

Karimbla Constructions Services Pty Ltd

Detailed Site Investigation

2 Macpherson Street, Warriewood, NSW

16 August 2017



Pour trust
into your
foundations
and you
can build
anything

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Detailed Site Investigation

Prepared for
Karimbla Constructions Services Pty Ltd

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Abbreviations

AHD	Australian Height Datum
ASS	Acid Sulphate Soil
bgs	below ground surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
COPC	Chemical of potential concern
DP	Deposited Plan
DQO	Data Quality Objective
Eurofins	Eurofins Environment Testing Australia Pty Ltd, trading as Eurofins MGT
HIL	Health Investigation Level
HSL	Health Screening Level
LOR	Limit of Reporting
mg/kg	milligrams per kilogram
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NSW EPA	New South Wales Environment Protection Authority
NSW OEH	New South Wales Office of Environment and Heritage
PAH	Polycyclic Aromatic Hydrocarbon
PID	Photoionisation Detector
ppm	parts per million
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percent Difference
SMP	Spoil Management Plan
SOP	Standard Operating Procedures
TCLP	Toxicity Characteristics Leaching Procedure
TRH	Total Recoverable Hydrocarbons
VENM	Virgin Excavated Natural Material
VOC	Volatile Organic Compound

Executive Summary

Karimbla Constructions Services Pty Ltd (Karimbla) intends to redevelop the property located at 2 Macpherson Street, Warriewood NSW (referred to as the 'site') for low density residential use, which involves the construction of 22 townhouses. The site location is shown on Figure 1. Coffey Services Australia Pty Ltd (Coffey) has been engaged by Karimbla to carry out a Detailed Site Investigation (DSI) for the planned redevelopment of the site, to support a rezoning and Development Application (DA). Coffey notes that the site is currently zoned as R3 – medium density residential, however as the site is in a flood-prone area, restrictions on development are imposed, including housing construction.

Based on information provided by Karimbla, Coffey understands that the proposed development will include demolition of existing structures and importation of filling material to raise the site by approximately 2m above existing ground level. Twenty two townhouses will occupy the majority of the site, a riparian set back is proposed along the western, eastern and northern boundaries, with an access road built around the perimeter of the site, joining Macpherson Street to the south.

The objective of the DSI is to assess if the site is suitable (or can be made suitable) for the proposed low density residential development with access to soil.

Based a review of available data, observations made during fieldwork and an assessment of laboratory analytical data, Coffey makes the following conclusions:

- Asbestos Fines, in the form of fibre cement fragments and loose fibre bundles, were detected in in three shallow samples of fill collected from soil test pits TP04 and TP13 at a depth of 0.05-0.15 and TP21 at a depth of 0.1-0.2m.
- Concentrations of carcinogenic PAH (as benzo(a)pyrene TEQ) was reported above the Health Screening Level (HIL) A of 3mg/kg in fill samples HA02_0.05-0.15 which is less than 2.5x the HIL criteria. The source of the PAHs is attributed to ash in fill (as noted on the borehole log). Additional TCLP analysis was undertaken, which identified the PAHs to have very low mobility. Delineation of this impact was achieved, with the concentration of the deeper sample (HA02_0.4-0.5) being below the HIL criteria.
- Exceedances of the Ecological Investigation Levels / Ecological Screening Levels (EIL/ESL) criteria for concentrations of nickel, zinc, TRH C16-C34 and benzo(a)pyrene were noted in six soil samples from five sampling locations (HA02, TP11, TP14, TP23 and TP26). However, the risk associated with these impacts is considered to be negligible due to the immobile nature of the contamination which is associated with the crystalline matrix of terracotta.
- Groundwater is unlikely to be impacted based on chemical concentrations and immobility of chemicals detected in soil samples analysed and depth of identified impacts.
- Available soil data indicates that the fill material on the site would classify as General Solid Waste in accordance with the Waste Classification Guidelines (EPA; 2014), with asbestos impacted fill to be managed as Special (asbestos) waste. Coffey recommends excavating asbestos impacted fill and stockpiling this material separately on hardstand to remove identified asbestos impacted fill.

In summary, based on the findings of the investigation and in consideration of the key conclusions outlined above, Coffey concludes that the site can be made suitable for the proposed residential development where residents would have access to gardens and soil. Given that no widespread contamination was identified across the site and no local hotspot of chemical contamination was identified, Coffey considers that a remediation action plan (RAP) is not warranted. We recommend that the isolated occurrences of asbestos impacts be addressed through implementation of a contamination management plan (CMP), which would require an asbestos removal plan in accordance with WHS Regulation. We also recommend that the CMP include an unexpected contamination finds procedure as a precautionary measure.

As a minimum, the CMP should develop procedures to manage the following aspects during construction:

- Fill materials impacted with asbestos
- Unexpected finds of contamination
- Management of aesthetics associated with fill material if the current fill on site will be visible.
- Waste classification and material tracking
- Classification for reuse of soils on-site (if applicable)
- Classification of imported soils

It is recommended that the CMP is prepared by an appropriately experienced environmental consultant.

A construction Environmental Management Plan would be prepared and implemented by the Principal Contractor to address site management procedures, including dust suppression during excavation, erosion and sediment control, and water management during construction.

We draw your attention to the attached sheets titled "Important Information about your Coffey Environmental Report" which should be read in conjunction with this report.

1. Introduction

1.1. General

Karimbla Constructions Services Pty Ltd (Karimbla) intends to redevelop the property located at 2 Macpherson Street, Warriewood NSW (referred to as the 'site') for residential use with access to soil, which would take the form of 22 townhouses. The site location is shown on Figure 1. Coffey Services Australia Pty Ltd (Coffey) has been engaged by Karimbla to carry out a Detailed Site Investigation (DSI) for the proposed redevelopment of the site, to support an application for rezoning and also a Development Application (DA). Coffey notes that the site is currently zoned as R3 – medium density residential, however as the site is in a flood-prone area, restrictions on development are imposed, including housing construction.

Based on information provided by Karimbla, Coffey understands that the proposed development will include demolition of existing structures and importation of filling material to raise the site by approximately 2m above existing ground level. Twenty-two townhouses would occupy the majority of the site, a riparian set back is included along the western, eastern and northern boundaries, with an access road built around the perimeter of the site, joining Macpherson Street to the south. A copy of the proposed development plan provided by Karimbla is included in Appendix A. We note that Macpherson Street was also being raised by approximately 2m above the existing road level at the time of undertaking the site works. Based on information provided by Karimbla, Northern Beaches Council have planning approval to undertake these works from the Department of Planning and Infrastructure. These works were being carried out by Ward Civil but are separate from the works documented in this report.

This report presents the findings of a detailed site investigation of possible contamination on the site associated with previous uses of the site.

This investigation was undertaken in general accordance with Coffey's proposal dated 3 May 2017 (ref. SYDEN205656P). A Preliminary Site Investigation (PSI) was reported by Coffey (reference: GEOTLCVO25237AB-AC Rev1, dated 29 October, 2016 - the PSI report).

1.2. Objective

The objective of the DSI is to assess if the site is suitable (or can be made suitable) for the proposed residential development with access to soil, being proposed as twenty-two townhouses.

1.3. Scope of works

This soil investigation assessed the potential source of contamination and Contaminants of Concern (COPCs) identified in the PSI report.

The investigation included planning and field-works, comprising:

- OH&S planning including devising a Site-specific Safety Plan (SSP), Safe Work Method Statements (SWMS) and obtaining Dial-Before-You-Dig (DBYD) plans;
- Location of underground services by a qualified and experienced service locator prior to intrusive works commencing;
- Field assessment program, including:
 - Soil sampling from 28 test pits (TP01 to TP28);
 - Soil sampling from five hand augured locations (HA01 to HA05);

- Laboratory analysis of soil samples for COPCs including Total Recoverable Hydrocarbons (TRH), benzene, toluene, ethylbenzene and xylene (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), Herbicides, Organochlorine Pesticides (OCP), Polychlorinated Biphenyls (PCB) and asbestos;
- Data assessment and interpretation; and
- Preparation of a report about soil contamination on the site (this document) in general accordance with *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW OEH, 2011) and *State Environmental Planning Policy 55 – Remediation of Land* (SEPP55) 1998 for rezoning and redevelopment.

The work carried out, including detailed methodologies applied in the investigation are described in Section 4.

2. Site Information

2.1. Site identification

The site location and site plan is shown in Figures 1 and 2 respectively. Site identification details are provided in Table 2.1.

Table 2.1: Site Identification

Site Address:	2 Macpherson Street, Warriewood NSW
Current Site Ownership	Karimbla Properties No.32
Site Area	Approximately 2.2 Ha
Site Identification Details	Lot 25 of Deposited Plan (DP) 5464
Current Zoning	Zone R3: Medium Density Residential under Pittwater Council Local (now Northern Beaches Council) Environmental Plan 2014 with restrictions on development due to the site being within a flood-prone area.
Current Site Use / Property Description	The site was formerly a plant nursery (Foley's Nursery), and was used for the cultivation, storage and display of plants for sale. Infrastructure associated with the former nursery (i.e. sales building, equipment shed, greenhouses and plant storage and display areas) is still present on-site.
Proposed Site Use	Residential with garden and accessible soils in the form of townhouses.

At the time of investigation, it was evident that the nursery site had not been operational for some time. Buildings and infrastructure associated with the former nursery were present across the site and were found to be in poor condition.

Selected photographs of the current site conditions and typical soil profile are presented in Appendix B.

2.2. Geology and soils

The Sydney 1:100,000 Geological Series Sheet 9130 indicates the locality is underlain by alluvial sediments of Quaternary age. The alluvial soils are typically described as silty to peaty quartz sand, silt and clay, with ferruginous and humic cementation in places and common shell layers. Hawkesbury Sandstone, of Triassic age, underlies the alluvium.

The Sydney Soil Landscape Sheet 9130 indicates that the Warriewood soil landscape is present on the site. This landscape is characterised by deep, well-sorted sandy podzols and dark mottled siliceous sands.

2.3. Acid sulfate soils

The 1:25,000 Acid Sulfate Soil Risk Map, Hornsby and Mona Vale Sheet (edition two, 1997) indicates that the locality is underlain by an Aeolian sand plain (Wa2). The Acid Sulfate Soil Risk Map shows a high probability of acid sulfate soil occurrence between 1m to 3m below ground.

2.4. Regional topography and drainage

The site is adjacent to Narrabeen Creek, which flows around the northern and eastern site boundaries. Narrabeen Creek meanders to the south, joining Mullet Creek and South Creek which discharge into the Pacific Ocean.

The topography of the site appears to be mounded, with the higher central portion of site reported to be at 3.71m AHD, with surrounding elevations between 1.87m AHD (north), 1.6m AHD (east) and 1.0m AHD (south). This topography is consistent with the flow direction of Narrabeen Creek.

As the site is predominantly unsealed, it is expected that surface water runoff would percolate into sub-surface soils, except during intense rainfall when surplus water would drain into the stormwater system and/or adjacent Narrabeen Creek.

2.5. Regional hydrogeology

A search of groundwater bore licences was undertaken on 19 June 2017 using the NSW Department of Primary Industries, Office of Water website (<http://allwaterdata.water.nsw.gov.au/water.stm>). The results of the search indicated that there are two registered bores (GW106697 and GW106698) within a 500m radius of the site. These bores are located approximately 450m to the North West of the site at 14 Macpherson Street, Warriewood and are used for monitoring purposes.

Groundwater is expected to be present at shallow depths within the underlying Quaternary deposits, discharging into Narrabeen Creek located along the northern and eastern site boundaries. Groundwater flow direction is expected to vary with flow direction ranging from north to east.

3. Site history review

The Phase 1 Site Contamination Assessment (Coffey PSI report, 2016) presents a summary of the historical uses of the site based on a review of selected aerial photographs, historical land ownership, NSW EPA public registers and Council planning records/certificates.

Information collected on site history indicates that:

- The site appears to have been undeveloped land from at least the 1930s until between 1961 and 1978 when the site was developed for use as a market garden or orchard. The site remained relatively unchanged with the exception of reworking of soils for planting and construction of glass houses within the southern half of the site in 1982. Aerial photographs indicate that these glasshouses were removed between 1982 and 1994. Some smaller buildings were constructed in the southern portion of the site.
- A search of the NSW WorkCover's Stored Chemical Information Database (SCID) identified no licences to store Dangerous good on site. However anecdotal evidence from a former employee of the Nursery (Neil), indicated that an above ground storage tank (AST) was previously located on a concrete loading dock in the southern portion of the site. It is understood that this AST was used to store diesel for refuelling a tractor used at the nursery. It is noted that storage of diesel fuel previously did not require a permit from NSW WorkCover.

The following areas of environmental concern (AEC) and contaminants of potential concern (COPC) were identified:

- Fill of unknown origin and quality distributed across the site;
- Possible use of pesticides / herbicides associated with market garden and nursery operation;
- Potential storage and use of fuels and oils associated with the operation of machinery onsite (e.g. tractors and lawn mowers).
- Potential for weathering of hazardous building materials such as lead paint and fibre cement containing asbestos from former site structures and uncontrolled demolition of former site structures which may have included hazardous building materials.

Based on these findings, Coffey considered that the site could be made suitable for its proposed use in accordance with decision making under planning processes described in SEPP55 (DUAP, 1998); however, it was recommended that a detailed site investigation be completed to assess the significance of the potential contamination to the proposed residential use with access to soil on the site.

4. Data Quality Objectives

As stated in Section 18 (Appendix B) of Schedule B2 'Guideline on Site Characterisation' of the *National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM) 2013*, Data Quality Objectives (DQOs) are used to "define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site".

Data Quality Objectives (DQOs) were developed for this project as summarised in Table 4.1.

Table 4.1: Data Quality Objectives

1. State the problem	Is the site suitable (or can be made suitable) for the proposed residential development. The main problems are: • How many soil test pit locations should be sampled and where? • Are there access restrictions present that may affect the location of test pits and the method(s) used for sampling? • To what depths should the test pits be excavated? • At what depth(s) should soil samples be collected? • What are the contaminants of potential concern for soil?
2. Identify the decision	Is the site suitable for development residential use with access to soil?
3. Identify inputs to the decision	The primary inputs to assessing the above include: • Information gathered from a Preliminary Contamination Assessment (Coffey, 2016) conducted for the site, including a review of site history, environmental setting and information gathered from a site walkover. • Field observations, PID screening results, soil laboratory results • Relevant legislation and regulatory guidelines.
4. Define the boundaries of the study	The investigation area is defined by the boundaries of the site, as shown in Figure 2. The vertical boundary for the study is the potential depth of impacted soil. The temporal boundary is defined as the current status of the site at the time of the investigation.
5. Develop a decision rule	The decision rule for soil and groundwater for each chemical/layer to assess the suitability of the site will be as follows: • QA/QC assessment indicates that the data is usable; • Where contaminant concentrations for each sample are below the adopted investigation / screening levels, then no further assessment is required with respect to that chemical/media/area; and • Where contaminant concentrations are reported to exceed one or more adopted investigation / screening levels, then additional investigation or site specific risk assessment may be required. Remediation of the site would be recommended where the risk has been shown to be unacceptable.
6. Acceptable limits on decision error	There are two main sources of false results which may cause decision errors: • Sampling errors, which occur when the samples collected are not representative of the conditions within the investigation area; and

	• Measurement errors, which occur during sample collection, handling, preparation, analysis and data reduction. False results may lead the decision maker to make the following errors: • Type I: deciding that the soil and/or groundwater is not contaminated and, therefore, the site is suitable for the proposed mixed commercial and residential development when the reverse is true; and • Type II: deciding that the soil and/or groundwater is contaminated and, therefore, the site is not suitable for the proposed mixed commercial and residential development when the reverse is true. An assessment will be made as to the likelihood of a Type I decision error being made based on the results of a QA/QC assessment and the closeness of the data to assessment criteria. Additionally, statistical methods may be used, where applicable, such as 95% Upper Confidence Limit (UCL) calculations. The investigation levels for assessment are nominated in Section 6. A Type II error would result in additional investigation which almost certainly would allow correction of that error.
7. Optimise the design for obtaining data	Based on the previous Steps 1 to 6 of the DQO process, the optimal design for obtaining the required data is presented in the following sections (i.e. proposed field and laboratory programs).

5. Sampling and Analysis Plan

Investigation of potential contamination in soil included the following:

- Excavation of twenty eight test pits using mechanical excavator which was undertaken by environmental contractor ANC Foster and supervised by Coffey on 16 May 2017. Test pits were excavated to a target depth of 1m bgs. Test pits TP02 – TP06, TP10 – TP12 and TP19 were terminated in fill material at depths ranging from 0.6m to 1.0m bgs in order to minimise disturbance to underlying potential acid sulfate soils as groundwater was expected at shallow depths (i.e. <1m bgs). Groundwater inflow was noted in test pits TP02, TP03 and TP05 at depths ranging from 0.5m to 0.7m bgs. Coffey notes that although thickness of fill material was not delineated across the site, the investigation was targeting top-down contamination, which is likely to be in surface fill. In addition, the site is being raised by approximately 2m, which decreases the risk associated with any deeper contamination.
- Drilling of five boreholes using hand auger which was undertaken by Coffey on 16th and 17th May, 2017. Refusal was encountered in boreholes due to underlying concrete slabs and/or hard fill material.

The investigation locations are shown on Figure 2. Assessment of groundwater contamination was not proposed, but was subject to the findings of the soil investigation and potential for identified soil contamination to impact groundwater.

5.1. Soil Sampling Methodology

The investigation works followed the methodology outlined in Table 5.1.

Table 5.1: Soil Sampling Procedure

Activity	Detail / Comments
Below Ground Service Clearance	Dial-Before-You-Dig (DBYD) service plans for the site and immediately surrounding area were reviewed prior to commencement of intrusive investigation works. Investigation locations were also scanned by an underground service clearance sub-contractor using an electromagnetic detector.
Concrete Coring	An experienced concrete corer was engaged to core through the concrete slab prior to hand augering.
Soil Sampling	Soil samples from 5 hand auger bores (HA01 to HA05) were collected directly from the hand auger. Soil samples from twenty eight test pit locations (TP01 to TP28) were collected directly from the walls of the excavation and/or centre of the excavator bucket. Samples were collected from the near surface (beneath the concrete where present) and then at approximately 0.5m intervals to the base of each borehole / test pit.
Soil Logging	Soil samples were logged by a suitably qualified and experienced Coffey scientist in accordance with Coffey's relevant Standard Operating Practice (SOP), which is consistent with Section 7.3, Field Description of Soils, in Schedule B2 of the ASC NEPM. Presence or absence of anthropogenic material and contamination (i.e. odours or staining) is recorded on the logs which are presented in Appendix C.

Soil Screening	Soil samples were screened in the field for the presence of ionisable volatile organic compounds (VOCs) using a Photoionisation Detector (PID) fitted with a 10.6eV lamp. The PID was bump tested and fresh air calibrated at the start of each day. Calibration certificates are presented in Appendix D. Headspace screening results are recorded on test pit logs presented in Appendix C.
Sample Handling and Transportation	Sample collection, storage and transport were in general accordance with Coffey's SOP. Soil samples were placed into laboratory prepared and supplied glass jars, fitted with Teflon lined seals to limit possible volatile loss. Sample jars were filled to minimise headspace. Separate samples for asbestos analysis were collected and placed in double zip lock bags. The samples were placed into ice chilled coolers and dispatched to NATA accredited laboratories for analysis under chain of custody (CoC) control. CoC's are included with the laboratory certificates in Appendix E.
QA/QC Samples	To measure the accuracy and precision of the data generated by the field and laboratory procedures for this assessment, Coffey collected and analysed the following quality assurance / quality control (QA/QC) samples: • Two intra-laboratory duplicate soil samples; • Two inter-laboratory triplicate soil samples; • One trip blank sample was included in each batch of samples to assess whether any contamination may have been introduced to the samples during shipping and field handling procedures; and • One rinsate sample was collected to assess the effectiveness of field equipment decontamination.
Decontamination of sampling equipment	Multi-use sampling equipment comprised the hand auger which was decontaminated by scrubbing with Decon 90 solution and rinsed with deionised water between investigation locations. A rinsate sample was collected at the end of the day for quality control by pouring deionised water over the hand auger cutter following decontamination.

5.2. Analytical Schedule

Sample were analysed by Eurofins | MGT at Lane Cove West (primary laboratory), and ALS in Smithfield (secondary laboratory). Both laboratories are NATA accredited for the analytes selected.

A selection of primary soil samples were submitted for laboratory analysis for a suite of chemicals of potential concern as summarised in Table 5.3. Chemicals of concern were assigned to samples which were selected to to achieve widespread characterisation of the soils at the site and any targeting identified indicators of contaminations such as. ash or elevated PID readings identified during sampling.

Table 5.3: Summary of Analysis

Chemical of Concern	No. Primary Soil Samples
Heavy metals	36
TRH	36
BTEX	36
PAH	36
PCB	9
OCP / OPP	36
Herbicides	33
Asbestos	17

Notes: Heavy metals (arsenic, cadmium, chromium(IV), copper, lead, mercury (inorganic), nickel, zinc), TRH= total recoverable hydrocarbons, BTEX = benzene, toluene, ethylbenzene, xylenes, PAH= Polycyclic aromatic hydrocarbons, OCP/OPP= Organochlorine/organophosphorus pesticides, PCB= Polychlorinated biphenyls.

6. Assessment Criteria

Assessment criteria were selected for relevance to the proposed residential development with gardens / accessible soil (home grown produce <10% fruit and vegetable intake).

The criteria presented below are intended to apply as Tier 1 risk assessment criteria based on certain site-specific characteristics. Where concentrations of a contaminant exceed the generic assessment criteria, then further consideration of the specific exposure pathway is required which may warrant further investigation, assessment or the development of a strategy to mitigate the potential risks identified.

6.1. Health and Ecological Investigation Levels (Soil)

Health and ecological investigation and screening levels for soil presented in Schedule B1 of the ASC NEPM are generally used in NSW when selecting investigation levels for chemical contaminants in soil.

Health and ecological investigation and screening levels are applicable to the first stage (Tier 1) of site assessment and are used to assist in the iterative development of a Conceptual Site Model (CSM). They are adopted as concentrations of a contaminant above which either further appropriate investigation and/or evaluation will be required, or development of an appropriate management strategy (including remediation).

Health Investigation Levels (HILs) are applicable for assessing human health risk via relevant exposure pathways. HILs were developed for a broad range of metals and organic substances. These are generic to all soil types and apply generally to a depth of 3m below the soil surface for residential sites.

Ecological Investigation Levels (EILs) are associated with selected metals and organic compounds and have been developed for assessing risk to terrestrial ecosystems under residential, open space and commercial/industrial land use scenarios. They apply to the top 2m of accessible soil, which corresponds to the root zone and habitation zone of many species. Karimbla propose to raise the level of the site by approximately 2m using imported fill material with appropriate soil-like consistency.

Coffey considers that the top 1m of soil currently on the site may be mixed with imported fill during earthworks for practical management of the construction process. As a conservative approach, we have assessed chemical characteristics of the current top 1m of soil as being layered at any depth in the top 3m of the proposed future site without allowing for any mixing with possible imported fill material.

Health screening levels (HSLs) have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via inhalation after vapour intrusion into indoor air and direct contact with soil and groundwater. These HSLs depend on general soil type (sand, silt and clay mixture), building configurations and land use scenarios.

Similarly, ecological screening levels (ESLs) have been developed for selected petroleum compounds and fractions and are applicable for assessing risk to terrestrial ecosystems. The ESLs broadly apply to coarse and fine-grained soils under various land use scenarios and are applicable to the top 2m of accessible soil.

6.1.1. Health-based Criteria

The intended future use of the site is considered consistent with the "Residential A" exposure scenario described in Schedule B7 of the ASC NEPM which allows for garden / accessible soils and includes dwellings with home grown produce <10% fruit and vegetable intake, (no poultry).

Chemicals with sufficient volatility to pose potential health risks via vapour inhalation pathway; namely TRH F1 and F2 fractions, BTEX and naphthalene concentrations were compared to the soil Health Screening Levels (HSLs) for vapour intrusion applicable to high density residential uses (i.e. HSL A & HSL B) listed in Table 1A(3) in Schedule B1 of the ASC NEPM.

The adopted screening levels apply to a sandy soil.

The HILs for heavy metals, PAH, pesticides and PCBs in soils are selected from relevant values in Table 1A(1) in Schedule B1 of the ASC NEPM. Adopted values for health-based criteria are summarised in Table 6.1.

Table 6.1: Summary of HILs in Soil

Analyte	HILs for Residential A (mg/kg)
Arsenic (total)	100
Cadmium	20
Chromium (VI) ¹	100
Copper	6,000
Lead	300
Mercury (inorganic)	40
Nickel	400
Zinc	7,400
Carcinogenic PAHs as Benzo(a)pyrene TEQ ²	3
Total PAHs	300
Aldrin + Dieldrin	6
Chlordane	50
DDT+DDD+DDE	240
Endosulfan	270
Endrin	10

Chlorpyrifos	160
Heptachlor	6
HCB	10
Methoxychlor	300
Non-dioxin like PCB	1

¹ Laboratory Total Chromium results (or Total Chromium minus Chromium III) will be assessed against the HIL for Chromium VI as an initial screening assessment.

² TEQ = Toxicity Equivalent Quotient

The HSLs for TRH, BTEX and naphthalene in soils are summarised in Table 6.2.

Based on the dominant soil texture, HSLs for sandy soils have been adopted.

Table 6.2 - Summary of Health Screening Levels in Soil

Chemical	HSL A & B – Residential (for sandy soils) ¹ (mg/kg)			HSL-A Direct Contact ² (mg/kg)	Intrusive Maintenance Worker ^{2/3} (mg/kg)
	0m to <1m	1m to <2m	2m to <4m		
Benzene	0.5	0.5	0.5	100	120,000 / NL
Toluene	160	220	310	14,000	85,000 / NL
Ethylbenzene	55	NL	NL	4,500	130,000 / NL
Xylenes	40	60	95	12,000	29,000 / NL
Naphthalene	3	NL	NL	1,400	1100 / 77
F1 (TPH C ₆ -C ₁₀ – BTEX)	45	70	110	4,400	82,000 / NL
F2 (TPH >C ₁₀ -C ₁₆ – Naphthalene)	110	240	440	3,300	62,000 / NL

Notes:

NL: non-limiting (i.e. contaminant is not considered to pose a risk to human health through vapour inhalation regardless of concentration).

Soil type is assumed to be clayey soils based on previous investigation.

1. Table 1A(3) – Soil Health Screening Levels for Vapour Intrusion (NEPC, 2013)

2. Table B4 - Soil Health Screening levels for Direct Contact for future resident (CRC CARE, 2011)

3. Table B3 – Soil Health Screening Levels for Vapour Intrusion (Intrusive Maintenance Worker) (CRC CARE, 2011)

6.1.2. Ecological Investigation and Screening Levels

To assess the impact on ecosystems including site vegetation from contamination within the upper 2m of the subsurface, the ASC NEPM presents Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for different land uses (e.g. areas of ecological significance, urban residential/public open space, commercial).

The EILs derived for heavy metals in soils are summarised in Table 6.3.

Table 6.3 - Summary of Ecological Investigation Levels in Soil

Chemical	Urban Residential / Public Open Space (mg/kg)		
	Contaminant Limit	Ambient Concentration ⁽⁴⁾	EIL ⁽⁵⁾
Arsenic	100	5	110
Chromium	190 ⁽¹⁾	13	200

Copper	95 ⁽²⁾	28	120
Lead	1,100	163	1,270
Nickel	30 ⁽²⁾	5	40
Zinc	230 ⁽³⁾	122	350
Naphthalene	170	-	170

¹ Based on a (conservative) clay content 1%.

² Based on a cation exchange capacity of 5cmol_c/kg typical of a granular soil with minor clay.

³ Based on a cation exchange capacity of 5cmol_c/kg typical of a granular soil with minor clay and a pH of 6.5.

⁴ Derived from Olszowy.H et al (1995) using 25thile concentrations for an old suburb with high traffic in NSW.

⁵ EIL = Contaminant Limit + Ambient Background Concentration, rounded.

The ESLs for TRH, BTEX and benzo(a)pyrene in soils from Schedule B1 in the ASC NEPM are summarised in Table 6.4. Based on the dominant soil texture, ESLs for coarse grained (sand) soils have been adopted.

Table 6.4 - Summary of ESLs in Soil

Chemical	ESL – Urban Residential and public open space (for coarse grained soils) (mg/kg)
F1 C ₆ -C ₁₀	180
F2 C ₁₀ -C ₁₆	120
F3 >C ₁₆ -C ₃₄	300
F4 >C ₃₄ -C ₄₀	2800
Benzene	50
Toluene	85
Ethylbenzene	70
Xylenes	105
Benzo(a)pyrene	0.7

6.2. Asbestos

Qualitative testing (present / absent) was undertaken on soil samples to assess for potential asbestos impact because no evidence of asbestos impact was observed during investigation.

For the purpose of this assessment, a criterion of “no asbestos fines or asbestos containing materials detected in soils” has been adopted. For clarity, asbestos fines includes free asbestos fibres in soil.

6.3. Management Limits

In accordance with Section 2.9 of Schedule B1 of the ASC NEPM, consideration of Management Limits for petroleum hydrocarbons has been included to assess the potential for accumulation of explosive vapours, the potential risk to buried infrastructure, or the formation of phase separated hydrocarbons (PSH).

A summary of the adopted management limits for this site is provided in Table 6.5.

Table 6.5: Summary of Site Management Limits

Chemical	Soil Type	Residential, parkland and public open space (mg/kg)
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F1: TRH C ₆ -C ₁₀	Coarse	700
F2: TRH C ₁₀ -C ₁₆	Coarse	1,000
F3: TRH C ₁₆ -C ₃₄	Coarse	2,500
F4: TRH C ₃₄ -C ₄₀	Coarse	10,000

7. Quality Assurance / Quality Control

The following QA/QC assessment addresses data completeness, comparability, representativeness, precision and accuracy based on field and laboratory considerations and the processes for assessment of data quality provided in Section 19 (Appendix C) of Schedule B2 Guideline on Site Characterisation of the ASC NEPM.

7.1. Data Quality Indicators

The data quality indicators are based on the analysis of field and laboratory quality control sample results, and in accordance with AS 4482.1-2005. Specific data quality indicators for field and laboratory QA/QC samples are listed in Table 7.1.

Table 7.1: QA/QC Indicators

Type of Quality Control Sample	Control Limit
Duplicate Samples	Relative Percentage Difference (RPD) within 50% for samples except when: - the reported concentration is <10 times LOR for which no limit applies; or - one sample reports a detectable concentration and the alternate sample reported a concentration below the LOR.
Blank or Rinsate Samples	Analytes not detected

7.2. Field Quality Assurance / Quality Control

QA/QC procedures implemented for this project included:

- Sampling performed by qualified Coffey environmental professionals in accordance with Coffey's Standard Operating Procedures (SOPs) which are based on industry accepted protocols for environmental sampling and are consistent with Schedule B2 of the ASC NEPM;
- The PID was bump tested using a mixture of isobutylene and air (100ppm) and fresh air in accordance with manufacturer's instructions, to ensure the equipment was holding calibration, copies of the bump test are provided in Appendix D;
- The following intra-laboratory (blind duplicate) and inter-laboratory (split duplicate) samples were collected and submitted for laboratory analysis as listed in Table 7.2. RPD results are provided in Table 3. It should be noted that samples QD-03 and QT-03 were not submitted for analysis as the

minimum sampling density was achieved and the level of contamination appeared low across the site based on observations and headspace screening results.

Table 7.2: Duplicate Samples

Primary Sample	Sample Medium	Blind Duplicate	Split Duplicate
TP03_0.4-0.5	Soil	QD-01	QT-01
TP18_0.4-0.5	Soil	QD-02	QT-02
TP27_0.5-0.6	Soil	QD-03	QT-03

- 36 primary soil samples were collected for analysis in accordance with the proposed sampling plan and thus the sampling plan (number and locations of samples) was completed during fieldwork.

7.2.1. Soil

Soil samples were submitted for analysis for COPCs listed in Table 5.3.

Two duplicate and two triplicate QC samples were analysed. In summary, these duplicate samples scheduled for analysis equate to 7% of the total soils scheduled for analysis, which meets the target of 5% for each and 10% in total. The RPD results are summarised in Table 3 at the end of this report.

Primary and QC sample results and calculated RPD values are listed in Table 2 at the end of this report. RPDs were below the control limits listed in Table 7.1 except for:

- Multiple PAHs for samples TP03_0.4-0.5 and QD-01.
- Chromium and Benzo[b]fluoranthene for samples TP03_0.4-0.5 and QT-01.

These RPD exceedances are characteristic of localised heterogeneity of fill material within the sample. Coffey notes that the sample was collected from an ash layer, containing asphalt, some fine to medium grained clayey sand (brown to grey) and some fine to medium sub-angular gravels. The discrepancy in concentrations, particularly PAHs is likely to be associated with differing abundances of ash and/or asphalt fragments which were analysed in each sample.

7.3. Laboratory QA/QC

In accordance with NATA endorsed quality plans, the project laboratories performed internal QA/QC assessment which includes laboratory duplicates, method blanks, matrix spikes and surrogate spikes.

Laboratory QC analytical results are summarised below:

- Analysis of samples was undertaken by NATA accredited environmental laboratories.
- All samples were extracted and analysed within acceptable holding times.
- No target analytes were detected in any of the method blanks.
- RPDs for the laboratory duplicate samples were within the acceptable range.
- Percentage recovery results for laboratory control samples were within the acceptable range.
- Percentage recovery results for surrogate samples were within the acceptable range.
- Percentage recovery results for matrix spikes were within the acceptable range.

7.4. Data quality assessment

Based on an assessment of the field and laboratory QA/QC information, Coffey considers that the data obtained is representative of subsurface conditions at the sampling locations. Overall, it is assessed that the results are acceptable for the purposes of this investigation.

8. Results

8.1. Site Specific Geology

The site is paved predominantly by gravel and/or crushed terracotta and areas surrounding the site structures within the southern portion of the site were paved with concrete or brick pavers. Exposed soils were present in vegetated areas surrounding the site.

The general stratigraphy encountered during the intrusive investigations typically comprised variable thicknesses of homogenous fill material with anthropogenic inclusions including ash and asphalt layers and terracotta, underlain by alluvial deposits (silty clays and sands).

The general subsurface conditions, based on observations during investigation are summarised in Tables 8.1.

Table 8.1: Site Specific Geology

Material / Origin	Depth to Top of Unit (mbgs)	Thickness of Unit (m)	Material Description
Fill	0.0 to 0.1	0.0 to 1.0+	Concrete slab was present at the surface at all hand auger locations except HA04. Concrete varied in thickness from 50mm to 100mm. Fill material was encountered in all test pits and boreholes. A layer of crushed terracotta of varying thickness was observed across the site. Fill material typically comprised layers of gravelly sand, silty sand and sandy clay. Anthropogenic inclusions observed within the fill included crushed terracotta, ash, bitumen, glass, tile, ballast gravels and metal fragments.
Alluvial	0.2 to 1.0+	undefined	Alluvial deposits were encountered in test pits TP08, TP09 (Silty Clay, high plasticity) and TP13 – TP28 (fine to medium grained sand with trace low plasticity clay). A sulfur odour was noted in TP01, indicating potential for acid sulfate soils to be present. It is noted that there is high probability for acid sulfate soils to be present at the site.

			No other odour or staining was observed within the Alluvial deposits.
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Refusal due to buried impenetrable material and/or possible deep concrete slabs was encountered in all hand augers HA01 – HA05. The target depth for test pits was 1m bgs which resulted in test pits TP02 – TP06, TP10 – TP12 and TP19 being terminated in fill material. This target depth was set in order to minimise disturbance to underlying potential acid sulfate soils as groundwater was expected at shallow depths (i.e. <1m bgs). Furthermore, the investigation was targeting top-down contamination, which is likely to be in surface fill and the site is being raised by approximately 2m, which decreases the risk associated with any deeper contamination,

8.2. Field Screening

Soil samples were screened for presence of volatile hydrocarbons using a PID. The PID readings were between 0.2 ppm (HA03) and 9.7 ppm (TP24), indicating that volatile hydrocarbons were unlikely to be present at reportable concentrations in the samples screened.

Individual PID readings are reported on the logs for hand auger holes and test pits presented in Appendix C.

8.3. Soil Results

Soil analytical results compared to the site criteria are provided in Table 1. Soil analytical results for preliminary waste classification are provided in Table 2. Copies of the laboratory reports are provided in Appendix E. Sampling locations and soil exceedances are shown on Figure 3.

8.3.1. Health-based Investigation and Screening Levels

Soil samples reported chemical concentrations less than the adopted health-based investigation and screening levels, with the exception of:

- Carcinogenic PAH (measured as Benzo(a)pyrene TEQ) reported a concentration of 5.5mg/kg in HA02 (0.05-0.15m), exceeding the HIL A criterion of 3mg/kg. TCLP analysis identified that Benzo(a)pyrene (B(a)P) has a leachable concentration of <0.001mg/L and is therefore considered to have very low bio-availability. Surrounding sampling locations reported no detectable B(a)P except for TP11 to the west which reported concentrations below the HIL A criterion.

All soil samples analysed reported pesticide chemical concentrations below laboratory limit of reporting (LOR), with the exception of 4,4-DDE, Chlordane, DDD, and Dieldrin, however concentrations were only slightly above the LOR and all well below the HIL A criteria.

Detections of TRH were reported in samples HA02_0.05-0.15, TP03_0.4-0.5, TP03_0.7-0.8, TP04_0.05-0.15, TP05_0.5-0.6 and TP15_0.05-0.15, however concentrations were all below HSL-A criteria.

8.3.2. Ecological Investigation and Screening Levels

Soil samples reported chemical concentrations less than the adopted ecological investigation and screening levels with the exception of:

- Nickel which exceeded the EIL in samples TP14_0.05-0.15 and TP23_0.1-0.3, with concentrations of 41mg/kg recorded in both samples which were described as crushed terracotta.
- Zinc which exceeded the EIL in sample TP26_0.2-0.3, with a concentration of 370mg/kg and was described as crushed terracotta.

- TRH C16-C34 which exceeded the ESL in sample HA02_0.05-0.15 with a concentration of 1000mg/kg and was described as gravelly sand with some ash amongst other inclusions.
- Benzo(a)pyrene which exceeded the ESL in samples HA02_0.05-0.15 and TP11_0.05-0.15 with concentrations of 3.5mg/kg and 1.1mg/kg respectively and were described as gravelly sand.

8.3.3. Management Limits

Soil samples reported chemical concentrations well below the adopted management limits.

8.3.4. Asbestos

Asbestos was detected in shallow fill in the following samples:

- Chrysotile asbestos detected in sample TP04_0.05-0.15 in the form of loose fibre bundles;
- Chrysotile asbestos detected in sample TP13_0.05-0.15 in the form of fibre cement fragments;
and
- Chrysotile and crocidolite asbestos detected in sample TP21_0.1-0.2 in the form of loose fibre bundles.

Asbestos was not detected in any of the other samples analysed.

9. Conceptual Site Model

9.1. Sources of Contamination

Investigations identified fill material as a source of contamination, containing the following:

- Concentrations of benzo(a)pyrene TEQ above the adopted HIL.
- Concentrations of benzo(a)pyrene above the adopted EIL.
- Concentrations of heavy metals, namely nickel and zinc, above the adopted EIL, it is likely that these concentrations are associated with the crushed terracotta encountered across the site.
- Fill which is locally impacted with asbestos.

9.2. Exposure Pathways

The key environmental pathways and exposure routes by which contaminants identified at the site may reach ecological and human receptors are assessed to include:

- Ingestion of soils
- Dermal contact with soil
- Inhalation of dusts and fibres
- Infiltration and leaching from unsaturated soils to shallow groundwater
- Vertical and lateral contaminant migration through the saturated zone
- Contaminant migration along preferential flow pathways (e.g. existing service corridors, building foundations etc.)
- Surface runoff / overland flow

9.3. Receptors

9.3.1. Human Receptors

The redevelopment of the site will introduce the following receptors:

- Construction workers involved in excavation
- Users of adjoining land (potentially during construction)
- Future site residents, maintenance workers (excavation activity) and visitors

9.3.2. Ecological Receptors

The primary ecological receptor currently identified in relation to the site is aquatic species within Narrabeen Creek, which is located immediately north, east and west of the site. Groundwater beneath the site is potentially hydraulically connected to the creek. Given that relatively low concentration of copper and other heavy metals detected within soil samples collected on-site, with no likely source on-site, the potential for groundwater impacts sourced from the site is considered to be low. Thus,

groundwater beneath the site is considered by Coffey to be unaffected by observed contamination in soil.

Coffey notes that gardens associated with the future residential land use are a considered a future ecological receptor.

9.4. Plausible Exposure Pathways

Table 9.1 present a summary of the plausible exposure pathways relevant to the human and ecological receptors identified above.

Table 9.1: Conceptual Site Model

Source	Contaminant & Known Location	Potential Transport Mechanisms	Exposure Pathway	Receptors
Fill deposits impacted by asbestos containing materials	- TP04_0.05-0.15 - TP13_0.05-0.15 - TP21_0.1-0.2	- Disturbance via construction/future subsurface works - Dispersion via wind	Inhalation	Construction workers during development Users of adjoining land during bulk earthworks Future site residents, workers (excavation activity) and visitors
Fill deposits containing carcinogenic PAHs - Benzo(a)Pyrene TEQ	Carcinogenic PAHs exceeded the HIL in the following sample: HA02_0.05-0.15	- Disturbance via construction/future subsurface works - Dispersion via wind - Surface water runoff	Dermal contact Inhalation of dust Ingestion	Construction workers during development Users of adjoining land during bulk earthworks Future site residents, workers (excavation activity) and visitors
Fill deposits containing heavy metals, Benzo(a)pyrene and TRH	Exceedances above the EILs in samples: - TP14_0.05-0.15 - HA02_0.05-0.15 - TP11_0.05-0.15 - TP26_0.2-0.3 - TP23_0.1-0.3	Potential ecological impacts to the receiving environment.	Plant uptake	Future vegetation and surrounding ecological environment

10. Discussion

10.1. Potential health risks to future construction workers and residents

Coffey's investigation of soil did not identify widespread contamination across the site. Localised contamination within fill material was found at four of the 33 sample locations, which has the potential to pose health risks to workers involved in excavation for construction or future maintenance and persons in the immediate vicinity of the site during construction.

No visible forms of ACM were observed within the subsurface during drilling or excavation through fill materials; however laboratory analysis identified Chrysotile and/or Crocidolite asbestos in three shallow samples of fill collected from soil test pits TP04 and TP13 at a depth of 0.05-0.15 and TP21 at a depth of 0.1-0.2m. The asbestos in these soil samples was reported as Asbestos Fines, being cement fibre fragments or loose fibre bundles (reported as non-respirable fibres).

Although there is a low risk to human health for the current site condition, there is a potential risk of exposure through dust inhalation during site redevelopment, if these impacts in fill are exposed. Removal of identified fill impacted with asbestos prior to development of the site will reduce potential exposure risk. Given that the site is proposed to be raised by approximately 2m using imported clean fill, this will further reduce the potential for future site users to be exposed to fill material. Coffey notes that loose asbestos fibre bundles in fill were not respirable. Appropriate management of spoil during site redevelopment, particularly dust suppression in areas of identified asbestos impact, will reduce potential exposure to fill impacted with asbestos.

The detection of carcinogenic PAHs (reported as benzo(a)pyrene TEQ) exceeding the HIL A of 3mg/kg in fill sample HA02_0.05-0.15 may be attributed to ash in fill (as noted on the borehole log). Additional TCLP analysis was undertaken on sample HA02_0.05-0.15, which identified the PAHs to have very low leachability. Furthermore, the detection is not considered a hotspot as the concentration is less than 2.5x the HIL criteria. Coffey notes that a deeper soil sample HA02_0.4-0.5 analysed, reported a concentration of benzo(a)pyrene TEQ below the adopted assessment criteria, which indicates that the impacts are likely confined to the upper 400mm of fill with a consistency of gravelly sand.

No other soil samples reported concentrations of analytes exceeding the HIL A criteria.

10.2. Potential ecological risks

Six samples from five sampling locations (HA02, TP11, TP14, TP23 and TP26) of fill analysed during this investigation exceeded the adopted EIL and/or ESL criteria, presenting a potential risk to the ecological environment. Coffey notes the following:

- The source of elevated nickel and zinc is likely to be derived from crushed terracotta, with the metals confined within a crystalline matrix, limiting the mobilisation potential and therefore decreasing the risk to the ecological environment.
- The source of the elevated B(a)P recorded in samples HA02_0.05-0.15 and TP11_0.05-0.15 may be attributed to ash inclusions within the fill and were proven to have very low mobility (i.e. leachable concentrations of <0.001 mg/L).
- Crushed terracotta may be considered an issue in terms of aesthetics, however considering the site is being built up with 2m of imported fill, potential aesthetic issues can be mitigated.

Based on the above, Coffey considers the risk to the ecological environment is negligible.

10.3. Potential for groundwater contamination

Based on the analytical results of the soil samples collected during this investigation, Coffey considers that there is a low to negligible likelihood for groundwater contamination to be present as a result of historical site use. One shallow soil sample HA02_0.0.5-0.15 reported an elevated TRH C16-C34 concentration. However, analysis of a deeper sample at this location (HA02_0.4-0.5) indicated that impacts didn't extend further than 0.4m below ground surface.

10.4. Preliminary waste classification

Based on a comparison of the soil analytical results to the NSW EPA (2014) 'Waste Classification Guidelines - Part 1: Classifying Waste', Coffey expects that the majority of the fill would classify as General Solid Waste, with the exception of asbestos impacted fill, to be managed as Special (asbestos) waste.

The laboratory results for TCLP analysis for samples exceeding the CT1 criteria (namely for lead, nickel and benzo(a)pyrene concentrations) were either below laboratory LOR or well below the TCLP1 waste threshold, indicating low leachability, as shown in Table 2.

11. Conclusions & Recommendations

Based a review of available data, observations made during fieldwork and an assessment of laboratory analytical data, Coffey concludes that:

- Asbestos Fines, in the form of fibre cement fragments (not visible unaided) and loose fibre bundles, were detected in in three shallow samples of fill collected from soil test pits TP04 and TP13 at a depth of 0.05-0.15 and TP21 at a depth of 0.1-0.2m.
- Concentrations of carcinogenic PAH (as benzo(a)pyrene TEQ) was reported above the HIL A of 3mg/kg in fill samples HA02_0.05-0.15 which is less than 2.5x the HIL criteria. The source of the PAHs is attributed to ash in fill (as noted on the borehole log). Additional TCLP analysis was undertaken which identified the PAHs to have very low mobility. Delineation of this impact was achieved, with the concentration of the deeper sample (HA02_0.4-0.5) being below the HIL criteria
- Exceedances of the EIL/ESL criteria for concentrations of nickel, zinc, TRH C16-C34 and benzo(a)pyrene were noted in six soil samples from five sampling locations (HA02, TP11, TP14, TP23 and TP26). However, the risk associated with these impacts is considered to be negligible due to the immobile nature of the contamination which is associated with the crystalline matrix of terracotta
- Groundwater is unlikely to be impacted based on chemical concentrations and immobility of chemicals detected in soil samples analysed and depth of identified impacts.
- Available soil data indicates that the fill material on the site would classify as General Solid Waste in accordance with the Waste Classification Guidelines (EPA; 2014), with asbestos impacted fill to be managed as Special (asbestos) waste. Coffey recommends excavating asbestos impacted fill and stockpiling this material separately on hardstand to remove identified asbestos impacted fill prior to commencement of bulk earthworks.

In summary, based on the findings of the investigation and in consideration of the key conclusions outlined above, Coffey concludes that the site can be made suitable for the proposed residential development where residents would have access to gardens and soil. Given that no widespread contamination was identified across the site and no local hotspot of chemical contamination was identified, Coffey considers that a remediation action plan (RAP) is not warranted. We recommend that the isolated occurrences of asbestos impacts be addressed through implementation of a contamination management plan (CMP), which would require an asbestos removal plan in accordance with WHS Regulation. We also recommend that the CMP include an unexpected contamination finds procedure as a precautionary measure.

As a minimum, the CMP should develop procedures to manage the following aspects during construction:

- Fill materials impacted with asbestos
- Unexpected finds of contamination
- Management of aesthetics associated with fill material if the current fill on site will be visible.
- Waste classification and material tracking
- Classification for reuse of soils on-site (if applicable)
- Classification of imported soils

It is recommended that the CMP is prepared by an appropriately experienced environmental consultant.

A Construction Environmental Management Plan would be prepared and implemented by the Principal Contractor to address site management procedures, including dust suppression during excavation, erosion and sediment control, and water management during construction.

This report should be read in conjunction with the attached "Important information about your Coffey Environmental Report".

Important information about your **Coffey** Environmental Report

Introduction

This report has been prepared by Coffey for you, as Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice,

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Coffey should be kept apprised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statutes and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but

steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Coffey prepared the report and has familiarity with the site, Coffey is well placed to provide such

assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

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Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.

12. References

AS 4482.2, Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances, 1999 (AS 4482.2)

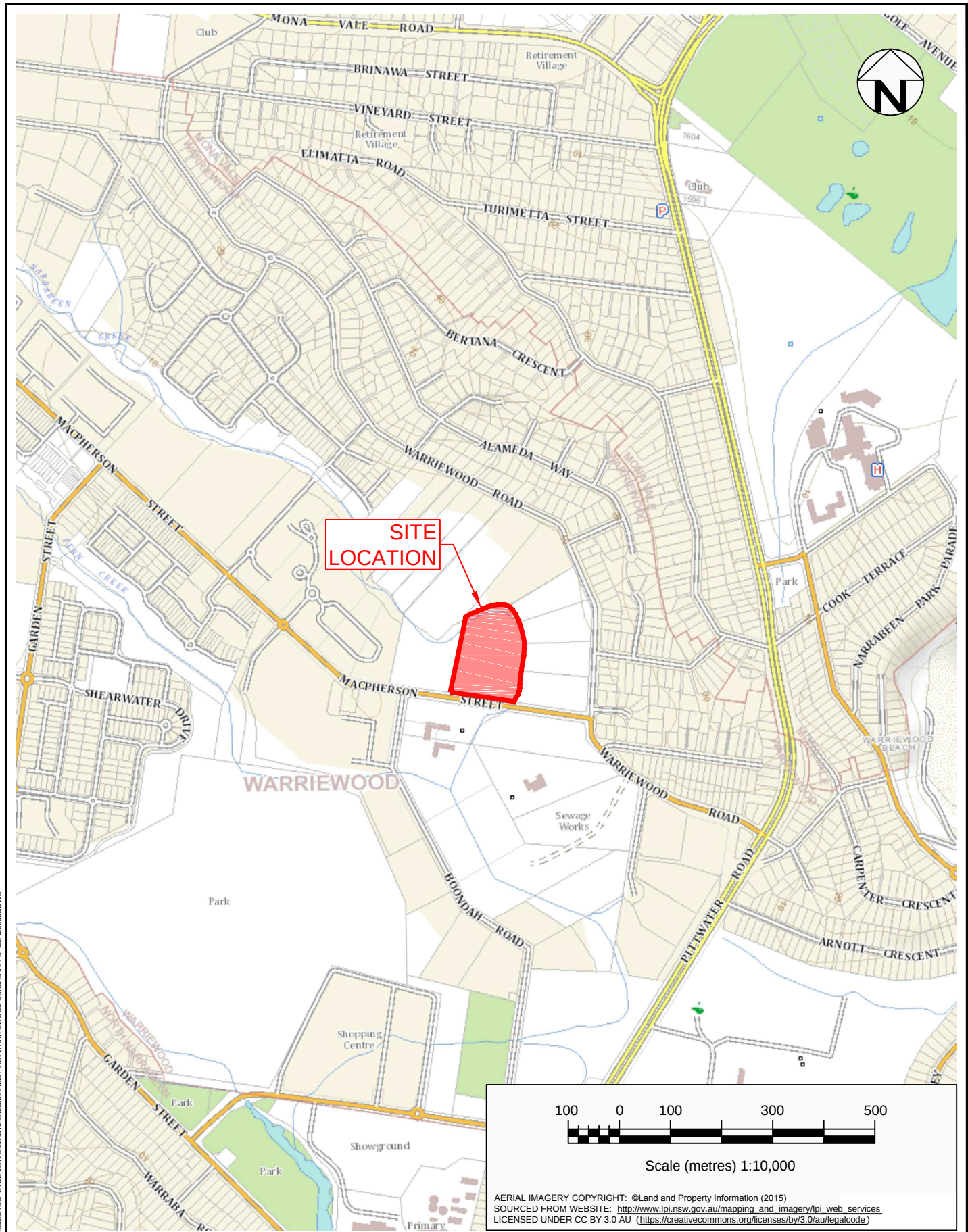
Coffey (2016) Preliminary Site Contamination Assessment – 2 Macpherson Street, Warriewood, NSW (Ref: GEOTLCOV25237AB-AC, dated 29 September 2016 (Rev.1)).

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Figures

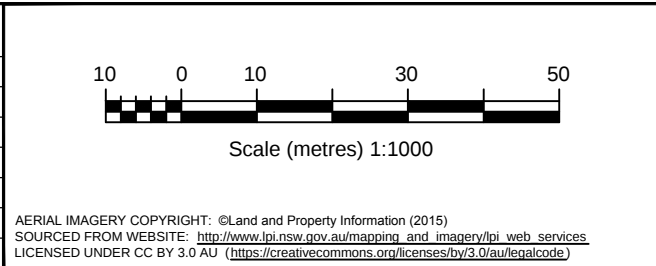


drawn	JS / FA	 A TETRA TECH COMPANY	client:	MERITON GROUP		
approved	PA		project:	DETAILED SITE INVESTIGATION 2 MACPHERSON STREET, WARRIEWOOD NSW		
date	30 / 05 / 17		title:	SITE LOCATION		
scale	AS SHOWN		project no:	754-SYDEN205656	figure no:	FIGURE 1
original size	A4				rev:	A

PLOT DATE: 28/06/2017 10:25:04 AM DWG FILE: \\TSS\779FS1.TT\LOCAL\DATA\ PROJECTS\SYDEN\205656\ MERITON WARREWOOD DS\CAD\754-SYDEN\205656.DWG



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date	30 / 05 / 17
scale	AS SHOWN
original size	A3



client: MERITON GROUP	
project: DETAILED SITE INVESTIGATION 2 MACPHERSON STREET, WARREWOOD NSW	
title: SITE LAYOUT AND SAMPLING LOCATION	
project no: 754-SYDEN205656	figure no: FIGURE 2
rev: A	

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Scale (metres) 1:1000

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approved	PA
date	30 / 05 / 17
scale	AS SHOWN
original size	A3

coffey

A TETRA TECH COMPANY

client: MERITON GROUP	
project: DETAILED SITE INVESTIGATION 2 MACPHERSON STREET, WARREWOOD NSW	
title: SAMPLING EXCEEDANCES	
project no: 754-SYDEN205656	figure no: FIGURE 3
rev: A	

Tables

TABLE 1
Soil Analytical Results
2 Macpherson Street, Warriewood

						Asbestos	BTEX							Herbicides							Inorganics	Metals													
							Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 less BTEX (F1)	2,4,5-Trichlorophenoxy acetic acid	2,4,5-TP (Silvex)	2,4-Dichlorophenoxy acetic acid	2,4-Dichlorprop	4-(2,4-Dichlorophenoxy) butyric acid (2,4-DB)	Actril (loxynil)	Dicamba		2-Methyl-4-chlorophenoxy acetic acid	2-Methyl-4-Chlorophenoxy butanoic acid	Mecoprop	Moisture Content (dried @ 103°C)	Arsenic	Cadmium	Chromium				Copper	Lead	Mercury	Nickel
EQL							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
							0.1	0.1	0.1	0.2	0.1	0.3	20	0.5	0.5	0.5	0.5	0.5	0.5	1	2	0.4	5	5	5	0.1	5	5	40	350	0.05	0.05	0.05		
NEPM 2013 EIL																					110		200	120	1270		40	350							
NEPM 2013 ESLs Urban residential and public open space, Coarse Soil							50	70	85			105																							
NEPM 2013 HSLs Residential A Soil 0m to <1m							0.5	55	160			40	45																						
NEPM 2013 HILs Residential A Soil						Detect								600		900					100	20		6000	300	40	400	7400							
CRC Care, 2011 - HSL-A Driect Contact							100	4500	14,000			12,000	29,000																						
CRC Care, 2011 - Intrusive Maintenance Worker							120,000	130,000	85,000				82,000																						
NEPM, 2013 Management Limits													700																						

Field_ID	LocCode	Sample_Depth (m)	Sampled_Date	Matrix_Description																																
HA01_0.15-0.3	HA01	0.15-0.3	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	12	2.7	<0.4	11	53	110	<0.1	5.3	53	<0.05	<0.05	<0.05	
HA02_0.05-0.15	HA02	0.05-0.15	17/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9.6	<2	<0.4	15	19	22	<0.1	17	22	<0.05	<0.05	<0.05	
HA02_0.4-0.5	HA02	0.4-0.5	17/05/2017	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	
HA03_0.1-0.2	HA03	0.1-0.2	17/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	3.4	<0.4	39	5.6	59	<0.1	<5	11	<0.05	<0.05	<0.05	
HA04_0.0-0.2	HA04	0-0.2	17/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	2.1	<0.4	16	7.6	39	<0.1	<5	66	<0.05	<0.05	<0.05	
HA05_0.1-0.3	HA05	0.1-0.3	17/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	2.4	<0.4	14	10	16	<0.1	9.7	46	<0.05	<0.05	<0.05	
TP01_0.1-0.2	TP01	0.1-0.2	16/05/2017	Fill	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	21	<2	<0.4	38	27	23	<0.1	37	100	<0.05	<0.05	<0.05	
TP02_0.4-0.5	TP02	0.4-0.5	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	21	3.6	<0.4	12	9.8	96	<0.1	<5	68	<0.05	<0.05	<0.05	
TP03_0.05-0.15	TP03	0.05-0.15	16/05/2017	Fill	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11	-	-	-	-	-	-	-	-	-	-		
TP03_0.4-0.5	TP03	0.4-0.5	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	-	-	-	-	-	-	-	-	-	-	-	10	4.3	<0.4	49	23	110	<0.1	32	100	<0.05	<0.05	<0.05	
TP03_0.7-0.8	TP03	0.7-0.8	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	-	-	-	-	-	-	-	-	-	-	-	19	2.2	<0.4	9.2	11	60	<0.1	6.3	25	<0.05	<0.05	<0.05	
TP04_0.05-0.15	TP04	0.05-0.15	16/05/2017	Fill	Asbestos detected	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	12	<2	<0.4	5.1	5.1	11	<0.1	<5	54	<0.05	<0.05	<0.05	
TP05_0.05-0.15	TP05	0.05-0.15	16/05/2017	Fill	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
TP05_0.5-0.6	TP05	0.5-0.6	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	3.2	<0.4	9.8	11	41	<0.1	5.2	73	<0.05	<0.05	<0.05	
TP05_0.9-1.0	TP05	0.9-1	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	-	-	-	-	-	-	-	-	-	-	-	22	2.5	<0.4	14	<5	13	<0.1	<5	43	<0.05	<0.05	<0.05	
TP06_0.05-0.15	TP06	0.05-0.15	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9.2	<2	<0.4	23	15	14	<0.1	23	35	<0.05	<0.05	<0.05	
TP07_0.05-0.15	TP07	0.05-0.15	16/05/2017	Fill	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	12	3.5	<0.4	14	6.3	13	<0.1	6.9	14	<0.05	<0.05	<0.05	
TP08_0.05-0.15	TP08	0.05-0.15	16/05/2017	Fill	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	12	<2	<0.4	<5	<5	38	<0.1	<5	58	<0.05	<0.05	<0.05	
TP09_0.6-0.8	TP09	0.6-0.8	16/05/2017	Natural	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	25	7.3	<0.4	22	<5	25	<0.1	<5	<5	<0.05	<0.05	<0.05	
TP10_0.05-0.15	TP10	0.05-0.15	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	14	4.1	<0.4	12	<5	19	<0.1	<5	10	<0.05	<0.05	<0.05	
TP11_0.05-0.15	TP11	0.05-0.15	16/05/2017	Fill	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9.1	4.1	<0.4	29	7.7	8.8	<0.1	10	14	<0.05	<0.05	<0.05	
TP12_0.05-0.15	TP12	0.05-0.15	16/05/2017	Fill	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP12_0.6-0.8	TP12	0.6-0.8	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	22	2.6	<0.4	55	5.6	150	<0.1	7.7	34	<0.05	<0.05	<0.05	
TP13_0.05-0.15	TP13	0.05-0.15	16/05/2017	Fill	Asbestos detected	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.6	2.7	<0.4	14	23	15	<0.1	20	76	0.09	<0.05	<0.05	
TP14_0.05-0.15	TP14	0.05-0.15	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.6	<2	<0.4	40	53	19	<0.1	41	57	<0.05	<0.05	<0.05	
TP15_0.05-0.15	TP15	0.05-0.15	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11	<2	<0.4	<5	<5	<5	<0.1	<5	<5	<0.05	<0.05	<0.05	
TP16_0.1-0.3	TP16	0.1-0.3	16/05/2017	Fill	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	33	2.3	<0.4	30	19	18	<0.1	35	90	<0.05	<0.05	<0.05	
TP17_0.05-0.15	TP17	0.05-0.15	16/05/2017	Fill	MD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP17_0.5-0.6	TP17	0.5-0.6	16/05/2017	Natural	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	16	2.2	<0.4	7.6	<5	6.3	<0.1	<5	20	<0.05	<0.05	<0.05	
TP18_0.2-0.3	TP18	0.2-0.3	16/05/2017	Fill	ND	-	-	-																												

[illegible]

[Filter]

					OPP																				PAH																	
					Fensulfotion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prothiofos	Pyrazophos	Ronnel	Stirophos	Terbufos	Trichloronate	Tetrachlorvinphos	Tokuthion	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound) *	Benzo(a)pyrene TEQ (medium bound) *	Benzo(a)pyrene TEQ (upper bound) *	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Benzo[b+j]fluoranthene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene				
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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					0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	2	0.2	0.2	0.5	0.2	0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
NEPM 2013 EIL																																										
NEPM 2013 ESLs Urban residential and public open space, Coarse Soil																												0.7														
NEPM 2013 HSLs Residential A Soil 0m to <1m																																										
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CRC Care, 2011 - HSL-A Driect Contact																																										
CRC Care, 2011 - Intrusive Maintenance Worker																																										
NEPM, 2013 Management Limits																																										
Field_ID	LocCode	Sample_Depth (m)	Sampled_Date	Matrix_Description																																						
HA01_0.15-0.3	HA01	0.15-0.3	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<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	<0.5		
HA02_0.05-0.15	HA02	0.05-0.15	17/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	0.6	3	3.5	5.5	5.5	5.5	2.2	2.9	3.1	2.7	0.9	5.5	<0.5			
HA02_0.4-0.5	HA02	0.4-0.5	17/05/2017	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	0.5	0.5	0.9	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5			
HA03_0.1-0.2	HA03	0.1-0.2	17/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<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	<0.5		
HA04_0.0-0.2	HA04	0-0.2	17/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<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	<0.5		
HA05_0.1-0.3	HA05	0.1-0.3	17/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<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	<0.5		
TP01_0.1-0.2	TP01	0.1-0.2	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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		
TP02_0.4-0.5	TP02	0.4-0.5	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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		
TP03_0.05-0.15	TP03	0.05-0.15	16/05/2017	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
TP03_0.4-0.5	TP03	0.4-0.5	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	0.8	1.1	1.4	0.8	<0.5	<0.5	0.8	<0.5	0.6	<0.5				
TP03_0.7-0.8	TP03	0.7-0.8	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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	0.6	<0.5			
TP04_0.05-0.15	TP04	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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	0.7	<0.5			
TP05_0.05-0.15	TP05	0.05-0.15	16/05/2017	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
TP05_0.5-0.6	TP05	0.5-0.6	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP05_0.9-1.0	TP05	0.9-1	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP06_0.05-0.15	TP06	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP07_0.05-0.15	TP07	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP08_0.05-0.15	TP08	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP09_0.6-0.8	TP09	0.6-0.8	16/05/2017	Natural	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP10_0.05-0.15	TP10	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP11_0.05-0.15	TP11	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<0.5	<0.5	<0.5	0.8	1.1	1.7	2	1.2	0.7	1	1.1	<0.5	1.6	<0.5				
TP12_0.05-0.15	TP12	0.05-0.15	16/05/2017	Fill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
TP12_0.6-0.8	TP12	0.6-0.8	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP13_0.05-0.15	TP13	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP14_0.05-0.15	TP14	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	-	-	<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			
TP15_0.05-0.15	TP15	0.05-0.15	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.5	<0.2	<0.2	<0.2	<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			
TP16_0.1-0.3	TP16	0.1-0.3	16/05/2017	Fill	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<													

TABLE 1
Soil Analytical Results
2 Macpherson Street, Warriewood

						Pesticides			Phenol		Polychlorinated Biphenyls								SVOCs		TPH										
	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	Demeton (total)	Pirimiphos-methyl	Profenofos	4,6-Dinitro-2-methylphenol	Dinoseb	Aroclor 1221	Aroclor 1016	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)	EPN	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10-C16	C16-C34	C34-C40	C6 - C10		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	1	0.2	0.2	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	50	20	20	50	50	50	50	100	100	20		
NEPM 2013 EIL		170																													
NEPM 2013 ESLs Urban residential and public open space, Coarse Soil																				120							300	2800	180		
NEPM 2013 HSLs Residential A Soil 0m to <1m																				110											
NEPM 2013 HILs Residential A Soil					300													1													
CRC Care, 2011 - HSL-A Driect Contact		1400																		3300											
CRC Care, 2011 - Intrusive Maintenance Worker		1100																		62,000											
NEPM, 2013 Management Limits																				1000								2500	10,000		

Field_ID	LocCode	Sample_Depth (m)	Sampled_Date	Matrix_Description		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<50	<100	<100	<20
HA01_0.15-0.3	HA01	0.15-0.3	16/05/2017	Fill		1.9	<0.5	1	5.5	32.8	-	<0.2	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<310	760	1070	<50	1000	530	<20	
HA02_0.05-0.15	HA02	0.05-0.15	17/05/2017	Fill		<0.5	<0.5	<0.5	0.8	2.1	-	<0.2	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	310	760	1070	<50	<100	530	<20	
HA02_0.4-0.5	HA02	0.4-0.5	17/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
HA03_0.1-0.2	HA03	0.1-0.2	17/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
HA04_0.0-0.2	HA04	0-0.2	17/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
HA05_0.1-0.3	HA05	0.1-0.3	17/05/2017	Fill		<0.5	<0.5	<0.5	0.6	1.2	-	<0.2	-	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	<50	54	54	<50	<100	<100	<20	
TP01_0.1-0.2	TP01	0.1-0.2	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP02_0.4-0.5	TP02	0.4-0.5	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP03_0.05-0.15	TP03	0.05-0.15	16/05/2017	Fill		-	-	-	-	-	-	-	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP03_0.4-0.5	TP03	0.4-0.5	16/05/2017	Fill		<0.5	<0.5	<0.5	0.7	3.6	<1	<0.2	<0.2	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	120	190	310	<50	240	170	<20	
TP03_0.7-0.8	TP03	0.7-0.8	16/05/2017	Fill		<0.5	<0.5	<0.5	0.7	1.3	<1	<0.2	<0.2	-	-	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	61	61	<50	<100	<100	<20	
TP04_0.05-0.15	TP04	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	0.6	1.3	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	87	130	217	<50	170	<100	<20
TP05_0.05-0.15	TP05	0.05-0.15	16/05/2017	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP05_0.5-0.6	TP05	0.5-0.6	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	100	110	210	<50	170	<100	<20	
TP05_0.9-1.0	TP05	0.9-1	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	-	-	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	66	66	<50	<100	<100	<20	
TP06_0.05-0.15	TP06	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP07_0.05-0.15	TP07	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP08_0.05-0.15	TP08	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP09_0.6-0.8	TP09	0.6-0.8	16/05/2017	Natural		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP10_0.05-0.15	TP10	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP11_0.05-0.15	TP11	0.05-0.15	16/05/2017	Fill		0.8	<0.5	<0.5	1.7	10	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP12_0.05-0.15	TP12	0.05-0.15	16/05/2017	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP12_0.6-0.8	TP12	0.6-0.8	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP13_0.05-0.15	TP13	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP14_0.05-0.15	TP14	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP15_0.05-0.15	TP15	0.05-0.15	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2	<0.2	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	<20	<50	54	54	<50	<100	<100	<20	
TP16_0.1-0.3	TP16	0.1-0.3	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP17_0.05-0.15	TP17	0.05-0.15	16/05/2017	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP17_0.5-0.6	TP17	0.5-0.6	16/05/2017	Natural		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP18_0.2-0.3	TP18	0.2-0.3	16/05/2017	Fill		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TP18_0.4-0.5	TP18	0.4-0.5	16/05/2017	Natural		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<50	<20	<20	<50	<50	<50	<50	<100	<100	<20	
TP19_0.1-0.2	TP19	0.1-0.2	16/05/2017	Fill		<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.2	-	<0.5	<0.5	-	-	-	-	-	-	-	<0.2	<50	<20	22	<50	<50	<50	<50	<100	<100	<20	
TP20_0.05-0.2	TP20	0.05-0.2	16/05/2017	Fill		<																												

HA01	0.15-0.3	HA01	0.15-0.3	16/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	12	2.7	<0.4	11	53	110	0.26	<0.1	5.3	-	53	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
HA02	0.05-0.15	HA02	0.05-0.15	17/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	9.6	<2	<0.4	15	19	22	-	<0.1	17	-	22	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
HA03	0.1-0.2	HA03	0.1-0.2	17/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	3.4	<0.4	39	5.6	59	-	<0.1	<5	-	11	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
HA04	0.0-0.2	HA04	0-0.2	17/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	2.1	<0.4	16	7.6	39	-	<0.1	<5	-	66	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
HA05	0.1-0.3	HA05	0.1-0.3	17/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	2.4	<0.4	14	10	16	-	<0.1	9.7	-	46	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
TP01	0.1-0.2	TP01	0.1-0.2	16/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	21	<2	<0.4	38	27	23	-	<0.1	37	-	100	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
TP02	0.4-0.5	TP02	0.4-0.5	16/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	21	3.6	<0.4	12	9.8	96	-	<0.1	<5	-	68	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
TP03	0.05-0.15	TP03	0.05-0.15	16/05/2017		-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03	0.4-0.5	TP03	0.4-0.5	16/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	-	-	-	-	-	-	-	-	-	10	4.3	<0.4	49	23	110	0.37	<0.1	32	-	100	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
TP03	0.7-0.8	TP03	0.7-0.8	16/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	-	-	-	-	-	-	-	-	-	19	2.2	<0.4	9.2	11	60	-	<0.1	6.3	-	25	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
TP04	0.05-0.15	TP04	0.05-0.15	16/05/2017		<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	12	<2	<0.4	5.1	5.1	11	-	<0.1	<5	-	54	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05
TP05	0.5-0.6	TP05	0.5-0.6	16/05/2017		<0.1	<0.1	<0																															

[illegible]

TABLE 2
Preliminary Waste Classification Results
2 Macpherson Street, Warriewood

														PAH																				Demeton (total)	P		
	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Prothiofos	Pyrazophos	Ronnel	Stirophos	Terbufos	Trichloronate	Tetrachlorvinphos	Tokuthion	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	TCLP Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound) *	Benzo(a)pyrene TEQ (medium bound) *	Benzo(a)pyrene TEQ (upper bound) *	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Benzo[b+j]fluoranthene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene			Total PAHs	
EQL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	MG/KG	MG/KG	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CT1 NSW 2014 General Solid Waste (No Leaching)	2	0.2	2	0.2	0.2	0.5	0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.001	0.5	0.5	0.5	0.5	0.5	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
TCLP1 - Leachable concentration																		0.8																	200		
CT2 NSW 2014 Restricted Solid Waste (No Leaching)																			0.04																		
SCC1 NSW 2014 General Solid Waste (leached)																		3.2																	800		
SCC2 NSW 2014 General Solid Waste (leached)																		10																	200		
SCC2 NSW 2014 Restricted Solid Waste (leached)																		23																	800		

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Matrix_Description	<2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
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TABLE 2
Preliminary Waste Classification Results
2 Macpherson Street, Warriewood

	Pesticides		Phenol		Polychlorinated Biphenyls								SVOCs		TPH									
	Pirimiphos-methyl	Profenofos	4,6-Dinitro-2-methylphenol	Dinoseb	Arochlor 1221	Aroclor 1016	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)	EPN	F2-NAPHTHALENE	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)	C10-C16	C16-C34	C34-C40	C6 - C10	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.2	0.2	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	50	20	20	50	50	50	50	100	100	20	
CT1 NSW 2014 General Solid Waste (No Leaching)												50			650				10000					
TCLP1 - Leachable concentration																								
CT2 NSW 2014 Restricted Solid Waste (No Leaching)												50			2600				40000					
SCC1 NSW 2014 General Solid Waste (leached)												50			650				10000					
SCC2 NSW 2014 Restricted Solid Waste (leached)												50			2600				40000					

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Matrix_Description																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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TABLE 3
RPD Results
2 Macpherson Street, Warriewood

Field Duplicates (SOIL)
Filter: ALL

SDG		948	948	RPD	948	8742	RPD	948	8742	RPD	948	948	RPD
Field ID		TP03_0.4-0.5	QD-01		TP03_0.4-0.5	QT01		TP18_0.4-0.5	QT02		TP18_0.4-0.5	QD-02	
Sampled Date/Time		16/05/2017	16/05/2017		16/05/2017	16/05/2017		16/05/2017	16/05/2017		16/05/2017	16/05/2017	
Chem_Gr	ChemName	Units	EQL										
BTEX	Benzene	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.2	0	<0.1
	Ethylbenzene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1
	Xylene (m & p)	mg/kg	0.2 (Primary): 0.5 (Interlab)	<0.2	<0.2	0	<0.2	<0.5	0	<0.2	<0.5	0	<0.2
	Xylene (o)	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0	<0.1
	Xylene Total	mg/kg	0.3 (Primary): 0.5 (Interlab)	<0.3	<0.3	0	<0.3	<0.5	0	<0.3	<0.5	0	<0.3
	C6-C10 less BTEX (F1)	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<10.0	0	<20.0	<10.0	0	<20.0
Inorganics	Moisture Content (dried @ 103°C)	%	1	10.0	9.5	5	10.0			13.0		13.0	11.0
Metals	Arsenic	mg/kg	2 (Primary): 5 (Interlab)	4.3	2.8	42	4.3	<5.0	0	4.3	<5.0	0	3.8
	Cadmium	mg/kg	0.4 (Primary): 1 (Interlab)	<0.4	<0.4	0	<0.4	<1.0	0	<0.4	<1.0	0	<0.4
	Chromium	mg/kg	5 (Primary): 2 (Interlab)	49.0	30.0	48	49.0	36.0	31	<5.0	4.0	0	<5.0
	Copper	mg/kg	5	23.0	21.0	9	23.0	32.0	33	8.2	8.0	2	8.2
	Lead	mg/kg	5	110.0	100.0	10	110.0	140.0	24	<5.0	<5.0	0	<5.0
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1
	Nickel	mg/kg	5 (Primary): 2 (Interlab)	32.0	20.0	46	32.0	27.0	17	<5.0	<2.0	0	<5.0
	Zinc	mg/kg	5	100.0	86.0	15	100.0	121.0	19	5.8	7.0	19	5.8
PAH	Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Benzo(a)anthracene	mg/kg	0.5	<0.5	1.0	67	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Benzo(a)pyrene	mg/kg	0.5	0.7	1.3	60	0.7	1.0	35	<0.5	<0.5	0	<0.5
	Benzo(a)pyrene TEQ (lower bound) *	mg/kg	0.5	0.8	1.8	77	0.8	1.3	48	<0.5	<0.5	0	<0.5
	Benzo(a)pyrene TEQ (medium bound) *	mg/kg	0.5	1.1	2.0	58	1.1	1.6	37	0.6	0.6	0	0.6
	Benzo(a)pyrene TEQ (upper bound) *	mg/kg	0.5	1.4	2.3	49	1.4	1.8	25	1.2	1.2	0	1.2
	Benzo(g,h,i)perylene	mg/kg	0.5	0.8	1.5	61	0.8	0.8	0	<0.5	<0.5	0	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	0.9	57	<0.5	0.6	18	<0.5	<0.5	0	<0.5
	Chrysene	mg/kg	0.5	<0.5	1.1	75	<0.5	0.6	18	<0.5	<0.5	0	<0.5
	Benzo[b+j]fluoranthene	mg/kg	0.5	0.8	1.6	67	0.8	1.5	61	<0.5	<0.5	0	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Fluoranthene	mg/kg	0.5	0.6	1.8	100	0.6	1.0	50	<0.5	<0.5	0	<0.5
	Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	1.0	67	<0.5	0.6	18	<0.5	<0.5	0	<0.5
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
	Pyrene	mg/kg	0.5	0.7	1.8	88	0.7	0.9	25	<0.5	<0.5	0	<0.5
TPH	F2-NAPHTHALENE	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0
	C6 - C9	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<10.0	0	<20.0	<10.0	0	<20.0
	C10 - C14	mg/kg	20 (Primary): 50 (Interlab)	<20.0	<20.0	0	<20.0	<50.0	0	<20.0	<50.0	0	<20.0
	C15 - C28	mg/kg	50 (Primary): 100 (Interlab)	120.0	140.0	15	120.0	<100.0	18	<50.0	<100.0	0	<50.0
	C29 - C36	mg/kg	50 (Primary): 100 (Interlab)	190.0	400.0	71	190.0	160.0	17	<50.0	<100.0	0	<50.0
	C10-C16	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0	<50.0	<50.0	0	<50.0
	C16-C34	mg/kg	100	240.0	490.0	68	240.0	170.0	34	<100.0	<100.0	0	<100.0
	C34-C40	mg/kg	100	170.0	640.0	116	170.0	170.0	0	<100.0	<100.0	0	<100.0
	C6 - C10	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<10.0	0	<20.0	<10.0	0	<20.0

*RPDs have only been considered where a concentration is greater than 0 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (0-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Field Blanks (SOIL)
Filter: ALL

SDG	948
Field ID	TRIP BLANK
Sampled_Date/Time	17/05/2017
Sample Type	Trip_B

Chem_Group	ChemName	Units	EQL	
BTEX	Benzene	mg/kg	0.1	<0.1
	Ethylbenzene	mg/kg	0.1	<0.1
	Toluene	mg/kg	0.1	<0.1
	Total BTEX	mg/kg	0.2	
	Xylene (m & p)	mg/kg	0.2	<0.2
	Xylene (o)	mg/kg	0.1	<0.1
	Xylene Total	mg/kg	0.3	<0.3

Appendix A - Proposed Development Plan (Provided by Karimbla)

Appendix B - Site Photographs

Selected Site Photographs



Photograph 1:

Current site conditions at 2 Macpherson Street, Warriewood NSW showing existing site buildings and surface condition.



Photograph 2:

Former nursery beds at 2 Macpherson Street, Warriewood NSW.



Photograph 3:

Former nursery beds at 2 Macpherson Street, Warriewood NSW.



Photograph 4:

Concreted area adjacent to site buildings and gravelled road within the southern portion of the site.



Photograph 5:

Paved portion of driveway near to site entry at 2 Macpherson Street, Warriewood NSW



Photograph 6:

Concreted area within the southern portion of the site.



Photograph 7:

Former location of AST located within the southern portion of the site. No staining observed on slab surface. Slab supported on concrete blocks



Photograph 8:

Crushed terracotta in surface soils across the site.



Photograph 9:

Former chemical storage area and location of HA03



Photograph 10:

Example of subsurface conditions including crushed terracotta, fill and underlying silty clay (TP08)



Photograph 11:

Example of subsurface conditions including crushed terracotta, fill and natural alluvial sands (TP01).



Photograph 12:

Example of subsurface conditions including ashy fill and deeper fill material (TP02)

Appendix C - Borehole Logs

Engineering Log - Borehole

Client: **Meriton Group**

Principal:

Project: **DSI, 2 Macpherson Street, Warriewood, NSW**

Borehole Location: **Refer Fig 2**

Borehole No. **HA01**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Date started: **17.5.2017**

Date completed: **17.5.2017**

Logged by: **JS**

Checked by: **PA**

drill model and mounting: HA		Easting:		slope: -90°		R.L. Surface:						
hole diameter: mm		Northing		bearing:		datum: AHD						
drilling information				material substance								
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
HA								Concrete (100mm thick)	m			No ACM, staining or odours observe
								Bitumen				
				E+4.5ppm				FILL (Silty SAND): medium grained, brown, trace low plasticity clay, plastics, crushed terracotta and concrete				
								refusal on concrete				
					0.5			Borehole HA01 terminated at 0.3m				
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer				penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal			classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Engineering Log - Borehole

Client: **Meriton Group**

Principal:

Project: ***DSI, 2 Macpherson Street, Warriewood, NSW***

Borehole Location: ***Refer Fig 2***

Borehole No. **HA02**

Sheet 1 of 1

Office Job No.: **SYDEN205656**Date started: **17.5.2017**Date completed: **17.5.2017**

Logged by: **JS**

Checked by: **PA**

drill model and mounting:		HA		Easting:		slope:		-90°		R.L. Surface:																	
hole diameter:		mm		Northing		bearing:				datum:		AHD															
drilling information						material substance																					
method		penetration		water		PID		notes samples, tests, etc		RL		depth metres		graphic log		classification symbol		material		moisture condition		consistency/ density index		pocket penetro- meter		structure and additional observations	
HA		1 2 3																Concrete (50mm thick)		M				100 200 300 400		No ACM, staining or odours observed	
								E+2.3ppm										FILL (Gravelly SAND): medium to coarse grained, brown to grey, fine to medium sub-angular gravels, with some clay, ash and crushed sandstone									
																		FILL (Sandy CLAY): medium to high plasticity, brown to orange to grey, fine grained sand, with some ash and fine gravels									
								E+3.6ppm				0.5						refusal									
												1.0						Borehole HA02 terminated at 0.6m									
method		DT		diatube		penetration		1 2 3 4		no resistance ranging to refusal		water		10/1/98 water level on date shown		notes, samples, tests		U ₅₀ undisturbed sample 50mm diameter		classification symbols and soil description based on unified classification system		consistency/density index		VS very soft			
PT		push tube		SS		solid stem flight auger		HS		hollow stem flight auger		VT		V Bit, T Bit		N		N* SPT - sample recovered		moisture		VS		very soft			
AH		air hammer		CP		cable percussive		HA		hand auger		NDD		non-destructive digging		Nc		SPT with solid cone		D dry		F		firm			
RC		rock corer														V		vane shear (kPa)		M moist		St		stiff			
																P		pressuremeter		W wet		VSt		very stiff			
																Bs		bulk sample		Wp plastic limit		H		hard			
																E		environmental sample		WL liquid limit		Fb		friable			
																R		refusal				VL		very loose			
																						L		loose			
																						MD		medium dense			
																						D		dense			
																						VD		very dense			

Form GEO 5.3 Issue 3 Rev.2

Checked by: **JS**

Engineering Log - Excavation

Excavation No. **TP01**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E								FILL (Gravel): Crushed terracotta	D			No ACM
				E+1.8ppm				FILL (Clayey SAND): fine to medium grained, brown to orange, low plasticity, with some tiles				
				E+2.1ppm	0.5							
				E+1.0ppm			SC	Clayey SAND: fine grained, brown to grey to black, low plasticity, potential acid sulfate soils	M			Sulfur odour
					1.0							
					1.5			Test pit TP01 terminated at 1m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT	diatube	1	2	3	4	U ₅₀	undisturbed sample 50mm diameter		VS			
PT	push tube					U ₆₃	undisturbed sample 63mm diameter		S			
SS	soild stem flight auger					D	disturbed sample		F			
HS	hollow stem flight auger					V	vane shear (kPa)		St			
VT	V Bit, T Bit					Bs	bulk sample		VSt			
AH	air hammer					E	environmental sample		H			
CP	cable percussive					R	refusal		Fb			
HA	hand auger								VL			
NDD	non-destructive digging								L			
RC	rock corer								MD			
									D			
									VD			

Engineering Log - Excavation

Excavation No. **TP02**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- kPa 100 200 300 400	structure and additional observations
E								FILL (Gravelly SAND): fine grained, black to white, with some ash	M			No ACM or staining observed
				E+2.2pm				FILL (Sandy CLAY): low plasticity, brown to grey, fine grained				
				E+5.4ppm	0.5			FILL (Sandy SILT): grey, fine to medium grained, with some low plasticity clay and plastic, trace sandstone cobbles (reworked natural material)	W			
				E+3.6ppm	1.0							
					1.5			Test pit TP02 terminated at 1m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT	diatube	1	2	3	4	U ₅₀	undisturbed sample 50mm diameter	based on unified classification system	VS	very soft		
PT	push tube					U ₆₃	undisturbed sample 63mm diameter		S	soft		
SS	soild stem flight auger					D	disturbed sample	F	firm			
HS	hollow stem flight auger					V	vane shear (kPa)	St	stiff			
VT	V Bit, T Bit					Bs	bulk sample	VSt	very stiff			
AH	air hammer					E	environmental sample	H	hard			
CP	cable percussive					R	refusal	Fb	friable			
HA	hand auger							VL	very loose			
NDD	non-destructive digging							L	loose			
RC	rock corer							MD	medium dense			
								D	dense			
								VD	very dense			

Engineering Log - Excavation

Excavation No. **TP03**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information				material substance								
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E				E+4.4ppm				FILL (Gravelly SAND): fine grained, brown to grey, sub-angular gravel, trace low plasticity clay	M			No ACM or staining observed
				E+2.5ppm+QD01/QT01	0.5			Ash Layer: Asphalt with some fine to medium clayey sand (brown to grey) and some fine to medium sub-angular gravels				
				E+5.2ppm				FILL (Clayey SAND): fine to medium grained, brown, low plasticity, with some small to medium sub-angular gravel and crushed terracotta	W			
					1.0			Test pit TP03 terminated at 0.8m				
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer				penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		

Engineering Log - Excavation

Excavation No. **TP04**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m		R.L. Surface:			
excavation dimensions: m long m wide						Northing: m		datum: AHD					
excavation information						material substance							
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- kPa 100 200 300 400	structure and additional observations	
E								Concrete	D				
				E+6.3ppm				FILL (CLAY): high plasticity, with some fine to medium grained sand, crushed sandstone, dark brown terracotta, gravel					
					0.5			becoming stiff clay @ 0.4m	M				
				E+6.5ppm									
					1.0			Test pit TP04 terminated at 0.6m					
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Engineering Log - Excavation

Excavation No. **TP05**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E				E+3.2ppm	0.5			FILL (Gravelly SAND): fine to medium grained, brown to grey, fine to coarse crushed terracotta pot sub-angular gravel, with some low plasticity clay	M			No ACM, staining or odour observed
				E+2.6ppm				fragments of steel + plastic				
				E+2.3ppm	1.0			FILL (Clayey SAND): fine to medium grained, grey, low plasticity, with some sub-angular gravel and crushed terracotta	W			
					1.5			Test pit TP05 terminated at 1m				
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer		penetration 1 2 3 4  no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		

Engineering Log - Excavation

Excavation No. **TP06**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m		R.L. Surface:			
excavation dimensions: m long m wide						Northing: m		datum: AHD					
excavation information						material substance							
method	penetration	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations	
E	1 2 3			E+3.1ppm				FILL (Clayey SAND): fine to medium grained, brown to orange, low plasticity, with some tiles	M			No ACM, staining or odour observed	
				E+2.3ppm	0.5			FILL (Clayey SAND): fine grained, brown to grey to black, low plasticity, potential acid sulfate soils, with some asphalt, glass fragments, trace ash, sub-angular gravel, crushed terracotta pots					
					1.0			Test pit TP06 terminated at 0.8m					
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Engineering Log - Excavation

Excavation No. **TP07**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m		R.L. Surface:			
excavation dimensions: m long m wide						Northing: m		datum: AHD					
excavation information						material substance							
method	penetration	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations	
E	1 2 3			E+5.1ppm				FILL (Clayey SAND): fine to medium grained, brown to orange, low plasticity, with some tiles	M			No ACM or odour observed	
				E+4.6ppm	0.5			FILL (Clayey SAND): fine grained, brown to grey to black, low plasticity, potential acid sulfate soils, with some asphalt, glass fragments, trace ash inclusions, sub-angular gravel, crushed terracotta pots					
					1.0			Test pit TP07 terminated at 0.8m					
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Engineering Log - Excavation

Excavation No. **TP08**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:	
excavation dimensions: m long m wide		Northing: m		datum: AHD		
excavation information				material substance		
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	material substance
E						Crushed terracotta
				E+7.4ppm		FILL (SAND): fine grained, brown to grey, trace fine to medium sub-angular gravel and low plasticity clay
					0.5	CL Silty CLAY: medium to high plasticity, grey to yellow to orange
				E+4.9ppm		
					1.0	Test pit TP08 terminated at 0.6m
method		penetration		notes, samples, tests		consistency/density index
DT	diatube	1	2 3 4	U ₅₀	undisturbed sample 50mm diameter	VS
PT	push tube	2		U ₆₃	undisturbed sample 63mm diameter	S
SS	soild stem flight auger	3		D	disturbed sample	F
HS	hollow stem flight auger	4		V	vane shear (kPa)	St
VT	V Bit, T Bit			Bs	bulk sample	VSt
AH	air hammer			E	environmental sample	H
CP	cable percussive			R	refusal	Fb
HA	hand auger					VL
NDD	non-destructive digging					L
RC	rock corer					MD
						D
						VD

Engineering Log - Excavation

Excavation No. **TP09**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E				E+6.5ppm				FILL (Gravelly SAND): fine to medium grained, brown to grey, sub-angular fine to coarse gravels with some crushed terracotta, trace ash	M			No ACM or odours observed
				E+8.7ppm	0.5		CH	Silty CLAY high plasticity, grey to red				Iron Staining
					1.0			Test pit TP09 terminated at 0.8m				
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer		penetration 1 2 3 4  no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		

Engineering Log - Excavation

Excavation No. **TP10**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m		R.L. Surface:		
excavation dimensions: m long m wide						Northing: m		datum: AHD				
excavation information						material substance						
method	penetration	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E	1 2 3							FILL (Crushed terracotta)	M			No ACM, Staining or odours observed
				E+6.5ppm	0.5			FILL (Sandy CLAY): medium to high plasticity, brown to grey, fine to medium sand, with some crushed sandstone and medium to coarse sub-angular gravel, trace ash				
				E+6.8ppm								
					1.0			Test pit TP10 terminated at 0.8m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer		1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense				

Engineering Log - Excavation

Excavation No. **TP11**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:	
excavation dimensions: m long m wide		Northing: m		datum: AHD		
excavation information				material substance		
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	material soil type: plasticity or particle characteristics, colour, secondary and minor components.
E				E+8.2ppm		FILL (Gravelly SAND): fine to medium grained, brown to grey, sub-angular fine to medium gravels
					0.5	FILL (Sandy CLAY): low to medium plasticity, brown to grey, fine grained, with some crushed sandstone boulders
				E+8.1ppm		
					1.0	Test pit TP11 terminated at 0.7m
method		penetration		notes, samples, tests		consistency/density index
DT	diatube	1	2 3 4	U ₅₀	undisturbed sample 50mm diameter	VS
PT	push tube			U ₆₃	undisturbed sample 63mm diameter	S
SS	soild stem flight auger			D	disturbed sample	F
HS	hollow stem flight auger			V	vane shear (kPa)	St
VT	V Bit, T Bit			Bs	bulk sample	VSt
AH	air hammer			E	environmental sample	H
CP	cable percussive			R	refusal	Fb
HA	hand auger					VL
NDD	non-destructive digging					L
RC	rock corer					MD
						D
						VD

Engineering Log - Excavation

Excavation No. **TP12**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:	
excavation dimensions: m long m wide		Northing: m		datum: AHD		
excavation information				material substance		
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	structure and additional observations
E				E+5.5ppm	0.5	No ACM, staining or odours observed
				E+8.9ppm		
					1.0	
Test pit TP12 terminated at 0.8m						
method		penetration		notes, samples, tests		consistency/density index
DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer		1 2 3 4  no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow		U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
				classification symbols and soil description based on unified classification system		moisture D dry M moist W wet Wp plastic limit WL liquid limit

Engineering Log - Excavation

Excavation No. **TP13**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:			
excavation dimensions: m long m wide		Northing: m		datum: AHD				
excavation information				material substance				
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	material substance		
E				E+5.4ppm		FILL (Gravelly SAND): fine to medium grained, brown to grey, sub-angular medium to coarse crushed terracotta gravels		
				E+3.7ppm	0.5	SAND: fine to medium grained, brown to grey, with some sub-angular fine to medium gravel, trace low plasticity clay		
					1.0			
					1.5	Test pit TP13 terminated at 1m		
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer				penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense

Engineering Log - Excavation

Excavation No. **TP14**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

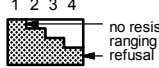
Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:		
excavation dimensions: m long m wide		Northing: m		datum: AHD			
excavation information				material substance			
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	material substance	
E				E+3.9ppm		FILL (Gravelly SAND): fine to medium grained, brown to grey, sub-angular medium to coarse crushed terracotta gravels	
						Asphalt trace ash	
				E+4.0ppm	0.5	SAND: fine to medium grained, brown to grey, with some sub-angular fine to medium gravel, trace low plasticity clay	
					1.0		
					1.5	Test pit TP14 terminated at 1m	
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer		penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense

Engineering Log - Excavation

Excavation No. **TP15**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E				E+3.9ppm				FILL (Gravelly SAND): fine to medium grained, brown to grey, sub-angular medium to coarse crushed terracotta gravels	M			No ACM, staining or odours observed
				E+3.6ppm	0.5		SP	SAND: fine to medium grained, brown to grey, with some sub-angular fine to medium gravel, trace low plasticity clay				
					1.0							
					1.5			Test pit TP15 terminated at 1m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT	diatube	1	2	3	4	U ₅₀	undisturbed sample 50mm diameter	based on unified classification system	VS	very soft		
PT	push tube					U ₆₃	undisturbed sample 63mm diameter		S	soft		
SS	soild stem flight auger					D	disturbed sample	F	firm			
HS	hollow stem flight auger					V	vane shear (kPa)	St	stiff			
VT	V Bit, T Bit					Bs	bulk sample	VSt	very stiff			
AH	air hammer					E	environmental sample	H	hard			
CP	cable percussive					R	refusal	Fb	friable			
HA	hand auger							VL	very loose			
NDD	non-destructive digging							L	loose			
RC	rock corer							MD	medium dense			
								D	dense			
								VD	very dense			

Engineering Log - Excavation

Excavation No. **TP16**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m	R.L. Surface:			
excavation dimensions: m long m wide						Northing: m		datum: AHD				
excavation information						material substance						
method	penetration	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E	1 2 3							FILL (Crushed terracotta)	M			No ACM, Staining or odours observed
								FILL (Gravelly SAND): fine to medium grained, brown to grey, sub-angular medium to coarse grained gravels				
				E+7.8ppm								
					0.5			SAND: fine to medium grained, brown to grey, with some sub-angular fine to medium gravel, trace low plasticity clay, organic material (wood)				
				E+3.2ppm								
					1.0							
					1.5			Test pit TP16 terminated at 1m				
method						penetration		notes, samples, tests		classification symbols and soil description		consistency/density index
DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						1 2 3 4  no resistance ranging to refusal		U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		based on unified classification system		VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense
water						10/1/98 water level on date shown		moisture		D dry M moist W wet Wp plastic limit WL liquid limit		
						water inflow						
						water outflow						

Engineering Log - Excavation

Excavation No. **TP17**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E								FILL (Crushed terracotta)	M			No ACM, staining or odours observed
				E+4.4ppm				FILL (Gravelly SAND): fine to medium grained, brown to grey, sub-angular medium to coarse grained gravels, trace low plasticity clay				
					0.5		SP	SAND: fine to medium grained, brown to grey, with some sub-angular fine to medium gravel, trace low plasticity clay, organic material (wood)				
				E+9.4ppm								
					1.0							
					1.5			Test pit TP17 terminated at 1m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT	diatube	1	2	3	4	U ₅₀	undisturbed sample 50mm diameter	based on unified classification system	VS	very soft		
PT	push tube					U ₆₃	undisturbed sample 63mm diameter		S	soft		
SS	soild stem flight auger					D	disturbed sample	F	firm			
HS	hollow stem flight auger					V	vane shear (kPa)	St	stiff			
VT	V Bit, T Bit					Bs	bulk sample	VSt	very stiff			
AH	air hammer					E	environmental sample	H	hard			
CP	cable percussive					R	refusal	Fb	friable			
HA	hand auger							VL	very loose			
NDD	non-destructive digging							L	loose			
RC	rock corer							MD	medium dense			
								D	dense			
								VD	very dense			

Engineering Log - Excavation

Excavation No. **TP18**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- kPa 100 200 300 400	structure and additional observations
E								FILL (Crushed terracotta)	M			No ACM, staining or odours observed
				E+5.4ppm				FILL (Ashy Gravelly SAND): fine to medium grained, sub-angular fine to coarse grained gravels				
				E+4.2ppm+QD2/QT2	0.5		SP	SAND: fine to medium grained, brown to grey, with some sub-angular fine to medium gravel, trace low plasticity clay, organic material (wood)				
				E+4.8ppm	1.0							
					1.5			Test pit TP18 terminated at 1m				
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer		penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		

Engineering Log - Excavation

Excavation No. **TP19**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m	R.L. Surface:					
excavation dimensions: m long m wide						Northing: m		datum: AHD						
excavation information						material substance								
method	penetration			water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E	1	2	3							FILL (Gravelly SAND): fine to medium grained, brown, sub-angular fine to coarse crushed terracotta and ballast gravel	M			No ACM, staining or odours observed
						E+4.8ppm								
						E+3.7ppm	0.5							
						E+4.7ppm				FILL (Gravelly CLAY): low plasticity, brown to green to grey, fine to coarse sub-angular gravel, with some crushed terracotta pot gravels				
							1.0							
							1.5			Test pit TP19 terminated at 1.2m				
method						penetration		notes, samples, tests			classification symbols and soil description		consistency/density index	
DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						1 2 3 4  no resistance ranging to refusal		U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal			based on unified classification system		VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	
						water  10/1/98 water level on date shown  water inflow  water outflow					moisture D dry M moist W wet Wp plastic limit WL liquid limit			

Engineering Log - Excavation

Excavation No. **TP20**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E	1 2 3							FILL (Gravelly SAND): fine to medium grained, crushed terracotta gravels	M			No ACM, staining or odours observed
				E+4.2ppm								
					0.5		SP	SAND: fine to medium grained, brown to grey, trace low plasticity clay				
				E+4.8ppm								
					1.0							
					1.5			Test pit TP20 terminated at 1m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT	diatube	1	2	3	4	U ₅₀	undisturbed sample 50mm diameter	based on unified classification system	VS	very soft		
PT	push tube					U ₆₃	undisturbed sample 63mm diameter		S	soft		
SS	soild stem flight auger					D	disturbed sample	F	firm			
HS	hollow stem flight auger					V	vane shear (kPa)	St	stiff			
VT	V Bit, T Bit					Bs	bulk sample	VSt	very stiff			
AH	air hammer					E	environmental sample	H	hard			
CP	cable percussive					R	refusal	Fb	friable			
HA	hand auger							VL	very loose			
NDD	non-destructive digging							L	loose			
RC	rock corer							MD	medium dense			
								D	dense			
								VD	very dense			

Engineering Log - Excavation

Excavation No. **TP21**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m	R.L. Surface:			
excavation dimensions: m long m wide						Northing: m		datum: AHD				
excavation information						material substance						
method	penetration	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E	1 2 3							FILL (Gravelly SAND): fine to medium grained, crushed terracotta gravels	D			No ACM, staining or odours observed
				E+4.6ppm								
					0.5		SP	SAND: fine to medium grained, brown to grey, trace low plasticity clay				
				E+3.3ppm								
					1.0							
					1.5			Test pit TP21 terminated at 1m				
method						notes, samples, tests			classification symbols and soil description		consistency/density index	
DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal			moisture D dry M moist W wet W _p plastic limit W _L liquid limit		VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	
penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow												

Engineering Log - Excavation

Excavation No. **TP22**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- kPa 100 200 300 400	structure and additional observations
E								FILL (Sandy GRAVEL):crushed terracotta, with some ash	M			No ACM, staining or odours observed
				E+6.6ppm								
					0.5		SP	SAND:fine to medium grained, brown to grey, trace low plasticity clay				
				E+6.7ppm								
					1.0							
					1.5			Test pit TP22 terminated at 1m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT	diatube	1	2	3	4	U ₅₀	undisturbed sample 50mm diameter	VS	very soft			
PT	push tube	no resistance ranging to refusal		U ₆₃	undisturbed sample 63mm diameter	S	soft					
SS	soild stem flight auger			D	disturbed sample	F	firm					
HS	hollow stem flight auger			V	vane shear (kPa)	St	stiff					
VT	V Bit, T Bit			Bs	bulk sample	VSt	very stiff					
AH	air hammer			E	environmental sample	H	hard					
CP	cable percussive			R	refusal	Fb	friable					
HA	hand auger					VL	very loose					
NDD	non-destructive digging					L	loose					
RC	rock corer					MD	medium dense					
						D	dense					
						VD	very dense					

Engineering Log - Excavation

Excavation No. **TP23**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:	
excavation dimensions: m long m wide		Northing: m		datum: AHD		
excavation information				material substance		
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	structure and additional observations
E				E+7.2ppm	0.5	No ACM, staining or odours observed
				E+6.1ppm	1.0	
					1.5	
Test pit TP23 terminated at 1m						
method		penetration		notes, samples, tests		consistency/density index
DT	diatube	1	2	3	4	VS
PT	push tube					S
SS	soild stem flight auger					F
HS	hollow stem flight auger					St
VT	V Bit, T Bit					VSt
AH	air hammer					H
CP	cable percussive					Fb
HA	hand auger					VL
NDD	non-destructive digging					L
RC	rock corer					MD
						D
						VD

Engineering Log - Excavation

Excavation No. **TP24**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations
E								Crushed Terracotta	M			No ACM, staining or odours observed
				E+9.7ppm				FILL (Gravelly SAND): fine to medium grained, brown to black, fine to coarse sub-angular gravels, trace ash				
				E+8.8ppm	0.5		SP	SAND: fine to medium grained, brown to grey, trace low plasticity clay				
					1.0							
					1.5			Test pit TP24 terminated at 1m				
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer		penetration 1 2 3 4  no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal				classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense		

Engineering Log - Excavation

Excavation No. **TP25**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m	R.L. Surface:				
excavation dimensions: m long m wide						Northing: m		datum: AHD					
excavation information						material substance							
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations	
E								Crushed terracotta	M			No ACM, staining or odours observed	
				E+7.4ppm				FILL (Gravelly SAND): fine to medium grained, brown to black, fine to coarse sub-angular gravels, trace ash					
					0.5		SP	SAND: fine to medium grained, brown to grey, trace low plasticity clay					
				E+6.7ppm									
					1.0								
					1.5			Test pit TP25 terminated at 1m					
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Engineering Log - Excavation

Excavation No. **TP26**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m	R.L. Surface:				
excavation dimensions: m long m wide						Northing: m		datum: AHD					
excavation information						material substance							
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa 100 200 300 400	structure and additional observations	
E								Crushed terracotta	M			No ACM, staining or odours observed	
				E+7.4ppm				Crushed terracotta with some brown fine to medium grained sand					
					0.5		SP	SAND: fine to medium grained, brown to grey, trace low plasticity clay					
				E+6.7ppm									
					1.0								
					1.5			Test pit TP26 terminated at 1m					
method DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						penetration 1 2 3 4  no resistance ranging to refusal water  10/1/98 water level on date shown  water inflow  water outflow		notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal		classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit		consistency/density index VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	

Engineering Log - Excavation

Excavation No. **TP27**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:						Pit Orientation:		Easting: m	R.L. Surface:					
excavation dimensions: m long m wide						Northing: m		datum: AHD						
excavation information						material substance								
method	penetration			water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- meter kPa	structure and additional observations
E	1	2	3							Crushed terracotta with some brown fine to medium grained sand	M			No ACM, staining or odours observed
						E+8.6ppm								
							0.5		SP	SAND: fine to medium grained, brown to grey, trace low plasticity clay				
						E+7.5ppm+QD03/QT03								
							1.0							
							1.5			Test pit TP27 terminated at 1m				
method						penetration		notes, samples, tests			classification symbols and soil description		consistency/density index	
DT diatube PT push tube SS solid stem flight auger HS hollow stem flight auger VT V Bit, T Bit AH air hammer CP cable percussive HA hand auger NDD non-destructive digging RC rock corer						1 2 3 4  no resistance ranging to refusal		U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample V vane shear (kPa) Bs bulk sample E environmental sample R refusal			based on unified classification system		VS very soft S soft F firm St stiff VSt very stiff H hard Fb friable VL very loose L loose MD medium dense D dense VD very dense	
						water  10/1/98 water level on date shown  water inflow  water outflow					moisture D dry M moist W wet Wp plastic limit WL liquid limit			

Engineering Log - Excavation

Excavation No. **TP28**

Sheet 1 of 1

Office Job No.: **SYDEN205656**

Client: **Meriton Group**

Date started: **16.5.2017**

Principal:

Date completed: **16.5.2017**

Project: **Meriton Warriewood DSI**

Logged by: **LS**

Test pit location: **2 Macpherson Street, Warriewood, NSW**

Checked by: **JS**

equipment type and model:		Pit Orientation:		Easting: m	R.L. Surface:							
excavation dimensions: m long m wide		Northing: m		datum: AHD								
excavation information						material substance						
method	penetration 1 2 3	water	PID	notes samples, tests, etc	depth metres	graphic log	classification symbol	material soil type: plasticity or particle characteristics, colour, secondary and minor components.	moisture condition	consistency/ density index	pocket penetro- kPa 100 200 300 400	structure and additional observations
E								Crushed terracotta with some brown fine to medium grained sand	M			No ACM, staining or odours observed
				E+3.4ppm								
					0.5		SP	SAND: fine to medium grained, brown to grey, trace low plasticity clay				
				E+4.1ppm								
					1.0							
					1.5			Test pit TP28 terminated at 1m				
method		penetration		notes, samples, tests		classification symbols and soil description		consistency/density index				
DT	diatube	1	2	3	4	U ₅₀	undisturbed sample 50mm diameter	based on unified classification system	VS	very soft		
PT	push tube					U ₆₃	undisturbed sample 63mm diameter		S	soft		
SS	soild stem flight auger					D	disturbed sample	F	firm			
HS	hollow stem flight auger					V	vane shear (kPa)	St	stiff			
VT	V Bit, T Bit					Bs	bulk sample	VSt	very stiff			
AH	air hammer					E	environmental sample	H	hard			
CP	cable percussive					R	refusal	Fb	friable			
HA	hand auger							VL	very loose			
NDD	non-destructive digging							L	loose			
RC	rock corer							MD	medium dense			
								D	dense			
								VD	very dense			

Appendix D - Equipment Calibration Records

RENTALS

Equipment Report - MiniRAE 3000 PID

This Gas Meter has been performance checked and calibrated as follows:

Lamp	Compound	Concentration	Zero	Span	Traceability Lot #	Pass?
10.6 eV	Isobutylene	100 ppm	0.0 ppm	100.0 ppm	Lot 389261 Cyl 3	☒

Alarm Limits

High	100 ppm
Low	50 ppm

Bump Test

Date	Target Gas	Reading	Pass?
12/05/2017	100 ppm	100.0 ppm	☒

- ☒ Battery Status 100%
☒ 10 minutes test complete
☒ Spare battery status (Min 5.5 volts)
☒ Electrical Safety Tag attached (AS/NZS 3760)

- ☒ Performance check (pump, lamp, sensor)
☒ Data cleared
☒ Filters checked

 Tag No: 001439

 Valid to: 17/06/2017

 Date: 12/05/2017

 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
☒	☐	MiniRAE 2000 PID / Operational Check / Battery Status <u>100%</u>
☒	☐	Lamp 10.6 eV, Compound Set to: Isobutylene C/factor: 1
☒	☐	Protective yellow rubber boot
☒	☐	Inlet probe (attached to PID)
☒	☐	Spare water trap filter(s) Qty <u>1</u>
☒	☐	Charger 240V to 12V1250mA
☒	☐	Cradle and Travel Charger
☒	☐	Instruction Manual behind foam on the lid of case "
☒	☐	Quick Guide Sheet behind foam on the lid of case "
☒	☐	Spare Alkaline Battery Compartment with batteries
☒	☐	Inline Moisture trap Filter Guide Laminated
☒	☐	Calibration regulator & tubing (optional)
☒	☐	Data cable and Software CD (optional)
☒	☐	Carry Case
☒	☐	Check to confirm electrical safety (tag must be valid)

 Date: 15/05/2017

 Signed: [Signature]

TFS Reference	<u>C5006794</u>	Return Date:	/ /
Customer Reference		Return Time:	
Equipment ID	<u>PID3000-9</u>	Condition on return:	
Equipment Serial No.	<u>592912626</u>		

"We do more than give you great equipment... We give you great solutions!"

Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: RentalsAU@Thermofisher.com	
Melbourne Branch 5 Caribbean Drive, Scoresby 3179	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113	Adelaide Branch 27 Beulah Road, Norwood, South Australia 5067	Brisbane Branch Unit 2/5 Ross St Newstead 4006	Perth Branch 121 Beringarra Ave Malaga WA 6090	

RENTALS

Equipment Certification Report – Isobutylene

Isobutylene for Minirae PID 2000/3000/Lite:

Bottle Size: 34 L

Current Capacity: 250 PSI

Capacity on return: _____ PSI

Lot #: 168524 Cyl 170

Exp Date: DEC 2018

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	Return	Item
☒	☐	Isobutylene bottle
☒	☐	Regulator (ID: <u>REG713SG</u>)
☒	☐	Tubing
☒	☐	Carry Case

Date: 15/05/2017

Signed: [Signature]

TFS Reference	<u>C8006794</u>	Return Date:	/ /
Customer Reference		Return Time:	
Equipment ID	<u>REG713SG</u>	Condition on return:	
Equipment Serial No.			

"We do more than give you great equipment... We give you great solutions!"

Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: RentalsAU@Thermofisher.com	
Melbourne Branch 5 Caribbean Drive, Scoresby 3179	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113	Adelaide Branch 33 King Street, South Australia 5067	Brisbane Branch Unit 2/5 Ross St Newstead 4006	Perth Branch 121 Beringarra Ave Malaga WA 6090	

Appendix E - Laboratory Analysis Test Certificates & Chain of Custody Documentation

0949



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 3 of 5 0950

Consigning Office:

Report Results to:

Invoices to:

Mobile:

Email:

@coffey.com

Phone:

Email:

@coffey.com

Project No: _____ Task No: _____

Project Name: _____ Laboratory: _____

Sampler's Name: _____ Project Manager: _____

Special Instructions: _____

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	BIO	Herbicides	Asbestos (P/A)	PCBS	HOLD	NOTES
	TP17-0.05-0.15	16/5	AM/PM	Soil	JZ	SND	/	/	/	/	/	
	TP17-0.5-0.1				Z		/	/	/	/	/	
	TP18-0.3-0.3				Z		/	/	/	/	/	
	TP18-0.4-0.5				Z		/	/	/	/	/	
	TP18-0.8-1.0						/	/	/	/	/	
	TP19-0.1-0.2				Z		/	/	/	/	/	
	TP19-0.4-0.5				Z		/	/	/	/	/	
	TP19-0.6-0.8				Z		/	/	/	/	/	
	TP20-0.05-0.2				Z		/	/	/	/	/	
	TP20-0.5-0.6				Z		/	/	/	/	/	
	TP21-0.1-0.2				Z		/	/	/	/	/	
	TP21-0.5-0.6				Z		/	/	/	/	/	
	TP22-0.1-0.2				Z		/	/	/	/	/	
	TP22-0.5-0.6				Z		/	/	/	/	/	
	TP23-0.1-0.3				Z		/	/	/	/	/	
	TP23-0.4-0.5				Z		/	/	/	/	/	
	TP24-0.2-0.4				Z		/	/	/	/	/	
	TP24-0.5-0.6				Z		/	/	/	/	/	

RELINQUISHED BY

Name: J. Sixsmith Date: 17/5/2017 →

Coffey Environments Time: _____

Name: _____ Date: _____ →

Company: _____ Time: _____

RECEIVED BY

Name: [Signature] Date: 17/5/17

Company: PC/MW Time: 16:46

Name: _____ Date: _____

Company: _____ Time: _____

Sample Receipt Advice: (Lab Use Only)

All Samples Received in Good Condition ☐All Documentation is in Proper Order ☐Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

546538

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

Page 4 of 5 8740

Report Results to: AS Page 1

Mobile: _____ Email: _____@coffev.com

Phone: Email: @coffey.com

Task No:

Laboratory:

Project Manager:

Special Instructions:

Relevant agreements: Eurofins COF_ENAUABTF00952AA_MSA1 ; ALS COF_ENAUABTF00952AA_MSA2 and SGS COF_ENAUABTF00952AA_MSA3

Analysis Request Section

Lab No.	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	BIO	Herbic	B4	M8	PCBs	Holo	Asbes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</
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Name: J. Sixsmith Date: 17/5/2017
Coffey Environments Time:

Name: _____ Date: _____
Company: _____ Time: _____

Name: Wendy Date: 1/15/17
Company: BF/AGT Time: 16:48

Name: _____ Date: _____
Company: _____ Time: _____

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition

All Documentation is in Proper Order

Samples Received Properly Chilled

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock Bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative, OP - Other Preservative

546538

8741



Sample Receipt Advice

Company name: **Coffey Environments Pty Ltd NSW**

Contact name: Preston Alma
Project name: DSI WARRIEWOOD
Project ID: SYDEN205656
COC number: 948
Turn around time: 5 Day
Date/Time received: May 17, 2017 4:48 PM
Eurofins | mgt reference: **546538**

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 : 11.4 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.
- ☒ Appropriate sample containers have been used.
- ☒ 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:

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Preston Alma - Preston_Alma@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Environments Pty Ltd NSW email address.

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 546538
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: May 17, 2017 4:48 PM
Due: May 24, 2017
Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP01_0.1-0.2	May 16, 2017		Soil	S17-My16846	X		X	X			X	X	
2	TP02_0.4-0.5	May 16, 2017		Soil	S17-My16847				X			X	X	
3	TP03_0.05-0.15	May 16, 2017		Soil	S17-My16848	X			X			X		
4	TP03_0.4-0.5	May 16, 2017		Soil	S17-My16849			X				X	X	
5	TP03_0.7-0.8	May 16, 2017		Soil	S17-My16850							X	X	
6	TP04_0.05-0.15	May 16, 2017		Soil	S17-My16851	X			X			X	X	
7	TP05_0.05-0.15	May 16, 2017		Soil	S17-My16852	X								

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 546538
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: May 17, 2017 4:48 PM
Due: May 24, 2017
Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
8	TP05_0.5-0.6	May 16, 2017		Soil	S17-My16853				X			X	X	
9	TP05_0.9-1.0	May 16, 2017		Soil	S17-My16854							X	X	
10	TP06_0.05-0.15	May 16, 2017		Soil	S17-My16855				X			X	X	
11	TP07_0.05-0.15	May 16, 2017		Soil	S17-My16856	X		X	X			X	X	
12	TP08_0.05-0.15	May 16, 2017		Soil	S17-My16857	X			X			X	X	
13	TP09_0.6-0.8	May 16, 2017		Soil	S17-My16858				X			X	X	
14	TP10_0.05-0.15	May 16, 2017		Soil	S17-My16859			X	X			X	X	
15	TP11_0.05-0.15	May 16, 2017		Soil	S17-My16860	X			X			X	X	
16	TP12_0.05-	May 16, 2017		Soil	S17-My16861	X								

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 546538
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: May 17, 2017 4:48 PM
Due: May 24, 2017
Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
	0.15													
17	TP12_0.6-0.8	May 16, 2017		Soil	S17-My16862				X			X	X	
18	TP13_0.05-0.15	May 16, 2017		Soil	S17-My16863	X			X			X	X	
19	TP14_0.05-0.15	May 16, 2017		Soil	S17-My16864				X			X	X	
20	TP15_0.05-0.15	May 16, 2017		Soil	S17-My16865				X			X	X	
21	TP16_0.1-0.3	May 16, 2017		Soil	S17-My16866	X		X	X			X	X	
22	TP17_0.05-0.15	May 16, 2017		Soil	S17-My16867	X								
23	TP17_0.5-0.6	May 16, 2017		Soil	S17-My16868			X	X			X	X	
24	TP18_0.2-0.3	May 16, 2017		Soil	S17-My16869	X								

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
25	TP18_0.4-0.5	May 16, 2017		Soil	S17-My16870			X	X			X	X	
26	TP19_0.1-0.2	May 16, 2017		Soil	S17-My16871	X			X			X	X	
27	TP20_0.05-0.2	May 16, 2017		Soil	S17-My16872				X			X	X	
28	TP21_0.1-0.2	May 16, 2017		Soil	S17-My16873	X			X			X	X	
29	TP22_0.5-0.6	May 16, 2017		Soil	S17-My16874				X			X	X	
30	TP23_0.1-0.3	May 16, 2017		Soil	S17-My16875				X			X	X	
31	TP24_0.2-0.4	May 16, 2017		Soil	S17-My16876	X			X			X	X	
32	TP24_0.5-0.6	May 16, 2017		Soil	S17-My16877							X	X	
33	TP25_0.1-0.2	May 16, 2017		Soil	S17-My16878				X			X	X	
34	TP26_0.2-0.3	May 16, 2017		Soil	S17-My16879				X			X	X	
35	TP27_0.1-0.2	May 16, 2017		Soil	S17-My16880	X			X			X	X	
36	TP28_0.1-0.2	May 16, 2017		Soil	S17-My16881	X		X				X		

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
37	TP28_0.5-0.6	May 16, 2017		Soil	S17-My16882				X			X	X	
38	QD-01	May 16, 2017		Soil	S17-My16883					X		X		X
39	QD-02	May 16, 2017		Soil	S17-My16884					X		X		X
40	HA01_0.15-0.3	May 16, 2017		Soil	S17-My16885				X			X	X	
41	HA02_0.05-0.15	May 17, 2017		Soil	S17-My16886				X			X	X	
42	HA03_0.1-0.2	May 17, 2017		Soil	S17-My16887				X			X	X	
43	HA04_0.0-0.2	May 17, 2017		Soil	S17-My16888				X			X	X	
44	HA05_0.1-0.3	May 17, 2017		Soil	S17-My16889			X	X			X	X	
45	TRIP BLANK	May 17, 2017		Soil	S17-My16890						X			
46	TRIP SPIKE	May 17, 2017		Soil	S17-My16891						X			
47	QR-01	May 17, 2017		Water	S17-My16892					X				X

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
48	TP01_0.4-0.5	May 16, 2017		Soil	S17-My16893		X							
49	TP01_0.5-0.6	May 16, 2017		Soil	S17-My16894		X							
50	TP02_0.05-0.15	May 16, 2017		Soil	S17-My16895		X							
51	TP02_0.9-1.0	May 16, 2017		Soil	S17-My16896		X							
52	TP04_0.5-0.6	May 16, 2017		Soil	S17-My16897		X							
53	TP06_0.5-0.7	May 16, 2017		Soil	S17-My16898		X							
54	TP07_0.5-0.7	May 16, 2017		Soil	S17-My16899		X							
55	TP08_0.5-0.6	May 16, 2017		Soil	S17-My16900		X							
56	TP09_0.05-0.15	May 16, 2017		Soil	S17-My16901		X							
57	TP10_0.6-0.7	May 16, 2017		Soil	S17-My16902		X							
58	TP11_0.5-0.7	May 16, 2017		Soil	S17-My16903		X							

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Sample Detail						Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
59	TP13_0.5-0.7	May 16, 2017		Soil	S17-My16904		X							
60	TP14_0.5-0.7	May 16, 2017		Soil	S17-My16905		X							
61	TP15_0.5-0.6	May 16, 2017		Soil	S17-My16906		X							
62	TP16_0.5-0.7	May 16, 2017		Soil	S17-My16907		X							
63	TP18_0.8-1.0	May 16, 2017		Soil	S17-My16908		X							
64	TP19_0.4-0.5	May 16, 2017		Soil	S17-My16909		X							
65	TP19_0.6-0.8	May 16, 2017		Soil	S17-My16910		X							
66	TP20_0.5-0.6	May 16, 2017		Soil	S17-My16911		X							
67	TP21_0.5-0.6	May 16, 2017		Soil	S17-My16912		X							
68	TP22_0.1-0.2	May 16, 2017		Soil	S17-My16913		X							
69	TP23_0.4-0.5	May 16, 2017		Soil	S17-My16914		X							
70	TP25_0.5-0.7	May 16, 2017		Soil	S17-My16915		X							

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
71	TP26_0.5-0.7	May 16, 2017		Soil	S17-My16916		X							
72	TP27_0.5-0.6	May 16, 2017		Soil	S17-My16917		X							
73	QD-03	May 16, 2017		Soil	S17-My16918		X							
74	HA02_0.4-0.5	May 17, 2017		Soil	S17-My16919		X							
75	HA03_0.3-0.4	May 17, 2017		Soil	S17-My16920		X							
Test Counts						17	28	9	33	3	2	40	36	3

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.

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: Preston Alma
Report 546538-AID
Project Name DSI WARRIEWOOD
Project ID SYDEN205656
Received Date May 17, 2017
Date Reported May 25, 2017

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 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 DSI WARRIEWOOD
Project ID SYDEN205656
Date Sampled May 16, 2017
Report 546538-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
TP01_0.1-0.2	17-My16846	May 16, 2017	Approximate Sample 165g Sample consisted of: Dark brown-red fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP03_0.05-0.15	17-My16848	May 16, 2017	Approximate Sample 179g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP04_0.05-0.15	17-My16851	May 16, 2017	Approximate Sample 146g Sample consisted of: Dark brown fine grain soil and rocks	Chrysotile asbestos detected in the form of loose fibre bundles. Approximate raw weight of asbestos = 0.00020g* Organic fibre detected. No respirable fibres detected.
TP05_0.05-0.15	17-My16852	May 16, 2017	Approximate Sample 199g Sample consisted of: Light brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP07_0.05-0.15	17-My16856	May 16, 2017	Approximate Sample 264g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP08_0.05-0.15	17-My16857	May 16, 2017	Approximate Sample 141g Sample consisted of: Dark grey fine grained sandy soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP11_0.05-0.15	17-My16860	May 16, 2017	Approximate Sample 177g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP12_0.05-0.15	17-My16861	May 16, 2017	Approximate Sample 191g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
TP13_0.05-0.15	17-My16863	May 16, 2017	Approximate Sample 238g Sample consisted of: Dark brown fine grain soil and rocks	Chrysotile asbestos detected in fibre cement fragments. Approximate raw weight of asbestos containing material = 0.010g Organic fibre detected. No respirable fibres detected.
TP16_0.1-0.3	17-My16866	May 16, 2017	Approximate Sample 121g Sample consisted of: Dark brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP17_0.05-0.15	17-My16867	May 16, 2017	Approximate Sample 117g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP18_0.2-0.3	17-My16869	May 16, 2017	Approximate Sample 164g Sample consisted of: Dark brown-red fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP19_0.1-0.2	17-My16871	May 16, 2017	Approximate Sample 227g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP21_0.1-0.2	17-My16873	May 16, 2017	Approximate Sample 136g Sample consisted of: Brown fine grain soil and rocks	Chrysotile and crocidolite asbestos detected in the form of loose fibre bundles. Approximate raw weight of asbestos = 0.00050g* Organic fibre detected. No respirable fibres detected.
TP24_0.2-0.4	17-My16876	May 16, 2017	Approximate Sample 60g Sample consisted of: Dark brown fine grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP27_0.1-0.2	17-My16880	May 16, 2017	Approximate Sample 128g Sample consisted of: Dark brown fine grained sandy soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
TP28_0.1-0.2	17-My16881	May 16, 2017	Approximate Sample 89g Sample consisted of: Brown fine grain soil and rocks	No asbestos detected. 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	May 17, 2017	Indefinite

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Contact Name: Preston Alma

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP01_0.1-0.2	May 16, 2017		Soil	S17-My16846	X		X	X			X	X	
2	TP02_0.4-0.5	May 16, 2017		Soil	S17-My16847				X			X	X	
3	TP03_0.05-0.15	May 16, 2017		Soil	S17-My16848	X			X			X		
4	TP03_0.4-0.5	May 16, 2017		Soil	S17-My16849			X				X	X	
5	TP03_0.7-0.8	May 16, 2017		Soil	S17-My16850							X	X	
6	TP04_0.05-0.15	May 16, 2017		Soil	S17-My16851	X			X			X	X	
7	TP05_0.05-0.15	May 16, 2017		Soil	S17-My16852	X								

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
8	TP05_0.5-0.6	May 16, 2017		Soil	S17-My16853				X			X	X	
9	TP05_0.9-1.0	May 16, 2017		Soil	S17-My16854							X	X	
10	TP06_0.05-0.15	May 16, 2017		Soil	S17-My16855				X			X	X	
11	TP07_0.05-0.15	May 16, 2017		Soil	S17-My16856	X		X	X			X	X	
12	TP08_0.05-0.15	May 16, 2017		Soil	S17-My16857	X			X			X	X	
13	TP09_0.6-0.8	May 16, 2017		Soil	S17-My16858				X			X	X	
14	TP10_0.05-0.15	May 16, 2017		Soil	S17-My16859			X	X			X	X	
15	TP11_0.05-0.15	May 16, 2017		Soil	S17-My16860	X			X			X	X	
16	TP12_0.05-	May 16, 2017		Soil	S17-My16861	X								

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
	0.15													
17	TP12_0.6-0.8	May 16, 2017		Soil	S17-My16862				X			X	X	
18	TP13_0.05-0.15	May 16, 2017		Soil	S17-My16863	X			X			X	X	
19	TP14_0.05-0.15	May 16, 2017		Soil	S17-My16864				X			X	X	
20	TP15_0.05-0.15	May 16, 2017		Soil	S17-My16865				X			X	X	
21	TP16_0.1-0.3	May 16, 2017		Soil	S17-My16866	X		X	X			X	X	
22	TP17_0.05-0.15	May 16, 2017		Soil	S17-My16867	X								
23	TP17_0.5-0.6	May 16, 2017		Soil	S17-My16868			X	X			X	X	
24	TP18_0.2-0.3	May 16, 2017		Soil	S17-My16869	X								

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Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
25	TP18_0.4-0.5	May 16, 2017		Soil	S17-My16870			X	X			X	X	
26	TP19_0.1-0.2	May 16, 2017		Soil	S17-My16871	X			X			X	X	
27	TP20_0.05-0.2	May 16, 2017		Soil	S17-My16872				X			X	X	
28	TP21_0.1-0.2	May 16, 2017		Soil	S17-My16873	X			X			X	X	
29	TP22_0.5-0.6	May 16, 2017		Soil	S17-My16874				X			X	X	
30	TP23_0.1-0.3	May 16, 2017		Soil	S17-My16875				X			X	X	
31	TP24_0.2-0.4	May 16, 2017		Soil	S17-My16876	X			X			X	X	
32	TP24_0.5-0.6	May 16, 2017		Soil	S17-My16877							X	X	
33	TP25_0.1-0.2	May 16, 2017		Soil	S17-My16878				X			X	X	
34	TP26_0.2-0.3	May 16, 2017		Soil	S17-My16879				X			X	X	
35	TP27_0.1-0.2	May 16, 2017		Soil	S17-My16880	X			X			X	X	
36	TP28_0.1-0.2	May 16, 2017		Soil	S17-My16881	X		X				X		

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 546538
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
37	TP28_0.5-0.6	May 16, 2017		Soil	S17-My16882				X			X	X	
38	QD-01	May 16, 2017		Soil	S17-My16883					X		X		X
39	QD-02	May 16, 2017		Soil	S17-My16884					X		X		X
40	HA01_0.15-0.3	May 16, 2017		Soil	S17-My16885				X			X	X	
41	HA02_0.05-0.15	May 17, 2017		Soil	S17-My16886				X			X	X	
42	HA03_0.1-0.2	May 17, 2017		Soil	S17-My16887				X			X	X	
43	HA04_0.0-0.2	May 17, 2017		Soil	S17-My16888				X			X	X	
44	HA05_0.1-0.3	May 17, 2017		Soil	S17-My16889			X	X			X	X	
45	TRIP BLANK	May 17, 2017		Soil	S17-My16890						X			
46	TRIP SPIKE	May 17, 2017		Soil	S17-My16891						X			
47	QR-01	May 17, 2017		Water	S17-My16892					X				X

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
48	TP01_0.4-0.5	May 16, 2017		Soil	S17-My16893		X							
49	TP01_0.5-0.6	May 16, 2017		Soil	S17-My16894		X							
50	TP02_0.05-0.15	May 16, 2017		Soil	S17-My16895		X							
51	TP02_0.9-1.0	May 16, 2017		Soil	S17-My16896		X							
52	TP04_0.5-0.6	May 16, 2017		Soil	S17-My16897		X							
53	TP06_0.5-0.7	May 16, 2017		Soil	S17-My16898		X							
54	TP07_0.5-0.7	May 16, 2017		Soil	S17-My16899		X							
55	TP08_0.5-0.6	May 16, 2017		Soil	S17-My16900		X							
56	TP09_0.05-0.15	May 16, 2017		Soil	S17-My16901		X							
57	TP10_0.6-0.7	May 16, 2017		Soil	S17-My16902		X							
58	TP11_0.5-0.7	May 16, 2017		Soil	S17-My16903		X							

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
59	TP13_0.5-0.7	May 16, 2017		Soil	S17-My16904		X							
60	TP14_0.5-0.7	May 16, 2017		Soil	S17-My16905		X							
61	TP15_0.5-0.6	May 16, 2017		Soil	S17-My16906		X							
62	TP16_0.5-0.7	May 16, 2017		Soil	S17-My16907		X							
63	TP18_0.8-1.0	May 16, 2017		Soil	S17-My16908		X							
64	TP19_0.4-0.5	May 16, 2017		Soil	S17-My16909		X							
65	TP19_0.6-0.8	May 16, 2017		Soil	S17-My16910		X							
66	TP20_0.5-0.6	May 16, 2017		Soil	S17-My16911		X							
67	TP21_0.5-0.6	May 16, 2017		Soil	S17-My16912		X							
68	TP22_0.1-0.2	May 16, 2017		Soil	S17-My16913		X							
69	TP23_0.4-0.5	May 16, 2017		Soil	S17-My16914		X							
70	TP25_0.5-0.7	May 16, 2017		Soil	S17-My16915		X							

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Sample Detail						Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
71	TP26_0.5-0.7	May 16, 2017		Soil	S17-My16916		X							
72	TP27_0.5-0.6	May 16, 2017		Soil	S17-My16917		X							
73	QD-03	May 16, 2017		Soil	S17-My16918		X							
74	HA02_0.4-0.5	May 17, 2017		Soil	S17-My16919		X							
75	HA03_0.3-0.4	May 17, 2017		Soil	S17-My16920		X							
Test Counts						17	28	9	33	3	2	40	36	3

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 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).

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
N/A	Not applicable

Authorised by:

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

Uncertainty data is available on request

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067



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: Preston Alma

Report 546538-S
Project name DSI WARRIEWOOD
Project ID SYDEN205656
Received Date May 17, 2017

Client Sample ID			TP01_0.1-0.2	TP02_0.4-0.5	TP03_0.05-0.15	TP03_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16846	S17-My16847	S17-My16848	S17-My16849
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	-	120
TRH C29-C36	50	mg/kg	< 50	< 50	-	190
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	310
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	%	65	61	-	66
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	-	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	-	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	0.8
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	1.1
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.4
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	-	0.7
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	-	0.8
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	0.8
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	-	0.6
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			TP01_0.1-0.2	TP02_0.4-0.5	TP03_0.05-0.15	TP03_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16846	S17-My16847	S17-My16848	S17-My16849
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	-	0.7
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	3.6
2-Fluorobiphenyl (surr.)	1	%	61	86	-	88
p-Terphenyl-d14 (surr.)	1	%	52	74	-	73
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
α-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
β-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
δ-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
γ-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	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchloroendate (surr.)	1	%	59	58	-	69
Tetrachloro-m-xylene (surr.)	1	%	76	76	-	76
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2

Client Sample ID			TP01_0.1-0.2	TP02_0.4-0.5	TP03_0.05-0.15	TP03_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16846	S17-My16847	S17-My16848	S17-My16849
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	-	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Omethoate	2	mg/kg	< 2	< 2	-	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	73	92	-	97
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	59	-	-	69
Tetrachloro-m-xylene (surr.)	1	%	76	-	-	76
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 (loxyneil)	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	%	81	78	87	-
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	-	< 2
Demeton (total)	1	mg/kg	< 1	< 1	-	< 1
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP01_0.1-0.2 Soil S17-My16846 May 16, 2017	TP02_0.4-0.5 Soil S17-My16847 May 16, 2017	TP03_0.05-0.15 Soil S17-My16848 May 16, 2017	TP03_0.4-0.5 Soil S17-My16849 May 16, 2017
Organophosphorus Pesticides (OP)						
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	-	< 2
Parathion	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Profenofos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Stirophos	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	73	92	-	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	240
TRH >C34-C40	100	mg/kg	< 100	< 100	-	170
Heavy Metals						
Arsenic	2	mg/kg	< 2	3.6	-	4.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	38	12	-	49
Copper	5	mg/kg	27	9.8	-	23
Lead	5	mg/kg	23	96	-	110
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	37	< 5	-	32
Zinc	5	mg/kg	100	68	-	100
% Moisture	1	%	21	21	11	10

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP03_0.7-0.8 Soil S17-My16850 May 16, 2017	TP04_0.05-0.15 Soil S17-My16851 May 16, 2017	TP05_0.5-0.6 Soil S17-My16853 May 16, 2017	TP05_0.9-1.0 Soil S17-My16854 May 16, 2017
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	87	100	< 50
TRH C29-C36	50	mg/kg	61	130	110	66
TRH C10-36 (Total)	50	mg/kg	61	217	210	66
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

Client Sample ID			TP03_0.7-0.8	TP04_0.05-0.15	TP05_0.5-0.6	TP05_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16850	S17-My16851	S17-My16853	S17-My16854
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	63	63	66	59
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
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	0.6	0.7	< 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	0.7	0.6	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	1.3	1.3	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	85	89	91	89
p-Terphenyl-d14 (surr.)	1	%	70	73	77	74
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	0.41	< 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

Client Sample ID			TP03_0.7-0.8	TP04_0.05-0.15	TP05_0.5-0.6	TP05_0.9-1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16850	S17-My16851	S17-My16853	S17-My16854
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	73	66	69	96
Tetrachloro-m-xylene (surr.)	1	%	85	80	84	120
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	90	91	97	95
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 (loxylnil)	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	-

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	TP03_0.7-0.8 Soil S17-My16850 May 16, 2017	TP04_0.05-0.15 Soil S17-My16851 May 16, 2017	TP05_0.5-0.6 Soil S17-My16853 May 16, 2017	TP05_0.9-1.0 Soil S17-My16854 May 16, 2017
Acid Herbicides						
MCPB	0.5	mg/kg	-	< 0.5	< 0.5	-
Mecoprop	0.5	mg/kg	-	< 0.5	< 0.5	-
Warfarin (surr.)	1	%	-	85	85	-
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Profenofos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	90	91	97	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	170	170	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	2.2	< 2	3.2	2.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	9.2	5.1	9.8	14
Copper	5	mg/kg	11	5.1	11	< 5
Lead	5	mg/kg	60	11	41	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.3	< 5	5.2	< 5
Zinc	5	mg/kg	25	54	73	43
% Moisture	1	%	19	12	15	22

Client Sample ID			TP06_0.05-0.15	TP07_0.05-0.15	TP08_0.05-0.15	TP09_0.6-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16855	S17-My16856	S17-My16857	S17-My16858
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	%	64	64	62	58
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
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	%	93	89	90	90
p-Terphenyl-d14 (surr.)	1	%	78	75	76	74
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

Client Sample ID			TP06_0.05-0.15	TP07_0.05-0.15	TP08_0.05-0.15	TP09_0.6-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16855	S17-My16856	S17-My16857	S17-My16858
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloroendate (surr.)	1	%	80	52	50	54
Tetrachloro-m-xylene (surr.)	1	%	82	74	76	67
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	94	83	87	91

Client Sample ID			TP06_0.05-0.15	TP07_0.05-0.15	TP08_0.05-0.15	TP09_0.6-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16855	S17-My16856	S17-My16857	S17-My16858
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	52	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	74	-	-
Acid Herbicides						
2,4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	87	83	85	90
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Profenofos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	94	83	87	91

Client Sample ID			TP06_0.05-0.15	TP07_0.05-0.15	TP08_0.05-0.15	TP09_0.6-0.8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16855	S17-My16856	S17-My16857	S17-My16858
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Heavy Metals						
Arsenic	2	mg/kg	< 2	3.5	< 2	7.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	14	< 5	22
Copper	5	mg/kg	15	6.3	< 5	< 5
Lead	5	mg/kg	14	13	38	25
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	23	6.9	< 5	< 5
Zinc	5	mg/kg	35	14	58	< 5
% Moisture	1	%	9.2	12	12	25

Client Sample ID			TP10_0.05-0.15	TP11_0.05-0.15	TP12_0.6-0.8	TP13_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16859	S17-My16860	S17-My16862	S17-My16863
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	%	65	65	67	62
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.7	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	2.0	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	0.8	< 0.5	< 0.5

Client Sample ID			TP10_0.05-0.15	TP11_0.05-0.15	TP12_0.6-0.8	TP13_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16859	S17-My16860	S17-My16862	S17-My16863
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.1	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	1.1	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	1.2	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.7	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	1.0	< 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	1.6	< 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	0.8	< 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	1.7	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	10	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	95	88	103
p-Terphenyl-d14 (surr.)	1	%	77	75	75	88
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2
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	0.09
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
α-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
β-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
δ-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
γ-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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloroendate (surr.)	1	%	61	58	77	126
Tetrachloro-m-xylene (surr.)	1	%	76	75	103	127
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP10_0.05-0.15	TP11_0.05-0.15	TP12_0.6-0.8	TP13_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16859	S17-My16860	S17-My16862	S17-My16863
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	88	84	90	112
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchloroendate (surr.)	1	%	61	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	76	-	-	-
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	90	87	78	76

Client Sample ID			TP10_0.05-0.15	TP11_0.05-0.15	TP12_0.6-0.8	TP13_0.05-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16859	S17-My16860	S17-My16862	S17-My16863
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton (total)	1	mg/kg	< 1	< 1	< 1	< 1
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Parathion	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Profenofos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Stirophos	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	88	84	90	112
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Heavy Metals						
Arsenic	2	mg/kg	4.1	4.1	2.6	2.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	29	55	14
Copper	5	mg/kg	< 5	7.7	5.6	23
Lead	5	mg/kg	19	8.8	150	15
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	10	7.7	20
Zinc	5	mg/kg	10	14	34	76
% Moisture	1	%	14	9.1	22	5.6

Client Sample ID			TP14_0.05-0.15	TP15_0.05-0.15	TP16_0.1-0.3	TP17_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16864	S17-My16865	S17-My16866	S17-My16868
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	54	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	54	< 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	62	59	64
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
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	%	85	88	86	85
p-Terphenyl-d14 (surr.)	1	%	71	75	72	71
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

Client Sample ID			TP14_0.05-0.15	TP15_0.05-0.15	TP16_0.1-0.3	TP17_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16864	S17-My16865	S17-My16866	S17-My16868
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloroendate (surr.)	1	%	109	89	143	121
Tetrachloro-m-xylene (surr.)	1	%	92	84	138	100
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2

Client Sample ID			TP14_0.05-0.15	TP15_0.05-0.15	TP16_0.1-0.3	TP17_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16864	S17-My16865	S17-My16866	S17-My16868
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Tokuthion	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	84	74	79	76
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	-	-	< 0.1	< 0.1
Dibutylchloredate (surr.)	1	%	-	-	143	121
Tetrachloro-m-xylene (surr.)	1	%	-	-	138	100
Acid Herbicides						
2,4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	85	83	81	85
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton (total)	1	mg/kg	< 1	< 1	-	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Parathion	0.5	mg/kg	< 0.5	< 0.5	-	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Profenofos	0.2	mg/kg	< 0.2	< 0.2	-	-
Prothiofos	0.5	mg/kg	< 0.5	< 0.5	-	-

Client Sample ID			TP14_0.05-0.15	TP15_0.05-0.15	TP16_0.1-0.3	TP17_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16864	S17-My16865	S17-My16866	S17-My16868
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Stirophos	0.5	mg/kg	< 0.5	< 0.5	-	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	84	74	79	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	2.3	2.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	40	< 5	30	7.6
Copper	5	mg/kg	53	< 5	19	< 5
Lead	5	mg/kg	19	< 5	18	6.3
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	41	< 5	35	< 5
Zinc	5	mg/kg	57	< 5	90	20
% Moisture	1	%	6.6	11	33	16

Client Sample ID			TP18_0.4-0.5	TP19_0.1-0.2	TP20_0.05-0.2	TP21_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16870	S17-My16871	S17-My16872	S17-My16873
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	22	< 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	%	64	64	64	61
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20

Client Sample ID			TP18_0.4-0.5	TP19_0.1-0.2	TP20_0.05-0.2	TP21_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16870	S17-My16871	S17-My16872	S17-My16873
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	%	87	89	87	87
p-Terphenyl-d14 (surr.)	1	%	74	77	75	76
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	0.54	< 0.05	0.08	< 0.05
4.4'-DDE	0.05	mg/kg	0.43	< 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	< 0.05	< 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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloroendate (surr.)	1	%	104	80	90	113
Tetrachloro-m-xylene (surr.)	1	%	99	80	98	111

Client Sample ID			TP18_0.4-0.5	TP19_0.1-0.2	TP20_0.05-0.2	TP21_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16870	S17-My16871	S17-My16872	S17-My16873
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	74	84	83	77
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	104	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	99	-	-	-

Client Sample ID			TP18_0.4-0.5	TP19_0.1-0.2	TP20_0.05-0.2	TP21_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16870	S17-My16871	S17-My16872	S17-My16873
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Atril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	81	83	90	80
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	74	84	83	77
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Heavy Metals						
Arsenic	2	mg/kg	4.3	< 2	2.5	4.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	11	32	18
Copper	5	mg/kg	8.2	13	16	15
Lead	5	mg/kg	< 5	11	8.2	23
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	9.9	31	13
Zinc	5	mg/kg	5.8	28	40	35
% Moisture	1	%	13	9.2	15	16

Client Sample ID			TP22_0.5-0.6	TP23_0.1-0.3	TP24_0.2-0.4	TP24_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16874	S17-My16875	S17-My16876	S17-My16877
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	%	75	75	76	75
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
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	%	87	85	90	94
p-Terphenyl-d14 (surr.)	1	%	76	76	77	79
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	0.06	< 0.05	0.08
4,4'-DDE	0.05	mg/kg	< 0.05	0.06	< 0.05	0.07
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

Client Sample ID			TP22_0.5-0.6	TP23_0.1-0.3	TP24_0.2-0.4	TP24_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16874	S17-My16875	S17-My16876	S17-My16877
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloroendate (surr.)	1	%	75	73	85	109
Tetrachloro-m-xylene (surr.)	1	%	69	71	77	91
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP22_0.5-0.6	TP23_0.1-0.3	TP24_0.2-0.4	TP24_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16874	S17-My16875	S17-My16876	S17-My16877
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	75	94	98	106
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	%	100	100	94	-
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	75	94	98	106
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Heavy Metals						
Arsenic	2	mg/kg	2.4	2.1	2.2	4.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	26	6.8	7.2
Copper	5	mg/kg	< 5	18	7.7	8.5
Lead	5	mg/kg	< 5	7.4	8.8	8.0
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	41	< 5	< 5
Zinc	5	mg/kg	8.5	37	22	16

Client Sample ID			TP22_0.5-0.6	TP23_0.1-0.3	TP24_0.2-0.4	TP24_0.5-0.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16874	S17-My16875	S17-My16876	S17-My16877
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
% Moisture	1	%	19	19	22	16

Client Sample ID			TP25_0.1-0.2	TP26_0.2-0.3	TP27_0.1-0.2	TP28_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16878	S17-My16879	S17-My16880	S17-My16881
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	%	76	77	77	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	-
Polycyclic Aromatic Hydrocarbons						
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	-
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	-
2-Fluorobiphenyl (surr.)	1	%	88	83	88	-
p-Terphenyl-d14 (surr.)	1	%	75	71	74	-

Client Sample ID			TP25_0.1-0.2	TP26_0.2-0.3	TP27_0.1-0.2	TP28_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16878	S17-My16879	S17-My16880	S17-My16881
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchlorodate (surr.)	1	%	116	142	125	-
Tetrachloro-m-xylene (surr.)	1	%	100	104	107	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 2	< 2	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 2	< 2	< 2	-
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-

Client Sample ID			TP25_0.1-0.2	TP26_0.2-0.3	TP27_0.1-0.2	TP28_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16878	S17-My16879	S17-My16880	S17-My16881
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Omethoate	2	mg/kg	< 2	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	110	90	105	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	-	-	122
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	114
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	%	97	100	103	-
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 2	< 2	< 2	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-

Client Sample ID			TP25_0.1-0.2	TP26_0.2-0.3	TP27_0.1-0.2	TP28_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16878	S17-My16879	S17-My16880	S17-My16881
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 2	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	110	90	105	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	3.2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	10	< 5	19	-
Copper	5	mg/kg	26	< 5	11	-
Lead	5	mg/kg	10	5.3	12	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	8.4	< 5	15	-
Zinc	5	mg/kg	87	370	52	-
% Moisture	1	%	20	17	12	10

Client Sample ID			TP28_0.5-0.6	QD-01	QD-02	HA01_0.15-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16882	S17-My16883	S17-My16884	S17-My16885
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
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	140	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	400	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	540	< 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	%	79	77	81	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20

Client Sample ID			TP28_0.5-0.6	QD-01	QD-02	HA01_0.15-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16882	S17-My16883	S17-My16884	S17-My16885
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.8	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	2.0	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	2.3	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	1.0	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.3	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	1.6	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	1.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.9	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	1.1	< 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	1.8	< 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	1.0	< 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	1.8	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	12	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	89	94	88	84
p-Terphenyl-d14 (surr.)	1	%	73	74	73	72
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4,4'-DDD	0.05	mg/kg	0.17	-	-	< 0.05
4,4'-DDE	0.05	mg/kg	0.21	-	-	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
α-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
β-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
δ-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
γ-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	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	1	mg/kg	< 1	-	-	< 1
Dibutylchloroendate (surr.)	1	%	104	-	-	105
Tetrachloro-m-xylene (surr.)	1	%	143	-	-	105

Client Sample ID			TP28_0.5-0.6	QD-01	QD-02	HA01_0.15-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16882	S17-My16883	S17-My16884	S17-My16885
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	98	-	-	100
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
Atril (loxynil)	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	%	106	-	-	112

Client Sample ID			TP28_0.5-0.6	QD-01	QD-02	HA01_0.15-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16882	S17-My16883	S17-My16884	S17-My16885
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	98	-	-	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	490	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	640	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	5.1	2.8	3.8	2.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	5.7	30	5.3	11
Copper	5	mg/kg	10	21	7.4	53
Lead	5	mg/kg	8.6	100	< 5	110
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	20	< 5	5.3
Zinc	5	mg/kg	34	86	5.4	53
% Moisture	1	%	16	9.5	11	12

Client Sample ID			HA02_0.05-0.15	HA03_0.1-0.2	HA04_0.0-0.2	HA05_0.1-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16886	S17-My16887	S17-My16888	S17-My16889
Date Sampled			May 17, 2017	May 17, 2017	May 17, 2017	May 17, 2017
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	310	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	760	< 50	< 50	54
TRH C10-36 (Total)	50	mg/kg	1070	< 50	< 50	54

Client Sample ID			HA02_0.05-0.15 Soil	HA03_0.1-0.2 Soil	HA04_0.0-0.2 Soil	HA05_0.1-0.3 Soil
Sample Matrix			S17-My16886	S17-My16887	S17-My16888	S17-My16889
Eurofins mgt Sample No.			May 17, 2017	May 17, 2017	May 17, 2017	May 17, 2017
Date Sampled						
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	%	79	79	78	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	5.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	5.5	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	5.5	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	0.6	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	3.0	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	3.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	2.7	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	2.2	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	2.9	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	3.1	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	5.5	< 0.5	< 0.5	0.6
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	1.9	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	1.0	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	5.5	< 0.5	< 0.5	0.6
Total PAH*	0.5	mg/kg	32.8	< 0.5	< 0.5	1.2
2-Fluorobiphenyl (surr.)	1	%	86	85	89	91
p-Terphenyl-d14 (surr.)	1	%	68	72	71	71
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

Client Sample ID			HA02_0.05-0.15 Soil	HA03_0.1-0.2 Soil	HA04_0.0-0.2 Soil	HA05_0.1-0.3 Soil
Sample Matrix			S17-My16886	S17-My16887	S17-My16888	S17-My16889
Eurofins mgt Sample No.			May 17, 2017	May 17, 2017	May 17, 2017	May 17, 2017
Date Sampled						
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloredate (surr.)	1	%	118	84	105	115
Tetrachloro-m-xylene (surr.)	1	%	120	88	109	52
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	97	82	73	81

Client Sample ID			HA02_0.05-0.15 Soil	HA03_0.1-0.2 Soil	HA04_0.0-0.2 Soil	HA05_0.1-0.3 Soil
Sample Matrix			S17-My16886	S17-My16887	S17-My16888	S17-My16889
Eurofins mgt Sample No.			May 17, 2017	May 17, 2017	May 17, 2017	May 17, 2017
Date Sampled						
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchloroendate (surr.)	1	%	-	-	-	115
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	52
Acid Herbicides						
2,4-D	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4-DB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-T	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-TP	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dicamba	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPA	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
MCPB	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Warfarin (surr.)	1	%	94	92	104	92
Organophosphorus Pesticides (OP)						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	97	82	73	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	1000	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	530	< 100	< 100	< 100

Client Sample ID			HA02_0.05-0.15	HA03_0.1-0.2	HA04_0.0-0.2	HA05_0.1-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S17-My16886	S17-My16887	S17-My16888	S17-My16889
Date Sampled			May 17, 2017	May 17, 2017	May 17, 2017	May 17, 2017
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	3.4	2.1	2.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	15	39	16	14
Copper	5	mg/kg	19	5.6	7.6	10
Lead	5	mg/kg	22	59	39	16
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	17	< 5	< 5	9.7
Zinc	5	mg/kg	22	11	66	46
% Moisture	1	%	9.6	15	13	13

Client Sample ID			TRIP BLANK	TRIP SPIKE
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S17-My16890	S17-My16891
Date Sampled			May 17, 2017	May 17, 2017
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.1	mg/kg	< 0.1	91%
Toluene	0.1	mg/kg	< 0.1	92%
Ethylbenzene	0.1	mg/kg	< 0.1	91%
m&p-Xylenes	0.2	mg/kg	< 0.2	92%
o-Xylene	0.1	mg/kg	< 0.1	92%
Xylenes - Total	0.3	mg/kg	< 0.3	92%
4-Bromofluorobenzene (surr.)	1	%	81	85

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 B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 23, 2017	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	May 23, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 23, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	May 23, 2017	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 23, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Eurofins mgt Suite B10			
Organochlorine Pesticides	Melbourne	May 23, 2017	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	May 25, 2017	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals M8	Sydney	May 23, 2017	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Polychlorinated Biphenyls	Melbourne	May 23, 2017	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Acid Herbicides	Melbourne	May 24, 2017	14 Day
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			
Organophosphorus Pesticides (OP)	Melbourne	May 23, 2017	0 Day
% Moisture	Sydney	May 17, 2017	14 Day
- Method: LTM-GEN-7080 Moisture			

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Chatswood
NSW 2067
Project Name: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 546538
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: May 17, 2017 4:48 PM
Due: May 24, 2017
Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP01_0.1-0.2	May 16, 2017		Soil	S17-My16846	X		X	X			X	X	
2	TP02_0.4-0.5	May 16, 2017		Soil	S17-My16847				X			X	X	
3	TP03_0.05-0.15	May 16, 2017		Soil	S17-My16848	X			X			X		
4	TP03_0.4-0.5	May 16, 2017		Soil	S17-My16849			X				X	X	
5	TP03_0.7-0.8	May 16, 2017		Soil	S17-My16850							X	X	
6	TP04_0.05-0.15	May 16, 2017		Soil	S17-My16851	X			X			X	X	
7	TP05_0.05-0.15	May 16, 2017		Soil	S17-My16852	X								

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
8	TP05_0.5-0.6	May 16, 2017		Soil	S17-My16853				X			X	X	
9	TP05_0.9-1.0	May 16, 2017		Soil	S17-My16854							X	X	
10	TP06_0.05-0.15	May 16, 2017		Soil	S17-My16855				X			X	X	
11	TP07_0.05-0.15	May 16, 2017		Soil	S17-My16856	X		X	X			X	X	
12	TP08_0.05-0.15	May 16, 2017		Soil	S17-My16857	X			X			X	X	
13	TP09_0.6-0.8	May 16, 2017		Soil	S17-My16858				X			X	X	
14	TP10_0.05-0.15	May 16, 2017		Soil	S17-My16859			X	X			X	X	
15	TP11_0.05-0.15	May 16, 2017		Soil	S17-My16860	X			X			X	X	
16	TP12_0.05-	May 16, 2017		Soil	S17-My16861	X								

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
	0.15													
17	TP12_0.6-0.8	May 16, 2017		Soil	S17-My16862				X			X	X	
18	TP13_0.05-0.15	May 16, 2017		Soil	S17-My16863	X			X			X	X	
19	TP14_0.05-0.15	May 16, 2017		Soil	S17-My16864				X			X	X	
20	TP15_0.05-0.15	May 16, 2017		Soil	S17-My16865				X			X	X	
21	TP16_0.1-0.3	May 16, 2017		Soil	S17-My16866	X		X	X			X	X	
22	TP17_0.05-0.15	May 16, 2017		Soil	S17-My16867	X								
23	TP17_0.5-0.6	May 16, 2017		Soil	S17-My16868			X	X			X	X	
24	TP18_0.2-0.3	May 16, 2017		Soil	S17-My16869	X								

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
25	TP18_0.4-0.5	May 16, 2017		Soil	S17-My16870			X	X			X	X	
26	TP19_0.1-0.2	May 16, 2017		Soil	S17-My16871	X			X			X	X	
27	TP20_0.05-0.2	May 16, 2017		Soil	S17-My16872				X			X	X	
28	TP21_0.1-0.2	May 16, 2017		Soil	S17-My16873	X			X			X	X	
29	TP22_0.5-0.6	May 16, 2017		Soil	S17-My16874				X			X	X	
30	TP23_0.1-0.3	May 16, 2017		Soil	S17-My16875				X			X	X	
31	TP24_0.2-0.4	May 16, 2017		Soil	S17-My16876	X			X			X	X	
32	TP24_0.5-0.6	May 16, 2017		Soil	S17-My16877							X	X	
33	TP25_0.1-0.2	May 16, 2017		Soil	S17-My16878				X			X	X	
34	TP26_0.2-0.3	May 16, 2017		Soil	S17-My16879				X			X	X	
35	TP27_0.1-0.2	May 16, 2017		Soil	S17-My16880	X			X			X	X	
36	TP28_0.1-0.2	May 16, 2017		Soil	S17-My16881	X		X				X		

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
37	TP28_0.5-0.6	May 16, 2017		Soil	S17-My16882				X			X	X	
38	QD-01	May 16, 2017		Soil	S17-My16883					X		X		X
39	QD-02	May 16, 2017		Soil	S17-My16884					X		X		X
40	HA01_0.15-0.3	May 16, 2017		Soil	S17-My16885				X			X	X	
41	HA02_0.05-0.15	May 17, 2017		Soil	S17-My16886				X			X	X	
42	HA03_0.1-0.2	May 17, 2017		Soil	S17-My16887				X			X	X	
43	HA04_0.0-0.2	May 17, 2017		Soil	S17-My16888				X			X	X	
44	HA05_0.1-0.3	May 17, 2017		Soil	S17-My16889			X	X			X	X	
45	TRIP BLANK	May 17, 2017		Soil	S17-My16890						X			
46	TRIP SPIKE	May 17, 2017		Soil	S17-My16891						X			
47	QR-01	May 17, 2017		Water	S17-My16892					X				X

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Sample Detail						Asbestos Absence /Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
48	TP01_0.4-0.5	May 16, 2017		Soil	S17-My16893		X							
49	TP01_0.5-0.6	May 16, 2017		Soil	S17-My16894		X							
50	TP02_0.05-0.15	May 16, 2017		Soil	S17-My16895		X							
51	TP02_0.9-1.0	May 16, 2017		Soil	S17-My16896		X							
52	TP04_0.5-0.6	May 16, 2017		Soil	S17-My16897		X							
53	TP06_0.5-0.7	May 16, 2017		Soil	S17-My16898		X							
54	TP07_0.5-0.7	May 16, 2017		Soil	S17-My16899		X							
55	TP08_0.5-0.6	May 16, 2017		Soil	S17-My16900		X							
56	TP09_0.05-0.15	May 16, 2017		Soil	S17-My16901		X							
57	TP10_0.6-0.7	May 16, 2017		Soil	S17-My16902		X							
58	TP11_0.5-0.7	May 16, 2017		Soil	S17-My16903		X							

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
59	TP13_0.5-0.7	May 16, 2017		Soil	S17-My16904		X							
60	TP14_0.5-0.7	May 16, 2017		Soil	S17-My16905		X							
61	TP15_0.5-0.6	May 16, 2017		Soil	S17-My16906		X							
62	TP16_0.5-0.7	May 16, 2017		Soil	S17-My16907		X							
63	TP18_0.8-1.0	May 16, 2017		Soil	S17-My16908		X							
64	TP19_0.4-0.5	May 16, 2017		Soil	S17-My16909		X							
65	TP19_0.6-0.8	May 16, 2017		Soil	S17-My16910		X							
66	TP20_0.5-0.6	May 16, 2017		Soil	S17-My16911		X							
67	TP21_0.5-0.6	May 16, 2017		Soil	S17-My16912		X							
68	TP22_0.1-0.2	May 16, 2017		Soil	S17-My16913		X							
69	TP23_0.4-0.5	May 16, 2017		Soil	S17-My16914		X							
70	TP25_0.5-0.7	May 16, 2017		Soil	S17-My16915		X							

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
71	TP26_0.5-0.7	May 16, 2017		Soil	S17-My16916		X							
72	TP27_0.5-0.6	May 16, 2017		Soil	S17-My16917		X							
73	QD-03	May 16, 2017		Soil	S17-My16918		X							
74	HA02_0.4-0.5	May 17, 2017		Soil	S17-My16919		X							
75	HA03_0.3-0.4	May 17, 2017		Soil	S17-My16920		X							
Test Counts						17	28	9	33	3	2	40	36	3

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 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.
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 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

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. 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
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 & PFASs 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 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	
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Organophosphorus Pesticides (OP)							
Demeton (total)	mg/kg	< 1			1	Pass	
Parathion	mg/kg	< 0.5			0.5	Pass	
Profenofos	mg/kg	< 0.2			0.2	Pass	
Prothiofos	mg/kg	< 0.5			0.5	Pass	
Stirophos	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
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	%	76			70-130	Pass	
TRH C10-C14	%	99			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	93			70-130	Pass	
Toluene	%	88			70-130	Pass	
Ethylbenzene	%	89			70-130	Pass	
m&p-Xylenes	%	89			70-130	Pass	
o-Xylene	%	86			70-130	Pass	
Xylenes - Total	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	78			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	88			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	88			70-130	Pass	
Anthracene	%	88			70-130	Pass	
Benz(a)anthracene	%	86			70-130	Pass	
Benzo(a)pyrene	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	%	92			70-130	Pass	
Benzo(g,h,i)perylene	%	87			70-130	Pass	
Benzo(k)fluoranthene	%	107			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a,h)anthracene	%	77			70-130	Pass	
Fluoranthene	%	97			70-130	Pass	
Fluorene	%	92			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	86			70-130	Pass	
Naphthalene	%	99			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	91			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4,4'-DDD	%	84			70-130	Pass	
4,4'-DDE	%	79			70-130	Pass	
4,4'-DDT	%	76			70-130	Pass	
a-BHC	%	78			70-130	Pass	
Aldrin	%	80			70-130	Pass	
b-BHC	%	79			70-130	Pass	
d-BHC	%	80			70-130	Pass	
Dieldrin	%	86			70-130	Pass	
Endosulfan I	%	81			70-130	Pass	
Endosulfan II	%	81			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	81			70-130	Pass	
Endrin aldehyde	%	85			70-130	Pass	
Endrin ketone	%	83			70-130	Pass	
g-BHC (Lindane)	%	77			70-130	Pass	
Heptachlor	%	76			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	77			70-130	Pass	
Methoxychlor	%	75			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	101			70-130	Pass	
Dimethoate	%	82			70-130	Pass	
Ethion	%	113			70-130	Pass	
Fenitrothion	%	89			70-130	Pass	
Methyl parathion	%	87			70-130	Pass	
Mevinphos	%	129			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	121			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2,4-D	%	106			70-130	Pass	
2,4-DB	%	94			70-130	Pass	
2,4,5-T	%	106			70-130	Pass	
2,4,5-TP	%	88			70-130	Pass	
Actril (loxynil)	%	87			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dicamba			%	96			70-130	Pass	
Dichlorprop			%	99			70-130	Pass	
Dinitro-o-cresol			%	75			70-130	Pass	
Dinoseb			%	82			70-130	Pass	
MCPA			%	117			70-130	Pass	
MCPB			%	85			70-130	Pass	
Mecoprop			%	82			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
TRH >C10-C16			%	110			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	75			70-130	Pass	
Cadmium			%	74			70-130	Pass	
Chromium			%	74			70-130	Pass	
Copper			%	80			70-130	Pass	
Lead			%	89			70-130	Pass	
Mercury			%	92			70-130	Pass	
Nickel			%	77			70-130	Pass	
Zinc			%	84			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	S17-My16847	CP	%	97			70-130	Pass	
Acenaphthylene	S17-My16847	CP	%	95			70-130	Pass	
Anthracene	S17-My16847	CP	%	100			70-130	Pass	
Benz(a)anthracene	S17-My16847	CP	%	99			70-130	Pass	
Benzo(a)pyrene	S17-My16847	CP	%	107			70-130	Pass	
Benzo(b&j)fluoranthene	S17-My16847	CP	%	97			70-130	Pass	
Benzo(g,h,i)perylene	S17-My16847	CP	%	113			70-130	Pass	
Benzo(k)fluoranthene	S17-My16847	CP	%	118			70-130	Pass	
Chrysene	S17-My16847	CP	%	112			70-130	Pass	
Dibenz(a,h)anthracene	S17-My16847	CP	%	108			70-130	Pass	
Fluoranthene	S17-My16847	CP	%	106			70-130	Pass	
Fluorene	S17-My16847	CP	%	103			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S17-My16847	CP	%	114			70-130	Pass	
Naphthalene	S17-My16847	CP	%	104			70-130	Pass	
Phenanthrene	S17-My16847	CP	%	96			70-130	Pass	
Pyrene	S17-My16847	CP	%	99			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2,4-D	S17-My16847	CP	%	89			70-130	Pass	
Actril (loxynil)	S17-My16847	CP	%	100			70-130	Pass	
Dichlorprop	S17-My16847	CP	%	96			70-130	Pass	
MCPA	S17-My16847	CP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-My16847	CP	%	83			70-130	Pass	
Cadmium	S17-My16847	CP	%	79			70-130	Pass	
Chromium	S17-My16847	CP	%	87			70-130	Pass	
Copper	S17-My16847	CP	%	89			70-130	Pass	
Lead	S17-My16847	CP	%	127			70-130	Pass	
Mercury	S17-My16847	CP	%	101			70-130	Pass	
Nickel	S17-My16847	CP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	S17-My16847	CP	%	129			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-My16849	CP	%	81			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-My16849	CP	%	88			70-130	Pass	
Toluene	S17-My16849	CP	%	83			70-130	Pass	
Ethylbenzene	S17-My16849	CP	%	100			70-130	Pass	
m&p-Xylenes	S17-My16849	CP	%	83			70-130	Pass	
o-Xylene	S17-My16849	CP	%	80			70-130	Pass	
Xylenes - Total	S17-My16849	CP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-My16849	CP	%	76			70-130	Pass	
TRH C6-C10	S17-My16849	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S17-My16850	CP	%	123			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-My16850	CP	%	125			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDD	S17-My16853	CP	%	105			70-130	Pass	
4,4'-DDE	S17-My16853	CP	%	113			70-130	Pass	
a-BHC	S17-My16853	CP	%	105			70-130	Pass	
Aldrin	S17-My16853	CP	%	90			70-130	Pass	
b-BHC	S17-My16853	CP	%	99			70-130	Pass	
d-BHC	S17-My16853	CP	%	101			70-130	Pass	
Dieldrin	S17-My16853	CP	%	114			70-130	Pass	
Endosulfan I	S17-My16853	CP	%	105			70-130	Pass	
Endosulfan II	S17-My16853	CP	%	105			70-130	Pass	
Endosulfan sulphate	S17-My16853	CP	%	100			70-130	Pass	
Endrin	S17-My16853	CP	%	109			70-130	Pass	
Endrin aldehyde	S17-My16853	CP	%	99			70-130	Pass	
Endrin ketone	S17-My16853	CP	%	83			70-130	Pass	
g-BHC (Lindane)	S17-My16853	CP	%	96			70-130	Pass	
Heptachlor	S17-My16853	CP	%	77			70-130	Pass	
Heptachlor epoxide	S17-My16853	CP	%	123			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	S17-My16855	CP	%	123			70-130	Pass	
Fenitrothion	S17-My16855	CP	%	136			70-130	Fail	Q08
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-My16858	CP	%	98			70-130	Pass	
Acenaphthylene	S17-My16858	CP	%	90			70-130	Pass	
Anthracene	S17-My16858	CP	%	103			70-130	Pass	
Benz(a)anthracene	S17-My16858	CP	%	95			70-130	Pass	
Benzo(a)pyrene	S17-My16858	CP	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	S17-My16858	CP	%	113			70-130	Pass	
Benzo(g,h,i)perylene	S17-My16858	CP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S17-My16858	CP	%	87			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	S17-My16858	CP	%	108			70-130	Pass	
Dibenz(a,h)anthracene	S17-My16858	CP	%	91			70-130	Pass	
Fluoranthene	S17-My16858	CP	%	99			70-130	Pass	
Fluorene	S17-My16858	CP	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-My16858	CP	%	100			70-130	Pass	
Naphthalene	S17-My16858	CP	%	93			70-130	Pass	
Phenanthrene	S17-My16858	CP	%	92			70-130	Pass	
Pyrene	S17-My16858	CP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-My16860	CP	%	95			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-My16860	CP	%	88			70-130	Pass	
Toluene	S17-My16860	CP	%	83			70-130	Pass	
m&p-Xylenes	S17-My16860	CP	%	84			70-130	Pass	
o-Xylene	S17-My16860	CP	%	82			70-130	Pass	
Xylenes - Total	S17-My16860	CP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-My16860	CP	%	79			70-130	Pass	
TRH C6-C10	S17-My16860	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S17-My16862	CP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-My16862	CP	%	115			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M17-My22895	NCP	%	114			70-130	Pass	
4.4'-DDE	M17-My22895	NCP	%	126			70-130	Pass	
4.4'-DDT	M17-My22895	NCP	%	124			70-130	Pass	
α-BHC	M17-My22895	NCP	%	118			70-130	Pass	
Aldrin	M17-My22895	NCP	%	123			70-130	Pass	
β-BHC	M17-My22895	NCP	%	127			70-130	Pass	
δ-BHC	M17-My22895	NCP	%	115			70-130	Pass	
Dieldrin	M17-My22895	NCP	%	129			70-130	Pass	
Endosulfan I	M17-My22895	NCP	%	125			70-130	Pass	
Endosulfan II	M17-My22895	NCP	%	126			70-130	Pass	
Endosulfan sulphate	M17-My22895	NCP	%	113			70-130	Pass	
Endrin	M17-My22895	NCP	%	127			70-130	Pass	
Endrin aldehyde	M17-My22895	NCP	%	121			70-130	Pass	
Endrin ketone	M17-My22895	NCP	%	121			70-130	Pass	
γ-BHC (Lindane)	M17-My22895	NCP	%	119			70-130	Pass	
Heptachlor	M17-My22895	NCP	%	124			70-130	Pass	
Heptachlor epoxide	M17-My22895	NCP	%	110			70-130	Pass	
Hexachlorobenzene	M17-My22895	NCP	%	115			70-130	Pass	
Methoxychlor	M17-My22895	NCP	%	126			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	S17-My16864	CP	%	93			70-130	Pass	
4.4'-DDE	S17-My16864	CP	%	86			70-130	Pass	
4.4'-DDT	S17-My16864	CP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
a-BHC	S17-My16864	CP	%	84			70-130	Pass	
Aldrin	S17-My16864	CP	%	87			70-130	Pass	
b-BHC	S17-My16864	CP	%	73			70-130	Pass	
d-BHC	S17-My16864	CP	%	79			70-130	Pass	
Dieldrin	S17-My16864	CP	%	95			70-130	Pass	
Endosulfan I	S17-My16864	CP	%	87			70-130	Pass	
Endosulfan II	S17-My16864	CP	%	93			70-130	Pass	
Endosulfan sulphate	S17-My16864	CP	%	92			70-130	Pass	
Endrin	S17-My16864	CP	%	111			70-130	Pass	
Endrin aldehyde	S17-My16864	CP	%	79			70-130	Pass	
Endrin ketone	S17-My16864	CP	%	86			70-130	Pass	
g-BHC (Lindane)	S17-My16864	CP	%	87			70-130	Pass	
Heptachlor	S17-My16864	CP	%	77			70-130	Pass	
Heptachlor epoxide	S17-My16864	CP	%	88			70-130	Pass	
Methoxychlor	S17-My16864	CP	%	90			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	M17-My20743	NCP	%	94			70-130	Pass	
Ethion	M17-My20743	NCP	%	107			70-130	Pass	
Methyl parathion	M17-My20743	NCP	%	73			70-130	Pass	
Mevinphos	M17-My20743	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M17-My22895	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-My16872	CP	%	100			70-130	Pass	
Acenaphthylene	S17-My16872	CP	%	96			70-130	Pass	
Anthracene	S17-My16872	CP	%	99			70-130	Pass	
Benz(a)anthracene	S17-My16872	CP	%	103			70-130	Pass	
Benzo(a)pyrene	S17-My16872	CP	%	107			70-130	Pass	
Benzo(b&j)fluoranthene	S17-My16872	CP	%	99			70-130	Pass	
Benzo(g,h,i)perylene	S17-My16872	CP	%	112			70-130	Pass	
Benzo(k)fluoranthene	S17-My16872	CP	%	122			70-130	Pass	
Chrysene	S17-My16872	CP	%	117			70-130	Pass	
Dibenz(a,h)anthracene	S17-My16872	CP	%	104			70-130	Pass	
Fluoranthene	S17-My16872	CP	%	107			70-130	Pass	
Fluorene	S17-My16872	CP	%	109			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S17-My16872	CP	%	115			70-130	Pass	
Naphthalene	S17-My16872	CP	%	106			70-130	Pass	
Phenanthrene	S17-My16872	CP	%	97			70-130	Pass	
Pyrene	S17-My16872	CP	%	106			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-My16872	CP	%	91			70-130	Pass	
Cadmium	S17-My16872	CP	%	94			70-130	Pass	
Chromium	S17-My16872	CP	%	70			70-130	Pass	
Copper	S17-My16872	CP	%	108			70-130	Pass	
Lead	S17-My16872	CP	%	112			70-130	Pass	
Mercury	S17-My16872	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-My16873	CP	%	83			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX				Result 1					
Benzene	S17-My16873	CP	%	88			70-130	Pass	
Toluene	S17-My16873	CP	%	84			70-130	Pass	
Ethylbenzene	S17-My16873	CP	%	84			70-130	Pass	
m&p-Xylenes	S17-My16873	CP	%	84			70-130	Pass	
o-Xylene	S17-My16873	CP	%	83			70-130	Pass	
Xylenes - Total	S17-My16873	CP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-My16873	CP	%	79			70-130	Pass	
TRH C6-C10	S17-My16873	CP	%	86			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
MCPB	M17-My20750	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S17-My16874	CP	%	102			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2,4-D	S17-My16874	CP	%	99			70-130	Pass	
Actril (loxynil)	S17-My16874	CP	%	105			70-130	Pass	
Dichlorprop	S17-My16874	CP	%	100			70-130	Pass	
MCPA	S17-My16874	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-My16874	CP	%	114			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDD	S17-My16876	CP	%	106			70-130	Pass	
4,4'-DDE	S17-My16876	CP	%	110			70-130	Pass	
4,4'-DDT	S17-My16876	CP	%	99			70-130	Pass	
a-BHC	S17-My16876	CP	%	89			70-130	Pass	
Aldrin	S17-My16876	CP	%	102			70-130	Pass	
b-BHC	S17-My16876	CP	%	73			70-130	Pass	
d-BHC	S17-My16876	CP	%	103			70-130	Pass	
Dieldrin	S17-My16876	CP	%	107			70-130	Pass	
Endosulfan I	S17-My16876	CP	%	99			70-130	Pass	
Endosulfan II	S17-My16876	CP	%	100			70-130	Pass	
Endosulfan sulphate	S17-My16876	CP	%	89			70-130	Pass	
Endrin	S17-My16876	CP	%	109			70-130	Pass	
Endrin aldehyde	S17-My16876	CP	%	80			70-130	Pass	
Endrin ketone	S17-My16876	CP	%	87			70-130	Pass	
g-BHC (Lindane)	S17-My16876	CP	%	89			70-130	Pass	
Heptachlor	S17-My16876	CP	%	108			70-130	Pass	
Heptachlor epoxide	S17-My16876	CP	%	100			70-130	Pass	
Methoxychlor	S17-My16876	CP	%	75			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-My16882	CP	%	95			70-130	Pass	
Acenaphthylene	S17-My16882	CP	%	93			70-130	Pass	
Anthracene	S17-My16882	CP	%	102			70-130	Pass	
Benz(a)anthracene	S17-My16882	CP	%	109			70-130	Pass	
Benzo(a)pyrene	S17-My16882	CP	%	111			70-130	Pass	
Benzo(g,h,i)perylene	S17-My16882	CP	%	116			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	S17-My16882	CP	%	83			70-130	Pass	
Chrysene	S17-My16882	CP	%	117			70-130	Pass	
Dibenz(a,h)anthracene	S17-My16882	CP	%	93			70-130	Pass	
Fluoranthene	S17-My16882	CP	%	121			70-130	Pass	
Fluorene	S17-My16882	CP	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-My16882	CP	%	109			70-130	Pass	
Naphthalene	S17-My16882	CP	%	93			70-130	Pass	
Phenanthrene	S17-My16882	CP	%	96			70-130	Pass	
Pyrene	S17-My16882	CP	%	122			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-My16883	CP	%	98			70-130	Pass	
Acenaphthylene	S17-My16883	CP	%	95			70-130	Pass	
Anthracene	S17-My16883	CP	%	96			70-130	Pass	
Benz(a)anthracene	S17-My16883	CP	%	71			70-130	Pass	
Chrysene	S17-My16883	CP	%	74			70-130	Pass	
Dibenz(a,h)anthracene	S17-My16883	CP	%	96			70-130	Pass	
Fluorene	S17-My16883	CP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-My16883	CP	%	77			70-130	Pass	
Naphthalene	S17-My16883	CP	%	105			70-130	Pass	
Phenanthrene	S17-My16883	CP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-My16884	CP	%	119			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-My16884	CP	%	104			70-130	Pass	
Toluene	S17-My16884	CP	%	106			70-130	Pass	
Ethylbenzene	S17-My16884	CP	%	109			70-130	Pass	
m&p-Xylenes	S17-My16884	CP	%	110			70-130	Pass	
o-Xylene	S17-My16884	CP	%	110			70-130	Pass	
Xylenes - Total	S17-My16884	CP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-My16884	CP	%	95			70-130	Pass	
TRH C6-C10	S17-My16884	CP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S17-My16885	CP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-My16885	CP	%	121			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	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Dibenz(a,h)anthracene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxylin)	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S17-My16846	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-My16846	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S17-My16846	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S17-My16846	CP	mg/kg	38	39	2.0	30%	Pass	
Copper	S17-My16846	CP	mg/kg	27	24	13	30%	Pass	
Lead	S17-My16846	CP	mg/kg	23	21	10	30%	Pass	
Mercury	S17-My16846	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S17-My16846	CP	mg/kg	37	39	4.0	30%	Pass	
Zinc	S17-My16846	CP	mg/kg	100	95	10	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-My16847	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-My16847	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S17-My16847	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S17-My16847	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S17-My16847	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S17-My16847	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S17-My16847	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-My16847	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S17-My16847	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S17-My16848	CP	%	11	11	1.0	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S17-My16849	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S17-My16849	CP	mg/kg	120	120	1.0	30%	Pass
TRH C29-C36	S17-My16849	CP	mg/kg	190	210	8.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S17-My16849	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S17-My16849	CP	mg/kg	240	250	5.0	30%	Pass
TRH >C34-C40	S17-My16849	CP	mg/kg	170	190	11	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S17-My16851	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S17-My16851	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S17-My16851	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S17-My16851	CP	mg/kg	<0.1	<0.1	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S17-My16854	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Disulfoton	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S17-My16854	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S17-My16854	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides (OP)				Result 1	Result 2	RPD		
Demeton (total)	S17-My16854	CP	mg/kg	< 1	< 1	<1	30%	Pass
Parathion	S17-My16854	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Profenofos	S17-My16854	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Prothiofos	S17-My16854	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Stirophos	S17-My16854	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	S17-My16859	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S17-My16859	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S17-My16859	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S17-My16859	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S17-My16859	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S17-My16859	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S17-My16859	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S17-My16859	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Fluoranthene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S17-My16859	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S17-My16859	CP	%	14	13	13	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S17-My16860	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S17-My16860	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S17-My16860	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S17-My16860	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S17-My16860	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S17-My16860	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S17-My16863	CP	mg/kg	0.2	< 0.1	63	30%	Fail Q15
4,4'-DDD	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S17-My16863	CP	mg/kg	0.09	< 0.05	99	30%	Fail Q15
4,4'-DDT	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
α-BHC	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
β-BHC	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
δ-BHC	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
γ-BHC (Lindane)	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S17-My16863	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S17-My16863	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S17-My16863	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Ethyl parathion	B17-My20796	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	B17-My20796	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	B17-My20796	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S17-My16871	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S17-My16871	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S17-My16871	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S17-My16871	CP	mg/kg	11	12	2.0	30%	Pass
Copper	S17-My16871	CP	mg/kg	13	12	6.0	30%	Pass
Lead	S17-My16871	CP	mg/kg	11	10	6.0	30%	Pass
Mercury	S17-My16871	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S17-My16871	CP	mg/kg	9.9	12	17	30%	Pass
Zinc	S17-My16871	CP	mg/kg	28	33	16	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S17-My16872	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S17-My16872	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S17-My16872	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S17-My16872	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S17-My16872	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S17-My16872	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S17-My16872	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S17-My16872	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S17-My16872	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S17-My16872	CP	%	15	16	3.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S17-My16873	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S17-My16873	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S17-My16873	CP	mg/kg	< 50	< 50	<1	30%	Pass

Duplicate								
Acid Herbicides				Result 1	Result 2	RPD		
2.4-D	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2.4-DB	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2.4.5-T	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
2.4.5-TP	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Actril (loxynil)	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dicamba	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dichlorprop	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dinitro-o-cresol	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dinoseb	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
MCPA	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
MCPB	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Mecoprop	S17-My16873	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S17-My16873	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S17-My16873	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S17-My16873	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S17-My16875	CP	mg/kg	0.06	< 0.05	24	30%	Pass
4,4'-DDE	S17-My16875	CP	mg/kg	0.06	0.05	18	30%	Pass
4,4'-DDT	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S17-My16875	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S17-My16875	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S17-My16875	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)anthracene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S17-My16882	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S17-My16882	CP	%	16	17	2.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S17-My16883	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	S17-My16883	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S17-My16883	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S17-My16883	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S17-My16883	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S17-My16883	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S17-My16883	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S17-My16883	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S17-My16883	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S17-My16884	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S17-My16884	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S17-My16884	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S17-My16884	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S17-My16884	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S17-My16884	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
α-BHC	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
β-BHC	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
δ-BHC	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Dieldrin	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
γ-BHC (Lindane)	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S17-My16888	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S17-My16888	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S17-My16888	CP	mg/kg	< 0.1	< 0.1	<1	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
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 QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Organic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)
Ryan Hamilton	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (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

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067



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: Preston Alma

Report 546538-W
Project name DSI WARRIEWOOD
Project ID SYDEN205656
Received Date May 17, 2017

Client Sample ID			QR-01
Sample Matrix			Water
Eurofins mgt Sample No.			S17-My16892
Date Sampled			May 17, 2017
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}	0.01	mg/L	< 0.01
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02
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
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001

Client Sample ID			QR-01
Sample Matrix			Water
Eurofins mgt Sample No.			S17-My16892
Date Sampled			May 17, 2017
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	85
p-Terphenyl-d14 (surr.)	1	%	105
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
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 B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - LTM-ORG-2010	Sydney	May 23, 2017	7 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	May 17, 2017	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	May 17, 2017	7 Day
Polycyclic Aromatic Hydrocarbons - Method: E007 Polyaromatic Hydrocarbons (PAH)	Sydney	May 23, 2017	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	May 23, 2017	7 Day
Eurofins mgt Suite B10			
Metals M8 - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Sydney	May 17, 2017	28 Day

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 546538
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: May 17, 2017 4:48 PM
Due: May 24, 2017
Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP01_0.1-0.2	May 16, 2017		Soil	S17-My16846	X		X	X			X	X	
2	TP02_0.4-0.5	May 16, 2017		Soil	S17-My16847				X			X	X	
3	TP03_0.05-0.15	May 16, 2017		Soil	S17-My16848	X			X			X		
4	TP03_0.4-0.5	May 16, 2017		Soil	S17-My16849			X				X	X	
5	TP03_0.7-0.8	May 16, 2017		Soil	S17-My16850							X	X	
6	TP04_0.05-0.15	May 16, 2017		Soil	S17-My16851	X			X			X	X	
7	TP05_0.05-0.15	May 16, 2017		Soil	S17-My16852	X								

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
8	TP05_0.5-0.6	May 16, 2017		Soil	S17-My16853				X			X	X	
9	TP05_0.9-1.0	May 16, 2017		Soil	S17-My16854							X	X	
10	TP06_0.05-0.15	May 16, 2017		Soil	S17-My16855				X			X	X	
11	TP07_0.05-0.15	May 16, 2017		Soil	S17-My16856	X		X	X			X	X	
12	TP08_0.05-0.15	May 16, 2017		Soil	S17-My16857	X			X			X	X	
13	TP09_0.6-0.8	May 16, 2017		Soil	S17-My16858				X			X	X	
14	TP10_0.05-0.15	May 16, 2017		Soil	S17-My16859			X	X			X	X	
15	TP11_0.05-0.15	May 16, 2017		Soil	S17-My16860	X			X			X	X	
16	TP12_0.05-	May 16, 2017		Soil	S17-My16861	X								

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
	0.15													
17	TP12_0.6-0.8	May 16, 2017		Soil	S17-My16862				X			X	X	
18	TP13_0.05-0.15	May 16, 2017		Soil	S17-My16863	X			X			X	X	
19	TP14_0.05-0.15	May 16, 2017		Soil	S17-My16864				X			X	X	
20	TP15_0.05-0.15	May 16, 2017		Soil	S17-My16865				X			X	X	
21	TP16_0.1-0.3	May 16, 2017		Soil	S17-My16866	X		X	X			X	X	
22	TP17_0.05-0.15	May 16, 2017		Soil	S17-My16867	X								
23	TP17_0.5-0.6	May 16, 2017		Soil	S17-My16868			X	X			X	X	
24	TP18_0.2-0.3	May 16, 2017		Soil	S17-My16869	X								

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
25	TP18_0.4-0.5	May 16, 2017		Soil	S17-My16870			X	X			X	X	
26	TP19_0.1-0.2	May 16, 2017		Soil	S17-My16871	X			X			X	X	
27	TP20_0.05-0.2	May 16, 2017		Soil	S17-My16872				X			X	X	
28	TP21_0.1-0.2	May 16, 2017		Soil	S17-My16873	X			X			X	X	
29	TP22_0.5-0.6	May 16, 2017		Soil	S17-My16874				X			X	X	
30	TP23_0.1-0.3	May 16, 2017		Soil	S17-My16875				X			X	X	
31	TP24_0.2-0.4	May 16, 2017		Soil	S17-My16876	X			X			X	X	
32	TP24_0.5-0.6	May 16, 2017		Soil	S17-My16877							X	X	
33	TP25_0.1-0.2	May 16, 2017		Soil	S17-My16878				X			X	X	
34	TP26_0.2-0.3	May 16, 2017		Soil	S17-My16879				X			X	X	
35	TP27_0.1-0.2	May 16, 2017		Soil	S17-My16880	X			X			X	X	
36	TP28_0.1-0.2	May 16, 2017		Soil	S17-My16881	X		X				X		

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
37	TP28_0.5-0.6	May 16, 2017		Soil	S17-My16882				X			X	X	
38	QD-01	May 16, 2017		Soil	S17-My16883					X		X		X
39	QD-02	May 16, 2017		Soil	S17-My16884					X		X		X
40	HA01_0.15-0.3	May 16, 2017		Soil	S17-My16885				X			X	X	
41	HA02_0.05-0.15	May 17, 2017		Soil	S17-My16886				X			X	X	
42	HA03_0.1-0.2	May 17, 2017		Soil	S17-My16887				X			X	X	
43	HA04_0.0-0.2	May 17, 2017		Soil	S17-My16888				X			X	X	
44	HA05_0.1-0.3	May 17, 2017		Soil	S17-My16889			X	X			X	X	
45	TRIP BLANK	May 17, 2017		Soil	S17-My16890						X			
46	TRIP SPIKE	May 17, 2017		Soil	S17-My16891						X			
47	QR-01	May 17, 2017		Water	S17-My16892					X				X

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Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
48	TP01_0.4-0.5	May 16, 2017		Soil	S17-My16893		X							
49	TP01_0.5-0.6	May 16, 2017		Soil	S17-My16894		X							
50	TP02_0.05-0.15	May 16, 2017		Soil	S17-My16895		X							
51	TP02_0.9-1.0	May 16, 2017		Soil	S17-My16896		X							
52	TP04_0.5-0.6	May 16, 2017		Soil	S17-My16897		X							
53	TP06_0.5-0.7	May 16, 2017		Soil	S17-My16898		X							
54	TP07_0.5-0.7	May 16, 2017		Soil	S17-My16899		X							
55	TP08_0.5-0.6	May 16, 2017		Soil	S17-My16900		X							
56	TP09_0.05-0.15	May 16, 2017		Soil	S17-My16901		X							
57	TP10_0.6-0.7	May 16, 2017		Soil	S17-My16902		X							
58	TP11_0.5-0.7	May 16, 2017		Soil	S17-My16903		X							

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 546538
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: May 17, 2017 4:48 PM
Due: May 24, 2017
Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence / Presence	HOLD	Polychlorinated Biphenyls	Acid Herbicides	Metals M8	BTEX	Moisture Set	Eurofins mgt Suite B10	Eurofins mgt Suite B4
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
59	TP13_0.5-0.7	May 16, 2017		Soil	S17-My16904		X							
60	TP14_0.5-0.7	May 16, 2017		Soil	S17-My16905		X							
61	TP15_0.5-0.6	May 16, 2017		Soil	S17-My16906		X							
62	TP16_0.5-0.7	May 16, 2017		Soil	S17-My16907		X							
63	TP18_0.8-1.0	May 16, 2017		Soil	S17-My16908		X							
64	TP19_0.4-0.5	May 16, 2017		Soil	S17-My16909		X							
65	TP19_0.6-0.8	May 16, 2017		Soil	S17-My16910		X							
66	TP20_0.5-0.6	May 16, 2017		Soil	S17-My16911		X							
67	TP21_0.5-0.6	May 16, 2017		Soil	S17-My16912		X							
68	TP22_0.1-0.2	May 16, 2017		Soil	S17-My16913		X							
69	TP23_0.4-0.5	May 16, 2017		Soil	S17-My16914		X							
70	TP25_0.5-0.7	May 16, 2017		Soil	S17-My16915		X							

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X				X	
Sydney Laboratory - NATA Site # 18217						X	X			X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 18217														
71	TP26_0.5-0.7	May 16, 2017		Soil	S17-My16916		X							
72	TP27_0.5-0.6	May 16, 2017		Soil	S17-My16917		X							
73	QD-03	May 16, 2017		Soil	S17-My16918		X							
74	HA02_0.4-0.5	May 17, 2017		Soil	S17-My16919		X							
75	HA03_0.3-0.4	May 17, 2017		Soil	S17-My16920		X							
Test Counts						17	28	9	33	3	2	40	36	3

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 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.
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 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

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. 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
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 & PFASs 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 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/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	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	101			70-130	Pass	
TRH C10-C14	%	125			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	118			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	97			70-130	Pass	
m&p-Xylenes	%	109			70-130	Pass	
o-Xylene	%	107			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total		%	108			70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions								
Naphthalene		%	108			70-130	Pass	
TRH C6-C10		%	98			70-130	Pass	
LCS - % Recovery								
Polycyclic Aromatic Hydrocarbons								
Acenaphthene		%	81			70-130	Pass	
Acenaphthylene		%	70			70-130	Pass	
Anthracene		%	112			70-130	Pass	
Benz(a)anthracene		%	82			70-130	Pass	
Benzo(a)pyrene		%	95			70-130	Pass	
Benzo(b&j)fluoranthene		%	78			70-130	Pass	
Benzo(g,h,i)perylene		%	100			70-130	Pass	
Benzo(k)fluoranthene		%	93			70-130	Pass	
Chrysene		%	103			70-130	Pass	
Dibenz(a,h)anthracene		%	93			70-130	Pass	
Fluoranthene		%	94			70-130	Pass	
Fluorene		%	100			70-130	Pass	
Indeno(1,2,3-cd)pyrene		%	98			70-130	Pass	
Naphthalene		%	78			70-130	Pass	
Phenanthrene		%	115			70-130	Pass	
Pyrene		%	94			70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions								
TRH >C10-C16		%	128			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	P17-My09956	NCP	%	126		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	P17-My09956	NCP	%	103		70-130	Pass	
Toluene	P17-My09956	NCP	%	95		70-130	Pass	
Ethylbenzene	P17-My09956	NCP	%	89		70-130	Pass	
m&p-Xylenes	P17-My09956	NCP	%	99		70-130	Pass	
o-Xylene	P17-My09956	NCP	%	100		70-130	Pass	
Xylenes - Total	P17-My09956	NCP	%	99		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	P17-My09956	NCP	%	93		70-130	Pass	
TRH C6-C10	P17-My09956	NCP	%	111		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S17-My09065	NCP	%	71		70-130	Pass	
Acenaphthylene	S17-My09065	NCP	%	124		70-130	Pass	
Benz(a)anthracene	S17-My09065	NCP	%	82		70-130	Pass	
Benzo(a)pyrene	S17-My09065	NCP	%	77		70-130	Pass	
Benzo(b&j)fluoranthene	S17-My09065	NCP	%	101		70-130	Pass	
Benzo(k)fluoranthene	S17-My09065	NCP	%	93		70-130	Pass	
Chrysene	S17-My09065	NCP	%	82		70-130	Pass	
Fluoranthene	S17-My09065	NCP	%	74		70-130	Pass	
Fluorene	S17-My09065	NCP	%	76		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S17-My09065	NCP	%	70		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	S17-My09065	NCP	%	72			70-130	Pass	
Phenanthrene	S17-My09065	NCP	%	70			70-130	Pass	
Pyrene	S17-My09065	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M17-My11187	NCP	%	86			70-130	Pass	
Cadmium	M17-My11187	NCP	%	102			70-130	Pass	
Chromium	M17-My11187	NCP	%	86			70-130	Pass	
Copper	M17-My11187	NCP	%	81			70-130	Pass	
Lead	M17-My11187	NCP	%	127			70-130	Pass	
Mercury	M17-My11187	NCP	%	120			70-130	Pass	
Nickel	M17-My11187	NCP	%	84			70-130	Pass	
Zinc	M17-My11187	NCP	%	85			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	S17-My11859	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-My11859	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-My11859	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-My11859	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-My11859	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M17-My11186	NCP	mg/L	0.016	0.019	1.0	30%	Pass	
Cadmium	M17-My11186	NCP	mg/L	0.0052	0.0068	2.0	30%	Pass	
Chromium	M17-My11186	NCP	mg/L	< 0.001	0.002	<1	30%	Pass	
Copper	M17-My11186	NCP	mg/L	17	17	2.0	30%	Pass	
Lead	M17-My11186	NCP	mg/L	0.054	0.068	1.0	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Nickel	M17-My11186	NCP	mg/L	2.8	2.9	1.0	30%	Pass
Zinc	M17-My11186	NCP	mg/L	1.5	1.6	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

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Metal (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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Enviro Sample NSW

From: Nibha Vaidya
Sent: Friday, 26 May 2017 4:12 PM
To: Enviro Sample NSW; COC NSW; Rupan Virk
Subject: 5 DAY TAT - FW: Eurofins | mgt Test Results - Report 546538 : Site DSI WARRIEWOOD (SYDEN205656)

Follow Up Flag: Follow up
Flag Status: Flagged

Additional TCLP please – 5 day TAT

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Sixsmith, Jessie [<mailto:Jessie.Sixsmith@coffey.com>]
Sent: Friday, 26 May 2017 4:05 PM
To: Nibha Vaidya; Alma, Preston
Subject: RE: Eurofins | mgt Test Results - Report 546538 : Site DSI WARRIEWOOD (SYDEN205656)

Hi Nibha,

Can we please request the following TCLPs on standard TAT:

- TCLP Lead: HA01-0.15-0.3, TP03_0.4-0.5, TP12-0.6-0.8
- TCLP Ni: TP14-0.05-0.15 and TP23_0.1-0.3
- TCLP benzo(a)pyrene: TP11_0.05-0.15 and HA02-0.05-0.15

These samples are for the Meriton Warriewood project FOC.

Kind regards,

Jessie Sixsmith
Environmental Scientist

t: +61 2 9406 1000
f: +61 2 9406 1002
m: +61 438 271 821

w: coffey.com

From: NibhaVaidya@eurofins.com [<mailto:NibhaVaidya@eurofins.com>]
Sent: Friday, 26 May 2017 1:27 PM
To: Alma, Preston <Preston.Alma@coffey.com>
Cc: Sixsmith, Jessie <Jessie.Sixsmith@coffey.com>
Subject: Eurofins | mgt Test Results - Report 546538 : Site DSI WARRIEWOOD (SYDEN205656)

Sample Receipt Advice

Company name: **Coffey Environments Pty Ltd NSW**
Contact name: **Preston Alma**
Project name: **ADDITIONAL: DSI WARRIEWOOD**
Project ID: **SYDEN205656**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 26, 2017 4:05 PM**
Eurofins | mgt reference: **547882**

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 : 11.4 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.
- ☒ Appropriate sample containers have been used.
- ☒ 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:

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Preston Alma - Preston_Alma@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Environments Pty Ltd NSW email address.

Company Name: Coffey Environments Pty Ltd NSW
Address: Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067
Project Name: ADDITIONAL: DSI WARRIEWOOD
Project ID: SYDEN205656

Order No.:
Report #: 547882
Phone: +61 2 9406 1000
Fax: +61 2 9406 1004

Received: May 26, 2017 4:05 PM
Due: Jun 2, 2017
Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Benzo(a)pyrene	Lead	Nickel	USA Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 18217									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	HA01_0.15-0.3	May 16, 2017		US Leachate	S17-My27122		X		X
2	TP03_0.4-0.5	May 16, 2017		US Leachate	S17-My27123		X		X
3	TP12_0.6-0.8	May 16, 2017		US Leachate	S17-My27124		X		X
4	TP14_0.05-0.15	May 16, 2017		US Leachate	S17-My27125			X	X
5	TP23_0.1-0.3	May 16, 2017		US Leachate	S17-My27126			X	X
6	TP11_0.05-0.15	May 16, 2017		US Leachate	S17-My27127	X			X
7	HA02_0.05-0.15	May 16, 2017		US Leachate	S17-My27128	X			X

Company Name: Coffey Environments Pty Ltd NSW
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Sample Detail	Benzo(a)pyrene	Lead	Nickel	USA Leaching Procedure
	X	X	X	X
Melbourne Laboratory - NATA Site # 1254 & 14271				
Sydney Laboratory - NATA Site # 18217	X	X	X	X
Brisbane Laboratory - NATA Site # 20794				
Perth Laboratory - NATA Site # 18217				
Test Counts	2	3	2	7

Certificate of Analysis

Coffey Environments Pty Ltd NSW
Level 20, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067



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: Preston Alma

Report 547882-L
Project name ADDITIONAL: DSI WARRIEWOOD
Project ID SYDEN205656
Received Date May 26, 2017

Client Sample ID			HA01_0.15-0.3	TP03_0.4-0.5	TP12_0.6-0.8	TP14_0.05-0.15
Sample Matrix			US Leachate	US Leachate	US Leachate	US Leachate
Eurofins mgt Sample No.			S17-My27122	S17-My27123	S17-My27124	S17-My27125
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	0.01	mg/L	0.26	0.37	< 0.01	-
Nickel	0.05	mg/L	-	-	-	< 0.05
USA Leaching Procedure						
Leachate Fluid ^{C01}		comment	1.0	1.0	1.0	1.0
pH (initial)	0.1	pH Units	9.5	8.9	11	9.6
pH (off)	0.1	pH Units	5.2	5.3	9.8	5.3
pH (USA HCl addition)	0.1	pH Units	2.4	2.4	4.9	2.4

Client Sample ID			TP23_0.1-0.3	TP11_0.05-0.15	HA02_0.05-0.15
Sample Matrix			US Leachate	US Leachate	US Leachate
Eurofins mgt Sample No.			S17-My27126	S17-My27127	S17-My27128
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene	0.001	mg/L	-	< 0.001	< 0.001
Heavy Metals					
Nickel	0.05	mg/L	< 0.05	-	-
USA Leaching Procedure					
Leachate Fluid ^{C01}		comment	1.0	1.0	1.0
pH (initial)	0.1	pH Units	8.6	9.2	9.1
pH (off)	0.1	pH Units	5.1	5.3	5.4
pH (USA HCl addition)	0.1	pH Units	2.3	2.4	2.4

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
Polycyclic Aromatic Hydrocarbons	Sydney	May 31, 2017	7 Days
- Method: LTM-ORG-2140 PAH and Phenols in Soils by GCMS			
Heavy Metals	Sydney	May 30, 2017	180 Day
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
USA Leaching Procedure	Sydney	May 30, 2017	14 Day
- Method: LTM-GEN-7010 Leaching Procedure for Soils & Solid Wastes			

Company Name: Coffey Environments Pty Ltd NSW
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Chatswood
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Order No.:
Report #: 547882
Phone: +61 2 9406 1000
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Received: May 26, 2017 4:05 PM
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Priority: 5 Day
Contact Name: Preston Alma

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Benzo(a)pyrene	Lead	Nickel	USA Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 18217									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	HA01_0.15-0.3	May 16, 2017		US Leachate	S17-My27122		X		X
2	TP03_0.4-0.5	May 16, 2017		US Leachate	S17-My27123		X		X
3	TP12_0.6-0.8	May 16, 2017		US Leachate	S17-My27124		X		X
4	TP14_0.05-0.15	May 16, 2017		US Leachate	S17-My27125			X	X
5	TP23_0.1-0.3	May 16, 2017		US Leachate	S17-My27126			X	X
6	TP11_0.05-0.15	May 16, 2017		US Leachate	S17-My27127	X			X
7	HA02_0.05-0.15	May 16, 2017		US Leachate	S17-My27128	X			X

Company Name: Coffey Environments Pty Ltd NSW
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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	Benzo(a)pyrene	Lead	Nickel	USA Leaching Procedure
Melbourne Laboratory - NATA Site # 1254 & 14271				
Sydney Laboratory - NATA Site # 18217	X	X	X	X
Brisbane Laboratory - NATA Site # 20794				
Perth Laboratory - NATA Site # 18217				
Test Counts	2	3	2	7

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 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.
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 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

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. 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
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 & PFASs 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 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										
Heavy Metals										
Lead				mg/L	< 0.01			0.01	Pass	
Nickel				mg/L	< 0.05			0.05	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Heavy Metals										
				Result 1						
Lead	S17-My27123	CP	%	76				70-130	Pass	
Nickel	S17-My27123	CP	%	70				70-130	Pass	
Spike - % Recovery										
Heavy Metals										
				Result 1						
Nickel	S17-My28087	NCP	%	78				70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
Heavy Metals										
				Result 1	Result 2	RPD				
Lead	S17-My27122	CP	mg/L	0.26	0.26	2.0		30%	Pass	
Nickel	S17-My27122	CP	mg/L	< 0.05	< 0.05	<1		30%	Pass	
Duplicate										
Heavy Metals										
				Result 1	Result 2	RPD				
Nickel	S17-My28086	NCP	mg/L	< 0.05	< 0.05	<1		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
C01	Leachate Fluid Key: 1 - pH 5.0; 2 - pH 2.9; 3 - pH 9.2; 4 - Reagent (DI) water; 5 - Client sample, 6 - other

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (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 shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CERTIFICATE OF ANALYSIS

Work Order : **ES1712005**
Client : **COFFEY ENVIRONMENTS PTY LTD**
Contact : **MS JESSIE SIXSMITH**
Address : **LEVEL 19, 799 PACIFIC HIGHWAY Tower B - Citadel Tower**
CHATSWOOD NSW, AUSTRALIA 2067
Telephone : **+61 02 9406 1000**
Project : **SYDEN205656 DS1 WARRIEWOOD**
Order number : **----**
C-O-C number : **8742**
Sampler : **JESSIE SIXSMITH**
Site : **----**
Quote number : **EN/077/17**
No. of samples received : **3**
No. of samples analysed : **2**

Page : 1 of 6
Laboratory : Environmental Division Sydney
Contact : Angelene Kumar
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61 2 8784 8555
Date Samples Received : 17-May-2017 18:00
Date Analysis Commenced : 19-May-2017
Issue Date : 25-May-2017 16:24



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP071: Results of sample QT01 have been confirmed by re-extraction and re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QT01	QT02	----	----	----
Client sampling date / time					16-May-2017 00:00	16-May-2017 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1712005-001	ES1712005-002	-----	-----	-----	-----
				Result	Result	----	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%	8.3	9.5	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	36	4	----	----	----	----
Copper	7440-50-8	5	mg/kg	32	8	----	----	----	----
Lead	7439-92-1	5	mg/kg	140	<5	----	----	----	----
Nickel	7440-02-0	2	mg/kg	27	<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	121	7	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	1.0	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	0.9	<0.5	----	----	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	0.6	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	1.5	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.6	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.0	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.6	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	0.8	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	7.0	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	1.3	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	1.6	0.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.8	1.2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QT01	QT02	----	----	----
Client sampling date / time					16-May-2017 00:00	16-May-2017 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1712005-001	ES1712005-002	-----	-----	-----
					Result	Result	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		160	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		160	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		170	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		170	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		340	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		91.6	87.8	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		94.6	89.1	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		68.0	71.4	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		85.6	87.5	----	----	----
Anthracene-d10	1719-06-8	0.5	%		92.5	88.8	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		93.0	88.2	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		96.4	99.8	----	----	----
Toluene-D8	2037-26-5	0.2	%		90.7	92.4	----	----	----

Page : 5 of 6
 Work Order : ES1712005
 Client : COFFEY ENVIRONMENTS PTY LTD
 Project : SYDEN205656 DS1 WARRIEWOOD



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QT01	QT02	----	----	----
				Client sampling date / time	16-May-2017 00:00	16-May-2017 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1712005-001	ES1712005-002	-----	-----	-----
					Result	Result	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		105	101	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

QUALITY CONTROL REPORT

Work Order	: ES1712005	Page	: 1 of 7
Client	: COFFEY ENVIRONMENTS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MS JESSIE SIXSMITH	Contact	: Angelene Kumar
Address	: LEVEL 19, 799 PACIFIC HIGHWAY Tower B - Citadel Tower CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9406 1000	Telephone	: +61 2 8784 8555
Project	: SYDEN205656 DS1 WARRIEWOOD	Date Samples Received	: 17-May-2017
Order number	: ----	Date Analysis Commenced	: 19-May-2017
C-O-C number	: 8742	Issue Date	: 25-May-2017
Sampler	: JESSIE SIXSMITH		
Site	: ----		
Quote number	: EN/077/17		
No. of samples received	: 3		
No. of samples analysed	: 2		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 900226)									
ES1711980-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	7.5	6.7	12.2	No Limit
ES1712005-001	QT01	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	8.3	7.7	7.60	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 899684)									
EB1709722-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	<2	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
ES1712194-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	1	2	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	8	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	85	82	3.75	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	11	17.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	20	8.87	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	21	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	682	728	6.52	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 899685)									
EB1709722-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1712194-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 897559)									
ES1712078-008	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 897559) - continued									
ES1712078-008	Anonymous	EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1712078-002	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080/071: Total Petroleum Hydrocarbons (QC Lot: 897114)							
ES1712075-003	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1712075-020	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 897558)									
ES1712078-008	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1712078-002	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 897114)									
ES1712075-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1712075-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 897558)									
ES1712078-008	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1712078-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 897114)									
ES1712075-003	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1712075-020	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	1.1	1.1	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	1.4	1.4	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit		

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%)		
			Low	High	
<5	21.7 mg/kg	101	86	126	
<1	4.64 mg/kg	102	83	113	
<2	43.9 mg/kg	85.9	76	128	
<5	32 mg/kg	98.1	86	120	
<5	40 mg/kg	97.6	80	114	
<2	55 mg/kg	97.1	87	123	
<5	60.8 mg/kg	102	80	122	
<0.1	2.57 mg/kg	92.1	70	105	
<0.5	6 mg/kg	102	77	125	
<0.5	6 mg/kg	99.1	72	124	
<0.5	6 mg/kg	97.1	73	127	
<0.5	6 mg/kg	104	72	126	
<0.5	6 mg/kg	97.6	75	127	
<0.5	6 mg/kg	99.4	77	127	
<0.5	6 mg/kg	90.3	73	127	
<0.5	6 mg/kg	86.5	74	128	
<0.5	6 mg/kg	97.0	69	123	
<0.5	6 mg/kg	104	75	127	
<0.5	6 mg/kg	107	68	116	
<0.5	6 mg/kg	106	74	126	
<0.5	6 mg/kg	101	70	126	
<0.5	6 mg/kg	67.4	61	121	
<0.5	6 mg/kg	65.6	62	118	
<0.5	6 mg/kg	66.9	63	121	
<10	26 mg/kg	83.3	68	128	
<50	200 mg/kg	104	75	129	
<100	300 mg/kg	108	77	131	
<100	200 mg/kg	109	71	129	

Method Blank (MB) Report

Spike

Spike Recovery (%)

Recovery Limits (%)

Matrix Spike (MS) Report

Sub-Matrix: **SOIL**

Spike

SpokeRecovery(%)
0
10
20
30
40
50
60
70
80
90
100

Recovery Limits (%)

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	Spike Spike/recovery (%)	MS	Recovery Limits (%) Low	High
EG005T: Total Metals by ICP-AES (QCLot: 899684)								
EB1709722-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	99.6		70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.8		70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	99.9		70	130
		EG005T: Copper	7440-50-8	250 mg/kg	99.9		70	130
		EG005T: Lead	7439-92-1	250 mg/kg	102		70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	99.6		70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	104		70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 899685)								
EB1709722-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	114		70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 897559)								
ES1712078-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.8		70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.4		70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 897114)								
ES1712075-003	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	87.4		70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 897558)								

Page : 7 of 7
 Work Order : ES1712005
 Client : COFFEY ENVIRONMENTS PTY LTD
 Project : SYDEN205656 DS1 WARRIEWOOD



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 897558) - continued							
ES1712078-002	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	80.5	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	101	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	111	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 897114)							
ES1712075-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	85.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 897558)							
ES1712078-002	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	87.4	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	108	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	97.8	52	132
EP080: BTEXN (QCLot: 897114)							
ES1712075-003	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	79.8	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	79.8	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	84.4	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	84.4	70	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.9	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	83.4	70	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES1712005	Page	: 1 of 4
Client	: COFFEY ENVIRONMENTS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MS JESSIE SIXSMITH	Telephone	: +61 2 8784 8555
Project	: SYDEN205656 DS1 WARRIEWOOD	Date Samples Received	: 17-May-2017
Site	: ----	Issue Date	: 25-May-2017
Sampler	: JESSIE SIXSMITH	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055-103) QT01,	QT02	16-May-2017	----	----	----	22-May-2017	30-May-2017	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) QT01,	QT02	16-May-2017	21-May-2017	12-Nov-2017	✓	22-May-2017	12-Nov-2017	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) QT01,	QT02	16-May-2017	21-May-2017	13-Jun-2017	✓	22-May-2017	13-Jun-2017	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) QT01,	QT02	16-May-2017	19-May-2017	30-May-2017	✓	19-May-2017	28-Jun-2017	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071) QT01,	QT02	16-May-2017	19-May-2017	30-May-2017	✓	19-May-2017	28-Jun-2017	✓
Soil Glass Jar - Unpreserved (EP080) QT01,	QT02	16-May-2017	20-May-2017	30-May-2017	✓	24-May-2017	30-May-2017	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP071) QT01,	QT02	16-May-2017	19-May-2017	30-May-2017	✓	19-May-2017	28-Jun-2017	✓
Soil Glass Jar - Unpreserved (EP080) QT01,	QT02	16-May-2017	20-May-2017	30-May-2017	✓	24-May-2017	30-May-2017	✓
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) QT01,	QT02	16-May-2017	20-May-2017	30-May-2017	✓	24-May-2017	30-May-2017	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICP-AES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

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