with the National Association of Testing Authorities.

The presence of lead paint will be assessed through visual inspection of painted surfaces during the inspection as required and using XRF equipment. No allowance has been made for laboratory analysis of lead paint.

Electrical appliances that may have PCB-containing capacitors will be identified by visual inspection. Representative samples of each type of light fitting or electrical appliance will be inspected and the make and model of the capacitor compared with the ones listed in the Australian and New Zealand Environment and Conservation Council (ANZECC) document Identification of PCB-Containing Capacitors.

Hazardous building footprints were assessed within the previous assessment (JBS 2012), however, further assessment after demolition will be completed. Soil samples of the former building footprints are proposed to be collected on a 20 m linear grid, with visual assessment of ACM included.

Footprint samples of the former buildings will be collected as per the requirements in **Table 7.3**.

7.11 Debris and Anthropogenic Materials

During construction works there is potential for anthropogenic materials to be identified throughout the site. Should extensive anthropogenic materials, including animal remains, be reported then assessment, including visual inspection and validation sampling, by the environmental consultant in accordance with the criteria in **Section 8** will be required.

If the material meets the adopted landuse criteria then there is potential that the material and debris can be separated for disposal offsite and/ or recycled, as appropriate.

Vegetation removed, if not impacted with asbestos, can be re-used on site as composting material and placed where required.

If material does not meet the adopted criteria then the material remediation strategy will completed as per **Section 5**.

7.12 Laboratory Analyses

All laboratories engaged for the project will need to be NATA accredited for the required analyses.

In addition, each laboratory is required to meet internal QA/QC requirements consistent with NEPM. Laboratory analysis of samples will be conducted with reference to COPCs listed in **Table 7.3**.

The proposed soil validation sampling and analytical program for impacted soils is outlined in **Table 7.3**.

Table 7.3 Sampling and Analytical Schedule

Validation Area	Sampling Frequency	Analytes
Excavations formed by the removal asbestos impacted soils	1 validation sample per 10 m linear of walls and 1 base validation sample per 25 m^2 (at least 1 sample per wall and base required)	Asbestos (500 mL)
Asbestos Surface ACM	NA	Inspection for ACM
Subsurface ACM picking and Pads	1 sample per 10 m^3 pads	Asbestos (500 mL)
Excavations formed by the removal heavy metal impacted soils	1 validation sample per 10 m linear of walls and 1 base validation sample per 25 m^2 (at least 1 sample per wall and base required)	Heavy metals including As, Cr, Cu, Cd, Pb, Ni, Hg and Zn
Excavations formed by the removal of hydrocarbon impacted soils	1 validation sample per 10 m linear of walls and 1 base validation sample per 25 m^2 (at least 1 sample per wall and base required)	PAHs, TPH
Cap and Containment	1 sample per 100 m^3	TCLP – PAHs, metals
Further Stockpile Sampling (for additional stockpiles generated)	1 sample per 25 m^3 up to 200 m^3 (i.e. min 8 samples in 200 m^3) 1 sample per 100 m^3 and inspection for aesthetic impacts	Asbestos (500 mL), 8 metals, PAHs, metals, TPH/BTEX
Footprints of all stockpiles	1 sample per 10 m (or 100 m^2) and inspection for the presence of ACM	8 metals/TPH/BTEX PAH, Asbestos (500 mL)
Imported Soils (VENM)	Minimum of 3 samples per source Site (and inspection, consistent with **Sections 6.8.4 and 6.8.6**)	8 metals/TPH/BTEX PAHs/OCPs/PCBs Asbestos (500 mL)
Imported Soils (ENM)	Consistent with ENM Exemption 2012 (or subsequent revisions) for characterisation	8 metals, TPH, PAHs, chlorinated hydrocarbons, Ph, RTA T276 foreign materials*, asbestos (500 mL)
Hydroponic Footprint (assumed 500 m^2)	5 samples	Asbestos (500 mL), 8 metals, OCPs, herbicides
ASTs	1 validation sample per 10 m linear of walls (if excavation required >0.1 m) and 1 base validation sample per 25 m^2 (minimum of 5 samples per)	PAHs, TPH/BTEX, VOCs, 8 metals
Building footprints (after demolition)	1 sample per 20 m and inspection for the presence of ACM	OCPs, Asbestos (500 mL), lead, PCB
Farm Dams	1 sample per 50 m for wall and inspection for the presence of ACM. 1 sample per 2500 m^2 for base. At least 1 sample per wall and base required	TPH, OCPs, asbestos (500 mL), 8 metals, biologicals, ammonia, Ph
Surface Debris	Visual Inspection of removal of materials including metal, machinery and animal remains	-
Dog Kennels	As per **Section 4**	
Animal Remains	As per **Section 4**	
6 Lots	As per **Section 4**	
Groundwater	None Proposed	-

*NSW Roads & Traffic Authority Test Method T276 Foreign Materials includes rubber, plastic, bitumen, paper, cloth, paint and wood.

8. Validation Criteria

Given the intention to develop the site for mixed land use, including residential, commercial and open space, soil results will be compared against the validation criteria stipulated in **Table 8.1**. The validation criteria are based upon the guidelines provided in NEPC (2013).

The remaining criteria are based on EPA endorsed investigation levels which, while being used as clean-up levels instead of site-specific criteria derived through a process of risk assessment, are considered adequately conservative for the purposes of validating the site.

Validation within lots will be based upon the landuses as per the development plans of the Precincts, as per **Figure 3**.

Table 8.1 Adopted Site Criteria

	Limit of Reporting	Laboratory Method	Health Investigation/ Screening Levels			
			Residential – Access HIL-A	Residential – Minimal Access HIL-B	Recreational/ Open Space HIL-C	Commercial/Industrial HIL-D
METALS						
Arsenic	4.0	ICP-AES (USEPA 200.7)	100	500	300	3000
Cadmium	0.4	ICP-AES (USEPA 200.7)	20	150	90	900
Chromium	1.0	ICP-AES (USEPA 200.7)	100[1]	500[1]	300[1]	3600
Copper	1.0	ICP-AES (USEPA 200.7)	6000	30 000	17 000	240 000
Nickel	1.0	ICP-AES (USEPA 200.7)	400	1200	1200	6000
Lead	1.0	ICP-AES (USEPA 200.7)	300	1200	600	1500
Zinc	1.0	ICP-AES (USEPA 200.7)	7400	60 000	30 000	400 000
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	40[2]	120[2]	80[2]	730
POLYCYCLIC AROMATIC HYDROCARBONS						
Carcinogenic PAHs (as B(a)P TPE)[3]	0.028	GCMS (USEPA8270)	3	4	3	40
Naphthalene	0.5	Purge Trap-GCMS (USEPA8260)	3	3	NL	NL
Total PAHs[4]	0.4	GCMS (USEPA8270)	300	400	300	4000
BTEX						
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	0.5[5]	0.5[5]	NL[5]	3
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	160[5]	160[5]	NL[5]	NL
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	55[5]	55[5]	NL[5]	NL
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	40	40[5]	NL[5]	230
TOTAL RECOVERABLE HYDROCARBONS						
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	45[6],	45[6]	NL[6]	260
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	110[6]	110[6]	NL[6]	NL
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)	-	-	-	-
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)	-	-	-	-
ORGANOCHLORINE PESTICIDES						
DDT + DDD + DDE	0.3	GCECD (USEPA8140,8080)	240	600	400	3600
Aldrin + Dieldrin	0.2	GCECD (USEPA8140,8080)	6	10	10	45
Chlordane	0.1	GCECD (USEPA8140,8080)	50	90	70	530
Endosulfan	0.3	GCECD (USEPA8140,8080)	270	400	340	2000
Endrin	0.1	GCECD (USEPA8140,8080)	10	20	20	100
Heptachlor	0.1	GCECD (USEPA8140,8080)	6	10	10	50
HCB	0.1	GCECD (USEPA8140,8080)	10	15	10	80
Methoxychlor	0.1	GCECD (USEPA8140,8080)	300	500	400	2500
PCBs						
Total PCBs	0.7	GCECD (USEPA8140,8080)	1	1	1	7
OTHER						
Bonded Asbestos	Presence	PLM / Dispersion Staining	0.01%	0.04%	0.02%	0.05%
AF/FA	Presence	PLM / Dispersion Staining	0.001%			
All forms of asbestos	Presence	PLM / Dispersion Staining	No visible ACM for surface soil (0 – 0.1 m bgs).			

Notes:

1. Guideline values presented are for Chromium (VI) in absence of total Chromium values. Where total Chromium results are elevated, representative samples will be analysed for Chromium (VI).
2. Guideline values are for inorganic mercury. Where elevated mercury concentrations are encountered and/or site information suggests the potential presence of elemental mercury and/or methyl mercury, consideration of applicability would be needed.
3. Carcinogenic PAHs calculated as per Benzo(a)pyrene Toxicity Equivalent Factor requirements presented in NEPC (2013)
4. Total PAHs calculated as per requirements presented in NEPC (2013).
5. Soil Health Screening Levels for Vapour Intrusion: Clay Soils. Values presented are those for 0 to <1 m bgs as the most conservative level.
6. Values for F1 C6-C9 are obtained by subtracting BTEX (Sum) from laboratory result for C6-C9 TRH.

The ecological guidelines adopted for the site are shown in **Table 8.2**. The ecological criteria are based on site-specific soil properties including pH, cation exchange capacity (CEC) and clay content reported in the DSI (JBS&G 2014), consistent with NEPC (2013) guidance.

Table 8.2 Ecological based criteria

	Limit of Reporting	Laboratory Method	ESLs Urban Residential and public open space	ESLs Commercial and industrial
Metals				
Arsenic	4.0	ICP-AES (USEPA 200.7)	100	160
Cadmium	0.4	ICP-AES (USEPA 200.7)	-	-
Chromium	1.0	ICP-AES (USEPA 200.7)	190	310
Chromium (VI)	1.0	Alkali leach colorimetric (APHA3500-Cr/USEAP3060A)	-	-
Copper	1.0	ICP-AES (USEPA 200.7)	130	190
Nickel	1.0	ICP-AES (USEPA 200.7)	30	55
Lead	1.0	ICP-AES (USEPA 200.7)	1100	1800
Zinc	1.0	ICP-AES (USEPA 200.7)	180	280
Mercury (inorganic)	0.1	Cold Vapour ASS (USEPA 7471A)	-	-
PAHs				
Benzo(a)pyrene	0.5	GCMS (USEPA8270)	0.7	1.4
Naphthalene	0.1	GCMS (USEPA8270)	170	370
BTEX				
Benzene	1.0	Purge Trap-GCMS (USEPA8260)	50	75
Toluene	1.0	Purge Trap-GCMS (USEPA8260)	85	135
Ethylbenzene	1.0	Purge Trap-GCMS (USEPA8260)	70	165
Total Xylenes	3.0	Purge Trap-GCMS (USEPA8260)	105	180
TPH				
F1 C_6-C_{10}	10	TPH Purge Trap-GCMS (USEPA8260)	180[1]	215[1]
F2 >C_{10}-C_{16}	50	TPH Purge Trap-GCMS (USEPA8260)	120[2]	170
F3 >C_{16}-C_{34}	100	Purge Trap-GCFID (USEPA8000)	300	1700
F4 >C_{34}-C_{40}	100	Purge Trap-GCFID (USEPA8000)	2800	3300
OCPs				
DDT	0.1	GCECD (USEPA8140,8080)	180	640

1. Values for F1 C_6-C_9 are obtained by subtracting BTEX (Sum) from laboratory result for C_6-C_9 TRH.
2. Value for Chromium (III) adopted for evaluation of total Chromium in the absence of known Chromium (VI) source.

Biological data collected during the assessment, where required, will be compared against the NSW EPA (1997[7]). The criteria is in **Table 8.3** below:

Table 8.3 Biosolids Based Criteria

Parameter	Standard
E.Coli	<100 MPN per g (dry weight)
Faecal Coliforms	<1,000 MPN per g (dry weight)

[7] Use and Disposal of Biosolids Products “Stabilisation Grade A Product”, NSW EPA (1997).

After consideration of the ESLs and HSLs, the Management Limits for TPH fractions (F1-F4) in soil can be reviewed and applied if required. The management limits are shown in **Table 8.4** below:

Table 8.4 Management Limits Criteria

TPH Fraction	Soil Texture	Management Limit (mg/kg dry soil)	
		Residential, parkland and public open space	Commercial and Industrial
F1 C_6-C_{10}	Coarse	700	700
	Fine	800	800
F2 >C_{10}-C_{16}	Coarse	1000	1000
	Fine	1000	1000
F3 >C_{16}-C_{34}	Coarse	2500	3500
	Fine	3500	5000
F4 >C_{34}-C_{40}	Coarse	10000	10000
	Fine	10000	10000

During redevelopment of the site any soil to be removed off-site shall require a waste classification in accordance with EPA (2014) 'Waste Classification Guidelines Part 1: Classifying Waste'. The potential presence of asbestos in fill materials must be noted in the preparation of the waste classification. The waste classification guidelines are in **Table 8.5** following:

Table 8.5 Waste Classification Guidelines based on SCC without TCLP

	Limit of Reporting	General Solid Waste	Restricted Solid Waste
METALS			
Arsenic	2.0	100	400
Cadmium	0.4	20	80
Chromium (VI)	5.0	100	400
Copper	5.0	-	-
Lead	5.0	100	400
Mercury	5.0	4	16
Nickel	1.0	40	160
Zinc	0..05	-	-
PETROLEUM HYDROCARBONS			
C6-C9 Fraction	20	650	2600
C10 – C36 Fraction	50	10000	40000
BTEX COMPOUNDS			
Benzene	0.1	10	40
Toluene	0.1	288	1152
Ethylbenzene	0.1	600	2400
Xylenes	0.3	1000	4000
POLYCYCLIC AROMATIC HYDROCARBONS			
Benzo(a)pyrene	0.5	0.8	3.2
Total PAHs	0.5	200	800
ORGANOCHLORINE PESTICIDES			
Aldrin + Dieldrin	0.1	< 50 (Scheduled waste)	< 50 (Scheduled waste)
Chlordane	0.1		
Heptachlor	0.05		
DDT + DDD + DDE	0.175		
POLYCHLORINATED BIPHENYLS			
Total PCBs	0.5	<50 (Scheduled waste)	<50 (Scheduled waste)

Note: Concentrations in **Table 8.4** are contaminant threshold values (CT1 & CT2 or SCC1 & SCC2 values where CT1 & CT2 are not used) for classifying waste by chemical assessment without the leaching (TCLP) test (EPA 2014).

8.1 Application of Soil Criteria

For soil to be considered as validated (i.e., not posing an unacceptable risk) all reported concentrations must be below the Site remediation criteria. Should results be found to be able the adopted criteria, then sstatistical analyses of the data in accordance with relevant guidance documents will be undertaken, if appropriate. If the statistical results are below the site criteria then the results will be considered acceptable.

In addition, consideration shall be given to the presence of odorous or discoloured soils (caused by contamination), and other aesthetic issues.

8.2 Validation Reporting

The development of the site is likely to be a staged approach, with the remediation likely to be completed in conjunction with the construction stages. In the event that the remedial works are required to be reported in a staged manner, the Validations Reports shall be stand-alone documents relating to particular stages (areas) of the site.

At the completion of the remedial works for each stage, each Validation Report will be prepared in general accordance with the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (OEH 2011), documenting the works as completed. Each report will contain information including:

- Confirmation that hazardous materials formerly within the buildings have been appropriately removed and disposed offsite;
- Details of the remediation works conducted;
- Information demonstrating that the objectives of the RAP have been achieved, in particular the validation sample results and assessment of the data against both the pre-defined data quality objectives and the remediation acceptance (validation) criteria;
- Information demonstrating compliance with appropriate regulations and guidelines;
- Any variations to the strategy undertaken during the implementation of the remedial works;
- Cap and containment details, where relevant, including survey data;
- Hazardous building material surveys for all buildings prior to demolition;
- Details of impacts associated with building structures being remediated;
- Waste tracking documentation from the receiving facility;
- Details of any environmental incidents occurring during the course of the remedial works and the actions undertaken in response to these incidents; and
- Other information as appropriate, including requirements (if any) for ongoing monitoring / management.

The report will serve to document the remediation works for future reference.

Should the works not be staged, then a single Validation Report will be prepared documenting all of the above.

9. Contingency Plan

A review of remediation works has been undertaken to identify potential risks to meeting the site validation criteria. A number of potential risks have been identified. These are listed following with contingencies that will be implemented to ensure that validation criteria are met.

9.1 Changing/Staged Development Requirements

As noted in Section 4, development may need to adjust the remedial approaches as development designs change and final site requirements adjust as development progresses. As such contingency remediation approaches may be required, consistent with **Table 5.4**.

9.2 Unexpected Finds

The possibility exists for hazards other than those identified and expected based on previous investigations, to be present at the Site.

Environmental sampling is based on chemical analytes identified as a potential concern during a documented process of reviewing historical Site activities. However, ground conditions between sampling points may vary, and further hazards may arise from unexpected sources and/or in unexpected locations. The nature of any additional hazards which may be present at the Site are generally detectable through visual or olfactory means, for example:

- Previously unidentified asbestos fibre impacted soils and ACM;
- Drums or underground tanks;
- Chemical bottles;
- Odorous or unusual coloured soils; and
- Buried animal remains.

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned potential hazards be identified (or any other unexpected potentially hazardous substance), the procedure summarised in **Flowchart 9.1** and detailed in the following sections is to be followed.

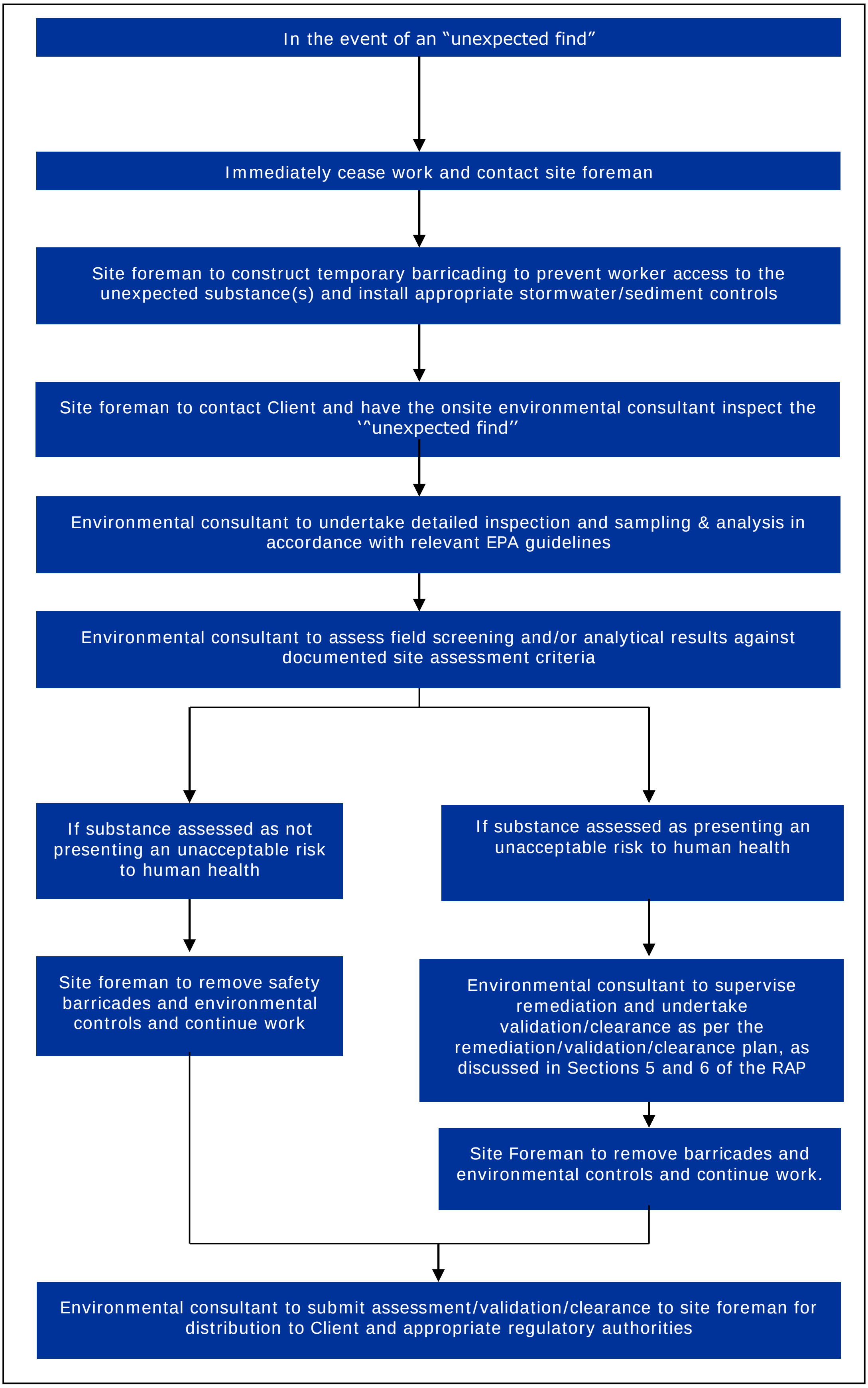
An enlarged version of the unexpected finds protocol, suitable for use on Site, should be posted in the Site Office and referred to during the Site Specific Induction by the Principal Contractor.

The sampling strategy for each 'unexpected find' shall be designed by a suitably qualified environmental consultant, in accordance with guidelines made or endorsed by EPA. The strategy will, however, be aimed at determining the nature of the substance – that is, is it hazardous and, if so, is it at concentrations which pose an unacceptable risk to human health or the environment.

The sampling frequency of the identified substance / materials shall meet the requirements the NSW EPA Sampling Design Guidelines (1995).

Should any unexpected finds require remediation and validation, the works will be conducted in general accordance with Sections 5 and 6 of this RAP, and with appropriate measures based on the nature of the unexpected find. The Auditor should be advised and discussions held to confirm the appropriate remedial strategy for the unexpected find.

Flowchart 9.1 Unexpected Find Protocol



10. Site Management Plan

Hours of Operation

Remediation works shall only be permitted during the following hours:

Monday to Friday: 7:00 am to 3:00 pm

Saturdays: 8:00 am to 1:00 pm

Sundays and Public Holidays: No work permitted.

Emergency work is permitted to be completed outside of these hours. The works schedule will require confirmation with Council.

10.1 Soil and Water Management

All works shall be conducted in strict accordance with the soil and water management measures outlined in this section.

To prevent the migration of impacted soil/sediment off site, silt fences shall be constructed at the down-gradient work area boundaries, as per the specifications contained in *Managing Urban Stormwater – Soil and Construction Volume 1, 4th Edition, NSW Government*, March 2004. Any material which is collected behind the sediment controls shall be treated as potentially contaminated and will be suitably managed.

In a storm event, the sediment controls located on-site will need to be monitored and replaced or altered if necessary. Collected material will need to be suitably managed in accordance with remediation works.

10.2 Site Access

During remediation works, perimeter fencing will be maintained to restrict access to the works area. Only authorised persons will be able to enter the works area.

Vehicle access to the works area shall be stabilised to prevent the tracking of soil around the site and the adjoining driveway/access point to the road will be swept or cleaned on an as-needed basis. Any collected materials shall be treated as potentially contaminated and will be suitably managed.

10.3 Stockpiles

The following procedures will be implemented:

- No stockpiles or other materials shall be placed on footpaths or roadways and will be away from all stormwater infrastructure (including drainage lines, stormwater pits, gutters, etc) where possible. Where this is not possible, sediment controls will be placed over stormwater grates to prevent ingress of sediment to stormwater drainage lines;
- Stockpiles shall be formed with sediment control structures placed immediately down slope to protect other lands and waters from sediment pollution;
- All stockpiles likely to generate substantial dusts or potential asbestos fibres shall be covered and, if left for more than 24 hours, be stored in a secure area; and
- All stockpiles will be placed on a level area as a low elongated mound.

10.4 Dam & Excavation Pump-out

The farm dams and excavation pump out water (if any) shall be pumped from the excavation by a licensed contractor and disposed of off-Site as 'liquid waste' in accordance with DECC (2009).

10.5 Noise

The remediation works shall comply with the NSW EPA's Environmental Noise Control Manual for the control of noise from construction sites.

All machinery and equipment used on site will be in good working order and with the fitted with appropriate silencers when necessary.

10.6 Vibration

The use of plant and machinery shall not cause vibrations to be felt or capable to be measured at the neighbouring premises.

10.7 Air Quality

10.7.1 Dust Control

During the remediation of the impacted areas, dust levels will be monitored and minimised by using mist sprays as necessary.

During the removal of the asbestos impacted materials from the site, the excavation area will be wetted down using a water spray to minimise the potential for dust to be generated. In addition to these controls, air sampling will be conducted during the asbestos remediation works to monitor the amount of airborne asbestos fibres released. The monitoring results will be used to adjust the work technique, in particular the amount of water used to wet the excavation.

Dust shall also be controlled by ensuring vehicles leave via the designated (stabilised) site access and all equipment has dust suppressors fitted.

10.7.2 Asbestos Air Monitoring

Asbestos air monitoring will be completed in accordance with **Section 11.4**.

10.8 Material Transporting

Trucks will be loaded in a designated area away from the contaminated material excavations. The transporting contractor shall ensure that there is no material tracked out onto the street and that the load is securely covered. In addition, all site vehicles must leave the site in a forward direction.

All appropriate road rules shall be observed and state roads will be selected as far as practicable over local roads when deciding on the transport route to the off-site material disposal location.

Where material is to be imported, controls are to be implemented to maintain separation between contaminated and non-contaminated materials.

10.9 Hazardous Materials

All hazardous and/or intractable wastes (if any) shall be removed and disposed of in accordance with the relevant regulatory requirements. In particular, any hazardous wastes will be transported by an EPA licensed transporter.

10.10 Disposal of Contaminated Soil

All soil will be classified, managed and disposed in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (DECC 2009a).

10.11 Imported Fill

If any materials are required to be imported on site to re-establish existing ground levels, then only material meeting the requirements outlined in **Section 6.8.4** will be accepted onto the site.

10.12 Site Signage and Contact Numbers

A sign shall be displayed throughout the duration of the works with the contact details of the remediation contractor and project manager. Council shall also be notified of these details at least 14 days prior to commencing works.

10.13 Complaint Reporting and Resolution

Complaints from adjoining site occupants or workers on site will be directed initially to the civil contractor on site. Following that, discussion with the environmental consultant and the complainant will investigate the issue and remedy it as required or applicable.

11. Health and Safety

The objectives of the health and safety plan are:

- to apply standard procedures that reduce risks resulting from the above works;
- to ensure all employees are provided with appropriate training, equipment and support to consistently perform their duties in a safe manner; and
- to have procedures to protect other Site workers and the general public.

These objectives will be achieved by:

- assignment of responsibilities;
- an evaluation of hazards;
- establishment of personal protection standards and mandatory safety practices and procedures; and
- provision for contingencies that may arise while operations are being conducted at the Site.

This health and safety section does not provide safety information specific to construction and other demolition or excavation activities carried out by contractors, such as the safe operation, maintenance and inspection of plant, etc. Contractors will be required to prepare their own Safe Work Method Statements for their work activities. All parties working on the Site shall comply with all applicable Health and Safety legislation, regulations, codes and guidelines.

Health and safety requirements while working with asbestos will be decided by the asbestos removal contractor and will be based on the requirement of their licence. Measures implemented by the licensed asbestos removal contractor will take precedence over the advice provided herein.

11.1 Responsibilities

11.1.1 Remediation Supervisor

The remediation supervisor is responsible for ensuring that the work is carried out in accordance with the health and safety plan. This will include:

Ensuring a copy of the health and safety plan is available at the Site during the remediation/validation activities;

Confirming individuals are competent in performing allotted tasks;

Liaison with the contractor representatives, as appropriate, regarding safety matters; and

Investigation and reporting of incidents and accidents.

The remediation supervisor will be designated by the nominated contractors prior to the commencement of Site remediation works.

11.1.2 Other Members of the Site Workforce

Every individual worker is responsible for conducting their allocated tasks in a safe manner and in accordance with their training and experience. They must give due consideration to the safety of all others in their proximity and cooperate in matters of health and safety. All workers must leave their work areas in such a condition that the location will not be hazardous to others at any time.

11.2 Hazards

The known or potential hazards associated with the work activities are listed below:

Inhalation hazards associated with the presence of asbestos containing materials.

- Chemical hazards associated with the presence of contaminated soil;
- Physical hazards, including:
- work in or near excavations;
  - operating machinery;
  - heat stress and UV exposure;
  - underground or overhead services;
  - manual handling; and
  - noise.

In the event of the discovery of any condition that would suggest the existence of a situation more hazardous than anticipated, or of any new hazard that could potentially cause serious harm to personnel or the environment, work will be suspended until the Remediation Supervisor has been notified and appropriate instructions have been provided to field personnel.

11.2.1 Inhalation Hazards

The main inhalation hazards from the remediation/validation works are consequent of the presence of asbestos, hydrocarbons and heavy metals.

Measures require to be put in place to prevent/ minimise the generation of airborne fibres and odours. These have been described in the environmental controls for the works. Where airborne emissions are generated, PPE shall be required to be worn to prevent potential exposure.

11.2.2 Physical Hazards

Operating Machinery

Heavy plant and equipment operating in the vicinity of field personnel presents a risk of physical injury. Personnel should be cognisant of their position in relation to operating machinery at all times. Personnel must wear high visibility clothing when onsite.

Never walk behind or to the side of any operating equipment without the operator's knowledge. Do not assume that the operator knows your position. Personnel should stay at least 1 m from the operational area of heavy equipment and should not stand directly below any load or piece of equipment (e.g. backhoes, excavators, vehicles).

Work In or Near Excavations

No Site personnel are to stand closer than 0.5 m to the edge of an excavation. No Site personnel are to enter excavation greater than 1 m deep. Additionally, at the end of each day excavations are to be barricaded to prevent access.

Cuts and Abrasions

The manual work associated with the remediation works gives rise to the risk of cuts and abrasions to personnel working in the area. As well as the direct consequences of any cut or abrasion, such injuries can lead to the possibility of exposure to contaminants through the wound as well as diseases such as tetanus. To minimise the risk of direct or indirect injury, personnel will wear the personal protective equipment described.

Heading: Heat Stress and UV Exposure

Site personnel may experience heat stress due to a combination of elevated ambient temperatures and the concurrent use of personal protection equipment; this depends in part on the type of work and the time of year.

In addition to heat stress, overexposure to UV radiation in sunlight can result in sunburn to exposed skin. The use of a high protection sunscreen (SPF15 or greater) on all exposed skin is recommended. Hats (including hard hats in specified areas) will also provide additional sun protection during the peak (i.e. 10:00 am to 3:00 pm) sun period. Sunglasses should be worn (where appropriate) to protect eyes from effects of UV exposure.

Underground Services

There is the potential for underground services (electricity, natural gas lines, water, telephone, sewer, and stormwater) to be present beneath the work area. The remediation contractor shall ensure that appropriate procedures will be taken to minimise the risk associated with excavation near services.

Aboveground Electrical Hazards

All electrical plant and equipment must comply with the requirements of Australian Standard AS 3000. Hand held portable tools shall comply with AS/NZS 3160 "hand-held portable electric tools" and shall be double insulated. Cord connected portable hand lamps shall comply with AS/NZS 3118. A Residual Current Device (RCD) shall protect plug-in portable equipment, which is connected to a supply above Extra Low Voltage - 12-24volts (including equipment supplied from a generator or welding set). RCD protection shall be provided during maintenance of portable electrical equipment at all times while the equipment is connected to a power supply above Extra Low Voltage, irrespective of whether power is switched ON or OFF. RCD's shall comply with AS 3190 and shall be type II units, rated to trip at or below 30 milliamps within 40 milliseconds.

In the vicinity of overhead power lines, the WorkCover NSW 'Guidelines for Working Near Overhead Power Lines' (2006) should be consulted to determine the appropriate 'approach distance' specific to the line voltage present and tasks under completion. No excavator, drill rig or crane may work within the nominated 'approach distance', unless specifically approved by the Remediation Supervisor and/or the asset owner if required.

Manual Handling

When lifting or handling heavy objects, use correct lifting techniques, bending the knees not the back. If the item to be lifted is too heavy or awkward for one person to lift, seek assistance from other company employees or use mechanical help.

Noise

Long-term exposure to high levels of noise is unlikely. However, operating machinery may cause significant noise exposures for short periods. Earplugs or earmuffs should be worn in any situation where noise levels make normal conversation difficult.

11.3 Personal Protective Equipment

All workers who may come into direct contact with contaminated soil will wear the following personal protective equipment:

- Overalls or long sleeved collared shirt;
- Heavy duty outer gloves (e.g. leather) where there is a risk of cuts or abrasions, otherwise PVC outer gloves if in direct contact with contaminated soil;

- Steel capped boots;
- Safety glasses;
- High visibility vest or jacket; and
- Hard hat.

In addition to the above, the following personal protective equipment will be worn by the licensed personnel responsible for removing the asbestos impacted soils, or potentially exposed to airborne emissions:

- During any work in the asbestos impacted area prior to final clearance, overalls worn should be made from either 100% synthetic material or a mixed natural/synthetic fabric capable of providing adequate protection against fibre penetration. Gloves, rubber soled work shoes or gum boots should be provided for personnel involved in the wet work. These shoes will remain inside the work area for the duration of the work.
- Approved respirators shall be worn in the asbestos impacted area at all times to provide respiratory protection. The minimum protection is an approved properly fitting disposable respirator or half faced respirator fitted with a particulate cartridge. However it is expected that the contractor will conduct a risk assessment in relation to the works and should consider the requirement for positive pressure, hood or full-face powered air-purifying respirator fitted with an approved Class M filter.
- The contractor shall supply and keep in good order, two complete sets of protective clothing and respirators for authorised inspection personnel. These will remain the property of the contractor at the end of the contract.
- Respirators should be issued for personal use only and shall be kept in a clean condition. Alcohol based antiseptic swabs should be made available for the cleaning of respirators.
- Any respirator defects should be reported for subsequent repair. They should be maintained in a clean and safe working condition.
- Employees must receive instruction in the correct method of using the respirator and on the importance of correct facial fit and maintenance. No person with a beard shall be allowed within the asbestos work area except using an approved positive pressure continuous airflow hood.

It is further noted that additional PPE may be required as part of the WorkCover permitting process. If this occurs, then the above PPE requirements will be upgraded to reflect WorkCover's requirements.

- In the event that workers will be exposed to highly odorous soil conditions during remediation works, the following additional PPE should be adopted:
- Impermeable disposable overalls; and
- Half or full face respirator with organic vapour cartridge.

11.4 Monitoring procedures

It is prudent practice to conduct monitoring for airborne asbestos fibres during asbestos works. The results of air monitoring can be used:

- To identify failures in containment;
- To identify poor work practices; and

- To provide proof of containment for occupiers and regulatory authorities and to provide evidence of good work practices for both present and future needs.

Monitoring will be conducted in accordance with the National Occupational Health & Safety Commission (NOHSC) membrane filter method as approved by the National Association of Testing Authorities (NATA).

The appropriate TWA (NOHSC) levels are:

- AmoSite - 0.1 fibre/mL;
- Chrysotile – 0.1 fibre/mL;
- Crocidolite - 0.1 fibre/mL;
- Other forms of asbestos - 0.1 fibre/mL; and
- Any mixture of these, or where the composition is unknown - 0.1 fibre/mL.

With consideration to these levels the following trigger levels have been developed:

- If airborne fibre levels reach 0.01 fibres/mL the source of fibre release is to be found and rectified. Work in the affected area does not have to stop; and
- If airborne fibre levels reach 0.02 fibres/mL work in the work area should stop and additional controls measures employed. This will involve additional water spraying during excavations.

Proposed air monitoring locations will be located in areas where asbestos impacted material has been identified.

Air monitoring results will be obtained within 24 hours of sample collection. While this precludes "real time" monitoring, visual indications will be made during all excavation works and, if there is any visible dusts, light water spays will be used to wet the excavation and prevent the release of any airborne asbestos fibres.

11.5 Decontamination Procedures

The decontamination procedures specified below will be followed whenever personnel, plant or equipment leave the Site.

Personnel

The following steps should be taken to ensure personnel do not leave the Site with potentially contaminated clothing:

- Wash boots in clean water
- Remove outer gloves and store for reuse
- Remove overalls and store for reuse (during the day) or place in the skip for the asbestos wastes for disposal.
- Remove respirator and goggles (if used) and store clean for reuse or decontamination, as appropriate.
- Thoroughly wash hands and face.

If any part of a worker's body comes into direct contact with any potentially contaminated material, the affected part(s) should be immediately washed with clean water.

Vehicle, Plant and Equipment

All equipment, including personal protective equipment, will be washed or otherwise cleaned to ensure that contaminated soil, water or dust is removed before it leaves the Site. All plant and equipment will have their outer bodies thoroughly cleaned of soil and sediment before moving off the Site.

11.6 Emergency Response

The remediation contractor will be responsible for preparing an emergency response plan, which will provide details on appropriate action and evacuation procedures in the event of an emergency.

In the event of an emergency arising on the Site, appropriate action should be taken. Site evacuation procedures should be followed, as necessary.

In the event of an accident: evaluate the seriousness of the injury, and contact emergency services, if necessary; provide first aid, as appropriate, and if safe to do so evacuate the injured person; make the area as safe as possible without jeopardising safety.

If a serious accident occurs, do not disturb the scene, except to make safe and prevent further injury or damage, and keep all unauthorised people out, and report all accidents to the Remediation Supervisor.

12. Post Remediation Site Management Plan

12.1 Long Term Management Plan

Subsequent to implementation of the preferred remediation strategy, and demonstration of successful validation of the site in accordance with the requirements of this RAP, a long term Environmental Management Plan (EMP) may be required for the management of any impacted materials exceeding criteria retained at the site.

Due to the various Precincts having different landuse scenarios, implementation of an EMP will only be required where impacted materials are retained that exceed specific landuse criteria.

Should all impacted material be remediated, either through offsite disposal or placement within road reserves or less sensitive landuse scenario locations then an EMP will not be required subject to auditor sign off and approval.

13. Regulatory Approvals/Licensing

State Environment Planning Policy Number 55 (SEPP55) Remediation of Land

The proposed remediation works are considered to be classified as 'Category 1' Remediation Works – i.e. requiring consent based on more than 3 ha of area is to be disturbed during the development and likely to be ancillary to the development and therefore part of the overall development process. The notification requirements of SEPP 55 include notification to Council 30 days before Category 1 remediation works commence. The notification will provide Council with the information needed to verify the work.

Protection of the Environment Operations Act 1997

In relation to the licensing requirements under the Protection of the Environment Operation Act 1997:

- The works do not fall within the licensing requirements for Contaminated Soil Treatment Works; and
- The works do not fall within the licensing requirements for Crushing, Grinding or Separating Works.

All material to be excavated and removed from the Site (including associated activities such as classification) will be undertaken in strict accordance with the requirements of the POEO Act 1997. Such requirements include:

- Ensuring waste is classified appropriately and in accordance with relevant guidelines;
- Waste materials are disposed of to appropriately licensed facilities;
- Other materials are removed to facilities lawfully able to accept such materials.

Waste Classification Guidelines, Part 1: Classifying Waste

All wastes generated shall be classified and managed in accordance with the NSW DECC Waste Classification Guidelines Part 1: (2009).

Asbestos Removal Regulations and Code of Practice

The removal and disposal of asbestos will be managed in accordance with the National Occupational Health & Safety Commission (NOHSC) Asbestos: Code of Practice and Guidance Notes, the Work Health and Safety Act 2011, WorkCover Guidelines and the NSW EPA Waste Classification Guidelines 2009. Friable asbestos works must be completed by a licensed Class A asbestos removalist. Non-friable asbestos remediation works can be completed by a Class B licensed contractor.

Before starting the affected works, a Site-specific permit approving the asbestos works must be obtained from NSW WorkCover. A permit will not be granted without a current licence and the permit application must be made at least seven days before the work is due to commence.

Work Health and Safety Act 2011

The overarching Act for NSW setting law relating to employee health and safety and employer responsibilities.

Work Health and Safety Regulation, 2011

Sets Regulations and details the duties for employers to achieve required employee health and safety performance.

Environmental Planning and Assessment Act 1979 (EP&A Act)

The EP&A Act provides a framework for the development of land within NSW, including division of planning responsibilities between tiers of government and requirements for assessment in relation to development of sites for specific uses. This act provides for the enforcement of conditions upon use of the land via planning instruments including state environmental planning policies such as SEPP 55.

Contaminated Land Management Act 1997 (CLM Act)

The CLM Act controls the assessment of contamination and management of contaminated soils and groundwater. The Act also contains guidance for the determination of whether a site is considered to be a Significantly Contaminated Site and allows for accreditation of Site Auditors.

Protection of the Environment Operations Act 1997 (POEO 1997)

The POEO Act provides a regulatory framework for matters affecting the environment including environmental protection measures. The act provides for the licensing of activities with the potential to cause harm to human health and/or degradation of the environment, including waste disposal.

14. Site Suitability

Subject to the successful implementation of the measures detailed in this RAP and subject to the limitations in **Section 15**, it is considered that the identified impacted soils can be remediated and validated without the need for further management.

However, as discussed in **Section 12**, should material above the adopted land use scenario criteria be retained in specific areas of the site, then an environmental management plan will be required to manage the potential risk to future site users for the particular containment area of the site.

15. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

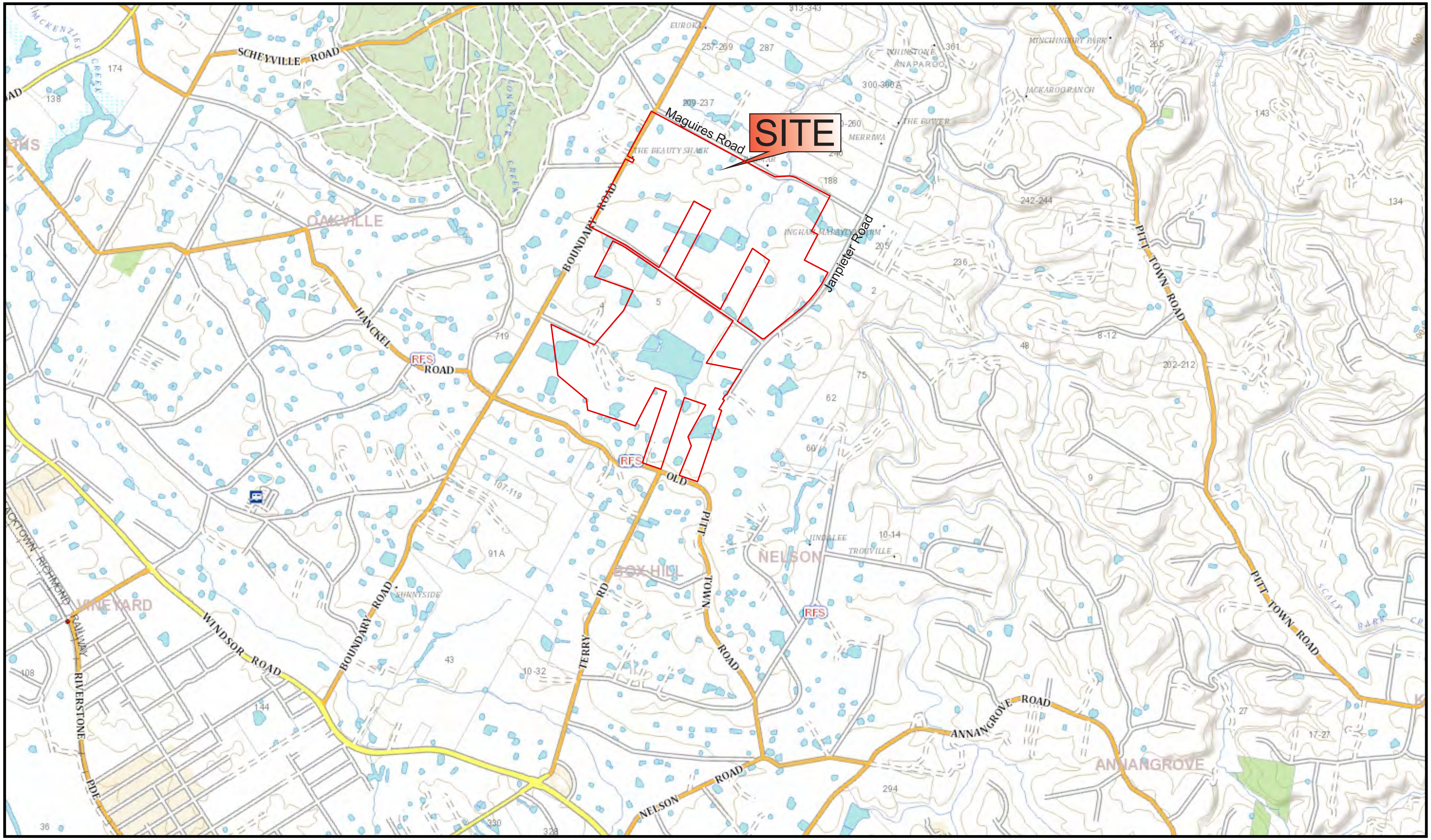
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, accessed 12-04-2013

0 750 1500 m

Scale: Approximate

Datum: MGA94 Zone 56 - AHD

A4			
A	Original Issue - R04	LL	17-10-2014
Rev	Description	Drn.	Date

Legend:

Approximate Site Boundary

JBS&G **Figure 1: Site Location**

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376_01 File Name: 43376_01

Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, imagery date 13-04-2011, accessed 12-04-2013

0 125 250 500 m

Scale:1:13,500

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
A	Original Issue - R04	LL	17-10-2014
Rev	Description	Drn.	Date:

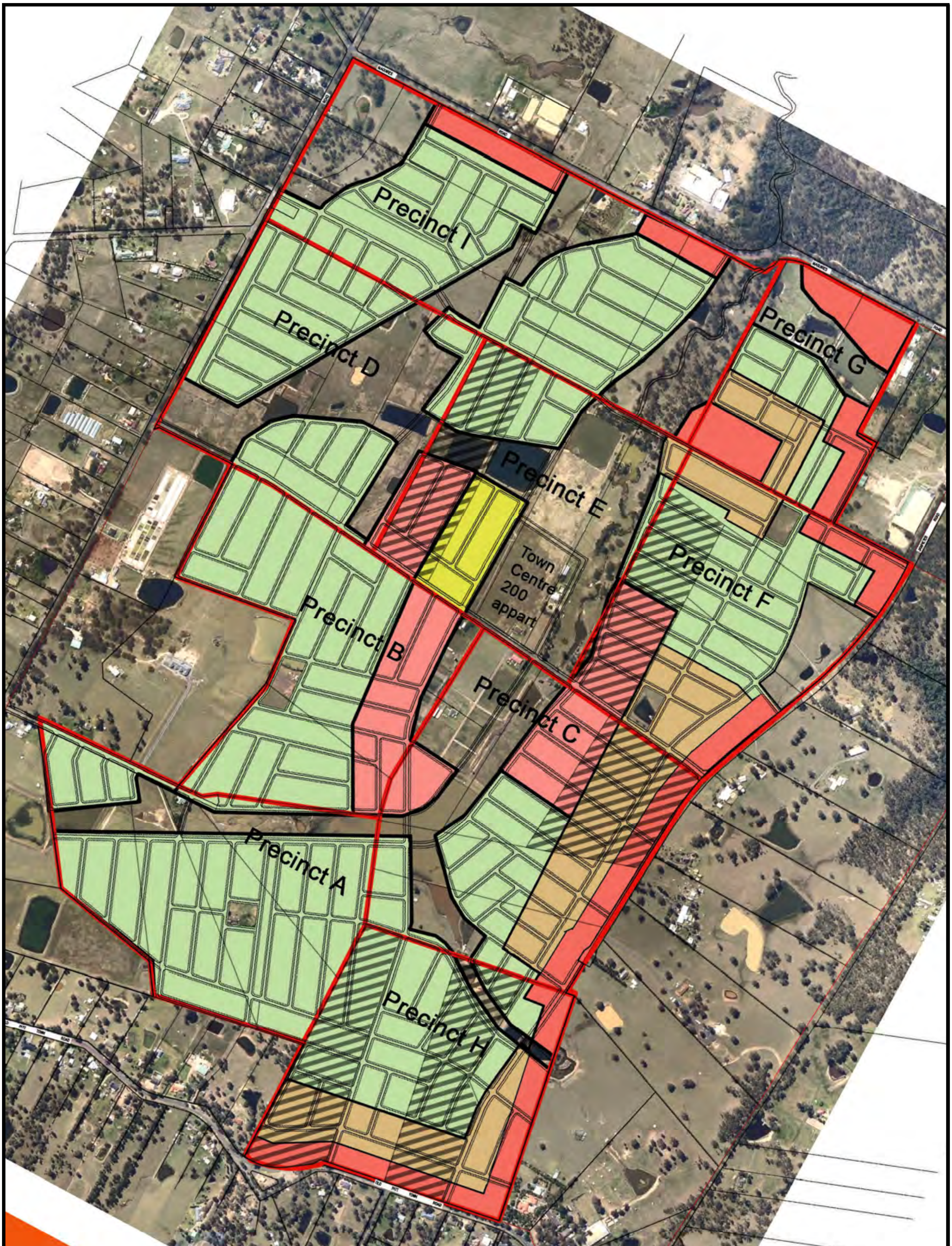
Legend:
- Approximate Site Boundary
- Approximate Lot Boundary
- Eletrical Transmission Line
- # Site Identification Number

JBS&G **Figure 2: Site Layout**

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376 File Name: 43376_02



Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, imagery date 13-04-2011, accessed 12-04-2013

0 125 250 500 m

Scale:1:13,500

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
A	Original Issue - R04	LL	24-10-2014
Rev	Description	Drn.	Date:

Legend:
- Low/Medium Density Residential
- Medium Density Residential
- Medium/High Density Residential
- High Density Residential
- Large Lot Residential
- Privately Owned Lots

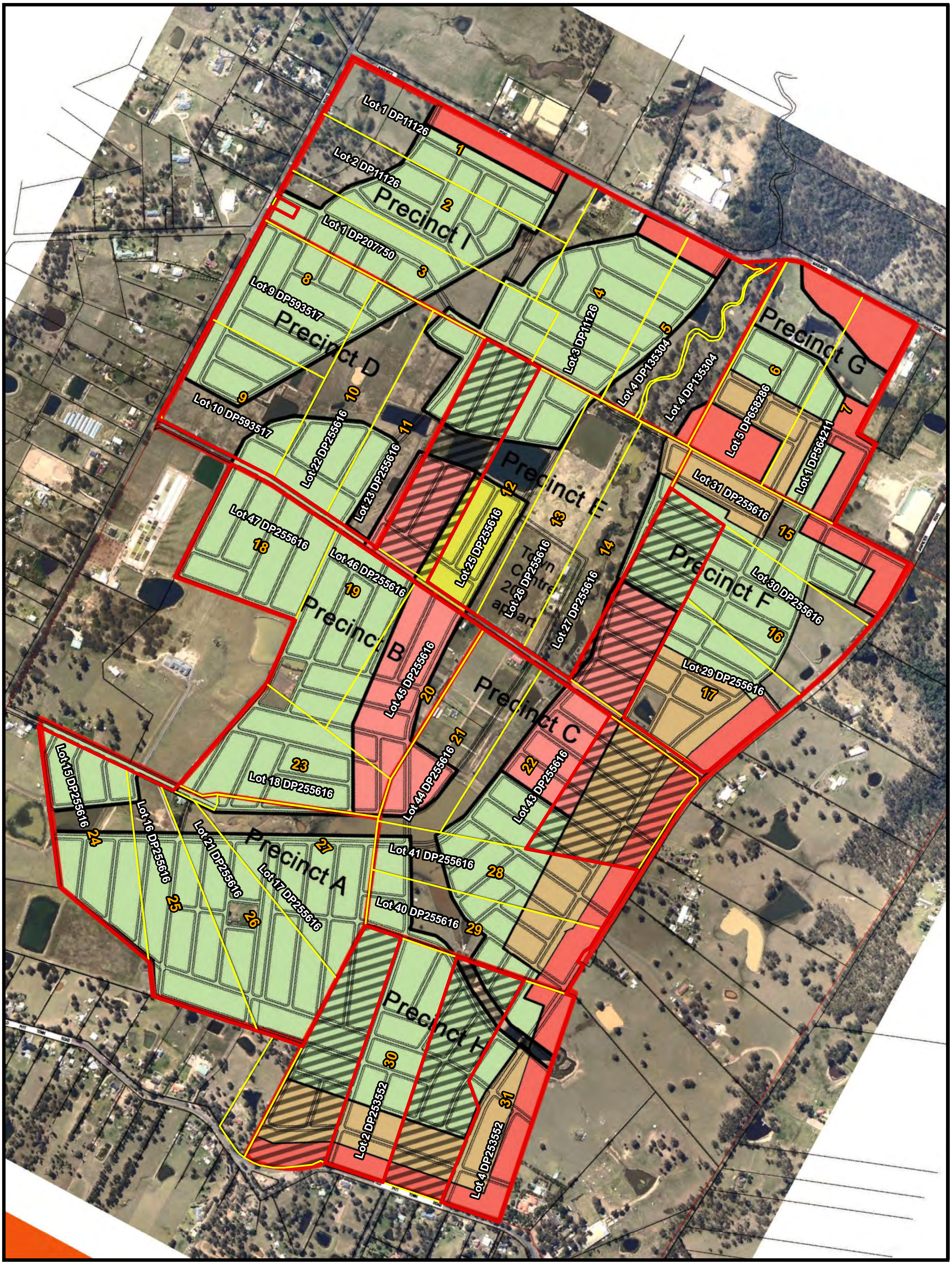
JBS&G **Figure 3: Precincts Layout**

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_03



Source: Box Hill North - Cadastral and Precinct Boundaries Overlay Plan. Design IQ: shaping the urban canvas.

0 125 250 500 m

Scale: 1:13,500

Datum: GDA 1994 MGA Zone 56 - AHD

A4

Rev	Description	Drn.	Date:
A	Original Issue - R04	LL	24-10-2014

Legend:
- Approximate Site Boundary
- Approximate Lot Boundary

JBS&G

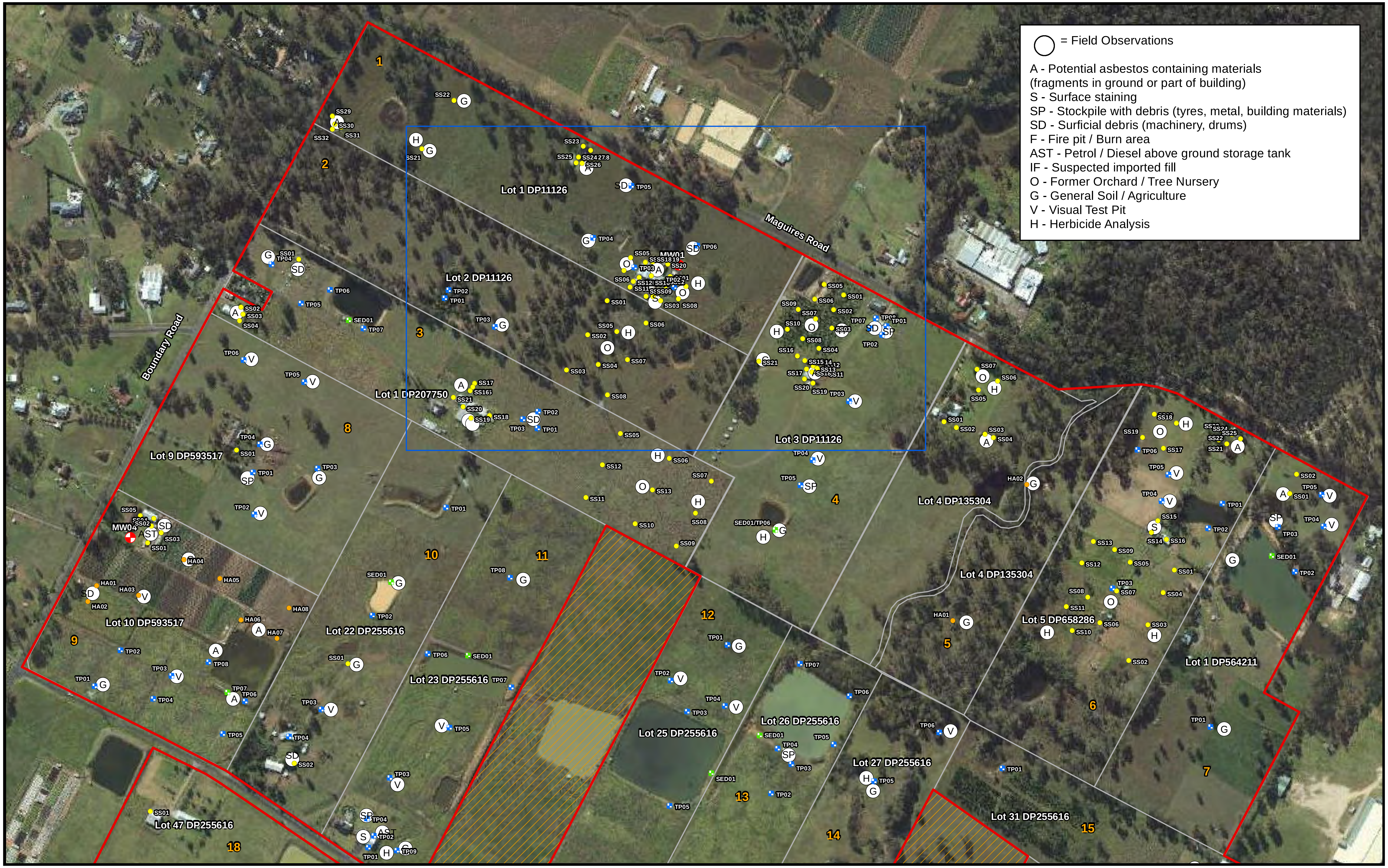
Figure 4: Precincts With Current Lot Boundaries

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_04



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

- # Site Identification Number
- Extent of Figure 5b

JBS&G

Figure 5a: Previous Soil Sample Locations - Northern Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_05a

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:2,000

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

Site Identification Number

JBS&G

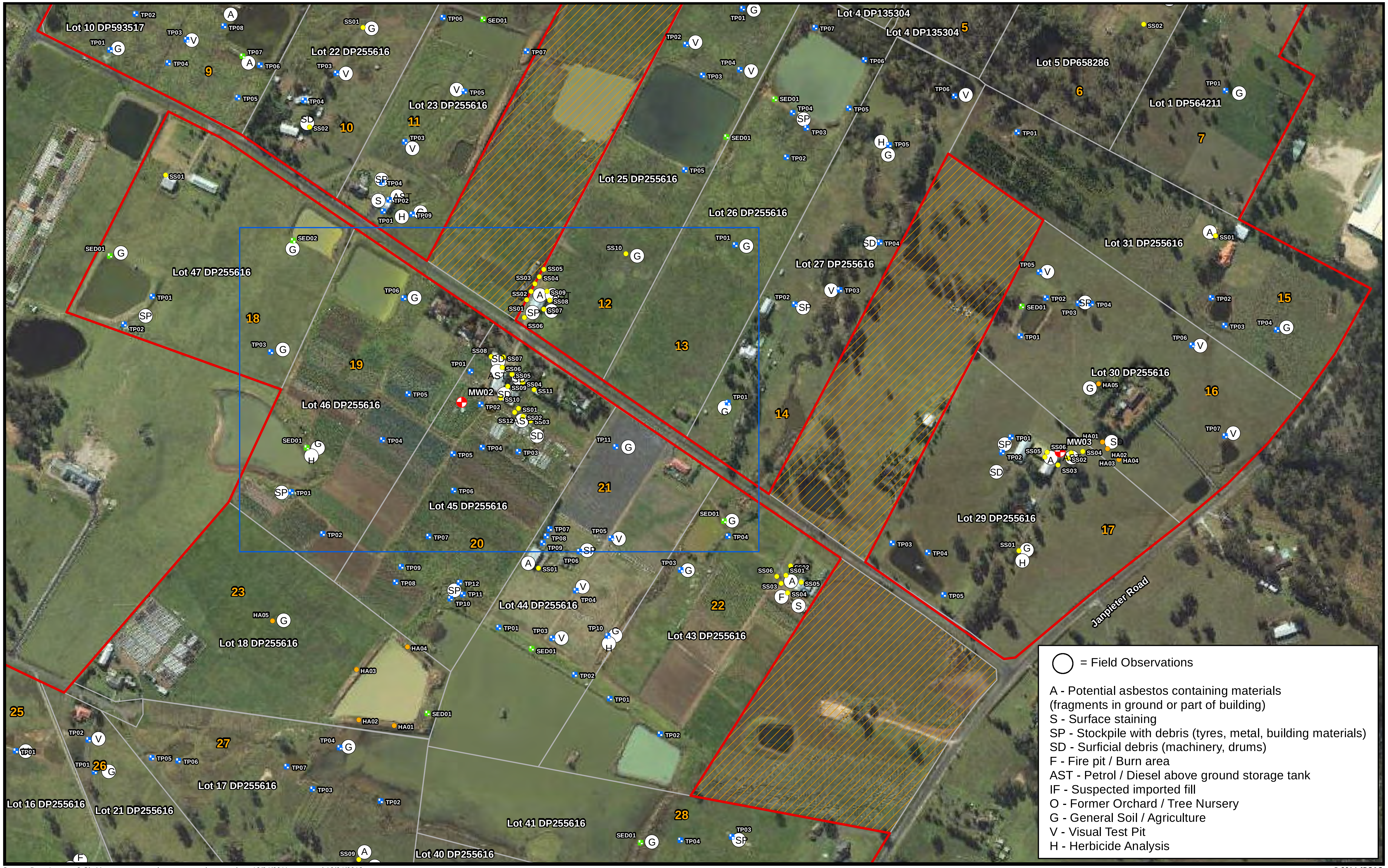
Figure 5b: Northern Surface Previous Soil Sample Locations

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_05b



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

- # Site Identification Number
- Extent of Figure 5d

JBS&G

Figure 5c: Previous Soil Sample Locations - Central Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_05c

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:1,965

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

Site Identification Number

JBS&G

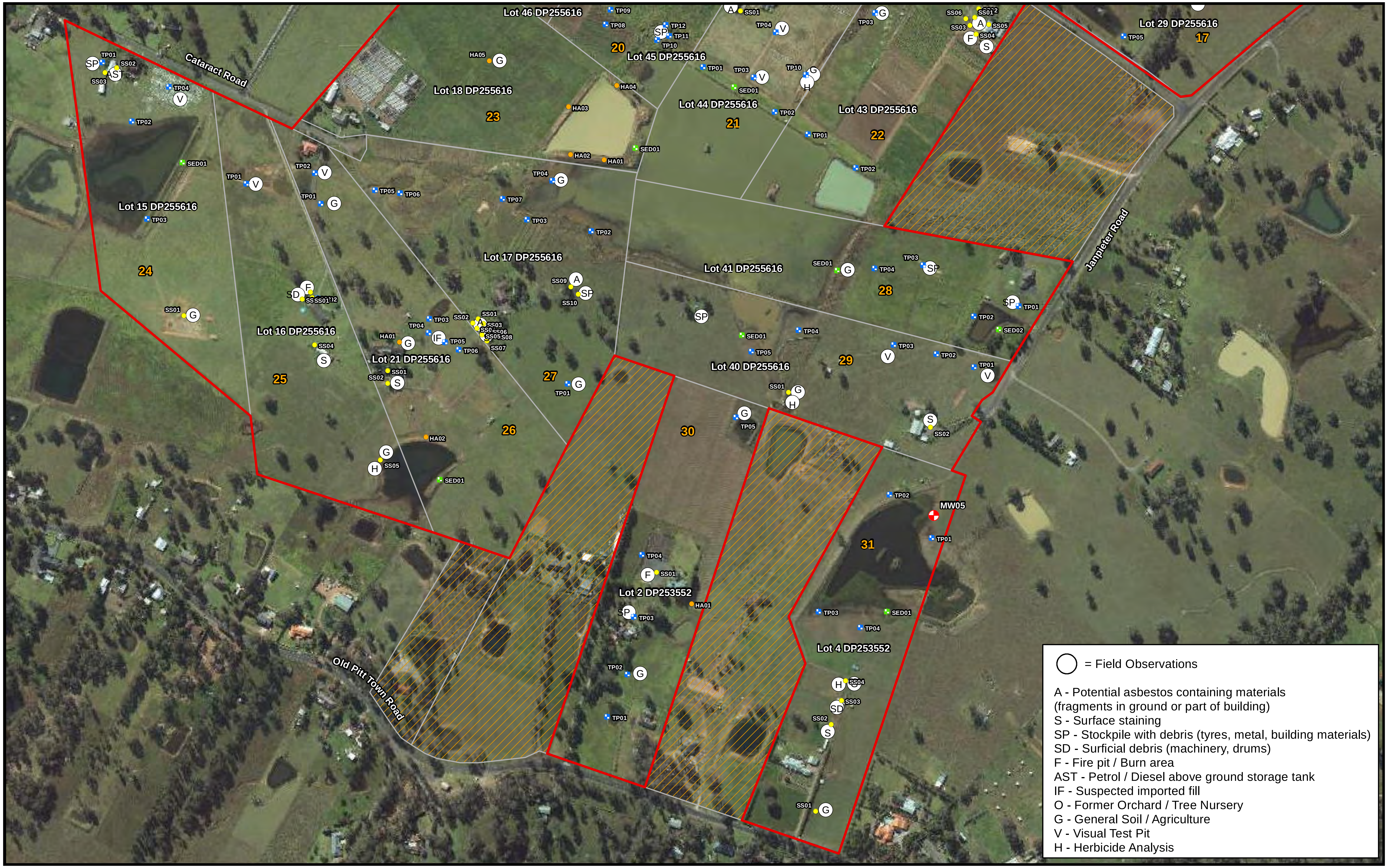
Figure 5d: Previous Soil Sample Locations - Central Lots (inset of Figure 5c)

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_05d



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,500

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

Site Identification Number

JBS&G

Figure 5e: Previous Soil Sample Locations - Southern Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_05e

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed: 12/04/2014

0 137.5 275 550 m

Scale:1:13,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
A	Original Issue - R04	LL	17-10-2014
Rev	Description	Drn.	Date:

Legend:
- Approximate Lot Boundary
- Groundwater Monitoring Well Locations
- Approximate Site Boundary
- Additional Properties Not Included in PSI

JBS&G

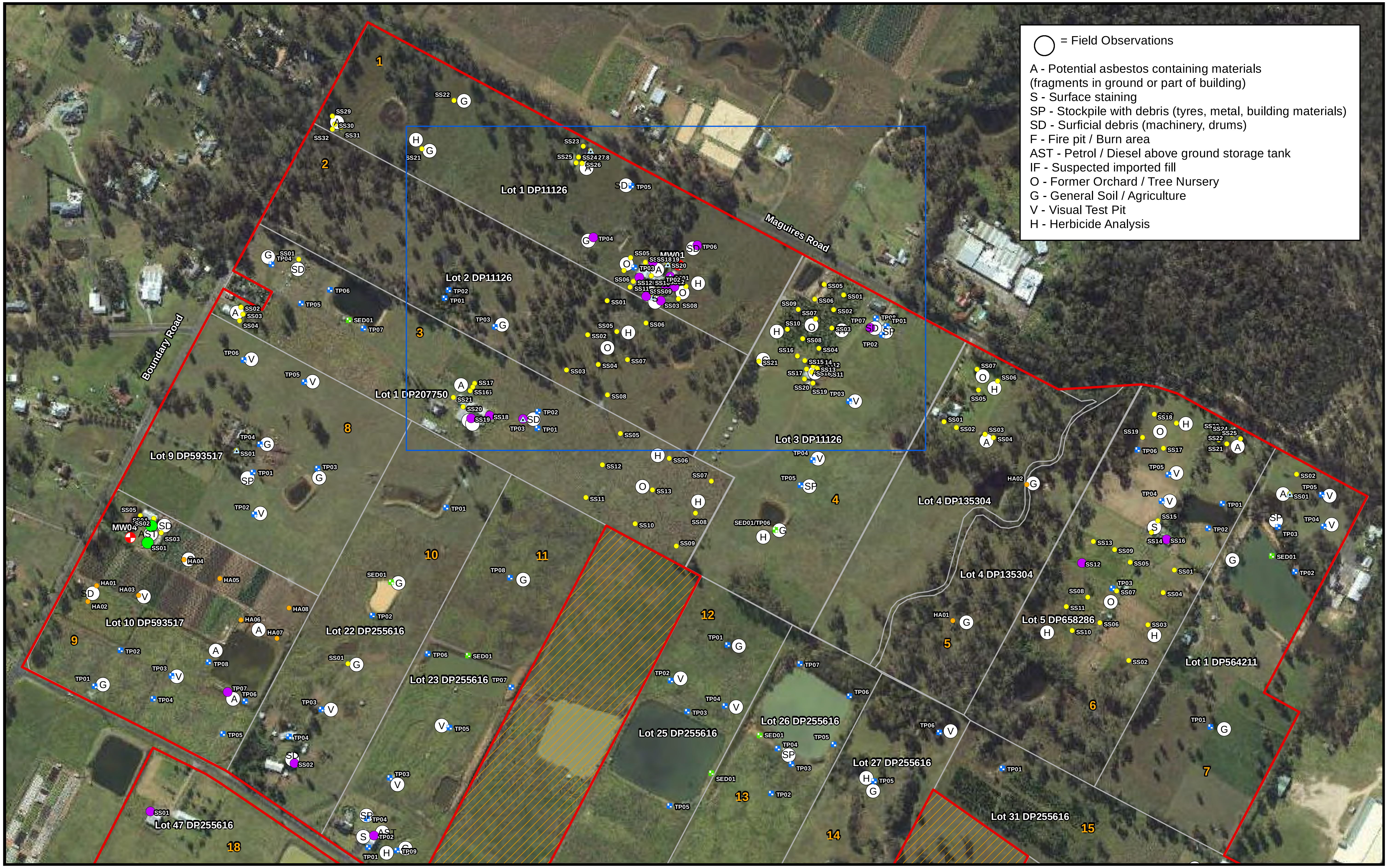
Figure 6: Previous Groundwater Sample Locations

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_06



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m
Scale:1:5,200
Datum: GDA 1994 MGA Zone 56 - AHD
A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:
- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations
- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Extent of Figure 7b

JBS&G

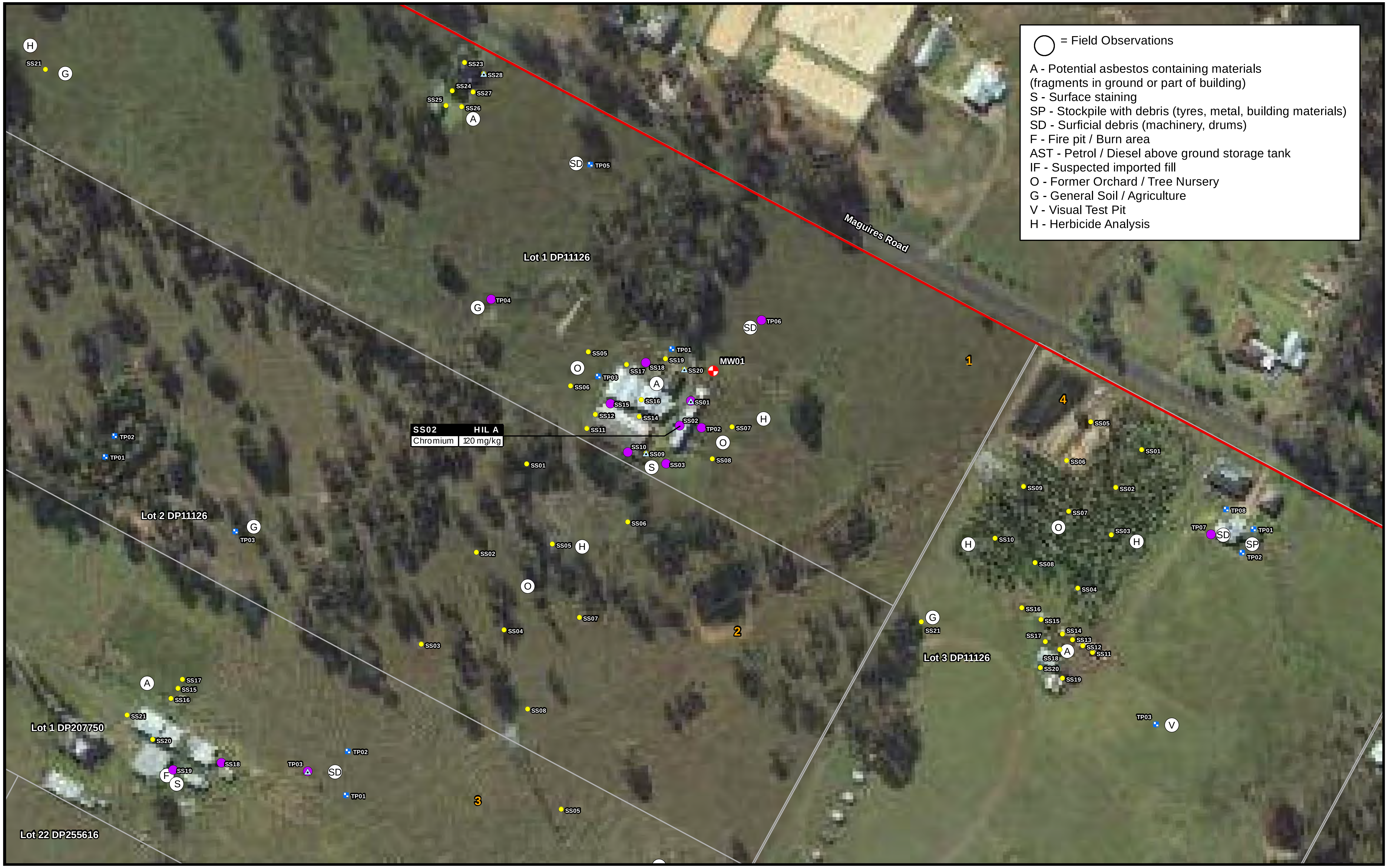
Figure 7a: Previous Soil Exceedances - Northern Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_07a



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:2,000

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- # Site Identification Number

JBS&G

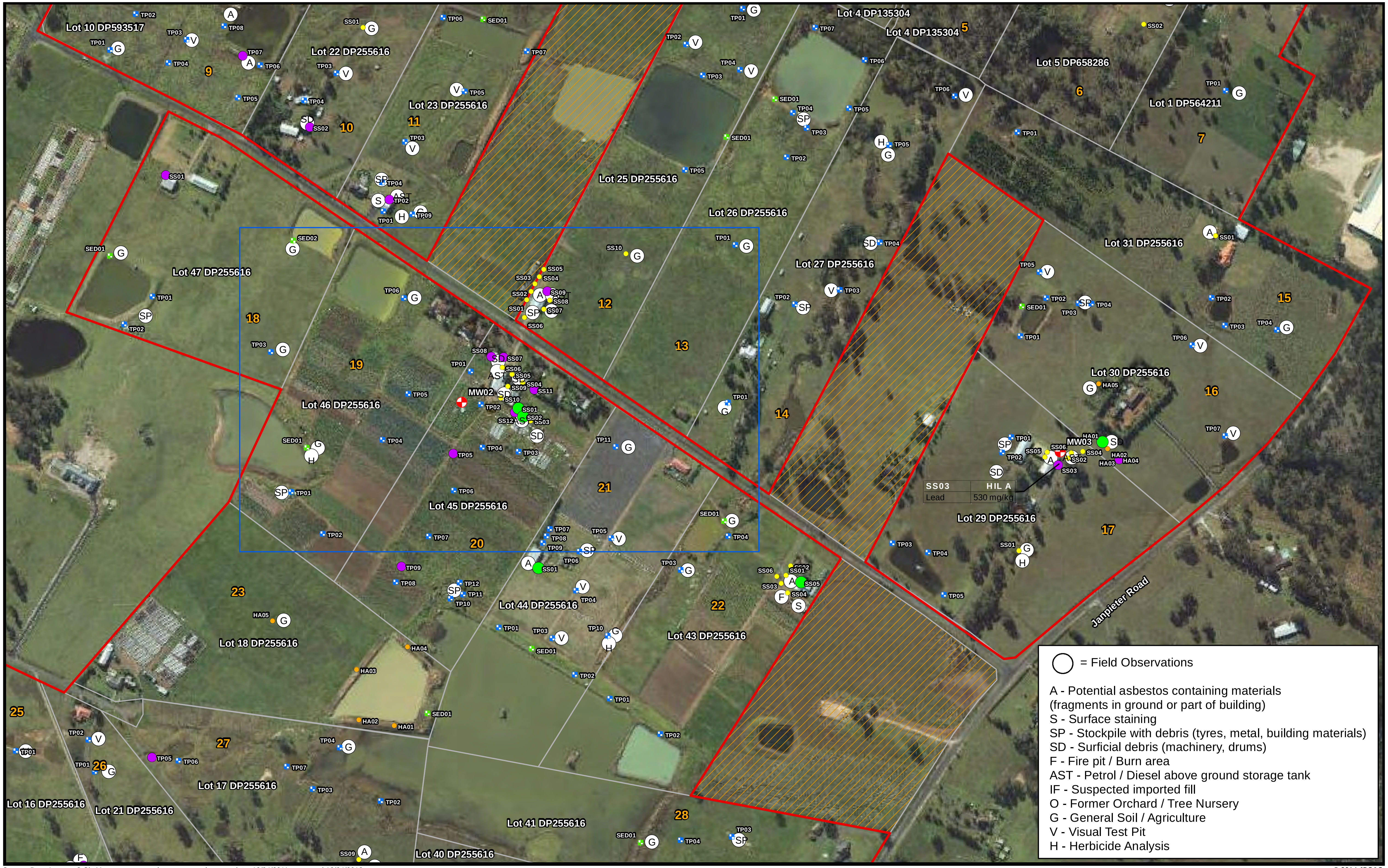
Figure 7b: Previous Soil Exceedances - Northern Lots (Detail Map)

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_07b



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m
Scale:1:5,200
Datum: GDA 1994 MGA Zone 56 - AHD
A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Site Identification Number
- Extent of Figure 7d

JBS&G

Figure 7c: Previous Soil Exceedances - Central Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_07c

Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:1,965

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- # Site Identification Number

JBS&G

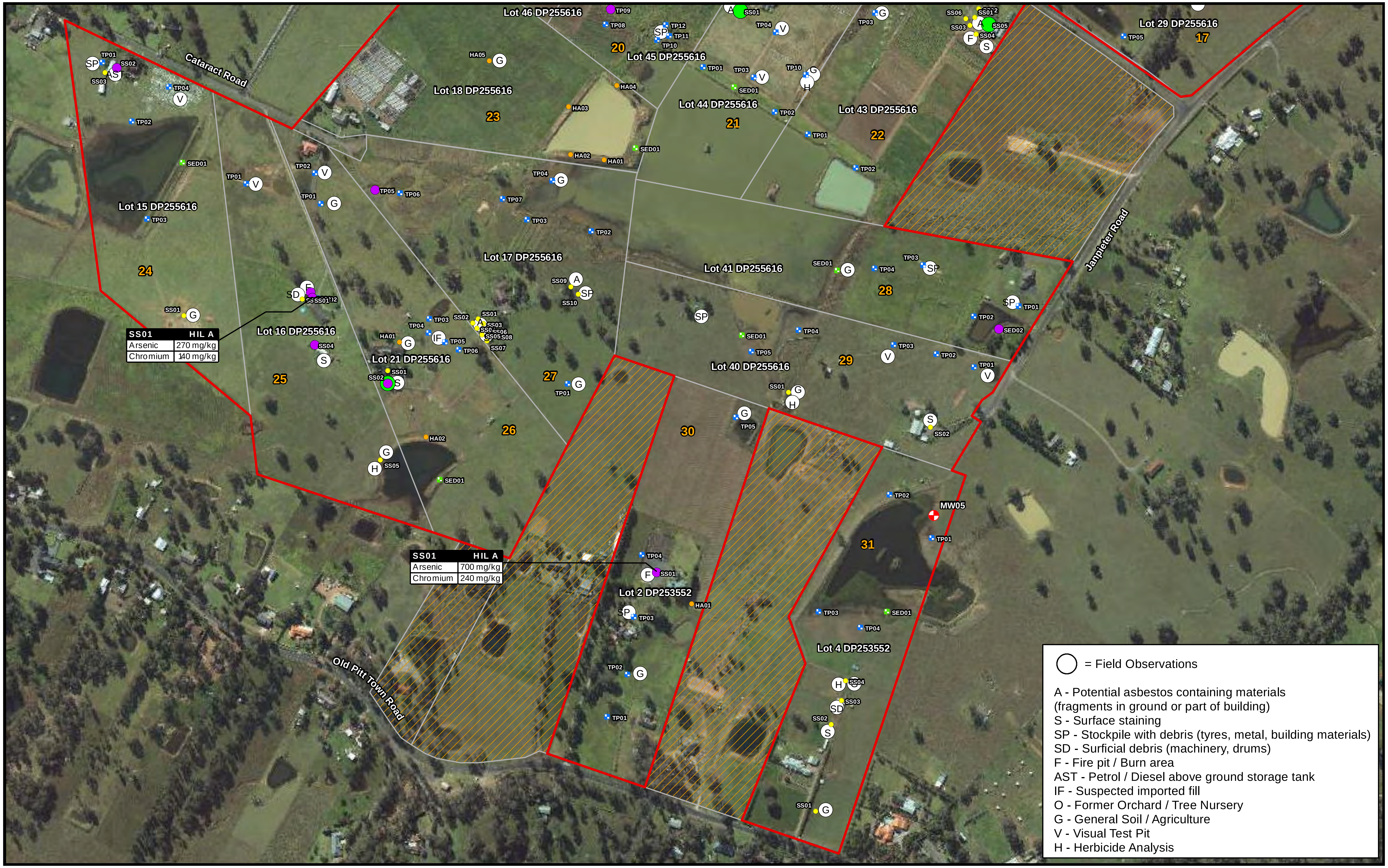
Figure 7d: Previous Soil Exceedances- Central Lots (Detail Map)

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_07d



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,500

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- # Site Identification Number

JBS&G

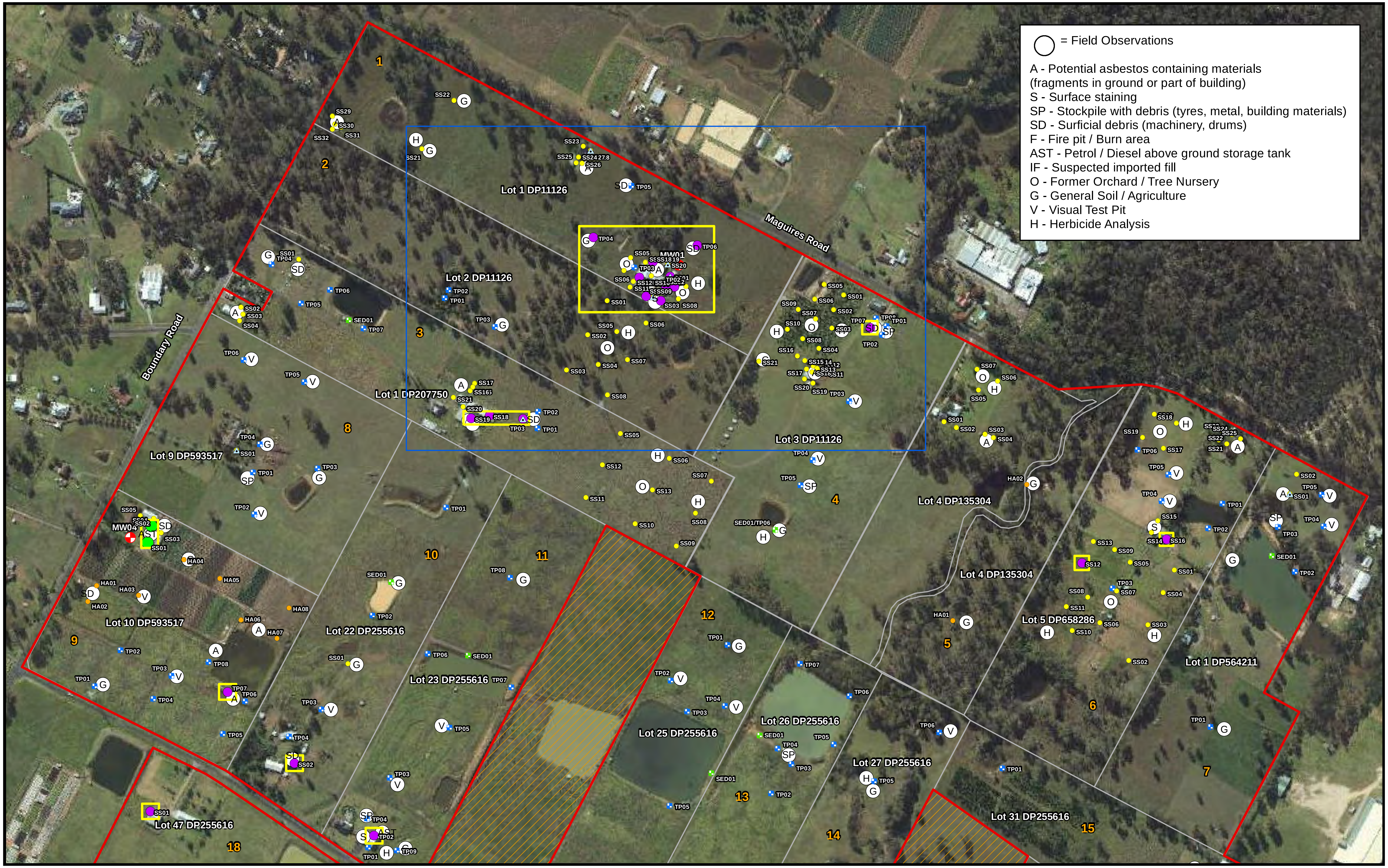
Figure 7e: Previous Soil Exceedances - Southern Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_07e



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Remedial Areas
- Extent of Figure 8b

JBS&G

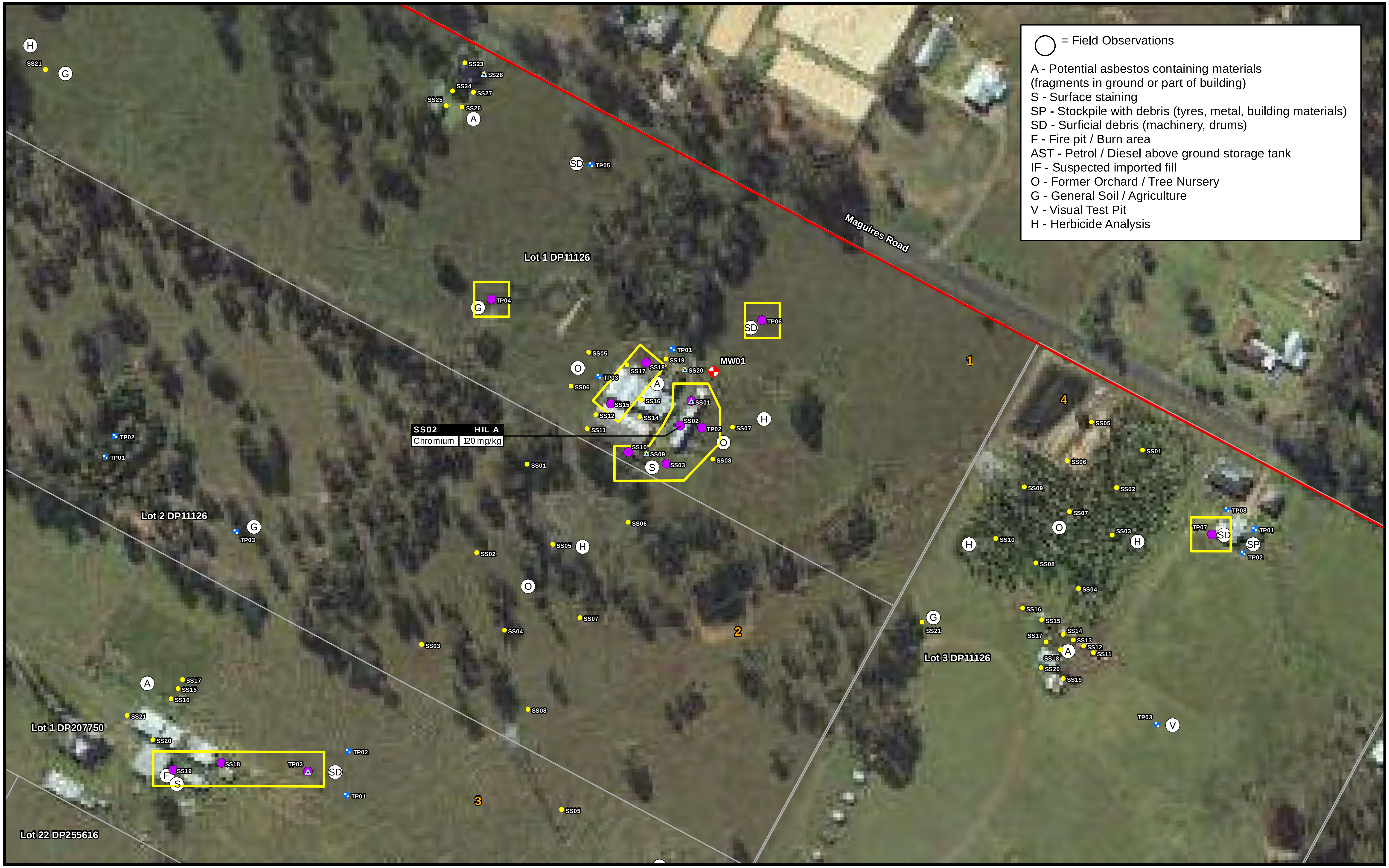
Figure 8a: Remedial Areas - Northern Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_08a



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:2,000

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	RF	21-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit

- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Remedial Areas

- Site Identification Number

JBS&G

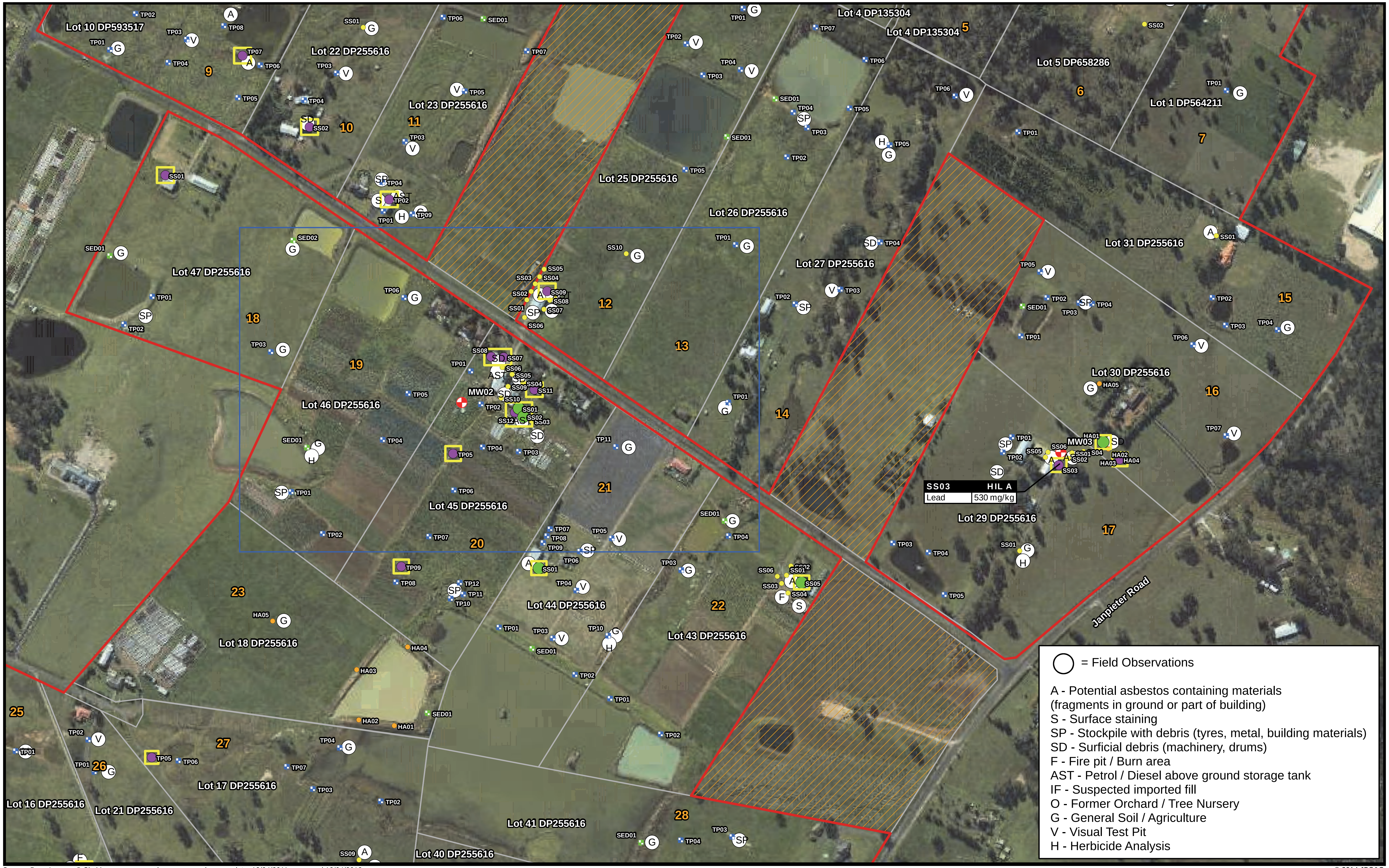
Figure 8b: Remedial Areas - Northern Lots (Detail Map)

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_08b



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,200

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	21-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Remedial Areas
- # Site Identification Number
- Extent of Figure 8d

JBS&G

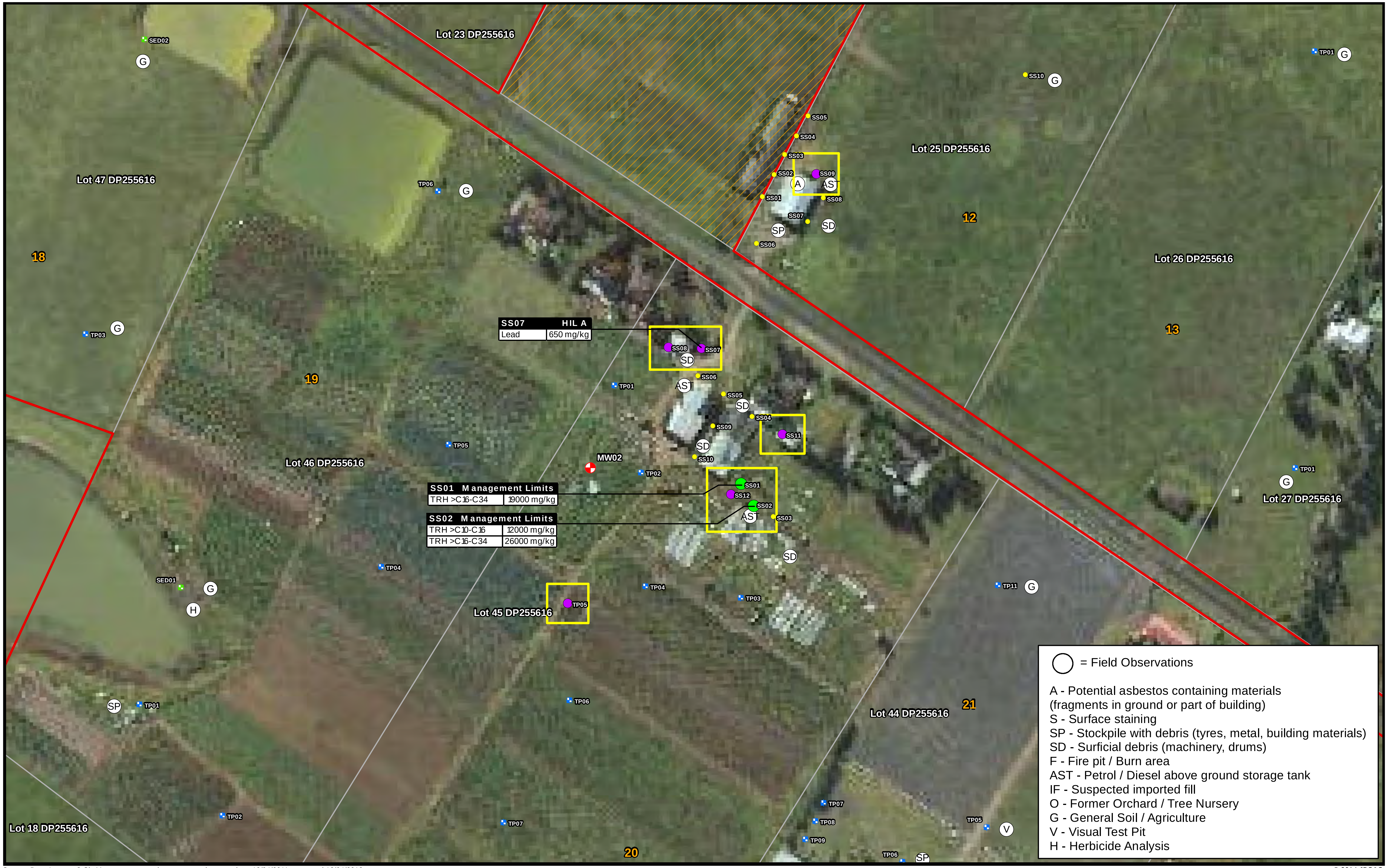
Figure 8c: Remedial Areas - Central Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_08c



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 20 40 80 m

Scale:1:1,965

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Remedial Areas
- # Site Identification Number

JBS&G

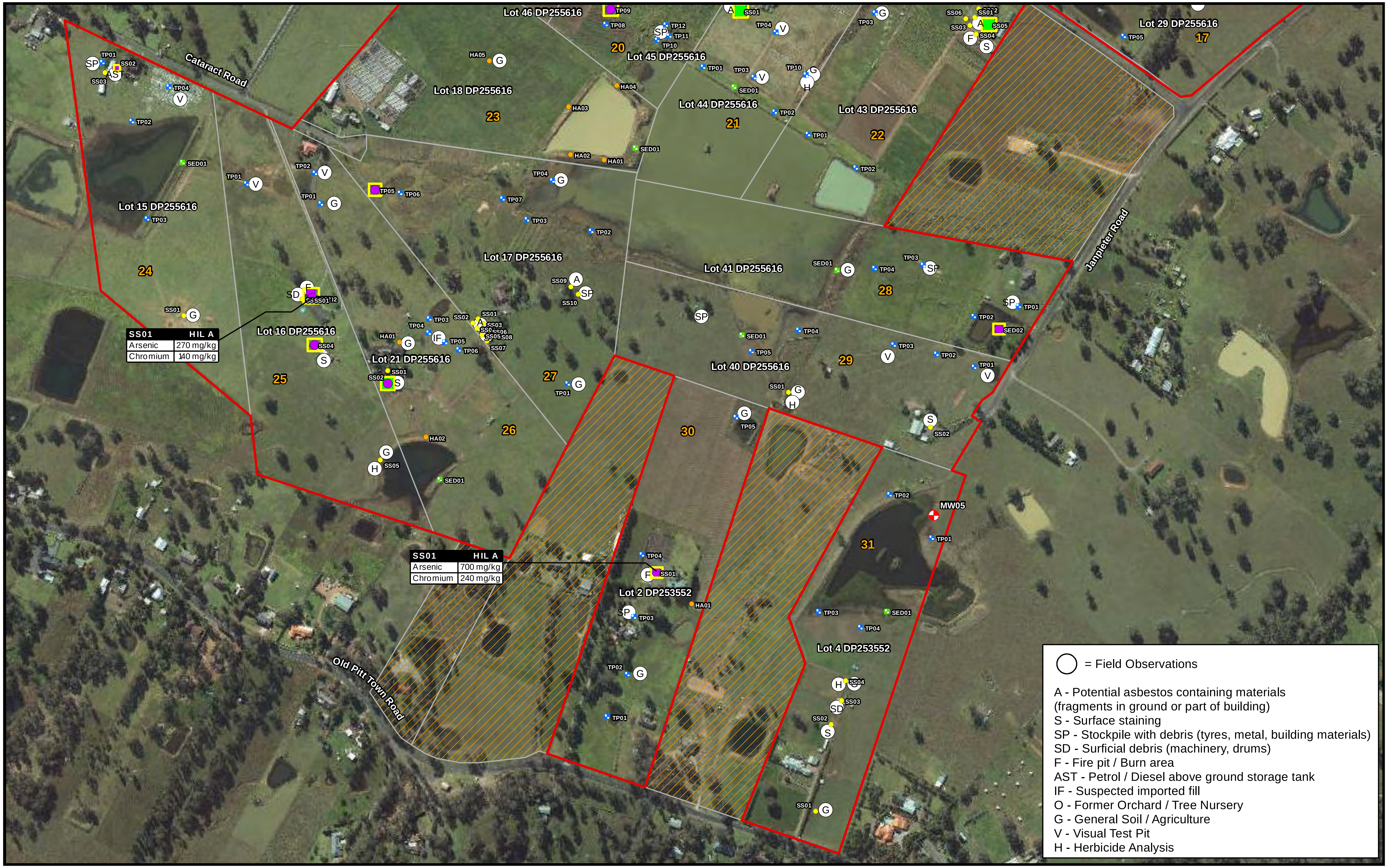
Figure 8d: Remedial Areas - Central Lots (Detail Map)

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_08d



Source: Base Image - © Six Maps www.maps.six.nsw.gov.au, imagery date: 13/04/2011, accessed 12/04/2013

0 55 110 220 m

Scale:1:5,500

Datum: GDA 1994 MGA Zone 56 - AHD

A3

Rev	Description	Drn.	Date
A	Original Issue - R04	LL	17-10-2014

Legend:

- Approximate Site Boundary
- Approximate Lot Boundary
- Monitoring Well Locations
- Additional Properties Not Included in PSI

Sampling Locations

- Grab Sample/Trowel
- Hand Auger
- Sediment Sample
- Test Pit
- Asbestos in Soil
- ESL/EIL Exceedances - Metals
- ESL/EIL Exceedances - PAH & TRH
- Remedial Areas
- # Site Identification Number

JBS&G

Figure 8e: Remedial Areas - Southern Lots

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_08e

Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, imagery date 13-04-2011, accessed 12-04-2013

0 125 250 500 m

Scale:1:13,500

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
A	Original Issue - R04	LL	17-10-2014
Rev	Description	Drn.	Date:

Legend:

Approximate Lot Boundary

LA Limited Access

SP Stockpile with debris (tyres, metal, building materials)

JBS&G

Figure 9: Known Stockpile Locations

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376

File Name: 43376_09

Source: Base Image - © SIX Maps www.maps.six.nsw.gov.au, imagery date 13-04-2011, accessed 12-04-2013

0 125 250 500 m

Scale:1:13,500

Datum: GDA 1994 MGA Zone 56 - AHD

Legend:

Approximate Lot Boundary

LA Limited Access

AST Above Ground Storage Tank Location

JBS&G

Figure 10: Above Ground Storage Tank Locations

Client: APP Corporation

Project: Box Hill North, NSW - RAP

Job No: 43376 File Name: 43376_10

Rev	Description	Drn.	Date:
A4			
A	Original Issue - R04	RF	21-10-2014

Appendix A: Development Plans

design iQ
shaping the urban canvas

Box Hill North Indicative Layout Plan

31102014 - Rev 7

Appendix B: GPS Coordinates of sample locations

Appendix B
GPS Codes for Sample Locations

Method	Code	Easting	Northing
TP	TP03	305978.5934	6278535.776
TP	TP01	306020.9268	6278551.652
TP	TP02	306037.8602	6278506.143
G	SS23	305901.7318	6278715.958
G	SS24	305894.7203	6278699.818
G	SS25	305891.1484	6278691.352
G	SS26	305900.1443	6278690.558
G	SS27	305906.6266	6278699.157
G	SS28	305912.8443	6278709.74
G	SS11	305972.1111	6278505.746
G	SS12	305976.9397	6278513.816
G	SS09	306006.0439	6278491.723
G	SS16	306003.3981	6278522.217
G	SS29	305526.6841	6278761.202
G	SS03	306017.6255	6278485.542
G	SS14	306002.2736	6278512.625
G	SS15	305985.6048	6278520.166
G	SS18	306005.9778	6278543.582
G	SS02	306025.3586	6278507.466
G	SS01	306031.907	6278521.621
G	SS19	306017.2226	6278545.831
G	SS20	306028.1367	6278539.944
G	SS30	305530.6529	6278749.031
G	SS31	305539.9133	6278744.533
G	SS32	305526.8164	6278741.623
TP	TP01	305695.0862	6278489.678
TP	TP02	305700.6425	6278501.585
G	SS03	305876.8554	6278381.728
G	SS08	305937.9742	6278344.422
G	SS05	305952.2618	6278439.275
G	SS04	305924.4805	6278390.062
G	SS01	305937.5774	6278485.313
G	SS07	305967.7399	6278397.206
G	SS02	305908.6054	6278434.513
G	SS06	305995.5212	6278451.975
TP	TP02	305834.7492	6278320.487
TP	TP01	305833.6581	6278295.228
TP	TP03	305811.4247	6278308.795
G	SS19	305734.0991	6278309.669
G	SS20	305722.3913	6278327.065
G	SS18	305761.8143	6278313.637
G	SS01	305476.5267	6278546.934
G	SS17	305739.5893	6278361.501
G	SS15	305736.9434	6278356.407
G	SS16	305732.9085	6278350.52
G	SS21	305707.773	6278341.062
TP	TP06	305523.3581	6278502.325
S	SED01	305551.5363	6278456.817
G	SS12	305930.5262	6278240.043
G	SS05	305957.3815	6278286.875
G	SS13	306005.4034	6278202.605
G	SS06	306030.6183	6278249.701
G	SS08	306069.4592	6278167.838
G	SS07	306093.4173	6278215.424
G	SS09	306040.8841	6278118.52
G	SS11	305905.6818	6278191.069
G	SS10	305979.58	6278152.016
G	SS01	305383.4285	6278262.11

Appendix B
GPS Codes for Sample Locations

Method	Code	Easting	Northing
TP	TP01	305408.471	6278229.708
G	SS02	305259.7348	6278159.938
G	SS04	305256.4275	6278148.694
G	SS01	305250.7389	6278123.294
G	SS03	305270.8473	6278138.507
G	SS05	305239.4949	6278164.081
TP	TP08	305342.0211	6277945.8
HA	HA06	305390.3077	6278007.977
HA	HA02	305161.4426	6278035.758
HA	HA01	305174.6718	6278059.571
TP	TP06	305396.5254	6277886.93
S	TP07	305369.9347	6277900.82
HA	HA07	305444.1505	6277980.592
TP	TP01	305696.8501	6278176.566
TP	TP02	305586.7833	6278015.699
TP	TP04	305461.8997	6277834.724
TP	TP01	305580.3009	6277668.565
TP	TP02	305589.0322	6277686.028
TP	TP04	305578.7134	6277712.222
TP	TP07	305794.6139	6277908.278
S	SED01	305729.5262	6277955.903
TP	TP06	305669.598	6277958.285
G	SS01	305254.7966	6277722.342
TP	TP02	305192.884	6277499.959
TP	TP01	305234.9529	6277541.234
G	SS09	305824.9749	6277548.907
G	SS08	305828.9436	6277535.414
G	SS07	305820.2124	6277521.92
S	SED01	306093.2629	6277779.889
TP	TP03	306057.5441	6277871.964
TP	TP05	306031.0857	6277730.941
TP	TP04	306192.4819	6277816.402
S	SED01	306165.4943	6277836.245
TP	TP05	306276.6195	6277822.752
TP	TP06	306299.9029	6277894.983
TP	TP07	306225.8194	6277943.402
TP	TP02	306182.9568	6277749.726
TP	TP03	306213.1194	6277793.383
TP	TP02	306195.3923	6277529.91
G	SS01	306824.6962	6277631.687
TP	TP02	306818.3462	6277539.612
TP	TP03	306838.4545	6277498.337
TP	TP01	306528.3623	6277787.262
G	SS01	306958.1787	6278197.058
G	SS15	306760.9976	6278156.445
G	SS14	306751.4726	6278138.982
G	SS16	306773.6976	6278128.664
G	SS25	306884.8229	6278278.683
G	SS24	306871.3291	6278285.033
G	SS22	306864.1853	6278271.539
G	SS21	306852.279	6278277.095
G	SS23	306858.6291	6278289.001
G	SS17	306769.5304	6278264.66
G	SS18	306788.5143	6278302.429
G	SS08	306656.2389	6278042.34
G	SS12	306647.1692	6278093.52
G	SS11	306624.0067	6278028.224
G	SS05	306719.48	6278094.593

Appendix B
GPS Codes for Sample Locations

Method	Code	Easting	Northing
G	SS03	306746.0707	6278001.062
G	SS02	306717.3633	6277947.749
G	SS04	306768.9572	6278048.82
G	SS10	306632.7904	6277992.176
G	SS19	306738.045	6278281.064
G	SS20	306755.5736	6278315.724
TP	TP06	306730.4272	6278263.02
TP	TP03	306693.1208	6278056.181
TP	TP01	306857.4274	6278182.322
G	SS03	306502.5543	6278285.959
G	SS07	306490.648	6278382.797
G	SS06	306521.6043	6278365.334
G	SS01	306441.4354	6278304.215
G	SS02	306459.6917	6278295.484
G	SS04	306515.2543	6278280.667
G	SS05	306492.7647	6278351.841
G	SS16	306222.2012	6278402.786
G	SS15	306233.1153	6278395.973
G	SS14	306245.6169	6278387.705
G	SS12	306257.1925	6278380.826
TP	TP07	306330.9452	6278444.921
G	SS09	306223.1934	6278472.372
G	SS02	306276.2425	6278471.776
TP	TP02	306348.9369	6278434.602
TP	TP01	306355.4313	6278448.168
TP	TP08	306339.6765	6278459.473
G	SS19	306245.4846	6278362.239
G	SS20	306232.7846	6278368.324
G	SS13	306251.3055	6278384.265
G	SS11	306262.8149	6278376.989
G	SS18	306244.0956	6278378.643
G	SS17	306235.695	6278383.273
G	SS06	306247.9982	6278487.387
G	SS10	306206.8554	6278442.672
G	SS08	306229.8742	6278428.649
G	SS07	306249.1226	6278458.15
G	SS05	306261.8888	6278509.546
G	SS04	306254.3482	6278413.965
G	SS03	306273.7289	6278444.59
G	SS01	306291.1915	6278493.538
TP	TP03	306619.8708	6277531.445
TP	TP04	306638.9208	6277530.652
HA	HA03	306672.3025	6277304.712
HA	HA04	306680.398	6277297.711
HA	HA02	306663.2221	6277313.142
HA	HA01	306655.5896	6277323.482
S	SED01	306534.9394	6277526.683
TP	TP01	306532.5581	6277482.233
TP	TP02	306571.4519	6277539.383
TP	TP02	306505.5706	6277308.454
TP	TP01	306519.0643	6277331.473
G	SS02	306603.7312	6277299.194
TP	TP03	306341.264	6277172.723
TP	TP04	306394.4453	6277159.229
TP	TP05	306418.2579	6277095.729
G	SS04	306626.1547	6277309.579
G	SS06	306572.9733	6277308.454
G	SS05	306569.1368	6277300.847

Appendix B
GPS Codes for Sample Locations

Method	Code	Easting	Northing
G	SS01	306609.0228	6277307.396
G	SS03	306589.2452	6277289.139
G	SS05	306205.0959	6277113.773
G	SS02	306189.2209	6277138.38
G	SS01	306182.474	6277124.621
G	SS03	306175.1979	6277112.318
G	SS04	306184.8552	6277098.163
TP	TP01	305918.9484	6276940.735
TP	TP04	306095.9551	6277183.623
TP	TP02	305994.3548	6276887.554
TP	TP07	305829.2545	6277193.942
TP	TP06	305873.7046	6277160.605
TP	TP09	305818.9357	6277173.305
TP	TP08	305824.492	6277183.623
G	SS01	305812.5857	6277135.205
TP	TP01	305753.0544	6277047.098
S	SED01	305802.267	6277015.348
TP	TP02	305866.5608	6276976.454
TP	TP11	305699.873	6277096.311
TP	TP10	305680.823	6277089.961
TP	TP12	305694.3167	6277113.773
TP	TP01	305442.6975	6277249.505
TP	TP01	305710.9855	6277429.686
TP	TP03	305782.4232	6277309.83
TP	TP02	305726.0668	6277380.474
G	SS06	305758.0815	6277434.978
G	SS10	305756.2294	6277389.205
G	SS09	305766.5481	6277406.668
G	SS04	305788.7732	6277411.959
G	SS05	305772.6336	6277424.659
G	SS08	305741.4127	6277451.118
G	SS07	305760.1981	6277450.324
TP	TP05	305617.3228	6277396.349
TP	TP08	305599.0666	6277114.567
TP	TP07	305648.2792	6277182.83
TP	TP06	305685.5855	6277251.886
TP	TP04	305728.4481	6277316.18
TP	TP04	305579.2228	6277327.292
TP	TP02	305489.5288	6277186.798
HA	HA02	305543.6362	6276908.39
HA	HA01	305596.553	6276899.923
S	SED01	305646.2948	6276918.973
HA	HA04	305616.6614	6277017.399
HA	HA03	305540.4612	6276983.532
G	SS03	304807.5375	6277037.745
TP	TP01	304803.0395	6277054.678
G	SS02	304826.1906	6277045.021
TP	TP03	304873.948	6276807.028
S	SED01	304930.0398	6276895.928
TP	TP02	304849.6063	6276961.545
G	SS01	305132.3142	6276690.611
G	SS03	305119.3496	6276679.763
G	SS04	305139.0611	6276607.532
TP	TP04	305319.031	6276626.846
S	SED01	305337.0227	6276395.071
HA	HA02	305314.7977	6276461.746
TP	TP03	305320.0893	6276649.071
G	SS01	305254.4725	6276566.521

Appendix B
GPS Codes for Sample Locations

Method	Code	Easting	Northing
TP	TP05	305345.4894	6276612.03
TP	TP06	305366.6561	6276600.388
G	SS02	305254.4725	6276546.413
TP	TP03	305474.8709	6276805.705
TP	TP07	305435.9771	6276839.043
TP	TP05	305234.3642	6276852.536
TP	TP06	305274.0517	6276847.774
TP	TP02	305576.4711	6276787.449
G	SS08	305421.6895	6276621.555
G	SS07	305411.3708	6276613.617
G	SS09	305543.9273	6276699.342
G	SS10	305555.8336	6276687.436
G	SS05	305403.4332	6276623.142
G	SS06	305413.3551	6276630.286
G	SS04	305395.4296	6276633.395
G	SS03	305405.7484	6276641.002
G	SS02	305389.0796	6276641.663
G	SS01	305397.6124	6276648.41
TP	TP01	306252.6769	6276669.109
TP	TP03	306101.0703	6276734.197
S	SED02	306220.9268	6276632.597
TP	TP02	306181.2392	6276653.234
S	SED01	305965.3388	6276725.466
G	SS02	306112.9766	6276477.021
TP	TP04	305904.2199	6276631.009
S	SED01	305814.526	6276623.072
TP	TP05	305829.6073	6276597.672
G	SS03	305971.9534	6276045.485
G	SS02	305956.0784	6276007.385
TP	TP03	305935.97	6276186.244
TP	TP04	306001.8514	6276161.373
S	SED01	306043.9202	6276186.244
TP	TP01	306114.8287	6276302.661
TP	TP02	306048.1536	6276371.452
G	SS01	305679.8528	6276247.627
TP	TP03	305643.8694	6276177.777
TP	TP04	305656.5694	6276276.202
TP	TP01	305601.536	6276020.085
HA	HA01	305734.8863	6276197.885
HA	HA08	305462.0472	6278026.193
TP	TP05	305363.0691	6277838.476
TP	TP04	305258.9714	6277890.809
HA	HA05	305358.7044	6278070.114
TP	TP02	305210.0512	6277963.62
G	SS07	306055.5914	6278506.726
G	SS08	306044.2143	6278488.205
G	SS17	305994.8694	6278542.445
G	SS06	305962.7224	6278530.274
G	SS21	305660.7396	6278712.083
G	SS02	305390.2026	6278475.677
G	SS03	305393.5099	6278464.961
G	SS04	305387.9537	6278455.436
G	SS21	306164.5073	6278394.582
TP	TP03	306299.4451	6278335.844
TP	TP04	306244.9408	6278247.473
S	SED01/TP0	306188.849	6278143.227
HA	HA02	306565.2196	6278210.432
G	SS07	306699.4959	6278051.681

Appendix B
GPS Codes for Sample Locations

Method	Code	Easting	Northing
G	SS06	306674.3604	6278004.056
TP	TP05	307005.884	6278196.144
TP	TP04	307009.059	6278148.519
TP	TP02	306965.6672	6278080.785
TP	TP03	306940.3995	6278147.857
S	SED01	306931.5359	6278104.73
TP	TP06	305394.0391	6278397.228
TP	TP05	305485.056	6278364.419
TP	TP04	305418.3808	6278271.286
TP	TP02	305409.9141	6278166.511
TP	TP03	305504.6352	6278235.302
HA	HA04	305304.9405	6278098.38
HA	HA03	305237.207	6278044.934
TP	TP03	305286.4196	6277925.342
TP	TP01	305171.5902	6277909.997
S	SED01	305614.971	6278065.51
G	SS01	305550.148	6277943.14
TP	TP03	305510.4604	6277875.01
TP	TP05	305702.0191	6277847.89
TP	TP09	305623.3054	6277664.401
S	SED01	305171.5946	6277602.092
S	SED02	305445.4389	6277625.11
S	SED01	305466.0765	6277315.547
TP	TP06	305611.333	6277539.385
G	SS10	305943.1212	6277604.949
TP	TP02	306032.8151	6277918.481
TP	TP04	306113.7778	6277880.381
TP	TP01	306117.7465	6277971.662
TP	TP06	306434.4534	6277840.693
TP	TP05	306336.822	6277767.668
TP	TP04	306322.5344	6277622.412
TP	TP03	306263.0031	6277551.768
TP	TP05	306561.1891	6277578.094
TP	TP06	306789.3927	6277468.953
TP	TP07	306839.0021	6277333.354
HA	HA05	306649.8247	6277410.744
G	SS01	306530.7619	6277161.043
S	SED01	306089.9652	6277206.023
TP	TP03	306025.1422	6277132.601
TP	TP10	305916.0013	6277034.705
TP	TP05	305921.293	6277180.226
TP	TP04	305868.3762	6277102.174
TP	TP03	305833.3189	6277030.736
HA	HA05	305415.0118	6277056.136
TP	TP04	305515.0245	6276867.223
HA	HA01	305272.9302	6276611.635
G	SS05	305242.7677	6276425.103
TP	TP02	305139.58	6276879.129
TP	TP01	305030.836	6276862.461
TP	TP02	305143.5487	6276681.485
TP	TP04	304908.5983	6277015.655
G	SS01	304932.4108	6276653.704
TP	TP03	306054.7756	6276607.666
TP	TP01	306181.7758	6276572.741
G	SS01	305888.0877	6276532.26
TP	TP05	305804.7438	6276493.366
G	SS04	305978.5754	6276076.647
G	SS01	305930.9503	6275870.271

Appendix B
GPS Codes for Sample Locations

Method	Code	Easting	Northing
G	SS22	305708.473	6278784.547
TP	TP04	305436.2162	6278540.072
TP	TP05	305480.0386	6278481.912
TP	TP05	306776.8912	6278226.227
TP	TP04	306766.5724	6278186.539
TP	TP03	305769.9332	6278446.707
TP	TP08	305792.5191	6278072.02
HA	HA01	306454.6666	6278007.092
TP	TP01	306839.6361	6277849.135
TP	TP03	305412.2062	6277458.662
TP	TP01	306106.4743	6277618.471
TP	TP01	306095.6263	6277382.991
TP	TP11	305927.6156	6277316.845
TP	TP04	306916.1009	6277491.471
TP	TP01	305148.6807	6276831.069
TP	TP01	305539.2065	6276546.377
TP	TP02	305633.3983	6276087.059
TP	TP05	305974.0462	6278657.679
TP	TP06	306072.4714	6278568.093
TP	TP02	306836.4573	6278145.781
G	SS09	306696.0282	6278113.519
G	SS01	306785.6572	6278083.075
G	SS01	305794.6142	6277536.003
G	SS05	305820.4112	6277581.644
G	SS02	305801.2288	6277548.571
G	SS04	305813.7966	6277570.399
G	SS03	305807.182	6277559.816
TP	TP04	305916.9976	6278580.105
G	SS02	305470.1154	6277794.159
TP	TP03	305612.5938	6277772.816
TP	TP07	305573.4354	6278444.33
TP	TP05	306226.8473	6278210.173
G	SS02	306968.542	6278225.883
TP	TP05	305684.5165	6277306.374
TP	TP09	305607.1257	6277137.702
TP	TP02	306122.039	6276593.202
G	SS05	305972.8997	6278549.728
G	SS10	305995.5216	6278492.181
G	SS06	305791.2099	6277509.675
G	SS02	305135.0287	6276681.792
G	SS06	306168.7358	6277122.895
G	SS11	305805.9362	6277401.888
G	SS01	305782.6529	6277373.842
G	SS12	305776.832	6277368.021
G	SS02	305789.532	6277361.671
G	SS03	305800.6446	6277355.321
G	SS13	306664.5899	6278125.53
TP	TP04	306024.5092	6276729.03

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