ENVIRONMENTAL CONSULTING SERVICES

ABN 45 165 948 372

ENVIRONMENTAL SITE ASSESSMENT

Proposed Subdivision of Lot 3991 in DP 1190132
Corner Jordan Springs Boulevard & Lakeside Parade
Jordan Springs NSW 2747

ENVIRONMENTAL CONSULTING SERVICES
DIVERSIFIED GROUP PTY LTD

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Approved by	**Date**	**Signed**
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Executive Summary

Environmental Consulting Services Pty Ltd (ECS) has undertaken environmental investigation of proposed Lot 2 following subdivision Lot 3991 in Deposited Plan 1190132. It is understood that following the subdivision of Lot 3991 the new Lot 2 will be developed for residential purposes.

The purpose of this investigation is to confirm that an existing Contamination Management Plan has been implemented and to provide a waste classification for materials that may be encountered and require off-site disposal during development.

This environmental investigation has undertaken the requirements of the Contamination Management Plan and did not identify potential human health of environmental risks.

The conditions at the Site consist of minor thickness of fill material and some concrete debris over natural clay soils. Sampling and analysis of both the fill material and natural clay soils did not identify contamination above the assessment criteria for residential land use.

There are no impacts on the Site that require specific management measures for the proposed use of the Site. However, during development excavated material that is surplus to requirement should be disposed of to an approved facility. The surface fill and concrete debris is considered to be General Solid Waste - CT1 and the underlying natural clay is Virgin Excavated Natural Material (VENM) for disposal purposes.

TABLE OF CONTENTS

1.0 INTRODUCTION

Environmental Consulting Services Pty Ltd (ECS) has undertaken an environmental investigation of proposed Lot 2 following subdivision Lot 3991 in Deposited Plan 1190132. The proposed Lot 2 is located at the intersection of Jordan Springs Boulevard & Lakeside Parade in Jordan Springs (the Site).

The location of the Site is presented in Figure 1 - Location Plan (Six Maps) and the proposed subdivision plan is included in Appendix 1.

Figure 1 – Location Plan

It is understood that following the subdivision of Lot 3991 the new Lot 2 will be developed for residential purposes.

The purpose of this investigation is to confirm that the existing Contamination Management Plan (CMP) has been implemented and to provide a waste classification for materials that may be encountered and require off-site disposal during development.

This assessment has been conducted with consideration of the Planning Guidelines - SEPP 55 Remediation of Land, New South Wales Environment Protection Authority guidelines and the Australian Standard for site assessment.

Site inspections, validation sampling and laboratory analyses were performed as part of this study. Best professional judgement was used to interpret and extrapolate between sampling points, however even under ideal circumstances actual conditions may vary from those inferred to exist. The actual interface between materials and variation of soil quality may be more abrupt or gradual than the report indicates.

2.0 CONTAMINATION MANAGEMENT PLAN

The Site is part of a former Australian Defence Industries (ADI) property that had a total area of approximately 1545 ha. Sydney Regional Environmental Plan No. 30 encompasses the ADI property and the Site is located near the south west corner of the former ADI property.

The ADI property was the subject of multiple environmental investigations and remediation activities. Following remediation Site Audits were completed for specific areas within the overall ADI property. Site Audit Statement number CHK001/1 (HLA Envirosciences Pty Ltd 7 June 1999) encompasses the Site and certifies that the Site is suitable for the following uses:

- residential, including substantial vegetable gardens and poultry;
- residential with minimal opportunity for soil access including units;
- day-care centre, preschool, primary school;
- secondary school;
- park, recreational open space, playing field; and
- commercial/industrial use.

This Site Audit Statement is subject to the development of a management plan.

A Contaminant Management Plan (CMP) was developed by URS Australia Pty Ltd entitled *Contaminant Management Plan Western Precinct Development Phase* (July 2008).

This CMP confirms that the overall property (being the Western Precinct of the ADI property) has been remediated, audited and declared suitable for its intended land use. The CMP noted that remnant contamination, if present, would most likely be discovered during development earthworks which would occur prior to subdivision.

The CMP was intended for use during the preparation phase of development, during which structures may be demolished and disposed of, ground levels altered, redundant infrastructure remover and new infrastructure established. The CMP anticipated that subsequent plans, if required, would be administered by Council.

The CMP requires observations for indicators of potential contamination including:

- discoloured soils;
- odorous soils;
- potential asbestos containing materials (ACM); and
- foreign materials such as drums, waste and building rubble.

In addition the potential for ordnance material to be encountered was included in the CMP. Potential ordnance material was considered to include:

- munition shells;
- flares;
- ammunition packaging;
- grenade components; and
- metal debris not identified as non-munitions or of uncertain origin.

3.0 SETTING

The Site is located at the intersection of Jordan Springs Boulevard and Lakeside Parade and has an area of 5004m^2. Proposed Lot 2 is outlined in red on Figure 2 – Site Plan (Six Maps).

Figure 2 – Site Plan

The site is irregular in shape with the western boundary being approximately 91m long, the eastern boundary approximately 78m long and with an 58m frontage to Jordan Springs Boulevard.

The Site is part of a larger undeveloped allotment that is bounded to the north by a commercial precinct and residential developments and to the east by undeveloped but serviced land. There is open undeveloped land to the south and west.

The Site is bisected by a shallow drainage feature that runs from near the north west corner to near the south east corner of the land approximately following the alignment of Jordan Springs Boulevard and Lakeside Parade. Surface water drainage is expected to flow into this drainage feature and flow southwards to a dam.

There are no improvements on the Site and most vegetation has been removed. There is however, the remnants of a chain wire fence that sections of the south west corner of the Site.

4.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

The regional geology has been described in the 1:100 000 Penrith geological map (series sheet 9030) being Triassic age shale and claystone and fine to medium grained sandstone known as the Bringelly Shale.

There are three surface water features in the vicinity of the Site including a large dam to the north east, a smaller dam to the south east and a wetland to the south west. There are a series of seasonal creeks in the vicinity of the Site including the feature that crosses the Site and another to the south.

5.0 DATA QUALITY OBJECTIVES

The purpose of establishing Data Quality Objectives (DQO) is to ensure that the field investigations and subsequent analyses are undertaken in a way that enables the collection and reporting of reliable data on which to base the assessment.

The process for establishing DQO for a site as defined by the US EPA has been adopted by the NSW EPA in the Guideline for the NSW Site Auditor Scheme (2006).

The DQO process, involves the following seven steps:

1. State the problem;
2. Identify the decision;
3. Identify inputs to the decision;
4. Define the study boundaries;
5. Develop a decision rule;
6. Specify limits on decision errors; and
7. Optimise the design for obtaining data.

The DQO objectives defined above have been addressed as follows.

State the problem

The assessment goal is to evaluate the relevance of the CMP with respect to the proposed subdivision and development of Lot 3991 in Deposited Plan 1190132 and the need for any future site-specific management plans during development.

Identify the decision

The CMP identifies indicators of potential contamination at the Site. This assessment needs to undertake observations consistent with the CMP. In

addition, soil sampling needs to be conducted to evaluate the material likely to be disturbed during development activities.

The principal study question is:

"Is there impact at that Site that requires the development of a site-specific management plan for implementation during development.

Inputs to the decision

The inputs to this assessment include a detailed Site inspection and methodical sampling of the surface soils.

The sampling program has been designed to provide enough information to allow a sound scientific and statistical evaluation of the principal study question set out in Step 2.

Boundaries of the study

The lateral boundaries of the study area are the Site boundaries depicted on Figure 2. The vertical boundary of the study area is approximately 100mm into the natural, undisturbed soils.

Decision rule

Project analytical data will be compared to NSW EPA approved guidelines including the Site Assessment Criterial (SAC) outlined in Section 7.

A summary of the Site decision rules for the contamination issues is presented in Table 1.

Table 1 - Summary of Site Decision Rules

Issue	Decision Rule
Indicators of potential contamination are observed such as discoloured or soils, potential ACM; or foreign materials.	The area where indicators of potential contamination are observed must be samples to characterise and delineate the extent of contamination.
Indicators of potential ordnance material are observed such as munition shells, flares, grenade components or metal debris.	A preliminary assessment of the potential ordnance material should be undertaken to determine whether it is miscellaneous debris, a fragment of ordnance or a potentially explosive device.
Results of soil sample analysis indicate the presence of contamination at concentrations above the SAC.	The contaminated material should be removed from the Site and disposed of at a licensed facility in accordance with NSW EPA Guidelines. Site validation must be completed.
Results of soil sample analysis indicate the presence of extensive contamination at concentrations above the SAC.	A sampling and analysis plan must be prepared to delineate the contamination and assess the extent of remediation required. The plan must be reviewed by an independent Site Auditor.

Specify limits on decision errors

The DQOs for sampling techniques and laboratory analysis of collected soil samples defines the acceptable level of error required for this investigation.

The data quality objectives will be assessed by reference to data quality indicators as follows:

- Data Representativeness - expresses the degree which sample data accurately and precisely represents a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples in an appropriate pattern across the study area. Consistent and repeatable sampling techniques and methods are utilised throughout the sampling.
- Completeness - defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being enough valid data generated during the study. If there is insufficient valid data, then additional data is required to be collected.
- Comparability - is a qualitative parameter expressing the confidence with which one data set can be compared with another data set. 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.
- Precision - measures the reproducibility of measurements under a given set of conditions. The precision of the data is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples. Duplicates will be assessed by calculating the Relative Percentage Difference (RPD) between the primary and duplicate samples. The proposed acceptable range for Relative Percent Difference (RPD) for duplicate samples have been set as follows:

%RPD Range	result >10 times PQL then maximum RPD 50% result >5 times PQL then maximum RPD 75% result >2 times PQL then maximum RPD 100% result <2 times PQL then no limit on the RPD.

- Accuracy - measures the bias in a measurement system. Accuracy can be undermined by such factors as field contamination of samples, poor preservation of samples, poor sample preparation techniques and poor selection of analysis techniques by the analysing laboratory. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards. Accuracy of field works is assessed by examining the level of contamination detected in equipment blanks.

Optimising the design for obtaining data

The sampling activities are undertaken in accordance with NSW EPA guidelines and accepted industry standards. Sampling is undertaken in a nominal grid pattern across the Site and also at areas where Indicators of potential contamination are observed.

All sampling is conducted in general accordance with the NSW EPA guidelines including the *Sampling Design Guidelines* (September 1995).

6.0 SITE INVESTIGATION

The areas of environmental concern have been defined in the CMP and are summarised in Table 2 – Areas of Environmental Concern.

Table 2 – Areas of Environmental Concern

Area of Environmental Concern	Contaminating Activity	Contaminants of Concern	Likelihood	Remarks
Site surface	ADI munitions manufacturing	Petroleum hydrocarbons, heavy metals and asbestos. Ordnance.	Low	The Site has been assessed, remediated and Audited
Fill material	Backfilling with material of unknown origin	Petroleum hydrocarbons, PAH, heavy metals and asbestos.	Possible	Uncontrolled dumping may have occurred.

6.1 Site Inspection

A nominal 20m square grid was established across the Site as a framework for the inspection and sampling activities. The grid axes were north-south and east-west. The Site inspection included:

- Observations along each grid line;
- Observations around the perimeter;
- Observations along the drainage features; and
- Observations within each grid square.

6.2 Soil Sampling

The proposed sampling plan included collection of samples at the corners of the established grid and at areas where indicators of potential contamination are observed

At each sampling locations shallow test pits were excavated using hand tools. Soil samples were collected during from the test pits by hand using new rubber gloves to collect each sample. Samples were collected directly into

laboratory prepared sample jars and stored under chilled conditions at the Site and during transport to the laboratory for analysis. All samples were labelled with the test pit location number and sample number then logged onto a chain of custody.

The locations of the test pits are presented on Figure 3 – Sampling Locations.

Figure 3 – Sampling Locations

6.3 Quality Plan

The quality assurance / quality control (QA/QC) procedures adopted during this assessment included: field decontamination protocols; sample labelling storage and handing methodologies.

Field decontamination involved the washing of sampling equipment in potable water prior to drilling each borehole and the use of a new pair of rubber gloves prior to the collection of each sample. All samples were labelled in the field with the sample location. Samples were all stored under chilled conditions during storage and transportation to the laboratory.

One duplicate sample pair was collected during this investigation. The duplicate sample pair included samples labelled TP9 S1 and D.

The analytical laboratory also conducted a QA/QC program. This program included; the analysis of one blank sample and one spiked sample the batch of samples tested; and the repeat analysis of the approximately 10% of the samples. The results of this QA/QC program are within the data quality objectives.

7.0 ASSESSMENT GUIDELINES

The NSW Environment Protection Authority (EPA) has issued a number of guidelines relevant to the concentration of contaminants in soil. These are used in conjunction with the National Environmental Protection Council (NEPC) - National environment protection (assessment of site contamination) measure 2013.

The following guidelines have reviewed for the environmental investigation of this Site:

- NEPC - National Environment Protection Measure for the Assessment of Site Contamination (2013); and
- EPA - Waste Classification Guidelines – Part 1: Classification of waste (2014)

7.1 Site Assessment Criteria

The Site Assessment Criteria (SAC) that have been used to evaluate soils for contamination are based on the National Environment Protection Measure (NEPM) for the Assessment of Site Contamination (NEPM 2013).

These Site Assessment Criteria are not derived as acceptance criteria for contamination at a site, but as levels above which specific consideration of risk, based on the site use and potential exposure, is required. If a risk is determined as present, then remediation and/or management must be undertaken.

The Site Criteria within the NEPM are based on potential impact to human health and are intentionally conservative. The health investigation levels (HIL) have been derived for four (4) generic land use settings;

- HIL ‘A’ Residential with garden/ accessible soil (home grown produce <10% fruit and vegetable intake (no poultry). This category includes children’s day care centres, preschools and primary schools.
- HIL ‘B’ Residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high rise buildings and flats.
- HIL ‘C’ Public open space such as parks, playgrounds, playing fields (e.g. ovals) secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves).
- HIL ‘D’ Commercial/industrial such as shops, offices, factories and industrial sites.

Health Screening Levels (HSLs) for various petroleum hydrocarbon compounds have also been developed. The HSLs also relate to the land use (consistent with the HILs) and are also dependent on soil type and depth.

With respect to this Site, the soil assessment criteria selected are for residential use with garden/accessible soil which is consistent with the proposed use of the land. These criteria are summarised on Table 3 - Soil Assessment Criteria.

Table 3 - Soil Assessment Criteria HILs

Contaminant	Site Assessment Criteria[1] (mg/kg)
Benzene	4[2]
Toluene	NL[2]
Ethylbenzene	NL[2]
Xylenes – Total	NL[2]
Naphthalene	NL[2]
TRH C6-10 (F1 fraction)	310[2]
TRH C10-16 (F2 fraction)	NL[2]
TRH C16-34 (F3 fraction)	NL[2]
TRH C34-40 (F4 fraction)	NL[2]
Arsenic	100
Cadmium	20
Chromium	100
Copper	6000
Lead	300
Mercury	40
Nickel	400
Zinc	7400
Carcinogenic PAHs	3
Total PAH	300
Asbestos[3]	No visible on the site surface & 0.01%

Notes: All results in mg/kg unless otherwise noted.
1. HIL 'A' Residential with garden/ accessible soil including children's day care centres, preschools and primary schools.
2. Guideline for clay soils over depth interval 0-1m
3. Guideline for bonded asbestos.

7.2 Waste Thresholds

The EPA waste classification guidelines establish steps to classify waste into classes that are defined in clause 49 of Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act). These classes include:

- special waste;
- liquid waste;
- hazardous waste;
- restricted solid waste;
- general solid waste (putrescible); and
- general solid waste (non-putrescible).

To determine the classification of waste, the following steps must be followed in the order below. Once a waste's classification has been established under

a particular step, the waste is taken to have that classification and must be managed accordingly.

- Step 1: Is the waste special waste?
- Step 2: Is the waste liquid waste?
- Step 3: Is the waste pre-classified?
- Step 4: Does the waste possess hazardous characteristics?
- Step 5: Determining a waste's classification using chemical testing.
- Step 6: Is the waste putrescible or non-putrescible?

Within Step 5 the EPA detail a testing process and contaminant threshold (CT) values. The contaminant thresholds for general solid waste (CT1), being the lowest specified thresholds are presented in Table 4 – Contaminant Thresholds.

Table 4 – Contaminant Thresholds

Sample Number	Contaminant Threshold CT1
Benzene	10
Toluene	288
Ethylbenzene	600
Xylenes - Total	1000
TPH C6-9	650
TRH C9-36	10000
Arsenic	100
Cadmium	20
Chromium	100
Copper	
Lead	100
Mercury	4
Nickel	40
Zinc	
Benzo(a)pyrene	0.8
Total PAH	200
Asbestos[1]	Nil

Notes: All results in mg/kg unless otherwise noted.
1. If asbestos is observed of detected the material is considered to be a Special Waste/Asbestos Waste.

8.0 DISCUSSION

8.1 Site Conditions

The Site inspection did not encounter:

- Indicators of potential contamination are observed such as discoloured or soils, potential ACM; or foreign materials; or
- Indicators of potential ordnance material are observed such as munition shells, flares, grenade components or metal debris.

Minor areas of fill material were observed on the surface of the Site. In general, the fill observed consisted of fragments of concrete and gravel scattered across the Site surface. The concrete debris observed near test pit location 7 is shown on Figure 4.

Figure 4 – Concrete Debris

Placed fill material associated with the construction of infrastructure was observed along the northern and eastern Site boundaries. The placed fill typically appeared to be sandstone material of up to 0.1m thickness. The surface conditions encountered in the test pits are summarised in Table 5 and the sandstone fill material encountered at test pit location 3 is shown on Figure 5.

Table 5 – Summary of Site Conditions

Test Pit	Depth (m)	Description	Sample
1	0.0 – 0.2	Silty Clay, brown	TP1 S1
2	0.0 – 0.1 0.1 – 0.2	Fill – Sandstone, off white, trace concrete Silty Clay, brown	TP2 S1 TP2 S2
3	0.0 – 0.1 0.1 – 0.2	Fill – Sandstone, brown Silty Clay, brown	TP3 S1 TP3 S2
4	0.0 – 0.1 0.1 – 0.2	Fill – Sandstone, brown Silty Clay, brown	TP4 S1 TP4 S2
5	0.0 – 0.2	Silty Clay, brown and orange	TP5 S1
6	0.0 – 0.2	Silty Clay, dark brown	TP6 S1
7	0.0 – 0.2	Silty Clay, brown	TP7 S1
8	0.0 – 0.2	Silty Clay, brown	TP8 S1
9	0.0 – 0.2	Silty Clay, brown	TP9 S1
10	0.0 – 0.2	Silty Clay, brown	TP10 S1
11	0.0 – 0.2	Silty Clay, brown and orange brown	TP11 S1
12	0.0 – 0.2	Silty Clay, brown	TP12 S1

Figure 5 – Sandstone Fill

The Site inspection did not identify any material that was considered to be potentially asbestos or material that was considered to be related to ordnance waste.

8.2 Sample Analysis Results

The results of analysis of the soil samples collected from the test pits are presented on Table 6 and the laboratory reports are included in Appendix 2. Included on Table 6 are the SAC.

The results of analysis of all soil samples indicated concentrations of the contaminants tested for are below the referenced guidelines for residential land use.

Table 6 – Summary of Soil Results

Sample Number	TP1 S1	TP2 S1	TP2 S2	TP3 S1	TP3 S2	TP4 S1	TP4 S2	TP5 S1	TP6 S1	TP7 S1	TP8 S1	TP9 S1	TP10 S1	TP11 S1	TP12 S1	D	Guidelines
Benzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	4
Toluene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NL
Ethylbenzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NL
Xylenes – Total	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	NL
Naphthalene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	NL
TRH C6-10	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	310
TRH C10-16	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	NL
TRH C16-34	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NL
TRH C34-40	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NL
Arsenic	4	3.9	6.8	9.9	8.8	6.5	8.5	7.9	9.3	10	6.6	7.2	12	25	4.8	9.9	100
Cadmium	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	20
Chromium	12	11	15	20	32	14	18	18	20	18	18	16	30	110	13	26	100
Copper	24	6.9	18	120	19	15	15	20	28	30	12	18	17	29	8.3	25	6000
Lead	20	16	19	80	24	17	19	16	31	35	16	35	20	57	15	26	300
Mercury	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	40
Nickel	18	6.7	8.7	15	7.4	7.1	6.8	7.8	19	12	< 5	10	18	12	< 5	7.6	400
Zinc	77	40	32	250	49	34	32	32	110	210	12	26	32	10	13	27	7400
Carcinogenic PAHs	< 0.5	< 0.5	< 0.5	< 0.5	< 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
Total PAH	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	300
Asbestos		ND		ND		ND											0.01%

Notes: All results in mg/kg unless otherwise noted
ND - No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

9.0 PRELIMINARY WASTE CLASSIFICATION

The materials encountered at this Site consisted of shallow fill material and concrete debris over natural clay soils. To classify the fill material and the natural clay soil the step listed in the waste classification guidelines were followed and are summarised on Table 7.

Table 7 – Waste Classification

Step	Response	Comment
Fill Material		
Is the waste special waste?	No	No asbestos
Is the waste liquid waste?	No	Material is solid
Is the waste pre-classified?	No	Unknown source
Does the waste possess hazardous characteristics?	No	No explosives
Waste's classification using chemical testing	GSW[1]	See Table 8
Natural Clay		
Is the waste special waste?	No	No asbestos
Is the waste liquid waste?	No	Material is solid
Is the waste pre-classified?	Yes	VENM[2]

Notes:

1. GSW – General Solid Waste specific contaminant concentration (SCC) < CT1
2. VENM – Virgin Excavated Natural Material

The results of analysis of the soil samples collected from the test pits are presented on Table 8 and the Contaminant Threshold - CT1 are included on this table.

The results of analysis of all soil samples indicated concentrations of the contaminants tested for are below the CT1.

Table 8 - Classification Using Chemical Testing

Sample Number	TP1 S1	TP2 S1	TP2 S2	TP3 S1	TP3 S2	TP4 S1	TP4 S2	TP5 S1	TP6 S1	TP7 S1	TP8 S1	TP9 S1	TP10 S1	TP11 S1	TP12 S1	D	CT1
Benzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	10
Toluene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	288
Ethylbenzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	600
Xylenes - Total	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	1000
TPH C6-9	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	650
TRH C9-36	< 50	< 50	< 50	53	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	56	< 50	< 50	< 50	10000
Arsenic	4	3.9	6.8	9.9	8.8	6.5	8.5	7.9	9.3	10	6.6	7.2	12	25	4.8	9.9	100
Cadmium	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	20
Chromium	12	11	15	20	32	14	18	18	20	18	18	16	30	110	13	26	100
Copper	24	6.9	18	120	19	15	15	20	28	30	12	18	17	29	8.3	25	
Lead	20	16	19	80	24	17	19	16	31	35	16	35	20	57	15	26	100
Mercury	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	4
Nickel	18	6.7	8.7	15	7.4	7.1	6.8	7.8	19	12	< 5	10	18	12	< 5	7.6	40
Zinc	77	40	32	250	49	34	32	32	110	210	12	26	32	10	13	27	
Benzo(a)pyrene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8
Total PAH	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	200
Asbestos		ND		ND		ND											Nil

Notes: All results in mg/kg unless otherwise noted
ND - No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

10.0 CONCLUSION

The Site is part of a former larger property that was the subject of an Environmental Audit and a CMP. The Audit confirmed that the larger property which encompassed the Site is suitable for residential use.

The CMP was prepared for implementation during the preparation phase of development, when structures may be demolished, ground levels altered and new infrastructure established. The CMP requires observations for indicators of potential contamination and for potential ordnance material.

This environmental assessment has undertaken observations that are consistent with the CMP. These observations did not identify indicators of potential contamination of potential ordnance material. Discoloured or odorous soils were not observed. Potential asbestos containing materials were also not observed and sampling of selected fill material did not identify asbestos. Some building rubble was observed on the Site but this material is scattered concrete debris and is not considered to represent areas of chemical contamination.

No items or material considered potentially be related to ordnance were identified on the Site.

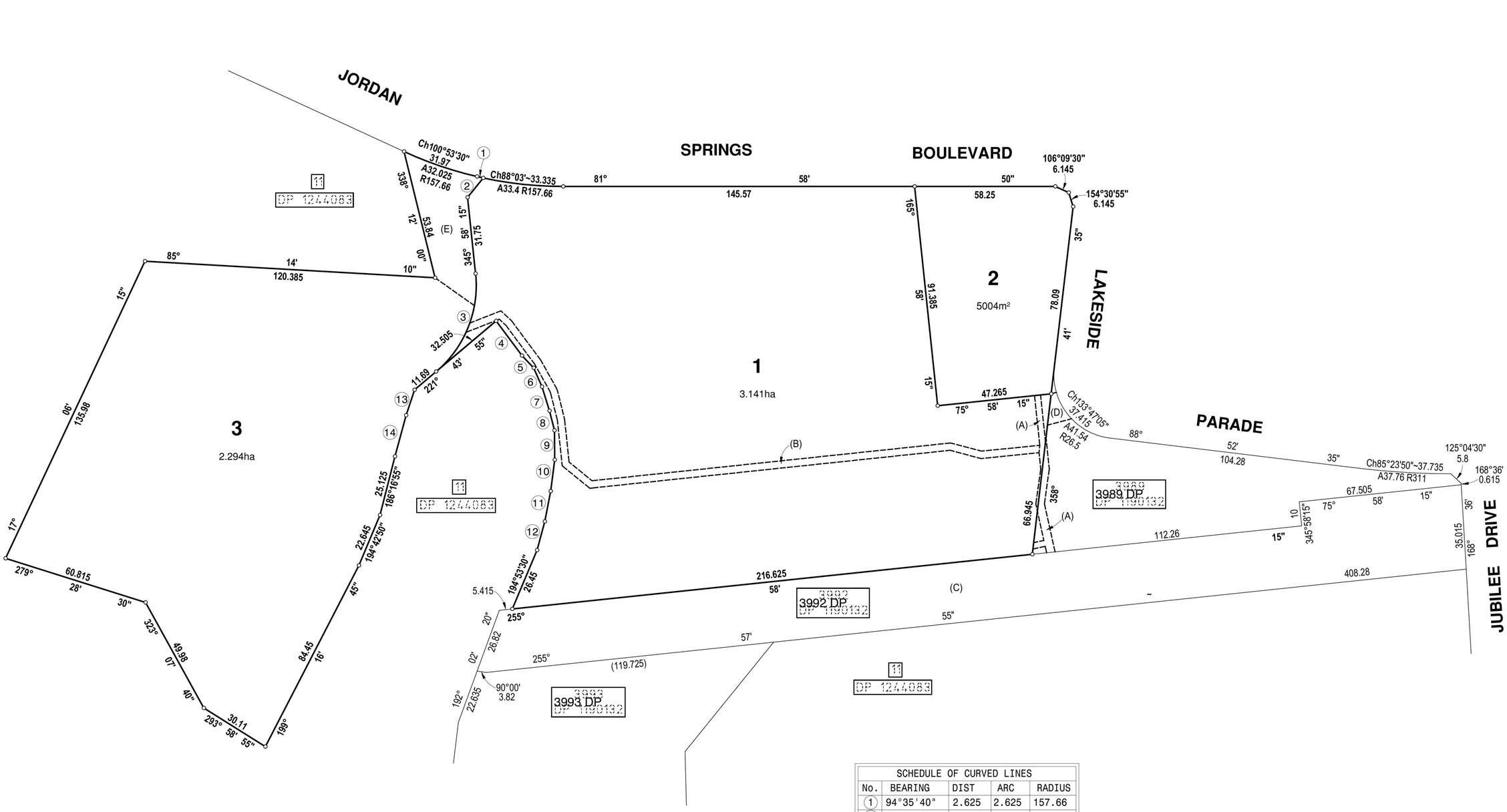
Sampling and analysis of both fill material and natural clay soils did not identify contamination above the assessment criteria for residential land use.

Based on this environmental assessment it is concluded that:

- The conditions at the Site consist of minor thickness of fill material and some concrete debris over natural clay soils;
- There are no impacts on the Site consistent with the areas of environmental concern and contaminating activities as defined in the CMP;
- Soil sampling activities did not identify contamination that requires management for the proposed future use of the Site;
- There is no impact at that Site that requires the development of a site-specific management plan for implementation during development.

During development activities excavated material that is surplus to requirement should be disposed of to an approved facility. The surface fill and concrete debris is considered to be General Solid Waste - CT1 and the underlying natural clay is Virgin Excavated Natural Material (VENM) for disposal purposes.

APPENDIX 1



SCHEDULE OF CURVED LINES				
No.	BEARING	DIST	ARC	RADIUS
1	94°35'40"	2.625	2.625	157.66
2	30°58'15"	10.355		
3	13°51'05"	43.77	45.545	46.8
4	135°09'10"	17.935		
5	128°41'05"	7.03		
6	148°07'05"	8.535		
7	154°38'05"	10.41		
8	157°50'20"	8.405		
9	171°20'00"	12.175		
10	179°21'25"	13.145		
11	182°52'55"	12.77		
12	187°02'30"	12.33		
13	190°25'40"	11.15		
14	187°11'20"	17.615		

PROPOSED EASEMENTS

(A) EASEMENT TO DRAIN WATER (VARIABLE WIDTH)
(B) EASEMENT TO DRAIN WATER (3.0 WIDE)
(C) RIGHT OF CARRIAGEWAY (WHOLE LOT)
(D) RIGHT OF CARRIAGEWAY (VARIABLE WIDTH)
(E) EASEMENT FOR SERVICES (VARIABLE WIDTH)

NOTES:

1. ALL DIMENSIONS & AREAS ARE SUBJECT TO FINAL SURVEY
2. FINAL PLAN MAY INCLUDE VARIOUS EASEMENTS, COVENANTS & RESTRICTIONS SUBJECT TO DEVELOPMENT APPROVAL

Surveyor: CRAIG TURNER Date of Survey: 14/06/2018 Surveyor's Ref: 7202	PROPOSED PLAN OF SUBDIVISION OF LOT 12 IN DP 1244083 AND LOT 3990 IN DP 1190132 AND EASEMENTS OVER LOTS 3989 & 3992 IN DP 1190132	L G A: PENRITH Locality: JORDON SPRINGS Reduction Ratio 1:1200 Lengths are in metres.	REGISTERED	**DP DRAFT** *ISSUE C*

APPENDIX 2

eurofins | mgt

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Environmental Consulting Services Grp
118A Australia Street
Camperdown
NSW 2050

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **REPORTS - Simon Caples**

Report **608568-S**
Project name JORDAN SPRINGS
Received Date Jul 19, 2018

Client Sample ID			**TP1 S1**	**TP2 S1**	**TP2 S2**	**TP3 S1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S18-JI23094**	**S18-JI23095**	**S18-JI23096**	**S18-JI23097**
Date Sampled			**Jul 18, 2018**	**Jul 18, 2018**	**Jul 18, 2018**	**Jul 18, 2018**
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	< 50	< 50	53
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	53
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	%	67	69	69	73
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						
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
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

Client Sample ID			TP1 S1	TP2 S1	TP2 S2	TP3 S1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-JI23094	S18-JI23095	S18-JI23096	S18-JI23097
Date Sampled			Jul 18, 2018	Jul 18, 2018	Jul 18, 2018	Jul 18, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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
2-Fluorobiphenyl (surr.)	1	%	115	104	103	109
p-Terphenyl-d14 (surr.)	1	%	129	114	112	112
Heavy Metals						
Arsenic	2	mg/kg	4.0	3.9	6.8	9.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	11	15	20
Copper	5	mg/kg	24	6.9	18	120
Lead	5	mg/kg	20	16	19	80
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	18	6.7	8.7	15
Zinc	5	mg/kg	77	40	32	250
% Moisture	1	%	8.3	1.8	8.9	9.2

Client Sample ID			TP3 S2	TP4 S1	TP4 S2	TP5 S1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-JI23098	S18-JI23099	S18-JI23100	S18-JI23101
Date Sampled			Jul 18, 2018	Jul 18, 2018	Jul 18, 2018	Jul 18, 2018
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	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 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	%	69	67	72	61
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			TP3 S2	TP4 S1	TP4 S2	TP5 S1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-JI23098	S18-JI23099	S18-JI23100	S18-JI23101
Date Sampled			Jul 18, 2018	Jul 18, 2018	Jul 18, 2018	Jul 18, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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
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
2-Fluorobiphenyl (surr.)	1	%	109	109	110	111
p-Terphenyl-d14 (surr.)	1	%	117	113	119	119
Heavy Metals						
Arsenic	2	mg/kg	8.8	6.5	8.5	7.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	32	14	18	18
Copper	5	mg/kg	19	15	15	20
Lead	5	mg/kg	24	17	19	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	7.4	7.1	6.8	7.8
Zinc	5	mg/kg	49	34	32	32
% Moisture	1	%	11	8.7	8.7	12

Client Sample ID			TP6 S1	TP7 S1	TP8 S1	TP9 S1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-JI23102	S18-JI23103	S18-JI23104	S18-JI23105
Date Sampled			Jul 18, 2018	Jul 18, 2018	Jul 18, 2018	Jul 18, 2018
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	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			TP6 S1	TP7 S1	TP8 S1	TP9 S1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-JI23102	S18-JI23103	S18-JI23104	S18-JI23105
Date Sampled			Jul 18, 2018	Jul 18, 2018	Jul 18, 2018	Jul 18, 2018
Test/Reference	LOR	Unit				
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	%	64	71	68	71
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						
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
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
2-Fluorobiphenyl (surr.)	1	%	109	111	109	112
p-Terphenyl-d14 (surr.)	1	%	117	124	114	105
Heavy Metals						
Arsenic	2	mg/kg	9.3	10	6.6	7.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	18	18	16
Copper	5	mg/kg	28	30	12	18
Lead	5	mg/kg	31	35	16	35
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	19	12	< 5	10
Zinc	5	mg/kg	110	210	12	26
% Moisture	1	%	19	13	9.4	12

Client Sample ID			TP10 S1	TP11 S1	TP12 S1	D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S18-JI23106	S18-JI23107	S18-JI23108	S18-JI23109
Date Sampled			Jul 18, 2018	Jul 18, 2018	Jul 18, 2018	Jul 18, 2018
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	56	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	56	< 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	%	67	69	66	68
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						
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
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
2-Fluorobiphenyl (surr.)	1	%	104	109	114	101
p-Terphenyl-d14 (surr.)	1	%	98	104	110	111
Heavy Metals						
Arsenic	2	mg/kg	12	25	4.8	9.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	30	110	13	26
Copper	5	mg/kg	17	29	8.3	25

Client Sample ID			TP10 S1	TP11 S1	TP12 S1	D
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins l mgt Sample No.			S18-JI23106	S18-JI23107	S18-JI23108	S18-JI23109
Date Sampled			Jul 18, 2018	Jul 18, 2018	Jul 18, 2018	Jul 18, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	20	57	15	26
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	18	12	< 5	7.6
Zinc	5	mg/kg	32	10	13	27
% Moisture	1	%	8.8	9.3	8.1	17

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 l mgt Suite B7			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jul 24, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C36			
BTEX	Melbourne	Jul 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jul 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jul 24, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jul 24, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	Jul 24, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Jul 20, 2018	14 Day

- Method: LTM-GEN-7080 Moisture

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: Diversified Grp P/L-T/a Enviro Consult Serv Grp
Address: 118A Australia Street
Camperdown
NSW 2050

Project Name: JORDAN SPRINGS

Order No.:
Report #: 608568
Phone: 1800 099 880
Fax:

Received: Jul 19, 2018 1:51 PM
Due: Jul 26, 2018
Priority: 5 Day
Contact Name: REPORTS - Simon Caples

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - AS4964	Moisture Set	Eurofins | mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X
Sydney Laboratory - NATA Site # 18217						X		
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	TP1 S1	Jul 18, 2018		Soil	S18-Jl23094		X	X
2	TP2 S1	Jul 18, 2018		Soil	S18-Jl23095	X	X	X
3	TP2 S2	Jul 18, 2018		Soil	S18-Jl23096		X	X
4	TP3 S1	Jul 18, 2018		Soil	S18-Jl23097	X	X	X
5	TP3 S2	Jul 18, 2018		Soil	S18-Jl23098		X	X
6	TP4 S1	Jul 18, 2018		Soil	S18-Jl23099	X	X	X
7	TP4 S2	Jul 18, 2018		Soil	S18-Jl23100		X	X
8	TP5 S1	Jul 18, 2018		Soil	S18-Jl23101		X	X
9	TP6 S1	Jul 18, 2018		Soil	S18-Jl23102		X	X
10	TP7 S1	Jul 18, 2018		Soil	S18-Jl23103		X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X
Sydney Laboratory - NATA Site # 18217						X		
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
11	TP8 S1	Jul 18, 2018		Soil	S18-Jl23104		X	X
12	TP9 S1	Jul 18, 2018		Soil	S18-Jl23105		X	X
13	TP10 S1	Jul 18, 2018		Soil	S18-Jl23106		X	X
14	TP11 S1	Jul 18, 2018		Soil	S18-Jl23107		X	X
15	TP12 S1	Jul 18, 2018		Soil	S18-Jl23108		X	X
16	D	Jul 18, 2018		Soil	S18-Jl23109		X	X
Test Counts						3	16	16

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. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. 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 SRA.

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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****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: Nephelometric Turbidity 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 and 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.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
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 & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

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 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 Aroclor 1260 in Matrix Spikes and LCS.
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 RPDs 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 >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							
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	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	115			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	85			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	81			70-130	Pass	
Toluene	%	80			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	86			70-130	Pass	
Xylenes - Total	%	85			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	121			70-130	Pass	
TRH C6-C10	%	121			70-130	Pass	
TRH >C10-C16	%	86			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	73			70-130	Pass	
Acenaphthylene	%	75			70-130	Pass	
Anthracene	%	90			70-130	Pass	
Benz(a)anthracene	%	74			70-130	Pass	
Benzo(a)pyrene	%	118			70-130	Pass	
Benzo(b&j)fluoranthene	%	104			70-130	Pass	
Benzo(g.h.i)perylene	%	85			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	102			70-130	Pass	
Dibenz(a.h)anthracene	%	87			70-130	Pass	
Fluoranthene	%	89			70-130	Pass	
Fluorene	%	78			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	70			70-130	Pass	
Naphthalene	%	71			70-130	Pass	
Phenanthrene	%	84			70-130	Pass	
Pyrene	%	87			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	85			80-120	Pass	
Cadmium	%	81			80-120	Pass	
Chromium	%	92			80-120	Pass	
Copper	%	87			80-120	Pass	
Lead	%	92			80-120	Pass	
Mercury	%	98			75-125	Pass	
Nickel	%	92			80-120	Pass	
Zinc	%	90			80-120	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	S18-Jl23095	CP	%	113			70-130	Pass	
TRH C10-C14	S18-Jl23095	CP	%	98			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-Jl23095	CP	%	88			70-130	Pass	
Toluene	S18-Jl23095	CP	%	90			70-130	Pass	
Ethylbenzene	S18-Jl23095	CP	%	97			70-130	Pass	
m&p-Xylenes	S18-Jl23095	CP	%	96			70-130	Pass	
o-Xylene	S18-Jl23095	CP	%	94			70-130	Pass	
Xylenes - Total	S18-Jl23095	CP	%	96			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	S18-Jl23095	CP	%	113			70-130	Pass	
TRH C6-C10	S18-Jl23095	CP	%	121			70-130	Pass	
TRH >C10-C16	S18-Jl23095	CP	%	98			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Jl23095	CP	%	76			70-130	Pass	
Acenaphthylene	S18-Jl23095	CP	%	87			70-130	Pass	
Anthracene	S18-Jl23095	CP	%	95			70-130	Pass	
Benz(a)anthracene	S18-Jl23095	CP	%	91			70-130	Pass	
Benzo(a)pyrene	S18-Jl23095	CP	%	96			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Jl23095	CP	%	104			70-130	Pass	
Benzo(g.h.i)perylene	S18-Jl23095	CP	%	79			70-130	Pass	
Benzo(k)fluoranthene	S18-Jl23095	CP	%	110			70-130	Pass	
Chrysene	S18-Jl23095	CP	%	114			70-130	Pass	
Dibenz(a.h)anthracene	S18-Jl23095	CP	%	91			70-130	Pass	
Fluoranthene	S18-Jl23095	CP	%	97			70-130	Pass	
Fluorene	S18-Jl23095	CP	%	89			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S18-Jl23095	CP	%	93			70-130	Pass	
Naphthalene	S18-Jl23095	CP	%	82			70-130	Pass	
Phenanthrene	S18-Jl23095	CP	%	85			70-130	Pass	
Pyrene	S18-Jl23095	CP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Jl23095	CP	%	104			75-125	Pass	
Cadmium	S18-Jl23095	CP	%	98			75-125	Pass	
Chromium	S18-Jl23095	CP	%	106			75-125	Pass	
Copper	S18-Jl23095	CP	%	111			75-125	Pass	
Lead	S18-Jl23095	CP	%	106			75-125	Pass	
Mercury	S18-Jl23095	CP	%	103			70-130	Pass	
Nickel	S18-Jl23095	CP	%	105			75-125	Pass	
Zinc	S18-Jl23095	CP	%	98			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-Jl23105	CP	%	104			70-130	Pass	
TRH C10-C14	S18-Jl23105	CP	%	116			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-Jl23105	CP	%	75			70-130	Pass	
Toluene	S18-Jl23105	CP	%	77			70-130	Pass	
Ethylbenzene	S18-Jl23105	CP	%	82			70-130	Pass	
m&p-Xylenes	S18-Jl23105	CP	%	79			70-130	Pass	
o-Xylene	S18-Jl23105	CP	%	80			70-130	Pass	
Xylenes - Total	S18-Jl23105	CP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-Jl23105	CP	%	100			70-130	Pass	
TRH C6-C10	S18-Jl23105	CP	%	112			70-130	Pass	
TRH >C10-C16	S18-Jl23105	CP	%	117			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Jl23105	CP	%	97			75-125	Pass	
Cadmium	S18-Jl23105	CP	%	92			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	S18-Jl23105	CP	%	102			75-125	Pass	
Copper	S18-Jl23105	CP	%	101			75-125	Pass	
Lead	S18-Jl23105	CP	%	91			75-125	Pass	
Mercury	S18-Jl23105	CP	%	95			70-130	Pass	
Nickel	S18-Jl23105	CP	%	100			75-125	Pass	
Zinc	S18-Jl23105	CP	%	103			75-125	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	S18-Jl23094	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S18-Jl23094	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-Jl23094	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S18-Jl23094	CP	mg/kg	< 50	55	63	30%	Fail	Q15
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Jl23094	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-Jl23094	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-Jl23094	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-Jl23094	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-Jl23094	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-Jl23094	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S18-Jl23094	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S18-Jl23094	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S18-Jl23094	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S18-Jl23094	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S18-Jl23094	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Jl23094	CP	mg/kg	4.0	6.2	44	30%	Fail	Q15
Cadmium	S18-Jl23094	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Jl23094	CP	mg/kg	12	12	2.0	30%	Pass	
Copper	S18-Jl23094	CP	mg/kg	24	24	1.0	30%	Pass	
Lead	S18-Jl23094	CP	mg/kg	20	20	2.0	30%	Pass	
Mercury	S18-Jl23094	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Nickel	S18-Jl23094	CP	mg/kg	18	16	11	30%	Pass	
Zinc	S18-Jl23094	CP	mg/kg	77	70	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S18-Jl23094	CP	%	8.3	8.6	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Jl23095	CP	mg/kg	3.9	3.6	8.0	30%	Pass	
Cadmium	S18-Jl23095	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Jl23095	CP	mg/kg	11	12	5.0	30%	Pass	
Copper	S18-Jl23095	CP	mg/kg	6.9	7.3	5.0	30%	Pass	
Lead	S18-Jl23095	CP	mg/kg	16	16	6.0	30%	Pass	
Mercury	S18-Jl23095	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Jl23095	CP	mg/kg	6.7	7.0	5.0	30%	Pass	
Zinc	S18-Jl23095	CP	mg/kg	40	43	6.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-Jl23104	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S18-Jl23104	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-Jl23104	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S18-Jl23104	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Jl23104	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-Jl23104	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-Jl23104	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-Jl23104	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-Jl23104	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-Jl23104	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S18-Jl23104	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S18-Jl23104	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S18-Jl23104	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S18-Jl23104	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S18-Jl23104	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Jl23104	CP	mg/kg	6.6	6.5	2.0	30%	Pass	
Cadmium	S18-Jl23104	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Jl23104	CP	mg/kg	18	15	20	30%	Pass	
Copper	S18-Jl23104	CP	mg/kg	12	12	1.0	30%	Pass	
Lead	S18-Jl23104	CP	mg/kg	16	14	11	30%	Pass	
Mercury	S18-Jl23104	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Jl23104	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S18-Jl23104	CP	mg/kg	12	12	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S18-Jl23104	CP	%	9.4	9.2	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S18-Jl23105	CP	mg/kg	7.2	5.1	33	30%	Fail	Q15
Cadmium	S18-Jl23105	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S18-Jl23105	CP	mg/kg	16	16	2.0	30%	Pass	
Copper	S18-Jl23105	CP	mg/kg	18	18	1.0	30%	Pass	
Lead	S18-Jl23105	CP	mg/kg	35	36	2.0	30%	Pass	
Mercury	S18-Jl23105	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S18-Jl23105	CP	mg/kg	10	10	2.0	30%	Pass	
Zinc	S18-Jl23105	CP	mg/kg	26	26	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	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 l mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Environmental Consulting Services Grp
118A Australia Street
Camperdown
NSW 2050

Attention:	REPORTS - Simon Caples
Report	608568-AID
Project Name	JORDAN SPRINGS
Received Date	Jul 19, 2018
Date Reported	Jul 26, 2018

Methodology:

Asbestos Fibre Identification

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.
NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.
NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter 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) is employed.
NOTE: 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 for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004.
NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w).The examination of large sample sizes(500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction.The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA(friable asbestos) and AF(asbestos fines) then applies where they are able to be quantified by gravimetric procedures.This quantitative screening is not generally applicable to FF(free fibres) and results of Trace Analysis are referred.
NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).
This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name JORDAN SPRINGS
Project ID
Date Sampled Jul 18, 2018
Report 608568-AID

Client Sample ID	Eurofins l mgt Sample No.	Date Sampled	Sample Description	Result
TP2 S1	18-Jl23095	Jul 18, 2018	Approximate Sample 97g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
TP3 S1	18-Jl23097	Jul 18, 2018	Approximate Sample 78g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
TP4 S1	18-Jl23099	Jul 18, 2018	Approximate Sample 99g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

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	Jul 20, 2018	Indefinite

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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

Perth
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Company Name: Diversified Grp P/L-T/a Enviro Consult Serv Grp
Address: 118A Australia Street
Camperdown
NSW 2050

Project Name: JORDAN SPRINGS

Order No.:
Report #: 608568
Phone: 1800 099 880
Fax:

Received: Jul 19, 2018 1:51 PM
Due: Jul 26, 2018
Priority: 5 Day
Contact Name: REPORTS - Simon Caples

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - AS4964	Moisture Set	Eurofins | mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X
Sydney Laboratory - NATA Site # 18217						X		
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	TP1 S1	Jul 18, 2018		Soil	S18-Jl23094		X	X
2	TP2 S1	Jul 18, 2018		Soil	S18-Jl23095	X	X	X
3	TP2 S2	Jul 18, 2018		Soil	S18-Jl23096		X	X
4	TP3 S1	Jul 18, 2018		Soil	S18-Jl23097	X	X	X
5	TP3 S2	Jul 18, 2018		Soil	S18-Jl23098		X	X
6	TP4 S1	Jul 18, 2018		Soil	S18-Jl23099	X	X	X
7	TP4 S2	Jul 18, 2018		Soil	S18-Jl23100		X	X
8	TP5 S1	Jul 18, 2018		Soil	S18-Jl23101		X	X
9	TP6 S1	Jul 18, 2018		Soil	S18-Jl23102		X	X
10	TP7 S1	Jul 18, 2018		Soil	S18-Jl23103		X	X

ABN – 50 005 085 521
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Site # 23736

Company Name: Diversified Grp P/L-T/a Enviro Consult Serv Grp
Address: 118A Australia Street
Camperdown
NSW 2050

Project Name: JORDAN SPRINGS

Order No.:
Report #: 608568
Phone: 1800 099 880
Fax:

Received: Jul 19, 2018 1:51 PM
Due: Jul 26, 2018
Priority: 5 Day
Contact Name: REPORTS - Simon Caples

Eurofins | mgt Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - AS4964	Moisture Set	Eurofins | mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X
Sydney Laboratory - NATA Site # 18217						X		
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
11	TP8 S1	Jul 18, 2018		Soil	S18-Jl23104		X	X
12	TP9 S1	Jul 18, 2018		Soil	S18-Jl23105		X	X
13	TP10 S1	Jul 18, 2018		Soil	S18-Jl23106		X	X
14	TP11 S1	Jul 18, 2018		Soil	S18-Jl23107		X	X
15	TP12 S1	Jul 18, 2018		Soil	S18-Jl23108		X	X
16	D	Jul 18, 2018		Soil	S18-Jl23109		X	X
Test Counts						3	16	16

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. 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.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
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).
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 substatntial 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).

Comments

The samples received were not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-samples to be analysed accurately represented the samples received.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	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
N/A	Not applicable

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

eurofins | mgt

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NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**Diversified Grp P/L-T/a Enviro Consult Serv Grp**
Contact name:	REPORTS - Simon Caples
Project name:	JORDAN SPRINGS
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Jul 19, 2018 1:51 PM
Eurofins | mgt reference:	**608568**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ 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.

☑ Appropriate sample containers have been used.

☒ Split sample sent to requested external lab.

☒ 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:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to REPORTS - Simon Caples - simon@ecsgroup.com.au.

diversified group pty ltd

Chain of Custody

Project	JORDAN SPRINGS																						
Diversified Group Pty Ltd						Manager: Simon Caples								Ph: 0415 225 474				Email: simon@ecsgroup.com.au					
Event Number:			Matrix			Analysis																	
Lab Number	Sample Number	Sample Date	Soil	Water	Other	BTEX	TPH	PAH	Phenol	Ammonia	Cyanide	Metals	TCLP Metals	Asbestos	SUITE D								
	TP1 S1	18/7	x												x								
	TP2 S1													x	x								
	TP2 S2														x								
	TP3 S1													x	x								
	TP3 S2														x								
	TP4 S1													x	x								
	TP4 S2														x								
	TP5 S1														x								
	TP6 S1														x								
	TP7 S1														x								
	TP8 S1														x								
	TP9 S1														x								
	TP10 S1														x								
	TP11 S1														x								
	TP12 S1														x								
	D														x								
Metals: As Cd Cr Cu Ni Pb Zn Hg						Comments:																	

Relinquished By:	SIMON	Signed:		Date:	19/8	Received By:	RTIMBA	Signed:		Date:	19/7/18

#608568