



## CONTAMINATION SITE INVESTIGATION REPORT



ADDRESS: 50, 134 & 146 Station Lane, LOCHINVAR NSW-2321

CLIENT: Bathla Group

REPORT No: NE526-Rev01

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GEOTESTA

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## EXECUTIVE SUMMARY

Geotesta was engaged by Bathla Group to conduct a site contamination investigation (SCI) on the property known as 51, 134 & 146 Station Lane LOCHINVAR NSW-2321. The SCI include a review of current and historical activities on the site, an assessment of the potential risk of soil/groundwater contamination existing on the land, the fieldworks and lab analysis and assessment. It is understood that the site is proposed for low to medium density residential development.

In accordance with the Department of Urban Affairs and Planning and Environment Protection Authority Managing Land Contamination: Planning Guidelines, State Environmental Planning Policy No. 55—Remediation of Land 1998, the site is considered to have a Low Risk of soil and groundwater contamination.

Based on the results of this investigation the following conclusions are drawn:

- Concentrations of Organochlorine Pesticides/Organophosphorus Pesticides, TRH, PAH and BTEX are below the site assessment criteria. No asbestos was detected in soil samples. Arsenic concentrations above the site assessment criteria were detected in BH101. Additional sampling during the data gap assessment will be required near BH101 to delineate the vertical and horizontal extent of identified Arsenic soil contamination. If the concentration of Arsenic still exceeds the site assessment criteria, a remedial action plan will be required to address the concentration exceedance.
- Additional sampling is required after demolition of the existing buildings and sheds to address the data gap due to limited access to the dwelling and sheds at the time of investigation.
- Based on the scope of works undertaken in this investigation, the site is considered suitable for the land use and proposed development provided that the limited hotspot is cleared of any Arsenic contamination.

## 1. INTRODUCTION

Geotesta was engaged by Bathla Group to investigate the contamination of the site referred to as 50, 134 & 146 Station Lane LOCHINVAR NSW-2321. The study including combined preliminary and detailed site investigations (SCI) was commissioned by Bathla Group.

The SCI include a review of current and historical activities on the site, an assessment of the potential risk of soil/groundwater contamination existing on the land, the fieldworks for soil sampling and lab analysis and assessment.

The site is a currently a mix of residential and farming area. Dwellings, sheds, open paddocks and dams are found on three sites. Open paddocks were observed on the properties 50, 134 & 146 Station Lane Lochinvar NSW, 2321. It is understood that the site is proposed for low to medium density residential development.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

## 2. PLANNING GUIDELINES

It is understood that the land is to be used for residential development. This Site Investigation was conducted in general accordance with the Department of Urban Affairs and Planning and Environment Protection Authority Managing Land Contamination: Planning Guidelines, State Environmental Planning Policy No. 55—Remediation of Land 1998.

Land contamination is most often the result of past uses. It can arise from activities that took place on or adjacent to a site and be the result of improper chemical handling or disposal practices, or accidental spillages or leakages of chemicals during manufacturing or storage. Activities not directly related to the site may also cause contamination; for example, from diffuse sources such as polluted groundwater migrating under a site or dust settling out from industrial emissions.

When carrying out planning functions under the EPA Act, a planning authority must consider the possibility that a previous land use has caused contamination of the site as well as the potential risk to health or the environment from that contamination. Decisions must then be made as to whether the land should be remediated, or its use of the land restricted, in order to reduce the risk. Failure to consider the possibility of contamination at appropriate stages of the planning decision process may result in:

- inappropriate land use decisions
- increased risk to human health
- detrimental effects on the biophysical environment
- impacts on the safety of existing and new structures
- delay in realising developments
- substantial fall in the land value and the passing on of unanticipated development costs to other parties

When an authority carries out a planning function, the history of land use needs to be considered as an indicator of potential contamination. Where there is no reason to suspect contamination after acting substantially in accordance with these Guidelines, the proposal may be processed in the usual way. However, where there is an indication that the land is, or may be, contaminated, the appropriate procedures outlined in these Guidelines should be followed.

Essentially, the Guidelines recommend that re-zonings, development control plans and development applications (DAs) are backed up by information demonstrating that the land is suitable for the proposed use or can be made suitable, either by remediation or by the way the land is used.

### 3. OBJECTIVE AND SCOPE

The objective of this SCI report is to comply with the Department of Urban Affairs and Planning and Environment Protection Authority Managing Land Contamination: Planning Guidelines, State Environmental Planning Policy No. 55—Remediation of Land 1998 and gain a better understanding of the environmental risks associated with the site for human health and/or the environment as a result of previous and current land use. The general objective to be adhered is recommending the suitability of the site for residential development in relation to the management of contamination.

The SCI was conducted in general accordance and consideration of the Planning Guidelines and the Australian Standard AS 4482.1-2005 Guide to the sampling and investigation of potentially contaminated soil - Part 1: Non-volatile and semi-volatile compounds, the Australian Standard AS 4482.2-1999 Guide to the sampling and investigation of potentially contaminated soil - Part 2: Volatile substances, the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 1999 (amended 2013), and other relevant NSW guidelines and legislation.

The scope of work carried out to achieve this objective consisted of:

- Performing a desktop assessment of the available information on the site history from aerial photographs, historical titles search, Geological and hydrogeological review;
- Searching records on previous notices issued by OEH and Maitland City Council,
- Inspecting the site to identify the areas of environmental concerns;
- Undertaking soil samplings across the site;
- Planning a range of laboratory environmental tests;
- Preparing a report summarising above.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.



## 4. SITE DESCRIPTION

### 4.1 Site Details, Location and Topography

The site is located at 51, 134 & 146 Station Lane Lochinvar NSW, 2321 in the local government area of City of Maitland. The site under investigation is located on the west side of Station lane and approximately 180 km (by road) from Sydney CBD. Three sites in irregular rectangular shapes with an area of approximately 101 Hectares. All the structures in the subject site including dwellings and sheds remain at the time of this investigation. The site location is shown in Figure 1.

### 4.2 Site, Surrounding Area and Topography

The site is highly undulating with topographical features matching the drainage patterns of the area. Available topographical maps indicate that the site lies at an elevation of approximately 48 metres above sea level reference to Australian Height Datum (AHD) (<http://en-au.topographic-map.com>).

### 4.3 Geological, Soil Landscapes and Drainage

The Cessnock 1:250,000 Geological Series Sheet 9132 indicates that the underlying geology consist of Sandstone, siltstone, lithic feldspathic, shale, basalt flows of Lochinvar formation Dalwood group. conglomerate of the Permian Maitland Group.

### 4.4 Site Regional Meteorology and Hydrogeology

The following climate information from the Commonwealth Bureau of Meteorology website (<http://www.bom.gov.au/>) can be obtained:

- Mean Annual rainfall (monthly rainfall) of 821.3mm in Maitland Visitors Centre (Site Number: 061388) (3.30 km away)
- Mean Annual Temperature (Monthly mean maximum temperature) temperature of 24.5°C in Maitland Visitors Centre (Site Number: 061388) (3.30 km away)

Groundwater salinity is mapped >14000mg/l and therefore unsuitable for stock use. The direction of the regional groundwater flow is expected to follow the slight slope of the regional topography.

A search of Bureau of Meteorology – water information identified no existing groundwater well located within an approximate distance of 500 metre from the site.

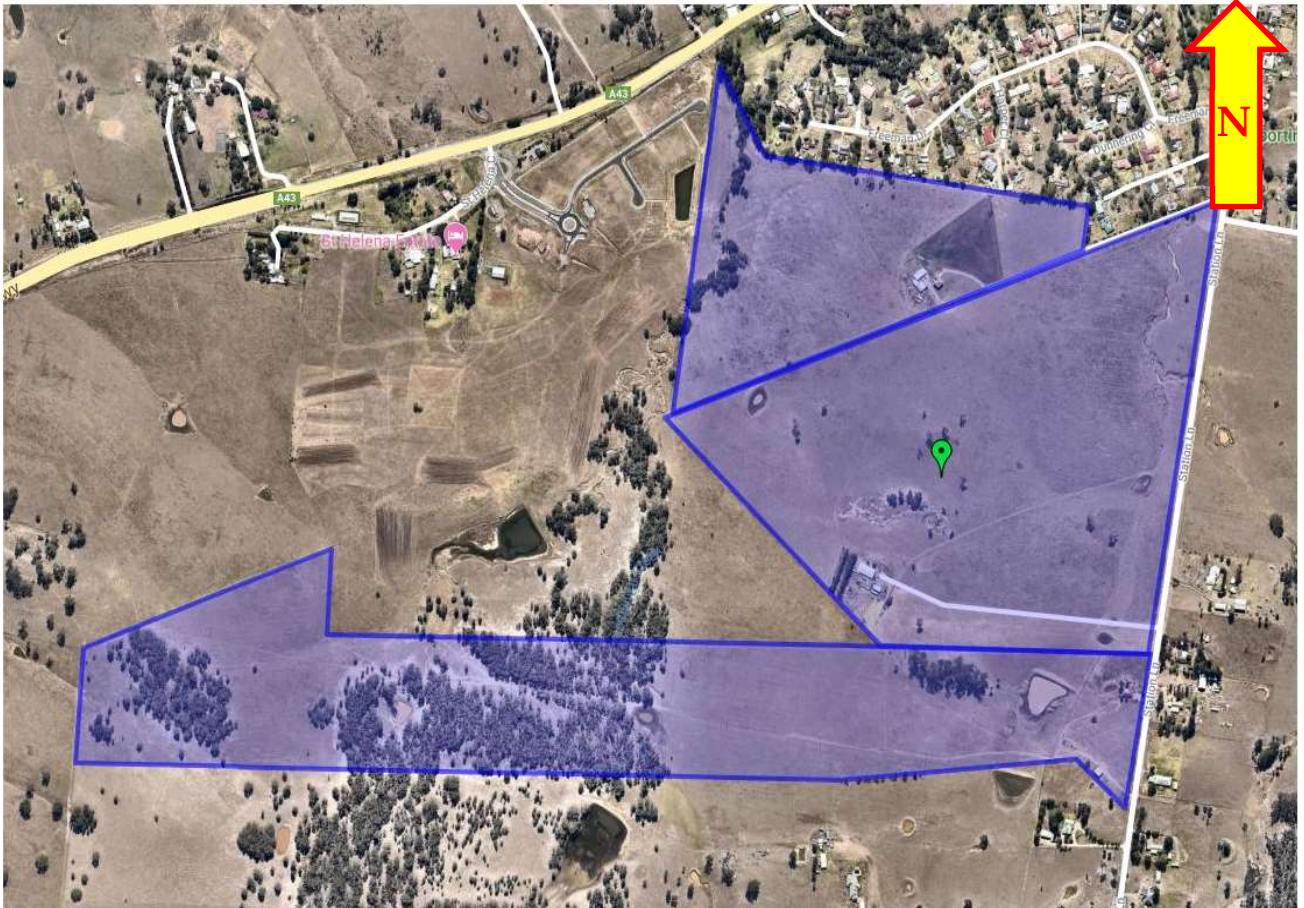


Figure 1. Site Location and features

## 4.5 Acid Sulphate Soils

The Department for Infrastructure, Planning and Natural Resources (DIPNR) Acid Sulphate Soils Risk Mapping (1997) indicates that the Site is not expected to be underlain by acid sulphate soils.

## 4.6 Site History

### 4.6.1 Historical Background

The Wonnarua people are the traditional landowners of the Maitland area and their lands extend throughout the Hunter Valley. A dreamtime story from the Wonnarua explains how the hills and rivers in the Hunter Valley were created by a spirit called Baiame. Neighbouring nations to Wonnarua include Geawegal, Worimi, Awabakal, Gamilaroi, Wiradjuri, Darkinjung and Birpai. These nations would travel through the area and were often invited to participate in local ceremonies.

The European settlement of Maitland began with farmers in the early 1800s. The majority of Maitland, including its main avenue, High Street, grew without apparent planning giving the city its great charm. The original bullock track became fixed as the line of High Street with its meandering curves which are still evident today. At almost every turn within Maitland you come across an architectural delight with a myriad of historic buildings giving the city its unique character. Landmark buildings erected over 170 years ago stand alongside fine modern buildings, a harmonious mix of new and old. The area has long been an industrious area and since the 1820s Central Maitland has been home to industry, trade and commerce.

Its riverside location, stores and warehouses gave the settlers many a task to undertake within the frontier town. Maitland was home to a wide range of businesses, including flourmills, breweries, soap and candle making and salt stores. Iron workers, blacksmiths and saddlers also thrived at this time. During the 1850s a series of riverside merchants traded, most notably David Cohen & Co and Owen & Beckett, experiencing great success. Interspersed within the retail area of Central Maitland were a selection of services and outlets such as tailors, hairdressers, wig makers, confectioners, photographers and dressmakers who added to the sense of vitality and diversity within the area [<https://www.mymaitland.com.au/about/maitlandshistory/>].

#### 4.6.2 Aerial Photograph Review

An aerial photograph search carried out by LotSearch was conducted on the site. The historical aerial photos were viewed with observations presented in Table 2. The LotSearch report (ref.:LS021373\_EA) is presented in Appendix A with additional aerial Photographs in Appendix B.

**Table 1: Aerial Photograph Review**

Year	Site Observations
1958	The site is covered with green grass and sparse trees. Dwellings currently exist on the southern property.
1963	A small dwelling has been constructed in the north-eastern part of the site
1971	No change from previous photograph
1976	Farming activities have taken place in the southern part of the site. No other major changes
1984	No change from previous photograph
1993	A dwelling and farm shed have been constructed in the central and southern part of the site
2004	A dwelling and accompanying sheds have been constructed in the northern part of the site
2010	No change from previous photograph
2015	No change from previous photograph
2021	No change from previous photograph

#### 4.6.3 Site Walkover

Results of the site walkover inspection carried out on 1 Aug 2019:

51 Station Lane:

- Large open paddock with a dam on the western side of the property
- One double storey and single storey dwelling
- sheds located nearby dwelling; Household refuse contained within the sheds

134 Station Lane:

- A single-story dwelling occupies the centre of the property.
- one large sheds in the southern side of the property containing household refuse, farming equipment, workshop equipment and multiple abandoned cars within and beside the sheds.
- Two large dams on the eastern and western side of the property.

- A historical quarry, as described by the current property owner, was noted in the centre of the site
- Unidentified fill material was noted in the central western part of the site

#### 146 Station Lane:

- A single storey main dwelling occupies entrance of the property.
- One shed can be found on the southern side of the main dwelling. Household gardening equipment were found in the shed.
- Two large dams found on the western side of the property

#### 4.6.4 NSW OEH Records

The site or nearby surrounding areas have no notices under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985). For the site or nearby surrounding areas no notices under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985) was found.

#### 4.6.5 Historical Land Titles Search

A search for the Historical Land Titles was not conducted as a review of the historic site aerial photographs indicates the site has not been used for anything other than residential and agricultural purposes.

## 5. POTENTIAL FOR CONTAMINATION

### 5.1 Areas of Environmental Concern

Our assessment of site AECs and COPCs (Table 1) is made based on available site history, aerial photograph interpretation and site walkovers. A map showing locations of identified AECs is provided in Figure 2.

**Table 2: Areas of Environmental Concern and Contaminants of Primary Concern (COPC)**

AEC <sup>1</sup>	Potential for Contamination	COPC	Contamination Likelihood
A – Dwellings	Pesticides and heavy metals may have been used underneath dwellings for pest control. Dwelling construction may include ACM and/or lead based paints.	HM, OCP/OPP and asbestos	Medium
B – Paddocks	Areas of possible Paddocks may have introduced heavy metals or pesticides to the soil	HM, OCP/OPP	Medium
C – Sheds/Garage	Heavy metals may have been used underneath sheds. Shed construction may include ACM and/or lead based paints.  Sheds may currently (or have previously) stored fuel, oils, asbestos sheeting (PACM), pesticides and/or been treated with heavy metals and pesticides (pest control). Shed construction may include ACM and/or lead based paints.	HM, TRH, PAH, BTEX and, OCP/OPP, ASBESTOS	Medium-High
D – Stockpile	Contaminants from unknown contents of stockpiles and general refuse may have spilled or leaked onto underlying soil.	HM, TRH, BTEX, PAH and OCP/OPP and asbestos.	Medium-high
E – Dams / Empty Dams	Contaminants may have washed into and accumulated in dams	MH and OCP/OPP	Low to medium
F – Unknown Fill Materials	Unknown fill materials may contain sources of contaminants which may have leached into underlying soil	HM, TRH, PAH, BTEX and, OCP/OPP, ASBESTOS	Medium

## 5.2 Assessment of Preliminary Site Investigation and recommendations

The results of the site history and walkover inspection indicate that the site has been used for residential and agricultural purposes since at least 1958. In accordance with the Department of Urban Affairs and Planning and Environment Protection Authority Managing Land Contamination: Planning Guidelines, State Environmental Planning Policy No. 55—Remediation of Land 1998, the site is considered to have the environmental concerns of:

- In the areas of possible dwellings/sheds, fibrous cement sheeting (containing asbestos) may have been used during construction and sheds may currently (or have previously) stored fuel, oils, asbestos sheeting, pesticides, zinc treated (galvanised) metals, and/or lead based paints.
- Contaminants from unknown contents of stockpiles and general refuse may have spilled or leaked onto underlying soil.
- Areas of possible cropping/grass may have introduced heavy metals or pesticides to the soil.
- Contaminants may have washed into and accumulated in dams.
- Fill from unknown sources may contain contaminants which may have spilled or leaked onto underlying soil.

To address identified AECs, intrusive soil/water sampling regime is recommended to determine what, if any, remediation is required to render the site fit for residential use. The soil sampling plan is to be developed in accordance with NSW EPA Sampling Design Guidelines (1995) and a risk-based assessment.

Assessment shall address each of the identified AECs and assess COPC identified for each AEC (Table 1). Results of the site testing shall be assessed against site acceptance criteria (SAC) with reference to ASC NEPM (1999, amended 2013).

## 6. SAMPLING ANALYSIS AND DATA QUALITY PLAN (SAQP)

A SAQP has been developed to ensure that data collected for this SCI is representative and provides a robust basis for site assessment decisions. Preparation of the SAQP has been completed in general accordance with ASC NEPM (1999, amended 2013) methodology and includes:

- Data Quality Objectives,
- Field Screening and Sampling Program;
- Sampling QA/QC;
- Sample Handling, Preservation and Storage Procedures;
- Analytical Program and Detailed Investigation Data Assessment.

### 6.1 Data Quality Objectives

The National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013 amendment and Australian Standard (AS) 4482.1-2005 recommend that data quality objectives (DQOs) be implemented during the investigation of potentially contaminated sites. The DQO process described in AS 4482.1-2005 outlines seven (7) distinct steps to outline the project goals, decisions, constraints and an assessment of the project uncertainties and how to address these when they arise. They define the quality and quantity of data needed to support decisions relating to the environmental condition of a site. They also outline the defining criteria that a data collection design should meet, including when, where, how and how many samples to be collected. In this detailed site investigation study, the DQOs for the assessment of soil investigations are as:

#### 6.1.1 State the Problem

Determine, from a contamination point of view, if the land is suitable to be developed for Residential land in accordance with the requirements of State Environmental Planning Policy No. 55 under the Environmental Planning and Assessment Act. 1979. This includes reviewing previous site investigations, historical searches (titles, land use of site and adjacent sites, and aerial photographs), identification of chemicals of concern, media they inhabit and possible migration pathways (to and from the site), potential exposures to human or/and environmental receptors, and concerns with the potential clean up and desired future land use of the property.



### 6.1.2 Identify the Decision

The decisions to be made on the contamination and the new environmental data required includes considering relevant site contamination criteria for each medium (fill, natural soil and groundwater). The decision was made that the concentrations for all soil chemicals of potential concern must be less than the site criteria identified for residual soils as Residential A - Garden/Accessible soil land use suitability.

Decisions are to be made based on the following questions:

- ✓ Do chemical concentrations in soil comply with the stated Site Acceptance Criteria (SAC)?
- ✓ Do residual soils or stockpiled materials (if applicable) pose an unacceptable risk to Human Health or the environment?

### 6.1.3 Identify Inputs to Decision

This step requires the identification of the environmental variables/characteristics that need measuring, identification of which media (fill, soil etc.) need to be collected, identification of the site criteria for each medium of concern and appropriate analytical testing. The inputs to the assessment of site soil quality will include:

- ✓ Existing site environmental data;
- ✓ Observations during field works
- ✓ Systematic Soil sampling and representative analysis results from the site
- ✓ Analytical Results;
- ✓ Assessment of analytical results against site suitable assessment criteria (SAC) including human health and ecological risk criteria.

### 6.1.4 Define the Study Boundaries

Specify the spatial and temporal aspects of the environmental media that the data must represent to support decision. To identify the boundaries (both spatial and temporal) of the investigation and to identify any restrictions that may obstruct the assessment process. The study boundaries are as follows:

- ✓ Lateral – Lateral boundary of the assessment is defined by the site boundary as indicated in Figure 1;
- ✓ Vertical – Vertical boundary will be governed by the maximum depth reached during field works (1000mm);
- ✓ Temporal – The dates of site inspection and sampling works.

### 6.1.5 Develop a Decision Rule

To define the parameter(s) of interest, specify the action level and provide a logical basis for choosing from alternative actions. The soils will not be considered suitable for its intended land use if soils do not comply with the criteria provided in NEPM 2013, Table 1A Column A–Residential with Garden Accessible soil.

The subject Site will be deemed unsuccessfully validated or containing contamination “hotspots” if the site assessment criteria are unfulfilled.

The decision rules for this investigation area are as follows:

- ✓ If the concentrations of chemicals in the soil data collected from the site do not exceed the SAC, then the site can be confirmed as suitable for the development.
- ✓ If the concentration of chemicals in the soil data collected from the site exceeds the SAC then a Remedial Action Plan will be required for that area or soil portion.
- ✓ If due to limit access the sampling is not done beneath the structures, then a data gap assessment will be required to validate the site.

The following publications have been reviewed with respect to the assessment criteria and sampling methodology of soils at the Site:

- ✓ NSW EPA Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites (2011);
- ✓ Schedule B1 Guideline on Investigation Levels for Soil and Groundwater from the National Environment Protection (Assessment of Site Contamination) Amended Measure 2013
- ✓ Standards Australia AS4482.1 2nd Edition: Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil – Part 1: Non-Volatile and Semi-Volatile Compounds, 2005;
- ✓ NSW EPA Contaminated Sites: Sampling Design Guidelines, 2005;
- ✓ NSW EPA Guidelines for the NSW Site Auditor Scheme, second edition 2006.
- ✓ National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013 amendment (NEPM 2013);
- ✓ WA DoH (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-contaminated Sites in Western Australia.

### 6.1.6 Specify Acceptable Limit

Specify the decision-maker’s acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence. Specific limits for this site will be adopted in accordance with the appropriate guidance from the NSW EPA, NEPC 2013, appropriate indicators of data quality (DQIs used to assess quality assurance/quality control) and standard procedures for field sampling and handling.

### 6.1.7 Optimise the Design for Obtaining Data

Identify a resource-effective sampling and analysis design for data collection that satisfy the DQOs. The Site Investigation testing program will aim to ensure that all the required data is collected to confirm the site suitability for the intended residential use. Proposed sampling

locations shall provide even coverage across identified AEC on the site beneath the sheds and structures. Sampling shall attempt to ensure that critical locations are assessed, sampled, and analysed for appropriate contaminants of concern. Soil sampling locations were set using a judgemental pattern across the site.

## **6.2 Field Screening and Sampling Program**

### **6.2.1 Data Quality Plan**

Investigations at the Site included a review of the preliminary site investigation prior to the commencement of work. The sampling regime for the investigation area of the Site was in accordance with the requirements as outlined in the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites and the NSW EPA Sampling Design Guidelines and NEPM 2013.

### **6.2.2 Visual Inspection**

During the sampling works for this SCI report, a visual inspection was also conducted to ensure no asbestos (AF/FA)/ACM materials were visible. The inspections for asbestos were undertaken in accordance with NEPM 2013 in Section 4.1.1. Screening assessment for identifying asbestos was also carried out.

### **6.2.3 Soil Sampling Techniques**

All techniques used for soil sampling, are based on methods specified by the National Environmental Protection (Assessment of Site Contamination) Measure (NEPM, 2013).

Experienced and specialized personnel of Geotesta collected all the samples for delivery to NATA accredited laboratory of Eurofins MGT.

Soil samples for chemical analysis were collected in accordance with the NSW Sample Design Guidelines and in accordance with the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013 amendment (NEPM 2013).

### **6.2.4 Rationale for Sampling Program and Locations**

The justification of the sampling point regime for the assessment was based on the investigator's knowledge, operational requirements, experience and history of the Site (Judgement Sampling Pattern). All historical investigations and anecdotal evidence supported the sampling approach adopted and provided for samples to be collected in an unbiased manner. All the AECs including PAH, BTEX, TRH, heavy metals, OCP/OPP and asbestos concentration have been targeted.

### **6.2.5 Sampling Program**

Initial fieldwork for this investigation was carried out on 1 Aug 2019 and included excavation of twenty-nine (29) boreholes. Nine (9) Boreholes were advanced by track mounted Pixy 41T drilling rig to a maximum depth of 3.5m (or refusal) below the existing ground surface. The remaining boreholes were advanced by hand auger to a depth of maximum 300m. The sampling locations are shown in Figure 3. An additional twenty-seven (27) boreholes were conducted on 10<sup>th</sup> June 2021 by hand auger to a maximum depth of 0.3m with the locations shown in Figure 4. Environmental soil samples were collected from the surface and at lower depths. In addition to soil samples, two dam water samples were also taken for this assessment. Standard procedures were used for sampling and soil sampling methodology was completed to meet data quality objectives.

### **6.2.6 Soil Logging**

Boreholes were logged by an experienced environmental/geotechnical engineer in accordance with Standard procedures. The borehole logs are attached to this report.

## **6.3 Sampling Quality control (QC) / Quality Assurance (QA)**

### **6.3.1 Sampling Procedures**

General soil sampling procedures included wearing of plastic disposable gloves when handling sampling equipment and soil and changed between collections of samples. All sampling equipment was clean prior to commencement of sampling. Equipment for soil sampling included a stainless-steel bowl, stainless steel trowel and knife. All equipment was decontaminated between sampling. The following measures have been utilized during the sampling to achieve the sampling quality controls.

#### **6.3.1.1 Sample Containers**

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lid. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team and media collected.

#### **6.3.1.2 Sample Tracking and Identification**

All samples were identified with a unique sample number and all sampling details were included on the sample label and were reproduced on the field sample log and chain of custody records.

### **6.3.1.3 Decontamination**

All equipment used in the sampling program, which includes a steel shovel and a hand auger was decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination;
- Cleaning in a solution of Decon-90TM;
- Rinsing in clean demineralised water then wiping with clean lint free cloths.

### **6.3.1.4 Sample Transport**

All samples were packed in ice from the time of collection and were transported under chain of custody from the Site to NATA registered laboratory identified as Eurofins MGT Services in Lane Cove. Collected samples were placed into an ice chilled cooler-box. During the project, the laboratory reported that all the samples arrived intact, with appropriate preservation medium and were analysed within their relative holding times for the respective analytes.

## **6.3.2 Analytical QA/QC Procedures**

Quality control is achieved by utilising NATA accredited laboratories, using standard methods supported by internal duplicates, the checking of high, abnormal or otherwise anomalous results against background and other chemical results for the sample concerned.

Quality assurance is achieved by confirming field or anticipated results based upon the comparison of field observations with laboratory results. One duplicate sample (D1) was taken for one-day sampling. D1 was duplicate sample of parent sample S7. Internal blank, spike and duplicate samples were also taken to assure the quality of analyses.

For the 10<sup>th</sup> of June 2021 investigation, one duplicate sample (D1\*) was taken for one-day sampling. D1 was duplicate sample of parent sample Di9\*. Internal blank, spike and duplicate samples were also taken to assure the quality of analyses.

In addition, the laboratory undertakes additional duplicate analysis as part of their internal quality assurance program. Chain of Custody documentations were used to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to hand-over to the laboratory.

## 6.4 Analytical Program and Detailed Investigation Data Assessment

### 6.4.1 Analytical Program

Samples were to be analysed to provide information for the characterisation of the most likely contaminated soils. This allowed the assessment of soils against the Site Acceptance Criteria. All analyses were to be carried out by NATA certified laboratory Eurofins MGT in accordance with Chain of Custody (COC) instructions supplied by Geotesta. The samples were checked for PAH, TRH, heavy metals, OCP/OPP and asbestos concentrations. Summary of the soil laboratory analyses is presented in Table 2. The details of samples' types and depths are provided in Table 3.

Table 3: Summary of soil/water laboratory program

COC	Number of samples analysed
Heavy Metals (M8) <sup>1</sup>	27
Suite B14	25
TRH	18
PAH	16
BTEX	17
Asbestos	7
Aggressivity	9

Notes: <sup>1</sup>Heavy metals: Arsenic, cadmium, Chromium, copper, lead, Mercury, Nickel, Zinc

Table 4: Samples Depth and Requested Lab Tests

Sample ID (BH)	Sample Type	HM <sup>1</sup>	Suite B14	TRH	PAH	BTEX	Asbestos
S1	Silty Clay	x	x				x
S2	Silty Clay			x			x
S3	Silty Clay	x				x	x
S4	Silty Clay				x		x
S5	Silty Clay	x	x	x			
S6	Silty Clay					x	x
S7	Silty Clay	x			x		
S8	Silty Clay		x	x			
BH101	Silty Clay	x					
BH102	Silty Clay				x		
BH103	Silty Clay		x				
BH104	Silty Clay	x		x		x	
BH105	Silty Clay						
BH106	Silty Clay		x				

BH107	Silty Clay					x	x
COM1	Silty Clay	x			x		
COM2	Silty Clay			x			
COM3	Silty Clay	x	x			x	
COM4	Silty Clay				x		
COM5	Silty Clay	x		x			
COM6	Silty Clay		x			x	
COM7	Silty Clay			x			
COM8	Silty Clay	x					
COM9	Silty Clay		x		x		
COM10	Silty Clay			x			
COM11	Silty Clay	x				x	
COM12	Silty Clay		x		x		
COM13	Silty Clay			x			
COM14	Silty Clay	x	x			x	x
W1	Dam Water	x					
W2	Dam Water	x					
D1 (BH7)	Soil	x					
Di1*	Topsoil	x	x	x	x	x	
Di2*	Topsoil	x	x	x	x	x	
Di3*	Topsoil	x	x	x	x	x	
Di4*	Fill	x	x	x	x	x	
Di5*	Fill	x	x	x	x	x	
Di6*	Fill	x	x	x	x	x	
Di7*	Fill	x	x	x	x	x	
Di8*	Fill	x	x	x	x	x	
Di9*	Fill	x	x	x	x	x	
COM1*	Topsoil	x	x				
COM2*	Topsoil	x	x				
COM3*	Fill	x	x				
COM4*	Topsoil	x	x				
COM5*	Topsoil	x	x				
COM6*	Topsoil	x	x				
FB1*	Water	x					
D1*	Soil	x					

<sup>1</sup>HM: Heavy metal

<sup>2</sup>OCP: Organochloride pesticides

<sup>2</sup>OPP: Organophosphate pesticides

<sup>3</sup>R17: Total Recoverable Hydrocarbons - 1999 NEPM Fractions: Volatile Organics

Total Recoverable Hydrocarbons - 2013 NEPM Fractions

Polycyclic Aromatic Hydrocarbons, Organochlorine Pesticides

Polychlorinated Biphenyls (PCB), Spectated Phenols, Total Recoverable Hydrocarbons - 2013 NEPM Fractions, Chromium (hexavalent), Cyanide (total) and Fluoride

Heavy Metals such as arsenic, copper, lead, etc., Total Recoverable Hydrocarbons - 1999 NEPM Fractions, TRH: Total recoverable hydrocarbons

PAH: Polycyclic aromatic hydrocarbons

BTEX: Benzene, toluene, ethyl benzene, xylene

**Note** \* - Sample taken from 10<sup>th</sup> June 2021 investigation.

#### **6.4.2 Detailed Investigation Data Assessment**

Based on the proposed development plans being residential, Health Investigation levels (HIL) of Residential A with soil access (ASC NEPM 1999, amended 2013) have been adopted as the SAC for this investigation.

For petroleum hydrocarbons, Health screening levels (HSL) for low density residential for clay (ASC NEPM 1999, amended 2013) have been adopted as the SAC for this investigation.

For all other analytes, the most appropriate assessment criteria therefore are taken to be the Residential-A HILs stated in Table 1A of NEPM 2013 Guidelines and relate directly to the measured chemical concentrations from each sample. The NEPM 2013 health screening level criteria (HSLs) for asbestos in soils was adopted for the Site. For the purposes of this detailed investigation, bulk samples were collected from the site soils. Asbestos sampling and visual inspections were undertaken to ensure that no detections of asbestos. Therefore, in addition to soil samples tested for asbestos, the 'presence/absence' of asbestos in soil material has been adopted as the SAC.

#### **6.4.3 Rationale for the Selection of Detailed Investigation Criteria**

The criteria selected have been chosen in accordance with current Australian and NSW- OEH guidelines. Australian Guidelines have been used in preference to international guidelines where available. These criteria are the most current and widely accepted guidelines in use at present in Australia and have generally been developed using a risk-based approach. Therefore, the chosen guidelines provide a satisfactory framework for the Site Assessment and they are considered appropriate.



## 7. SITE ASSESSMENT CRITERIA

The respective soil Site Assessment Criteria (SAC) for the project is provided in Tables 4, 5, and 6 below. The National Environmental Protection Measures Health Based Investigation Levels (2013) is used to determine the SAC.

### 7.1 Heavy metals, PAH, PCB, OCP/OPP and asbestos

Table 4 presents HILs for heavy metals, PAH, PCB, pesticides (OCP/OPP) and asbestos. It is obtained from Table 1A(1) in NEPM (2013) for Residential A.

**Table 5: Site Assessment Criteria for Soils (mg/kg)**

Analytes	HILs-Residential A <sup>1</sup>	Source
Arsenic	100	NEPM 2013
Cadmium	20	
Chromium (VI)	100	
Copper	7000	
Lead	300	
Mercury (inorganic)	200	
Nickel	400	
Zinc	8000	
Total PAHs	300	
Benzo(a)PyreneTEQ	3	
PCB	1	
Pesticides: (Aldrin/DielDrin), Chlordane DDT+DDE+DDD	7 50 260	
Asbestos: Bonded ACM <sup>2</sup> , Friable Asbestos <sup>3</sup> (FA), Asbestos Fines <sup>4</sup> (AF), Surface Asbestos (0.1m)	0.01% 0.001% No Visible	

- 1- Criteria adopted for residential areas of the Site
- 2- Bonded ACM (bonded Asbestos) - asbestos-containing-material which is in sound condition and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). Bonded ACM refers to, in this instance, material that cannot pass a 7 mm x 7 mm sieve.
- 3- Fibrous Asbestos - friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This material is in a degraded condition such that it can be broken or crumbled by hand pressure.
- 4- Asbestos Fines - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

### 7.2 Total Recoverable Hydrocarbons (TRH) and Benzene Toluene Ethylbenzene Xylene (BTEX)

The NEPM (2013) provides Health Screening Levels (HSLs), Ecological Screening Levels (ESLs) and Management Limits (MLs) for TRH fractions in soil based on concerns regarding ecological impacts, inhalation of vapours and direct contact with contaminant sources. The

Fraction Number (i.e. hydrocarbon compound range) is identified and compared against the prescribed HSL, ESL and ML values. HSLs, ESLs and MLs take into consideration the followings:

- ✓ Carbon number range, indicated by a Fraction Number (F1, F2, F3 or F4);
- ✓ Type of soil (sand, silt or clay);
- ✓ Depth to the source of contamination;
- ✓ Intended land-use

For this Site, the intended land use is HSL A – Residential with garden/accessible soil and the soil type was clay within a depth range of 0-1.0 m, 1.0 - < 2.0 m and 2.0 - < 4.0 m. The criteria are summarised in Tables 5 and 6 below. They are obtained from Table 1A(3) ( HSL A & HSL B), Table 1B(6) (fine soils) and Table 1B(7) (fine soils) in NEPM (2013).

**Table 6: NEPM 2013 BTEX and TRH Criteria – HSL Criteria for 0-1m, 1-<2m and 2-<4m**

Analytes	HSL-A(Clay) 0-1.0m	HSL-A (Clay) 1-<2.0m	HSL-A (Clay) 2-<4.0m
<b>Benzene</b>	0.7	0.9	1
<b>Toluene</b>	460	NL	NL
<b>Ethylbenzene</b>	NL	NL	NL
<b>Xylene</b>	110	250	NL
<b>F1: C6-C10</b>	50	75	120
<b>F2:C10-C16</b>	270	NL	NL
<b>F3: C16-C34</b>	N/A	N/A	N/A
<b>F4: C34-C40</b>	N/A	N/A	N/A

NL = Not Limiting (i.e. the soil vapour concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario).

N/A = Not applicable as F3 and F4 are non-volatile and hence are not of concern for vapour intrusion.

\*'Fine' refers to the soil texture grading as per NEPM 1999.

1 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion – 0-1.0m*

2 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion – 1-<2.0m*

3 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion – 2-<4.0m*

**Table 7: NEPM 2013 BTEX and TRH Criteria, ESL and ML Criteria for 0-1m, 1-<2m and 2-<4m**

Analytes	NEPM 2013 Amendment TRH Criteria (mg/kg dry wt.) ESL (Fine*)	NEPM 2013 Amendment TRH Criteria (mg/kg dry wt.) ML (Fine*)
<b>Benzene</b>	65	
<b>Toluene</b>	105	
<b>Ethylbenzene</b>	125	
<b>Xylene</b>	45	
<b>F1: C6-C10</b>	180	800
<b>F2:C10-C16</b>	120	1000
<b>F3: C16-C34</b>	1300	3500
<b>F4: C34-C40</b>	5600	10000

'Fine' refers to the soil texture grading as per NEPM 1999.

1 NEPM 2013 Amendment Table 1B(6) – ESLs for TPH fractions, BTEX and benzo(a)pyrene in soil.

2 NEPM 2013 Amendment Table 1B(7) – Management Limits for TPH fractions F1-F4 in soil.

### **7.3 Limitations of the Assessment Criteria**

All criteria have limitations. Not all chemical analytes are covered by each set of guidelines, requiring some criteria to be sourced from elsewhere. This is particularly relevant to the Dutch guidelines, which provide a guideline for assessment for some analytes not covered by the Australian guidelines.

### **7.4 Statistical Evaluation**

Samples results from each identified material were tabulated and grouped individually as distinct profiles to be assessed. To achieve compliance with the site adopted criteria, assessment of concentrations for each analyte across the site is performed. Where a sample result is beyond the HIL, non-compliant locations are defined as a hotspot. Hotspots are defined as localised areas where contaminant concentration is higher than in surrounding areas.

## 8. RESULTS

### 8.1 Field Observations

The Subject Site 51, 134 & 146 Station Lane LOCHINVAR NSW-2321 at the time of this investigation. The site is currently a mix of residential and farming area. Dwellings, sheds, open paddocks and dams are found on the site. Open paddocks with unknown stockpiles are found on the two sites.

#### 8.1.1 Subsurface Conditions

A summary of sub-surface soil conditions encountered in the site is presented below:

##### 8.1.1.1 *Fill/Topsoil*

Based on the fieldwork results an approximately 0.00m - 0.10m thick fill/topsoil layer made of Silty CLAY was observed in boreholes.

##### 8.1.1.2 *Silty CLAY*

The material below the fill/topsoil was mostly very stiff to hard Silty CLAY. They were found at depth of investigation 0.10m - 2.00m.

##### 8.1.1.3 *Bedrock*

Bedrock (Sandstone V) was encountered in nine boreholes at depth of 2.50m – 4.50m.

##### 8.1.1.4 *Groundwater*

The groundwater was not encountered by the maximum investigation depth of 4.50m.

### 8.2 Laboratory Analytical Results

Selected soil samples analysed for contamination concerns of Heavy metals, Organochlorine Pesticides (OCP), Organophosphate pesticides (OPP), Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethyl Benzene and Xylene (BTEX), Polycyclic Aromatic Hydrocarbon (PAH) and Asbestos. Water samples were analysed for heavy metal and OCP/OPP. These contaminants are commonly encountered on residential sites. Summary of Analytical Results are presented in Sections 8.2.1 to 8.2.5 and Tables 7 to 11. The lab test results are presented in Appendix C.

#### 8.2.1 Heavy Metals (HM)

A total of twenty-seven (27) soil samples were analysed for a range of heavy metals consisting of As, Cd, Cr, Cu, Pb, Hg, Ni and Zn. The results of the lab tests for the heavy

metal components are presented in Table 7. The statistical analysis of the heavy metal detections including, minimum, maximum and average along with the adopted SAC is shown in Table 8.

**Table 8: Heavy Metal Detections in soil samples (mg/kg)**

	<b>Arsenic (As)</b>	<b>Cadmium (Cd)</b>	<b>Chromium (Cr)# (Total)</b>	<b>Copper (Cu)</b>	<b>Lead (Pb)</b>	<b>Mercury (Hg)</b>	<b>Nickel (Ni)</b>	<b>Zinc (Zn)</b>
S1	69	< 0.4	120	33	8.2	< 0.1	51	29
S3	3.6	< 0.4	7.4	5.9	12	< 0.1	6.1	18
S5	10	< 0.4	130	28	9.8	< 0.1	59	47
S7	3.8	< 0.4	80	18	6.6	< 0.1	36	16
BH101	290	< 0.4	130	29	< 5	0.8	140	76
BH104	< 2	< 0.4	130	35	5	< 0.1	98	31
COM1	13	< 0.4	96	52	13	< 0.1	44	32
COM3	5.1	< 0.4	120	36	8.8	< 0.1	57	25
COM5	7.1	< 0.4	170	52	7.8	< 0.1	100	41
COM8	29	< 0.4	97	40	7.2	< 0.1	69	21
COM11	9.2	< 0.4	22	7.6	14	< 0.1	9.4	30
COM14	6.5	< 0.4	110	44	19	< 0.1	58	71
D1	6.3	< 0.4	100	24	9.6	< 0.1	50	22
Di1*	3.8	< 0.4	88	24	5.4	< 0.1	53	25
Di2*	4.3	< 0.4	84	26	7.2	< 0.1	51	38
Di3*	3.8	< 0.4	75	22	< 5	< 0.1	50	31
Di4*	3.1	< 0.4	47	18	13	< 0.1	26	45
Di5*	4.1	< 0.4	56	19	15	< 0.1	24	69
Di6*	45	3.2	84	220	40	< 0.1	58	3800
Di7*	5.2	< 0.4	22	14	17	< 0.1	13	230
Di8*	4.4	< 0.4	33	8.9	8.1	< 0.1	9.8	16
Di9*	3.6	< 0.4	11	8.1	15	< 0.1	8.1	33
COM1*	3.7	< 0.4	91 (<5) <sup>1</sup>	33	17	< 0.1	47	50
COM2*	17	< 0.4	52	25	9.8	< 0.1	29	25
COM3*	2.6	< 0.4	37	14	9.2	< 0.1	24	35

COM4*	5.3	< 0.4	60	14	8.7	< 0.1	18	18
COM5*	7.3	< 0.4	70	22	< 5	< 0.1	32	63
COM6*	26	< 0.4	71	42	17	< 0.1	36	140

**Note \*** - Sample taken from 10<sup>th</sup> June 2021 investigation. # - Chromium is total chromium and includes trivalent and hexavalent chromium. 1 – Hexavalent Chromium.

**Table 9: Statistical analysis of Heavy Metal Detections in Soil samples (mg/kg)**

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
<b>Samples</b>	27	27	27	27	27	27	27	27
<b>Minimum</b>	2.6	-	7.4	5.9	5	-	6.1	16
<b>Maximum</b>	290	3.2	170	220	40	0.8	140	3800
<b>Average</b>	21.92	-	78.34	32.66	12.14	-	44.87	181.32
<b>NEPM 2013</b>	<b>100</b>	<b>20</b>	<b>100</b>	<b>6000</b>	<b>300</b>	<b>40</b>	<b>400</b>	<b>7400</b>
<b>No. of HIL Exceedance</b>	1	0	0	0	0	0	0	0

As can be observed from Table 8, Arsenic concentration in Sample BH101 and Chromium concentration in samples S1, S5, BH101, BH104, COM3, COM5 and COM14 exceed the adopted Site Assessment Criteria. The potential sources of Arsenic exceedance in BH101 is likely from pesticides and fertilizers. BH101 is located next to a shed which might have been used for the pesticide/fertilizer storage. The criterion is for hexavalent chromium and the analysis was conducted for total chromium, which includes trivalent and hexavalent chromium. Additional testing was conducted on sample COM1\* for hexavalent chromium to assess the potential of contamination. As can be observed, the concentration of Hexavalent Chromium is below (<5 mg/kg) the Site Assessment Criteria. Therefore, it can be assumed that the concentrations of hexavalent chromium in other samples will reflect that of COM1\*. The potential sources of Chromium exceedance are likely from the road dusts and wood preservatives and paints.

### 8.2.2 Organochlorine Pesticides/Organophosphorus Pesticides (OCP/OPP)

A total of twenty-five (25) soil samples and one water sample were analysed for a range of organochlorine and Organophosphorus pesticides. Table 10 shows the OCP/OPP detections.

**Table 10: OCP/OPP (Pesticides) Detections in soil samples (mg/kg)**

	<b>4,4'-DDD</b>	<b>4,4'-DDE</b>	<b>4,4'-DDT</b>	<b>Aldrin</b>	<b>Chlordanes</b>	<b>Dieldrin</b>
S1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
S5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
S8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
BH103	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
BH106	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM9	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM12	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM14	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di1*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di2*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di3*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di4*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di5*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di6*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di7*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di8*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
Di9*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM1*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM2*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM3*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM4*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM5*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
COM6*	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05
<b>NEPM 2013 HIL</b>	<b>240</b>	<b>240</b>	<b>240</b>	<b>6</b>	<b>50</b>	<b>6</b>

**Note \*** - Sample taken from 10<sup>th</sup> June 2021 investigation.

All the concentrations of OCP/OPP were found to be below the adopted Site Assessment Criteria. Because of very small values of the OCP/OPP detections, no statistical analysis is required.

### 8.2.3 Polycyclic Aromatic Hydrocarbons (PAH)

A total of sixteen (16) samples were analysed for a range of PAH. Total PAH detections are shown in Table 11.

**Table 11: Total PAH Detections in soil samples (mg/kg)**

	<b>Total PAH</b>	<b>Benzo(a)PyreneTE (upper bound)</b>
S4	<0.5	1.2
S7	<0.5	1.2
BH102	<0.5	1.2
COM1	<0.5	1.2
COM4	<0.5	1.2
COM9	<0.5	1.2
COM12	<0.5	1.2
Di1*	<0.5	1.2
Di2*	<0.5	1.2
Di3*	<0.5	1.2
Di4*	<0.5	1.2
Di5*	<0.5	1.2
Di6*	<0.5	1.2
Di7*	<0.5	1.2
Di8*	<0.5	1.2
Di9*	<0.5	1.2
<b>NEPM 2013</b>	<b>300</b>	<b>3</b>
<b>No. of NEPM Exceedance</b>	<b>0</b>	<b>0</b>

**Note \*** - Sample taken from 10<sup>th</sup> June 2021 investigation.

As can be seen, all the concentrations of total PAH were found to be below the adopted Site Assessment Criteria.

### 8.2.4 Total Recoverable Hydrocarbons (TRH) - 2013 NEPM Fractions

A total of Eighteen (9) samples were analysed for TRH. TRH detections are presented in Table 12.



**Table 12: Total TRH Detections in soil samples (mg/kg)**

	<b>F1: C6-C10</b>	<b>F2: C10-C16</b>	<b>F3: C16-C34</b>	<b>F4: C34-C40</b>
S2	<20	<50	<100	<100
S5	<20	<50	<100	<100
S8	<20	<50	<100	<100
BH104	<20	<50	<100	<100
COM2	<20	<50	<100	<100
COM5	<20	<50	<100	<100
COM7	<20	<50	<100	<100
COM10	<20	<50	<100	<100
COM13	<20	<50	<100	<100
Di1*	<20	<50	<100	<100
Di2*	<20	<50	<100	<100
Di3*	<20	<50	<100	<100
Di4*	<20	<50	<100	<100
Di5*	<20	<50	140	<100
Di6*	<20	<50	<100	<100
Di7*	<20	<50	230	<100
Di8*	<20	<50	<100	<100
Di9*	<20	<50	310	<100
<b>HSL</b>	<b>50</b>	<b>280</b>	<b>NL</b>	<b>NL</b>
<b>ESL</b>	<b>180</b>	<b>120</b>	<b>1300</b>	<b>5600</b>
<b>ML</b>	<b>800</b>	<b>1000</b>	<b>3500</b>	<b>10000</b>
<b>No. of HSL/ESL/ML Exceedance</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Note \* - Sample taken from 10<sup>th</sup> June 2021 investigation.

All samples analysed, are found to have concentrations of TRH below the adopted Site Criteria (HSL, ESL and ML).

### 8.2.5 Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) - 2013 NEPM Fractions

A total of Seventeen (17) samples were analysed for BTEX. BTEX detections are presented in Table 13.

**Table 13: Total BTEX Detections in soil samples (mg/kg)**

	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>Xylene</b>
S3	< 0.1	< 0.1	< 0.1	< 0.3
S6	< 0.1	< 0.1	< 0.1	< 0.3
BH104	< 0.1	< 0.1	< 0.1	< 0.3
BH107	< 0.1	< 0.1	< 0.1	< 0.3
COM3	< 0.1	< 0.1	< 0.1	< 0.3
COM6	< 0.1	< 0.1	< 0.1	< 0.3
COM11	< 0.1	< 0.1	< 0.1	< 0.3
COM14	< 0.1	< 0.1	< 0.1	< 0.3
Di1*	< 0.1	< 0.1	< 0.1	< 0.3
Di2*	< 0.1	< 0.1	< 0.1	< 0.3
Di3*	< 0.1	< 0.1	< 0.1	< 0.3
Di4*	< 0.1	< 0.1	< 0.1	< 0.3
Di5*	< 0.1	< 0.1	< 0.1	< 0.3
Di6*	0.3	< 0.1	< 0.1	< 0.3
Di7*	< 0.1	< 0.1	< 0.1	< 0.3
Di8*	< 0.1	< 0.1	< 0.1	< 0.3
Di9*	< 0.1	< 0.1	< 0.1	< 0.3
<b>HSL</b>	<b>0.7</b>	<b>480</b>	<b>NL</b>	<b>110</b>
<b>ESL</b>	<b>65</b>	<b>105</b>	<b>125</b>	<b>45</b>
<b>No. of HSL/ESL Exceedance</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Note \* - Sample taken from 10<sup>th</sup> June 2021 investigation.

All samples analysed, are found to have concentrations of BTEX below the adopted Site Criteria (HSL, ESL and ML).

### 8.2.6 Asbestos

All sample locations were visually assessed for the presence of visible asbestos within surface soils. Following the visual inspection all the samples were taken for laboratory asbestos analyses. Screening assessment for asbestos carried out in the location of samples S1, S2, S3, S4, S6, BH107, COM14. No asbestos found in the soils passed/retained from/on Sieve 7mm\*7mm.

Seven samples (S1, S2, S3, S4, S6, BH107, COM14) were tested for Asbestos. The samples did not contain any asbestos. Organic fibres were detected from all samples.

### 8.2.7 Dam water results

Two dam water samples (W1 and W2) were taken and sent to lab for analysis. The lab results are shown in Table 14 and 15.

**Table 14: Heavy Metal Detections in dam water samples (mg/lit)**

	<b>Arsenic (As)</b>	<b>Cadmium (Cd)</b>	<b>Chromium (Cr)</b>	<b>Copper (Cu)</b>	<b>Lead (Pb)</b>	<b>Mercury (Hg)</b>	<b>Nickel (Ni)</b>	<b>Zinc (Zn)</b>
<b>W1</b>	0.01	< 0.0002	0.054	0.025	0.01	< 0.0001	0.047	0.04
<b>W2</b>	0.008	< 0.0002	0.048	0.017	0.004	< 0.0001	0.035	0.028
<b>GILs 2013</b>	<b>24</b>	<b>0.2</b>	<b>1</b>	<b>1.4</b>	<b>3.4</b>	<b>0.06</b>	<b>11</b>	<b>8</b>
<b>No of GILs exceedance</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

All the concentrations of heavy metals were found to be below the adopted Site Assessment Criteria (GILs) and limit of reporting (LOR). One dam water sample (W2) was tested for OP/OPP and the results is shown in Table 15.

**Table 15: OCP/OPP Detections in dam water samples (mg/lit)**

	<b>4,4'-DDD</b>	<b>4,4'-DDE</b>	<b>4,4'-DDT</b>	<b>Aldrin</b>	<b>Chlordanes</b>	<b>Dieldrin</b>
W2	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.001	< 0.0001

All the concentrations of OCP/OPP were found to be below the adopted Site Assessment Criteria (GILs) and limit of reporting (LOR).

### 8.3 Evaluation Analytical Quality Assurance

The laboratory quality control measures are assessed based on a duplicate sample which was collected during the field works.

The Relative Percentage Difference (RPD) values between parent sample S7 and Di9\*, and the duplicate samples D1 and D1\* were calculated to assess the results. A zero RPD means perfect agreement of results between the primary and duplicate sample whilst an RPD above 200% indicates total disagreement in results.

For D1 heavy metals, a maximum RPD value of 49.50% was calculated for Arsenic. For Chromium, Copper, Lead, Nickel and Zinc, RPD values were calculated to be 22.22%, 28.57%, 45.45%, 38.88% and 37.5%, respectively. RPD values for Cadmium and Mercury could not be calculated because the results were below laboratory detection limits.

For D1\* heavy metals, a maximum RPD value of 21.54% was calculated for Arsenic. For Chromium, Copper, Lead, Nickel and Zinc, RPD values were calculated to be 21.10%, 17.45%, 14.28%, 17.45% and 9.52%, respectively. RPD values for Cadmium and Mercury could not be calculated because the results were below laboratory detection limits.

The internal laboratory QA/QC results which are presented in the laboratory certificates are considered acceptable based on the duplicate and control samples analysed. The overall results suggest that the laboratory analysis carried out is reliable for this assessment.

## 9. DISCUSSION

### 9.1 Soil Contamination Summary

A summary of the lab result is presented as the following:

- Concentration of all soil and dam water heavy metal analytes were below the Site Assessment Criteria except for Arsenic concentration in Sample BH101. As a large number of locations were tested for arsenic and only one location was identified with Arsenic exceeding the site assessment criteria, this is the opinion of Geotesta that the arsenic contamination is not across the site and most likely a single location contamination.
- Chromium concentrations in samples S1, S5, BH101, BH104, COM3, COM5 and COM14. The criterion is for hexavalent chromium and the analysis was conducted for total chromium, which includes trivalent and hexavalent chromium. Hexavalent chromium rarely exists naturally and is unstable in the natural environment and is produced by industrial process, such as electro plating, tanneries, stainless steel product, textile manufacturing. Additional testing of COM1\* was conducted for hexavalent chromium and was below the SAC. Therefore, it can be assumed that the concentrations of hexavalent chromium in other samples will reflect that of COM1\* and as such are all considered to be below the adopted Site Assessment Criteria.
- Concentrations of Organochlorine Pesticides/Organophosphorus Pesticides (OCP/OPP) of soil and dam water samples were below the Site Assessment Criteria.
- Concentrations of PAH, TRH and BTEX analytes were below the Site Assessment Criteria.
- No asbestos detected, and only Organic fibres were detected in all the samples.

### 9.2 Data Gap

Due to limited access to the dwelling and the shed/garage at the time of this investigation, a data gap assessment of subsurface soils below the existing dwelling and shed/garage remains which needs to be carried out after demolition. Additional sampling to identify vertical and horizontal extent of identified Arsenic soil contamination at BH101 needs to be conducted. The same Site Assessment Criteria considered in this investigation to be used for the data gap assessment.

## 10. CONCLUSIONS AND RECOMMENDATIONS

A contamination site investigation of 51, 134 & 146 Station Lane LOCHINVAR NSW-2321 was undertaken by Geotesta to investigate the likelihood of the presence of contamination on the site. The investigations include a review of site history, a site inspection and soil sampling and analysis program. Soil sampling was performed at 58 borehole locations. Two dam water samples were also taken. The results of the site inspection and sampling indicate that the site to be predominantly by topsoils overlying silty clay overlying silty sand overlying sandstone. Selected soil samples were analysed for a range of potential contaminants consisting of Heavy metals - Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Mercury (Hg), Lead (Pb), Nickel (Ni) and Zinc (Zn), Organochlorine Pesticides (OCP)/ Organophosphorus Pesticides (OPP), Total recoverable Hydrocarbons (TRH), Polycyclic Aromatic Hydrocarbons (PAH), Benzene, Toluene, Ethyl Benzene and Xylene BTEX and Asbestos. Based on the assessment undertaken, the following conclusions and recommendations can be made:

- Concentrations of Organochlorine Pesticides/Organophosphorus Pesticides, TRH, PAH and BTEX are below the site assessment criteria. No asbestos was detected in soil samples. Arsenic concentrations above the site assessment criteria were detected in BH101. Additional sampling during the data gap assessment will be required near BH101 to delineate the vertical and horizontal extent of identified Arsenic soil contamination. If the concentration of Arsenic still exceeds the site assessment criteria, a remedial action plan will be required to address the concentration exceedance.
- Additional sampling is required after demolition of the existing buildings and sheds to address the data gap due to limited access to the dwelling and sheds at the time of investigation.
- Based on the scope of works undertaken in this investigation, the site is considered suitable for the land use and proposed development provided that the limited hotspot is cleared of any Arsenic contamination.

For and on behalf of

GEOTESTA PTY LTD

**Dr. Mohammad Hossein Bazyar**

BEng MEng PhD MIEAust

Senior Consultant

## 11. REFERENCES

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## **Information about this report**

The report contains the results of a geotechnical investigation conducted for a specific purpose and client. The results should not be used by other parties, or for other purposes, as they may contain neither adequate nor appropriate information. In particular, the investigation does not cover contamination issues unless specifically required to do so by the client.

### **Test Hole Logging**

The information on the test hole logs (boreholes, test pits, exposures etc.) is based on a visual and tactile assessment, except at the discrete locations where test information is available (field and/or laboratory results). The test hole logs include both factual data and inferred information.

### **Groundwater**

Unless otherwise indicated, the water levels presented on the test hole logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The actual groundwater level may differ from this recorded level depending on material permeability (i.e. depending on response time of the measuring instrument). Further, variations of this level could occur with time due to such effects as seasonal, environmental and tidal fluctuations or construction activities. Confirmation of groundwater levels, phreatic surfaces or piezometric pressures can only be made by appropriate instrumentation techniques and monitoring programmes.

### **Interpretation of Results**

The discussion or recommendations contained within this report normally are based on a site evaluation from discrete test hole data. Generalized, idealized or inferred subsurface conditions (including any geotechnical cross-sections) have been assumed or prepared by interpolation and/or extrapolation of these data. As such these conditions are an interpretation and must be considered as a guide only.

### **Change in Conditions**

Local variations or anomalies in the generalized ground conditions do occur in the natural environment, particularly between discrete test hole locations. Additionally, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site. Furthermore, conditions may change at the site from those encountered at the time of the geotechnical investigation through construction activities and constantly changing natural forces.

Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed or reported should be referred to GEOTESTA for appropriate assessment and comment.

### **Geotechnical Verification**

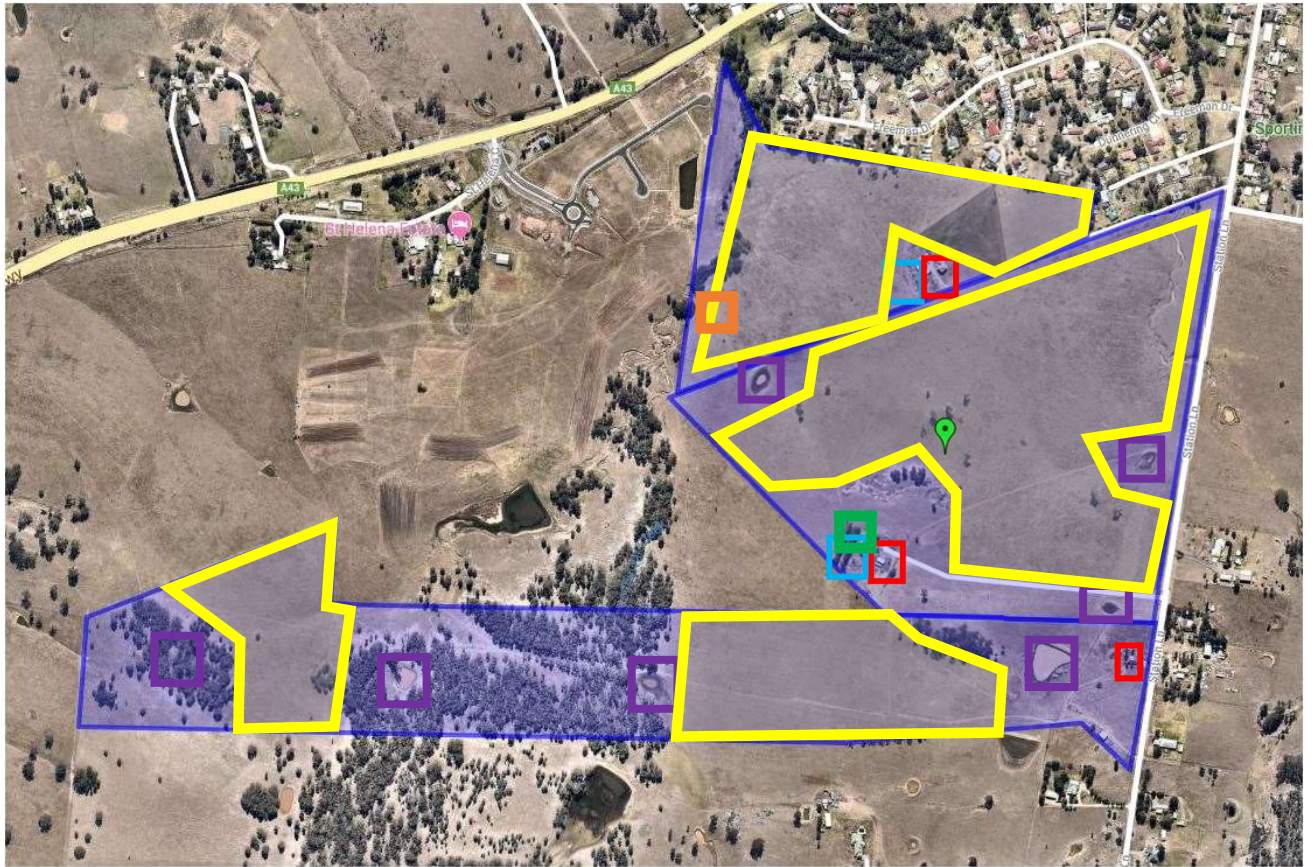
Verification of the geotechnical assumptions and/or model is an integral part of the design process - investigation, construction verification, and performance monitoring. Variability is a feature of the natural environment and, in many instances, verification of soil or rock









quality, or foundation levels, is required. There may be a requirement to extend foundation depths, to modify a foundation system or to conduct monitoring as a result of this natural variability. Allowance for verification by geotechnical personnel accordingly should be recognized and programmed during construction.

### **Reproduction of Reports**

Where it is desired to reproduce, the information contained in our geotechnical report, or other technical information, for the inclusion in contract documents or engineering specification of the subject development, such reproductions should include at least all of the relevant test hole and test data, together with the appropriate standard description sheets and remarks made in the written report of a factual or descriptive nature. Reports are the subject of copyright and shall not be reproduced either totally or in part without the express permission of Geotesta.



A 	B 	C 	D 	E 	F 
Dwelling	Paddocks	Sheds/Garage	Stockpile	Dams/Empty Dams	Unknown Fill

**Figure 2: Areas of Environmental Concerns**

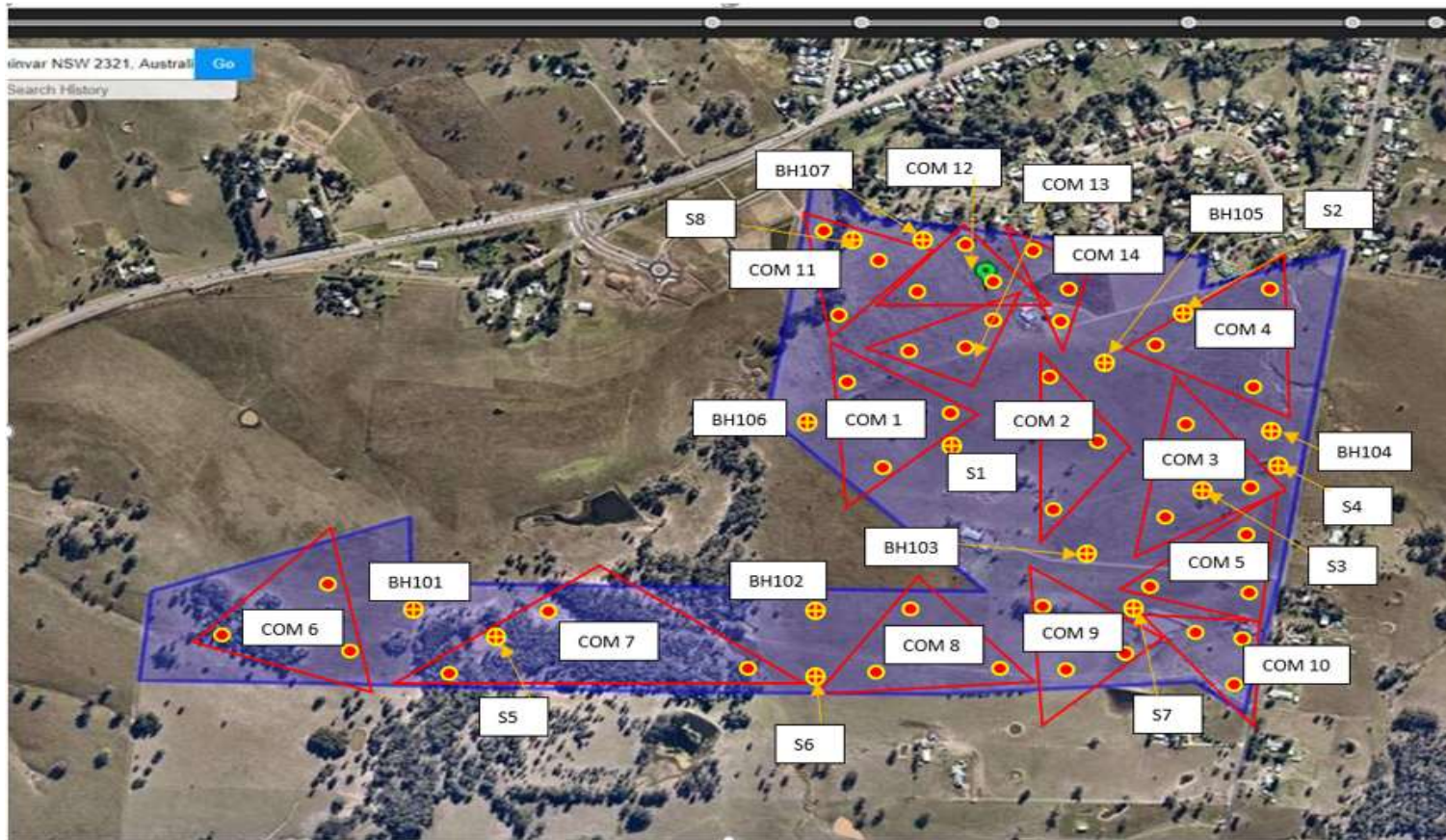


Figure 3: Soil Samples Location (19/09/2019)

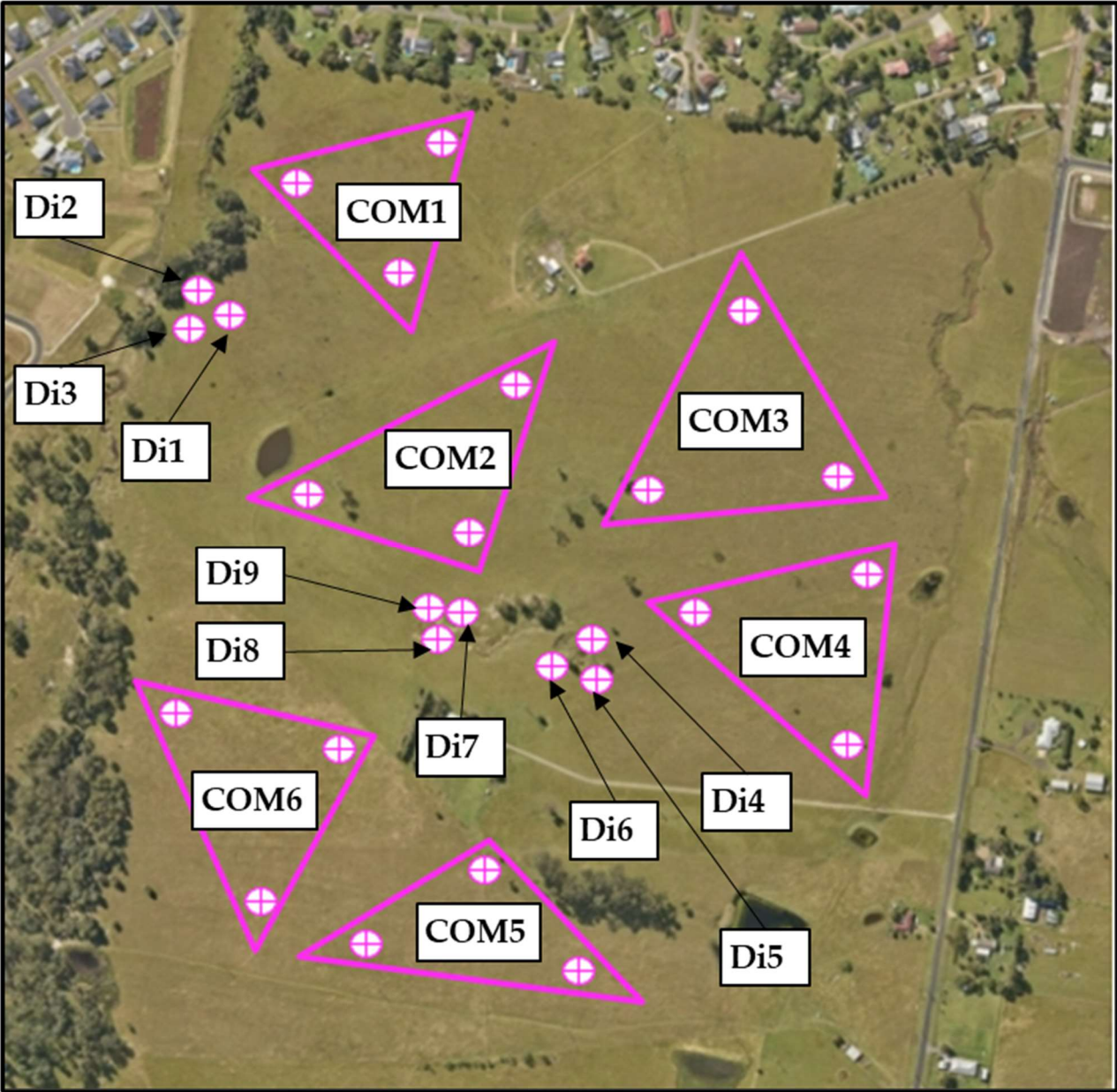


Figure 4: Soil Samples Location (10/06/2021)

# Appendix A

## Aerial Photographs

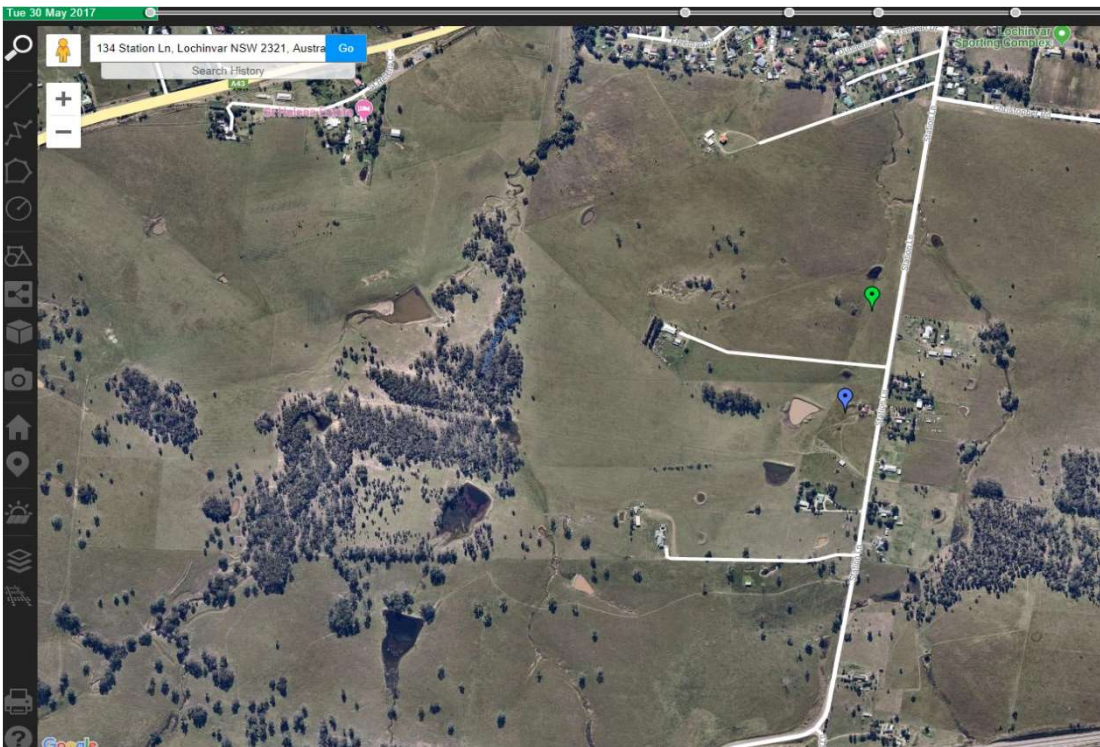
**Aerial Photo April 2021**



### Aerial Photo 2019



### Aerial Photo 2017



### Aerial Photo 2014



### Aerial Photo 2010





### Aerial Photo 2007



### Aerial Photo 2004



**Appendix B**  
Borehole Logs

## S1 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt dark brown	Moist	Very stiff	Groundwater not encountered

## S2 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt dark brown	Moist	Very stiff	Groundwater not encountered

## S3 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Clay with silt dark brown	Moist	stiff	Groundwater not encountered

## S4 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Silty Clay light brown	Moist	stiff	Groundwater not encountered

## S5 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Clay with silt brown	Moist	stiff	Groundwater not encountered

## S6 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt dark brown	Moist	stiff	Groundwater not encountered

## S7 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt brown	Moist	stiff	Groundwater not encountered

## COM1 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Clay with silt dark brown	Moist	stiff	Groundwater not encountered

## COM2 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt dark brown	Moist	stiff	Groundwater not encountered

## COM3 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt dark brown	Moist	stiff	Groundwater not encountered

## COM4 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt dark brown	Moist	stiff	Groundwater not encountered

## COM5 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt brown	Moist	stiff	Groundwater not encountered

## COM6 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt brown	Moist	stiff	Groundwater not encountered

## COM7 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt light brown	Dry – Moist	stiff	Groundwater not encountered

## COM8 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt dark brown	Dry – Moist	stiff	Groundwater not encountered

## COM9 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt brown	Moist	stiff	Groundwater not encountered

## COM10 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Clay with silt brown	Moist	stiff	Groundwater not encountered

## COM11 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Clay with silt dark brown	Dry – Moist	stiff	Groundwater not encountered



## COM12 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Clay with silt dark brown	Dry – Moist	stiff	Groundwater not encountered

## COM13 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.2	CL	Clay with silt dark brown	Dry – Moist	stiff	Groundwater not encountered

## COM14 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.3	CL	Clay with silt brown	Dry – Moist	stiff	Groundwater not encountered

**BH 101 Log**

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.5	CL	Clay with silt dark brown	Moist	Very stiff	
0.5-1.0	SM	Silty SAND		Very dense	Groundwater not encountered

**BH102 Log**

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.5	CL	Clay with silt dark brown	Moist	Very stiff	
0.5-1.0	SM	Silty SAND	Moist	Very dense	Groundwater not encountered

**BH103 Log**

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.4	CL	Clay with silt dark brown	Moist	Very stiff	
0.4-1.0	CL	Silty clay, dark brown	Moist	Very stiff	Groundwater not encountered

**BH104 Log**

<b>Depth (m)</b>	<b>Symbol</b>	<b>Material Description</b>	<b>Moisture</b>	<b>Consistency/Density</b>	<b>Field Notes</b>
0.0		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.4	CL	Clay with silt dark brown	Moist	Very stiff	
0.4-1.0	CL	Silty clay, brown	Moist	Very stiff	Groundwater not encountered

**BH105 Log**

<b>Depth (m)</b>	<b>Symbol</b>	<b>Material Description</b>	<b>Moisture</b>	<b>Consistency/Density</b>	<b>Field Notes</b>
0.0		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.5	CL	Clay with silt dark brown	Moist	Very stiff	
0.5-1.0	CL	Silty clay, dark brown	Moist	Hard	Groundwater not encountered

**BH106 Log**

<b>Depth (m)</b>	<b>Symbol</b>	<b>Material Description</b>	<b>Moisture</b>	<b>Consistency/Density</b>	<b>Field Notes</b>
0.0		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.4	CL	Clay with silt dark brown	Moist	Very stiff	
0.4-1.5	CL	Silty clay, dark brown	Moist	Very stiff	Groundwater not encountered

## BH107 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover
0.1-0.6	CL	Clay with silt dark brown	Moist	stiff	
0.6-3.0	CL	Silty clay, dark brown	Moist	Very stiff	Groundwater not encountered

## Di1 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.2		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover

## Di2 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.3		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover

## Di3 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.3		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover

## Di4 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.2		Fill: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover

## Di5 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.15		Fill: Sandstone gravel	Dry		

## Di6 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.1		Fill: Sandstone gravel	Dry – Moist		

## Di7 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.2		Fill: Silty CLAY with sandstone gravel	Dry		

## Di8 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.2		Fill: Silty CLAY with sandstone gravel	Dry – Moist		

## Di9 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.15		Fill: Silty CLAY with sandstone gravel	Dry – Moist		

## COM1 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.15		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover

## COM2 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.3		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover

## COM3 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.2		Fill: Silty CLAY with gravel, brown	Dry – Moist		Grass cover

## COM4 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.25		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		

## COM5 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.2		Topsoil: Silty CLAY with grass roots, brown	Dry – Moist		Grass cover

## COM6 Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.00-0.2		Fill: Silty CLAY with gravel, brown	Dry – Moist		Grass cover



## **Appendix C**

# **Lab Test Results**

Geotesta Pty Ltd (NSW)  
Unit 20, 1 Talavera Rd  
Macquarie Park  
NSW 2113



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: - Mohammad Hossein Bazyar

Report **669346-S**  
Project name **51 134 146 STATION LANE LOCHINVAR**  
Project ID **NE526**  
Received Date **Aug 02, 2019**

Client Sample ID			S1	S2	S3	S4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03332	S19-Au03333	S19-Au03334	S19-Au03335
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	-
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	94	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			S1	S2	S3	S4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03332	S19-Au03333	S19-Au03334	S19-Au03335
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	116
p-Terphenyl-d14 (surr.)	1	%	-	-	-	129
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.2	mg/kg	< 0.2	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-	-	-
Dibutylchloroendate (surr.)	1	%	95	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	90	-	-	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Bolstar	0.2	mg/kg	< 0.2	-	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	-
Coumaphos	2	mg/kg	< 2	-	-	-
Demeton-S	0.2	mg/kg	< 0.2	-	-	-
Demeton-O	0.2	mg/kg	< 0.2	-	-	-
Diazinon	0.2	mg/kg	< 0.2	-	-	-
Dichlorvos	0.2	mg/kg	< 0.2	-	-	-

Client Sample ID			S1	S2	S3	S4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03332	S19-Au03333	S19-Au03334	S19-Au03335
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Dimethoate	0.2	mg/kg	< 0.2	-	-	-
Disulfoton	0.2	mg/kg	< 0.2	-	-	-
EPN	0.2	mg/kg	< 0.2	-	-	-
Ethion	0.2	mg/kg	< 0.2	-	-	-
Ethoprop	0.2	mg/kg	< 0.2	-	-	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	-
Fenitrothion	0.2	mg/kg	< 0.2	-	-	-
Fensulfothion	0.2	mg/kg	< 0.2	-	-	-
Fenthion	0.2	mg/kg	< 0.2	-	-	-
Malathion	0.2	mg/kg	< 0.2	-	-	-
Merphos	0.2	mg/kg	< 0.2	-	-	-
Methyl parathion	0.2	mg/kg	< 0.2	-	-	-
Mevinphos	0.2	mg/kg	< 0.2	-	-	-
Monocrotophos	2	mg/kg	< 2	-	-	-
Naled	0.2	mg/kg	< 0.2	-	-	-
Omethoate	2	mg/kg	< 2	-	-	-
Phorate	0.2	mg/kg	< 0.2	-	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Pyrazophos	0.2	mg/kg	< 0.2	-	-	-
Ronnel	0.2	mg/kg	< 0.2	-	-	-
Terbufos	0.2	mg/kg	< 0.2	-	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	-
Tokuthion	0.2	mg/kg	< 0.2	-	-	-
Trichloronate	0.2	mg/kg	< 0.2	-	-	-
Triphenylphosphate (surr.)	1	%	100	-	-	-
<b>Conductivity (1:5 aqueous extract at 25°C as rec.)</b>						
	5	uS/cm	-	-	-	170
<b>pH (1:5 Aqueous extract at 25°C as rec.)</b>						
	0.1	pH Units	-	-	-	5.1
<b>Sulphate (as SO4)</b>						
	10	mg/kg	-	-	-	< 10
<b>% Moisture</b>						
	1	%	21	25	8.1	5.0
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	69	-	3.6	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	120	-	7.4	-
Copper	5	mg/kg	33	-	5.9	-
Lead	5	mg/kg	8.2	-	12	-
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	-
Nickel	5	mg/kg	51	-	6.1	-
Zinc	5	mg/kg	29	-	18	-

Client Sample ID			S5	S6	S7	S8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03336	S19-Au03337	S19-Au03338	S19-Au03339
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	59
TRH C29-C36	50	mg/kg	< 50	-	-	55
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	114
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	88	-	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	94	-
p-Terphenyl-d14 (surr.)	1	%	-	-	105	-

Client Sample ID			S5	S6	S7	S8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03336	S19-Au03337	S19-Au03338	S19-Au03339
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	-	< 0.2
Toxaphene	1	mg/kg	< 1	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-	-	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-	-	< 0.2
Dibutylchloroendate (surr.)	1	%	90	-	-	105
Tetrachloro-m-xylene (surr.)	1	%	87	-	-	102
<b>Organophosphorus Pesticides</b>						
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

Client Sample ID			S5	S6	S7	S8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03336	S19-Au03337	S19-Au03338	S19-Au03339
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	123	-	-	117
% Moisture	1	%	24	23	23	25
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	10.0	-	3.8	-
Cadmium	0.4	mg/kg	< 0.4	-	< 0.4	-
Chromium	5	mg/kg	130	-	80	-
Copper	5	mg/kg	28	-	18	-
Lead	5	mg/kg	9.8	-	6.6	-
Mercury	0.1	mg/kg	< 0.1	-	< 0.1	-
Nickel	5	mg/kg	59	-	36	-
Zinc	5	mg/kg	47	-	16	-

Client Sample ID			BH101	BH102	BH103	BH104
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03340	S19-Au03341	S19-Au03342	S19-Au03343
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	-	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	104

Client Sample ID			BH101	BH102	BH103	BH104
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03340	S19-Au03341	S19-Au03342	S19-Au03343
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	-	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	< 0.5	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH*	0.5	mg/kg	-	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	-	98	-	-
p-Terphenyl-d14 (surr.)	1	%	-	110	-	-
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-



Client Sample ID			BH101	BH102	BH103	BH104
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03340	S19-Au03341	S19-Au03342	S19-Au03343
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Dibutylchlorodate (surr.)	1	%	-	-	86	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	84	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg	-	-	< 2	-
Demeton-S	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-
Dimethoate	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
EPN	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Malathion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Monocrotophos	2	mg/kg	-	-	< 2	-
Naled	0.2	mg/kg	-	-	< 0.2	-
Omethoate	2	mg/kg	-	-	< 2	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Terbufos	0.2	mg/kg	-	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	101	-

Client Sample ID			BH101	BH102	BH103	BH104
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03340	S19-Au03341	S19-Au03342	S19-Au03343
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
Conductivity (1:5 aqueous extract at 25°C as rec.)	5	uS/cm	250	420	220	300
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.0	7.2	5.0	7.6
Sulphate (as SO4)	10	mg/kg	< 10	250	130	31
% Moisture	1	%	11	21	13	26
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	290	-	-	< 2
Cadmium	0.4	mg/kg	< 0.4	-	-	< 0.4
Chromium	5	mg/kg	130	-	-	130
Copper	5	mg/kg	29	-	-	35
Lead	5	mg/kg	< 5	-	-	5.0
Mercury	0.1	mg/kg	0.8	-	-	< 0.1
Nickel	5	mg/kg	140	-	-	98
Zinc	5	mg/kg	76	-	-	31

Client Sample ID			BH105	BH106	BH107	COM1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03344	S19-Au03345	S19-Au03346	S19-Au03347
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	105	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			BH105	BH106	BH107	COM1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03344	S19-Au03345	S19-Au03346	S19-Au03347
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
2-Fluorobiphenyl (surr.)	1	%	-	-	-	114
p-Terphenyl-d14 (surr.)	1	%	-	-	-	108
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Dibutylchloroendate (surr.)	1	%	-	113	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	107	-	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	0.2	mg/kg	-	< 0.2	-	-
Demeton-O	0.2	mg/kg	-	< 0.2	-	-
Diazinon	0.2	mg/kg	-	< 0.2	-	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-	-
Fensulfothion	0.2	mg/kg	-	< 0.2	-	-

Client Sample ID			BH105	BH106	BH107	COM1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03344	S19-Au03345	S19-Au03346	S19-Au03347
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Fenthion	0.2	mg/kg	-	< 0.2	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Naled	0.2	mg/kg	-	< 0.2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	113	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	5	uS/cm	530	110	390	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.9	6.9	7.9	-
Sulphate (as SO4)	10	mg/kg	50	< 10	< 10	-
% Moisture	1	%	16	25	15	23
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	-	-	13
Cadmium	0.4	mg/kg	-	-	-	< 0.4
Chromium	5	mg/kg	-	-	-	96
Copper	5	mg/kg	-	-	-	52
Lead	5	mg/kg	-	-	-	13
Mercury	0.1	mg/kg	-	-	-	< 0.1
Nickel	5	mg/kg	-	-	-	44
Zinc	5	mg/kg	-	-	-	32

Client Sample ID			COM2	COM3	COM4	COM5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03348	S19-Au03349	S19-Au03350	S19-Au03351
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-

Client Sample ID			COM2	COM3	COM4	COM5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03348	S19-Au03349	S19-Au03350	S19-Au03351
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>BTEX</b>						
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	110	-	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	71	-
p-Terphenyl-d14 (surr.)	1	%	-	-	79	-
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-

Client Sample ID			COM2	COM3	COM4	COM5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03348	S19-Au03349	S19-Au03350	S19-Au03351
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.2	-	-
Dibutylchlorodate (surr.)	1	%	-	INT	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	INT	-	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	0.2	mg/kg	-	< 0.2	-	-
Demeton-O	0.2	mg/kg	-	< 0.2	-	-
Diazinon	0.2	mg/kg	-	< 0.2	-	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-	-
Fensulfothion	0.2	mg/kg	-	< 0.2	-	-
Fenthion	0.2	mg/kg	-	< 0.2	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Naled	0.2	mg/kg	-	< 0.2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	94	-	-

Client Sample ID			COM2	COM3	COM4	COM5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03348	S19-Au03349	S19-Au03350	S19-Au03351
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
Conductivity (1:5 aqueous extract at 25°C as rec.)	5	uS/cm	-	-	48	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	5.7	-
Sulphate (as SO4)	10	mg/kg	-	-	11	-
% Moisture	1	%	26	27	22	23
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	5.1	-	7.1
Cadmium	0.4	mg/kg	-	< 0.4	-	< 0.4
Chromium	5	mg/kg	-	120	-	170
Copper	5	mg/kg	-	36	-	52
Lead	5	mg/kg	-	8.8	-	7.8
Mercury	0.1	mg/kg	-	< 0.1	-	< 0.1
Nickel	5	mg/kg	-	57	-	100
Zinc	5	mg/kg	-	25	-	41

Client Sample ID			COM6	COM7	COM8	COM9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03352	S19-Au03353	S19-Au03354	S19-Au03355
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	-
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	64	-	-	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			COM6	COM7	COM8	COM9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03352	S19-Au03353	S19-Au03354	S19-Au03355
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	108
p-Terphenyl-d14 (surr.)	1	%	-	-	-	110
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	-	< 0.2
Toxaphene	1	mg/kg	< 1	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-	-	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-	-	< 0.2
Dibutylchloroendate (surr.)	1	%	137	-	-	122
Tetrachloro-m-xylene (surr.)	1	%	130	-	-	129



Client Sample ID			COM6	COM7	COM8	COM9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03352	S19-Au03353	S19-Au03354	S19-Au03355
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	107	-	-	107
<b>% Moisture</b>						
	1	%	19	21	25	22
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	-	29	-
Cadmium	0.4	mg/kg	-	-	< 0.4	-
Chromium	5	mg/kg	-	-	97	-
Copper	5	mg/kg	-	-	40	-
Lead	5	mg/kg	-	-	7.2	-
Mercury	0.1	mg/kg	-	-	< 0.1	-
Nickel	5	mg/kg	-	-	69	-
Zinc	5	mg/kg	-	-	21	-

Client Sample ID			COM10	COM11	COM12	COM13
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03356	S19-Au03357	S19-Au03358	S19-Au03359
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 50	-	-	< 50
TRH C29-C36	50	mg/kg	< 50	-	-	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	< 50
<b>BTEX</b>						
Benzene	0.1	mg/kg	-	< 0.1	-	-
Toluene	0.1	mg/kg	-	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	-
o-Xylene	0.1	mg/kg	-	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	-	97	-	-
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	-	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	-	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	-	-	< 20
TRH >C10-C16	50	mg/kg	< 50	-	-	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	-	-	< 50
TRH >C16-C34	100	mg/kg	< 100	-	-	< 100
TRH >C34-C40	100	mg/kg	< 100	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	< 100
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	-	-	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	115	-
p-Terphenyl-d14 (surr.)	1	%	-	-	116	-

Client Sample ID			COM10	COM11	COM12	COM13
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03356	S19-Au03357	S19-Au03358	S19-Au03359
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Dibutylchloroendate (surr.)	1	%	-	-	128	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	128	-
<b>Organophosphorus Pesticides</b>						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg	-	-	< 2	-
Demeton-S	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-
Dimethoate	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
EPN	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Malathion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-

Client Sample ID			COM10	COM11	COM12	COM13
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S19-Au03356	S19-Au03357	S19-Au03358	S19-Au03359
Date Sampled			Aug 02, 2019	Aug 02, 2019	Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Monocrotophos	2	mg/kg	-	-	< 2	-
Naled	0.2	mg/kg	-	-	< 0.2	-
Omethoate	2	mg/kg	-	-	< 2	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Terbufos	0.2	mg/kg	-	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	111	-
% Moisture	1	%	21	9.9	19	24
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	-	9.2	-	-
Cadmium	0.4	mg/kg	-	< 0.4	-	-
Chromium	5	mg/kg	-	22	-	-
Copper	5	mg/kg	-	7.6	-	-
Lead	5	mg/kg	-	14	-	-
Mercury	0.1	mg/kg	-	< 0.1	-	-
Nickel	5	mg/kg	-	9.4	-	-
Zinc	5	mg/kg	-	30	-	-

Client Sample ID			COM14	D1
Sample Matrix			Soil	Soil
Eurofins Sample No.			S19-Au03360	S19-Au03361
Date Sampled			Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit		
<b>BTEX</b>				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	67	-
<b>Organochlorine Pesticides</b>				
Chlordanes - Total	0.1	mg/kg	< 0.1	-
4,4'-DDD	0.05	mg/kg	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	-

Client Sample ID			COM14	D1
Sample Matrix			Soil	Soil
Eurofins Sample No.			S19-Au03360	S19-Au03361
Date Sampled			Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit		
<b>Organochlorine Pesticides</b>				
Dieldrin	0.05	mg/kg	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	-
Toxaphene	1	mg/kg	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-
Dibutylchloroendate (surr.)	1	%	113	-
Tetrachloro-m-xylene (surr.)	1	%	120	-
<b>Organophosphorus Pesticides</b>				
Azinphos-methyl	0.2	mg/kg	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-
Coumaphos	2	mg/kg	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-
Naled	0.2	mg/kg	< 0.2	-
Omethoate	2	mg/kg	< 2	-
Phorate	0.2	mg/kg	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-

Client Sample ID			COM14	D1
Sample Matrix			Soil	Soil
Eurofins Sample No.			S19-Au03360	S19-Au03361
Date Sampled			Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit		
<b>Organophosphorus Pesticides</b>				
Ronnel	0.2	mg/kg	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-
Triphenylphosphate (surr.)	1	%	131	-
<b>% Moisture</b>				
	1	%	20	22
<b>Heavy Metals</b>				
Arsenic	2	mg/kg	6.5	6.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	110	100
Copper	5	mg/kg	44	24
Lead	5	mg/kg	19	9.6
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	58	50
Zinc	5	mg/kg	71	22

**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.

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.

<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Aug 07, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Aug 07, 2019	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Aug 07, 2019	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Aug 07, 2019	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Aug 07, 2019	14 Days
Conductivity (1:5 aqueous extract at 25°C as rec.) - Method: LTM-INO-4030 Conductivity	Sydney	Aug 07, 2019	7 Days
pH (1:5 Aqueous extract at 25°C as rec.) - Method: LTM-GEN-7090 pH in soil by ISE	Sydney	Aug 07, 2019	7 Days
Sulphate (as SO <sub>4</sub> ) - Method: E045 Anions by Ion Chromatography	Sydney	Aug 07, 2019	28 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Aug 07, 2019	180 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Aug 07, 2019	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Aug 07, 2019	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Aug 02, 2019	14 Days

<b>Company Name:</b> Geotesta Pty Ltd (NSW)	<b>Order No.:</b>	<b>Received:</b> Aug 2, 2019 3:32 PM
<b>Address:</b> Unit 20, 1 Talavera Rd Macquarie Park NSW 2113	<b>Report #:</b> 669346	<b>Due:</b> Aug 9, 2019
<b>Project Name:</b> 51 134 146 STATION LANE LOCHINVAR	<b>Phone:</b> 1300852 216	<b>Priority:</b> 5 Day
<b>Project ID:</b> NE526	<b>Fax:</b>	<b>Contact Name:</b> - Mohammad Hossein Bazyar

**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mgt Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
<b>External Laboratory</b>															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	S1	Aug 02, 2019		Soil	S19-Au03332	X					X		X	X	
2	S2	Aug 02, 2019		Soil	S19-Au03333	X								X	X
3	S3	Aug 02, 2019		Soil	S19-Au03334	X					X	X		X	
4	S4	Aug 02, 2019		Soil	S19-Au03335	X	X	X	X	X				X	
5	S5	Aug 02, 2019		Soil	S19-Au03336						X		X	X	X
6	S6	Aug 02, 2019		Soil	S19-Au03337	X						X		X	
7	S7	Aug 02, 2019		Soil	S19-Au03338					X	X			X	
8	S8	Aug 02, 2019		Soil	S19-Au03339								X	X	X
9	BH101	Aug 02, 2019		Soil	S19-Au03340		X	X	X		X			X	



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**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
10	BH102	Aug 02, 2019		Soil	S19-Au03341		X	X	X	X				X	
11	BH103	Aug 02, 2019		Soil	S19-Au03342		X	X	X				X	X	
12	BH104	Aug 02, 2019		Soil	S19-Au03343		X	X	X		X	X		X	X
13	BH105	Aug 02, 2019		Soil	S19-Au03344		X	X	X					X	
14	BH106	Aug 02, 2019		Soil	S19-Au03345		X	X	X				X	X	
15	BH107	Aug 02, 2019		Soil	S19-Au03346	X	X	X	X		X			X	
16	COM1	Aug 02, 2019		Soil	S19-Au03347					X	X			X	
17	COM2	Aug 02, 2019		Soil	S19-Au03348									X	X
18	COM3	Aug 02, 2019		Soil	S19-Au03349					X	X	X	X		
19	COM4	Aug 02, 2019		Soil	S19-Au03350		X	X	X	X				X	
20	COM5	Aug 02, 2019		Soil	S19-Au03351						X			X	X
21	COM6	Aug 02, 2019		Soil	S19-Au03352							X	X	X	

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**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
22	COM7	Aug 02, 2019		Soil	S19-Au03353									X	X
23	COM8	Aug 02, 2019		Soil	S19-Au03354						X			X	
24	COM9	Aug 02, 2019		Soil	S19-Au03355				X			X	X		
25	COM10	Aug 02, 2019		Soil	S19-Au03356								X	X	
26	COM11	Aug 02, 2019		Soil	S19-Au03357					X	X		X		
27	COM12	Aug 02, 2019		Soil	S19-Au03358				X			X	X		
28	COM13	Aug 02, 2019		Soil	S19-Au03359								X	X	
29	COM14	Aug 02, 2019		Soil	S19-Au03360	X				X	X	X	X		
30	D1	Aug 02, 2019		Soil	S19-Au03361					X			X		
31	W1	Aug 02, 2019		Water	S19-Au03362					X					
32	W2	Aug 02, 2019		Water	S19-Au03363					X		X			
<b>Test Counts</b>						7	9	9	9	7	15	8	11	30	9

## Internal Quality Control Review and Glossary

### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	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.
<b>TEQ</b>	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 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

### QC Data General Comments

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
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	
<b>Method Blank</b>							
<b>BTEX</b>							
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	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
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	
<b>Method Blank</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
<b>Method Blank</b>							
<b>Organophosphorus Pesticides</b>							
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	
<b>Method Blank</b>							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 5			5	Pass	
Sulphate (as SO4)	mg/kg	< 10			10	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
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	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>						
TRH C6-C9	%	97		70-130	Pass	
TRH C10-C14	%	79		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	92		70-130	Pass	
Toluene	%	113		70-130	Pass	
Ethylbenzene	%	113		70-130	Pass	
m&p-Xylenes	%	112		70-130	Pass	
o-Xylene	%	107		70-130	Pass	
Xylenes - Total	%	110		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>						
Naphthalene	%	95		70-130	Pass	
TRH C6-C10	%	92		70-130	Pass	
TRH >C10-C16	%	77		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	%	121		70-130	Pass	
Acenaphthylene	%	125		70-130	Pass	
Anthracene	%	104		70-130	Pass	
Benz(a)anthracene	%	124		70-130	Pass	
Benzo(a)pyrene	%	118		70-130	Pass	
Benzo(b&j)fluoranthene	%	130		70-130	Pass	
Benzo(g,h,i)perylene	%	114		70-130	Pass	
Benzo(k)fluoranthene	%	110		70-130	Pass	
Chrysene	%	117		70-130	Pass	
Dibenz(a,h)anthracene	%	114		70-130	Pass	
Fluoranthene	%	124		70-130	Pass	
Fluorene	%	115		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	115		70-130	Pass	
Naphthalene	%	120		70-130	Pass	
Phenanthrene	%	107		70-130	Pass	
Pyrene	%	126		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	%	110		70-130	Pass	
4,4'-DDD	%	121		70-130	Pass	
4,4'-DDE	%	126		70-130	Pass	
4,4'-DDT	%	126		70-130	Pass	
a-BHC	%	112		70-130	Pass	
Aldrin	%	126		70-130	Pass	
b-BHC	%	127		70-130	Pass	
d-BHC	%	126		70-130	Pass	
Dieldrin	%	125		70-130	Pass	
Endosulfan I	%	126		70-130	Pass	
Endosulfan II	%	125		70-130	Pass	
Endosulfan sulphate	%	121		70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Endrin	%	126			70-130	Pass		
Endrin aldehyde	%	112			70-130	Pass		
Endrin ketone	%	128			70-130	Pass		
g-BHC (Lindane)	%	125			70-130	Pass		
Heptachlor	%	125			70-130	Pass		
Heptachlor epoxide	%	125			70-130	Pass		
Methoxychlor	%	125			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Organophosphorus Pesticides</b>								
Diazinon	%	109			70-130	Pass		
Dimethoate	%	105			70-130	Pass		
Ethion	%	116			70-130	Pass		
Fenitrothion	%	101			70-130	Pass		
Methyl parathion	%	103			70-130	Pass		
Mevinphos	%	98			70-130	Pass		
<b>LCS - % Recovery</b>								
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	100			70-130	Pass		
Sulphate (as SO <sub>4</sub> )	%	112			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Heavy Metals</b>								
Arsenic	%	111			70-130	Pass		
Cadmium	%	110			70-130	Pass		
Chromium	%	112			70-130	Pass		
Copper	%	111			70-130	Pass		
Lead	%	113			70-130	Pass		
Mercury	%	92			70-130	Pass		
Nickel	%	109			70-130	Pass		
Zinc	%	107			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>				Result 1				
Chlordanes - Total	S19-Au01400	NCP	%	121		70-130	Pass	
4,4'-DDD	S19-Au02468	NCP	%	124		70-130	Pass	
4,4'-DDE	S19-Au01400	NCP	%	122		70-130	Pass	
4,4'-DDT	S19-Au02468	NCP	%	101		70-130	Pass	
a-BHC	S19-Au02468	NCP	%	106		70-130	Pass	
Aldrin	S19-Au02468	NCP	%	107		70-130	Pass	
b-BHC	S19-Au01400	NCP	%	111		70-130	Pass	
d-BHC	S19-Au01400	NCP	%	119		70-130	Pass	
Dieldrin	S19-Au01400	NCP	%	123		70-130	Pass	
Endosulfan I	S19-Au01400	NCP	%	124		70-130	Pass	
Endosulfan II	S19-Au01400	NCP	%	119		70-130	Pass	
Endosulfan sulphate	S19-Au01400	NCP	%	121		70-130	Pass	
Endrin	S19-Au01400	NCP	%	105		70-130	Pass	
Endrin aldehyde	S19-Au01400	NCP	%	101		70-130	Pass	
Endrin ketone	S19-Au01400	NCP	%	77		70-130	Pass	
g-BHC (Lindane)	S19-Au01400	NCP	%	111		70-130	Pass	
Heptachlor	S19-Au02468	NCP	%	102		70-130	Pass	
Heptachlor epoxide	S19-Au01400	NCP	%	123		70-130	Pass	
Methoxychlor	S19-Au02468	NCP	%	101		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Organophosphorus Pesticides</b>				Result 1				
Diazinon	S19-Au08769	NCP	%	110		70-130	Pass	
Dimethoate	S19-Au08769	NCP	%	116		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	S19-Au08769	NCP	%	105		70-130	Pass	
Methyl parathion	S19-Au08769	NCP	%	111		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C6-C9	S19-Au03308	NCP	%	82		70-130	Pass	
TRH C10-C14	S19-Au00781	NCP	%	85		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
Naphthalene	S19-Au03308	NCP	%	91		70-130	Pass	
TRH C6-C10	S19-Au03308	NCP	%	80		70-130	Pass	
TRH >C10-C16	S19-Au00781	NCP	%	83		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>				Result 1				
Benzene	S19-Au03308	NCP	%	93		70-130	Pass	
Toluene	S19-Au03308	NCP	%	94		70-130	Pass	
Ethylbenzene	S19-Au03308	NCP	%	91		70-130	Pass	
m&p-Xylenes	S19-Au03308	NCP	%	86		70-130	Pass	
o-Xylene	S19-Au03308	NCP	%	88		70-130	Pass	
Xylenes - Total	S19-Au03308	NCP	%	87		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S19-Au05720	NCP	%	126		70-130	Pass	
Acenaphthylene	S19-Au01695	NCP	%	106		70-130	Pass	
Anthracene	S19-Au05720	NCP	%	129		70-130	Pass	
Benz(a)anthracene	S19-Au01695	NCP	%	105		70-130	Pass	
Benzo(a)pyrene	S19-Au05720	NCP	%	126		70-130	Pass	
Benzo(b&j)fluoranthene	S19-Au05720	NCP	%	127		70-130	Pass	
Benzo(g,h,i)perylene	S19-Au05720	NCP	%	129		70-130	Pass	
Benzo(k)fluoranthene	S19-Au01695	NCP	%	129		70-130	Pass	
Chrysene	S19-Au05720	NCP	%	128		70-130	Pass	
Dibenz(a,h)anthracene	S19-Au01695	NCP	%	125		70-130	Pass	
Fluoranthene	S19-Au01695	NCP	%	106		70-130	Pass	
Fluorene	S19-Au01695	NCP	%	105		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S19-Au01695	NCP	%	111		70-130	Pass	
Naphthalene	S19-Au01695	NCP	%	104		70-130	Pass	
Phenanthrene	S19-Au05720	NCP	%	128		70-130	Pass	
Pyrene	S19-Au01695	NCP	%	105		70-130	Pass	
<b>Spike - % Recovery</b>								
				Result 1				
Sulphate (as SO4)	S19-Au07147	NCP	%	99		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S19-Au03360	CP	%	92		70-130	Pass	
Cadmium	S19-Au03360	CP	%	101		70-130	Pass	
Chromium	S19-Au03360	CP	%	84		70-130	Pass	
Copper	S19-Au03360	CP	%	90		70-130	Pass	
Lead	S19-Au03360	CP	%	98		70-130	Pass	
Mercury	S19-Au03360	CP	%	90		70-130	Pass	
Nickel	S19-Au03360	CP	%	91		70-130	Pass	
Zinc	S19-Au03360	CP	%	81		70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD			
Chlordanes - Total	S19-Au03240	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S19-Au03240	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S19-Au03240	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S19-Au03240	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
<b>Duplicate</b>									
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD			
Azinphos-methyl	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S19-Au11053	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfotiothion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S19-Au11053	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S19-Au11053	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate								
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD		
Ronnel	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S19-Au11053	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S19-Au03332	CP	%	21	21	4.0	30%	Pass
Duplicate								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD		
TRH C6-C9	S19-Au02742	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	S19-Au05759	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S19-Au05759	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S19-Au05759	NCP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	S19-Au02742	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S19-Au02742	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S19-Au05759	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S19-Au05759	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S19-Au05759	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	S19-Au02742	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S19-Au02742	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S19-Au02742	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S19-Au02742	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S19-Au02742	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S19-Au02742	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Acenaphthene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	N19-Au08877	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (1:5 aqueous extract at 25°C as rec.)	S19-Au03335	CP	uS/cm	170	170	1.0	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	S19-Au03335	CP	pH Units	5.1	5.1	Pass	30%	Pass
Sulphate (as SO4)	S19-Au07147	NCP	mg/kg	1100	1100	3.0	30%	Pass

<b>Duplicate</b>								
				Result 1	Result 2	RPD		
% Moisture	S19-Au03342	CP	%	13	12	12	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>								
				Result 1	Result 2	RPD		
Arsenic	S19-Au03357	CP	mg/kg	9.2	7.6	19	30%	Pass
Cadmium	S19-Au03357	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S19-Au03357	CP	mg/kg	22	21	7.0	30%	Pass
Copper	S19-Au03357	CP	mg/kg	7.6	7.5	1.0	30%	Pass
Lead	S19-Au03357	CP	mg/kg	14	13	6.0	30%	Pass
Mercury	S19-Au03357	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S19-Au03357	CP	mg/kg	9.4	9.1	3.0	30%	Pass
Zinc	S19-Au03357	CP	mg/kg	30	29	5.0	30%	Pass

**Comments**
**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
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**

Asim Khan	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	Senior Analyst-Inorganic (NSW)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)


**Glenn Jackson**
**General 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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**Geotesta Pty Ltd (NSW)**  
**Unit 20, 1 Talavera Rd**  
**Macquarie Park**  
**NSW 2113**



**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:** - Mohammad Hossein Bazyar  
**Report** 669346-AID  
**Project Name** 51 134 146 STATION LANE LOCHINVAR  
**Project ID** NE526  
**Received Date** Aug 02, 2019  
**Date Reported** Aug 09, 2019

**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 AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).  
 The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).  
*NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "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". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

**Project Name** 51 134 146 STATION LANE LOCHINVAR  
**Project ID** NE526  
**Date Sampled** Aug 02, 2019  
**Report** 669346-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
S1	19-Au03332	Aug 02, 2019	Approximate Sample 73g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
S2	19-Au03333	Aug 02, 2019	Approximate Sample 70g Sample consisted of: Dark brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
S3	19-Au03334	Aug 02, 2019	Approximate Sample 70g Sample consisted of: Brown fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
S4	19-Au03335	Aug 02, 2019	Approximate Sample 79g Sample consisted of: Brown fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
S6	19-Au03337	Aug 02, 2019	Approximate Sample 80g Sample consisted of: Dark brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH107	19-Au03346	Aug 02, 2019	Approximate Sample 84g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
COM14	19-Au03360	Aug 02, 2019	Approximate Sample 60g Sample consisted of: Dark brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos 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.

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.

<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
Asbestos - LTM-ASB-8020	Sydney	Aug 02, 2019	Indefinite

<b>Company Name:</b> Geotesta Pty Ltd (NSW)	<b>Order No.:</b>	<b>Received:</b> Aug 2, 2019 3:32 PM
<b>Address:</b> Unit 20, 1 Talavera Rd Macquarie Park NSW 2113	<b>Report #:</b> 669346	<b>Due:</b> Aug 9, 2019
	<b>Phone:</b> 1300852 216	<b>Priority:</b> 5 Day
	<b>Fax:</b>	<b>Contact Name:</b> - Mohammad Hossein Bazyar
<b>Project Name:</b> 51 134 146 STATION LANE LOCHINVAR		
<b>Project ID:</b> NE526		

**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
<b>External Laboratory</b>															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	S1	Aug 02, 2019		Soil	S19-Au03332	X					X		X	X	
2	S2	Aug 02, 2019		Soil	S19-Au03333	X							X	X	
3	S3	Aug 02, 2019		Soil	S19-Au03334	X					X	X		X	
4	S4	Aug 02, 2019		Soil	S19-Au03335	X	X	X	X	X				X	
5	S5	Aug 02, 2019		Soil	S19-Au03336						X		X	X	X
6	S6	Aug 02, 2019		Soil	S19-Au03337	X						X		X	
7	S7	Aug 02, 2019		Soil	S19-Au03338					X	X			X	
8	S8	Aug 02, 2019		Soil	S19-Au03339								X	X	X
9	BH101	Aug 02, 2019		Soil	S19-Au03340		X	X	X		X			X	



<b>Company Name:</b> Geotesta Pty Ltd (NSW)	<b>Order No.:</b>	<b>Received:</b> Aug 2, 2019 3:32 PM
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	<b>Phone:</b> 1300852 216	<b>Priority:</b> 5 Day
	<b>Fax:</b>	<b>Contact Name:</b> - Mohammad Hossein Bazyar
<b>Project Name:</b> 51 134 146 STATION LANE LOCHINVAR		
<b>Project ID:</b> NE526		

**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
10	BH102	Aug 02, 2019		Soil	S19-Au03341		X	X	X	X				X	
11	BH103	Aug 02, 2019		Soil	S19-Au03342		X	X	X				X	X	
12	BH104	Aug 02, 2019		Soil	S19-Au03343		X	X	X		X	X		X	X
13	BH105	Aug 02, 2019		Soil	S19-Au03344		X	X	X					X	
14	BH106	Aug 02, 2019		Soil	S19-Au03345		X	X	X				X	X	
15	BH107	Aug 02, 2019		Soil	S19-Au03346	X	X	X	X		X			X	
16	COM1	Aug 02, 2019		Soil	S19-Au03347					X	X			X	
17	COM2	Aug 02, 2019		Soil	S19-Au03348									X	X
18	COM3	Aug 02, 2019		Soil	S19-Au03349						X	X	X	X	
19	COM4	Aug 02, 2019		Soil	S19-Au03350		X	X	X	X				X	
20	COM5	Aug 02, 2019		Soil	S19-Au03351						X			X	X
21	COM6	Aug 02, 2019		Soil	S19-Au03352							X	X	X	

<b>Company Name:</b> Geotesta Pty Ltd (NSW)	<b>Order No.:</b>	<b>Received:</b> Aug 2, 2019 3:32 PM
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	<b>Phone:</b> 1300852 216	<b>Priority:</b> 5 Day
	<b>Fax:</b>	<b>Contact Name:</b> - Mohammad Hossein Bazyar
<b>Project Name:</b> 51 134 146 STATION LANE LOCHINVAR		
<b>Project ID:</b> NE526		

**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
22	COM7	Aug 02, 2019		Soil	S19-Au03353									X	X
23	COM8	Aug 02, 2019		Soil	S19-Au03354						X			X	
24	COM9	Aug 02, 2019		Soil	S19-Au03355				X			X	X		
25	COM10	Aug 02, 2019		Soil	S19-Au03356								X	X	
26	COM11	Aug 02, 2019		Soil	S19-Au03357					X	X		X		
27	COM12	Aug 02, 2019		Soil	S19-Au03358				X			X	X		
28	COM13	Aug 02, 2019		Soil	S19-Au03359								X	X	
29	COM14	Aug 02, 2019		Soil	S19-Au03360	X					X	X	X	X	
30	D1	Aug 02, 2019		Soil	S19-Au03361						X			X	
31	W1	Aug 02, 2019		Water	S19-Au03362						X				
32	W2	Aug 02, 2019		Water	S19-Au03363						X	X			
<b>Test Counts</b>						7	9	9	9	7	15	8	11	30	9

**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. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. 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**

<b>Dry</b>	Sample is dried by heating prior to analysis
<b>LOR</b>	Limit of Reporting
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>ISO</b>	International Standards Organisation
<b>AS</b>	Australian Standards
<b>WA DOH</b>	Reference document for the NEPM. Government of 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 (2011)
<b>NEPM</b>	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
<b>ACM</b>	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
<b>AF</b>	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to "non-bonded / friable".
<b>FA</b>	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
<b>Friable</b>	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
<b>Trace Analysis</b>	Analytical procedure used to detect the presence of respirable fibres in the matrix.

**Comments**

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

**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

**Qualifier Codes/Comments**

Code	Description
N/A	Not applicable

**Asbestos Counter/Identifier:**

Karthik Surisetty                      Senior Analyst-Asbestos (NSW)

**Authorised by:**

Sayeed Abu                                Senior Analyst-Asbestos (NSW)



**Glenn Jackson**  
**General 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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# CHAIN OF CUSTODY RECORD

Version 1.0 (2015)

Sydney Laboratory  
Unit F3 Bldg 16 Mars Rd  
2160 NSW  
02 9550 6000

Brisbane Laboratory  
Unit 1 21 Sinnamon Rd  
4170 QLD  
07 555 4444

Perth Laboratory  
Unit 2 51 Leach Highway  
6105 WA  
08 9478 0000

Melbourne Laboratory  
2 Kingston Town Circle  
3190 VIC  
03 9594 0000

**Company** Geotesta  
**Address** 20/1 Talavera Rd, Macquarie Park, 2113  
**Contact Name** Dr. Mohammad Hossain Bazyar  
**Phone No** 452454418  
**Special Direction**  
**Purchase Order**  
**Quote ID No**

### Project

Project Name

S1, 134, 146 Station Lane Lochlinvar

Project Manager

Report Format

Relinquished by

Email for Results

Containers

1L Plastic

250mL Plastic

125mL Plastic

200mL Amber Glass

40mL Vial

125mL Amber Glass

Other ( )

Turn Around Requirements

Overnight (Sum)\*

1 Day\*  2 Day\*

3 Day\*  6 Day

Other ( )

Sample Comments / DG Hazard Warning

No. Client Sample ID Date Matrix

S1 2008/19 Soil

S2 2008/19 Soil

S3 2008/19 Soil

S4 2008/19 Soil

S5 2008/19 Soil

S6 2008/19 Soil

S7 2008/19 Soil

S8 2008/19 Soil

BH101 2008/19 Soil

BH102 2008/19 Soil

BH103 2008/19 Soil

BH104 2008/19 Soil

BH105 2008/19 Soil

BH106 2008/19 Soil

BH107 2008/19 Soil

COM1 2008/19 Soil

COM2 2008/19 Soil

COM3 2008/19 Soil

COM4 2008/19 Soil

COM5 2008/19 Soil

COM6 2008/19 Soil

COM7 2008/19 Soil

COM8 2008/19 Soil

COM9 2008/19 Soil

COM10 2008/19 Soil

COM11 2008/19 Soil

COM12 2008/19 Soil

COM13 2008/19 Soil

COM14 2008/19 Soil

D1 2008/19 Soil

W1 2008/19 WATER

W2 2008/19 WATER

Total Counts 15 11 9 7 8 7 9

(tick where matrix is requested: Heavy Metal, TRH or "Other")

Heavy Metal  
Soils B14  
TRH  
PAH  
BTEX  
Asbestos  
EC, pH  
Aggressivity  
Ph. Ec. Substrate

Received By

Received By

Received By

Received By

Received By

Received By

Received By

Received By

Received By

Counter (#)

Received By

Received By

Received By

Received By

Received By

Received By

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Signature

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Time

Time

Time

Signature of sample to the laboratory will be considered as acceptance of findings (and) should firm and conditions unless agreed otherwise. A copy of Statute, Reg. Standard Terms and

Geotesta Pty Ltd (NSW)  
Unit 20, 1 Talavera Rd  
Macquarie Park  
NSW 2113



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: - Mohammad Hossein Bazyar

Report **669346-W**  
Project name **51 134 146 STATION LANE LOCHINVAR**  
Project ID **NE526**  
Received Date **Aug 02, 2019**

Client Sample ID			W1 Water	W2 Water
Sample Matrix			S19-Au03362	S19-Au03363
Eurofins Sample No.			Aug 02, 2019	Aug 02, 2019
Date Sampled				
Test/Reference	LOR	Unit		
<b>Organochlorine Pesticides</b>				
Chlordanes - Total	0.001	mg/L	-	< 0.001
4.4'-DDD	0.0001	mg/L	-	< 0.0001
4.4'-DDE	0.0001	mg/L	-	< 0.0001
4.4'-DDT	0.0001	mg/L	-	< 0.0001
a-BHC	0.0001	mg/L	-	< 0.0001
Aldrin	0.0001	mg/L	-	< 0.0001
b-BHC	0.0001	mg/L	-	< 0.0001
d-BHC	0.0001	mg/L	-	< 0.0001
Dieldrin	0.0001	mg/L	-	< 0.0001
Endosulfan I	0.0001	mg/L	-	< 0.0001
Endosulfan II	0.0001	mg/L	-	< 0.0001
Endosulfan sulphate	0.0001	mg/L	-	< 0.0001
Endrin	0.0001	mg/L	-	< 0.0001
Endrin aldehyde	0.0001	mg/L	-	< 0.0001
Endrin ketone	0.0001	mg/L	-	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	-	< 0.0001
Heptachlor	0.0001	mg/L	-	< 0.0001
Heptachlor epoxide	0.0001	mg/L	-	< 0.0001
Hexachlorobenzene	0.0001	mg/L	-	< 0.0001
Methoxychlor	0.0001	mg/L	-	< 0.0001
Toxaphene	0.01	mg/L	-	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	-	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	-	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	-	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	-	< 0.001
Dibutylchloroendate (surr.)	1	%	-	149
Tetrachloro-m-xylene (surr.)	1	%	-	88
<b>Organophosphorus Pesticides</b>				
Azinphos-methyl	0.002	mg/L	-	< 0.002
Bolstar	0.002	mg/L	-	< 0.002
Chlorfenvinphos	0.002	mg/L	-	< 0.002
Chlorpyrifos	0.02	mg/L	-	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	-	< 0.002
Coumaphos	0.02	mg/L	-	< 0.02
Demeton-S	0.02	mg/L	-	< 0.02

Client Sample ID			W1	W2
Sample Matrix			Water	Water
Eurofins Sample No.			S19-Au03362	S19-Au03363
Date Sampled			Aug 02, 2019	Aug 02, 2019
Test/Reference	LOR	Unit		
<b>Organophosphorus Pesticides</b>				
Demeton-O	0.002	mg/L	-	< 0.002
Diazinon	0.002	mg/L	-	< 0.002
Dichlorvos	0.002	mg/L	-	< 0.002
Dimethoate	0.002	mg/L	-	< 0.002
Disulfoton	0.002	mg/L	-	< 0.002
EPN	0.002	mg/L	-	< 0.002
Ethion	0.002	mg/L	-	< 0.002
Ethoprop	0.002	mg/L	-	< 0.002
Ethyl parathion	0.002	mg/L	-	< 0.002
Fenitrothion	0.002	mg/L	-	< 0.002
Fensulfothion	0.002	mg/L	-	< 0.002
Fenthion	0.002	mg/L	-	< 0.002
Malathion	0.002	mg/L	-	< 0.002
Merphos	0.002	mg/L	-	< 0.002
Methyl parathion	0.002	mg/L	-	< 0.002
Mevinphos	0.002	mg/L	-	< 0.002
Monocrotophos	0.002	mg/L	-	< 0.002
Naled	0.002	mg/L	-	< 0.002
Omethoate	0.002	mg/L	-	< 0.002
Phorate	0.002	mg/L	-	< 0.002
Pirimiphos-methyl	0.02	mg/L	-	< 0.02
Pyrazophos	0.002	mg/L	-	< 0.002
Ronnel	0.002	mg/L	-	< 0.002
Terbufos	0.002	mg/L	-	< 0.002
Tetrachlorvinphos	0.002	mg/L	-	< 0.002
Tokuthion	0.002	mg/L	-	< 0.002
Trichloronate	0.002	mg/L	-	< 0.002
Triphenylphosphate (surr.)	1	%	-	99
<b>Heavy Metals</b>				
Arsenic	0.001	mg/L	0.010	0.008
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.054	0.048
Copper	0.001	mg/L	0.025	0.017
Lead	0.001	mg/L	0.010	0.004
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.047	0.035
Zinc	0.005	mg/L	0.040	0.028

**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.

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.

<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Aug 02, 2019	7 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Aug 02, 2019	7 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Aug 05, 2019	180 Days



<b>Company Name:</b> Geotesta Pty Ltd (NSW)	<b>Order No.:</b>	<b>Received:</b> Aug 2, 2019 3:32 PM
<b>Address:</b> Unit 20, 1 Talavera Rd Macquarie Park NSW 2113	<b>Report #:</b> 669346	<b>Due:</b> Aug 9, 2019
<b>Project Name:</b> 51 134 146 STATION LANE LOCHINVAR	<b>Phone:</b> 1300852 216	<b>Priority:</b> 5 Day
<b>Project ID:</b> NE526	<b>Fax:</b>	<b>Contact Name:</b> - Mohammad Hossein Bazyar

**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
<b>External Laboratory</b>															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	S1	Aug 02, 2019		Soil	S19-Au03332	X					X		X	X	
2	S2	Aug 02, 2019		Soil	S19-Au03333	X							X	X	
3	S3	Aug 02, 2019		Soil	S19-Au03334	X					X	X		X	
4	S4	Aug 02, 2019		Soil	S19-Au03335	X	X	X	X	X				X	
5	S5	Aug 02, 2019		Soil	S19-Au03336						X		X	X	X
6	S6	Aug 02, 2019		Soil	S19-Au03337	X						X		X	
7	S7	Aug 02, 2019		Soil	S19-Au03338					X	X			X	
8	S8	Aug 02, 2019		Soil	S19-Au03339								X	X	X
9	BH101	Aug 02, 2019		Soil	S19-Au03340		X	X	X		X			X	

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<b>Project Name:</b> 51 134 146 STATION LANE LOCHINVAR	<b>Phone:</b> 1300852 216	<b>Priority:</b> 5 Day
<b>Project ID:</b> NE526	<b>Fax:</b>	<b>Contact Name:</b> - Mohammad Hossein Bazyar
<b>Eurofins Analytical Services Manager : Asim Khan</b>		

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
10	BH102	Aug 02, 2019		Soil	S19-Au03341		X	X	X	X				X	
11	BH103	Aug 02, 2019		Soil	S19-Au03342		X	X	X				X	X	
12	BH104	Aug 02, 2019		Soil	S19-Au03343		X	X	X		X	X		X	X
13	BH105	Aug 02, 2019		Soil	S19-Au03344		X	X	X					X	
14	BH106	Aug 02, 2019		Soil	S19-Au03345		X	X	X				X	X	
15	BH107	Aug 02, 2019		Soil	S19-Au03346	X	X	X	X			X		X	
16	COM1	Aug 02, 2019		Soil	S19-Au03347					X	X			X	
17	COM2	Aug 02, 2019		Soil	S19-Au03348									X	X
18	COM3	Aug 02, 2019		Soil	S19-Au03349						X	X	X	X	
19	COM4	Aug 02, 2019		Soil	S19-Au03350		X	X	X	X				X	
20	COM5	Aug 02, 2019		Soil	S19-Au03351						X			X	X
21	COM6	Aug 02, 2019		Soil	S19-Au03352							X	X	X	

<b>Company Name:</b> Geotesta Pty Ltd (NSW)	<b>Order No.:</b>	<b>Received:</b> Aug 2, 2019 3:32 PM
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<b>Project Name:</b> 51 134 146 STATION LANE LOCHINVAR	<b>Phone:</b> 1300852 216	<b>Priority:</b> 5 Day
<b>Project ID:</b> NE526	<b>Fax:</b>	<b>Contact Name:</b> - Mohammad Hossein Bazyar

**Eurofins Analytical Services Manager : Asim Khan**

Sample Detail						Asbestos - AS4964	Conductivity (1:5 aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Sulphate (as SO4)	Polyyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins   mg/L Suite B14	Moisture Set	Total Recoverable Hydrocarbons
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>															
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X	X	X	X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>															
<b>Perth Laboratory - NATA Site # 23736</b>															
22	COM7	Aug 02, 2019		Soil	S19-Au03353									X	X
23	COM8	Aug 02, 2019		Soil	S19-Au03354						X			X	
24	COM9	Aug 02, 2019		Soil	S19-Au03355				X			X	X		
25	COM10	Aug 02, 2019		Soil	S19-Au03356								X	X	
26	COM11	Aug 02, 2019		Soil	S19-Au03357					X	X		X		
27	COM12	Aug 02, 2019		Soil	S19-Au03358				X			X	X		
28	COM13	Aug 02, 2019		Soil	S19-Au03359								X	X	
29	COM14	Aug 02, 2019		Soil	S19-Au03360	X					X	X	X	X	
30	D1	Aug 02, 2019		Soil	S19-Au03361						X			X	
31	W1	Aug 02, 2019		Water	S19-Au03362						X				
32	W2	Aug 02, 2019		Water	S19-Au03363						X	X			
<b>Test Counts</b>						7	9	9	9	7	15	8	11	30	9

**Internal Quality Control Review and Glossary**
**General**

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

**Holding Times**

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

**Units**

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

**Terms**

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	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.
<b>TEQ</b>	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 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

**QC Data General Comments**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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
<b>Method Blank</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
<b>Method Blank</b>							
<b>Organophosphorus Pesticides</b>							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/L	< 0.02		0.02	Pass	
Pyrazophos	mg/L	< 0.002		0.002	Pass	
Ronnel	mg/L	< 0.002		0.002	Pass	
Terbufos	mg/L	< 0.002		0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002		0.002	Pass	
Tokuthion	mg/L	< 0.002		0.002	Pass	
Trichloronate	mg/L	< 0.002		0.002	Pass	
<b>Method Blank</b>						
<b>Heavy Metals</b>						
Arsenic	mg/L	< 0.001		0.001	Pass	
Cadmium	mg/L	< 0.0002		0.0002	Pass	
Copper	mg/L	< 0.001		0.001	Pass	
Lead	mg/L	< 0.001		0.001	Pass	
Mercury	mg/L	< 0.0001		0.0001	Pass	
Nickel	mg/L	< 0.001		0.001	Pass	
Zinc	mg/L	< 0.005		0.005	Pass	
<b>LCS - % Recovery</b>						
<b>Organochlorine Pesticides</b>						
4.4'-DDD	%	89		70-130	Pass	
4.4'-DDE	%	97		70-130	Pass	
4.4'-DDT	%	92		70-130	Pass	
a-BHC	%	94		70-130	Pass	
Aldrin	%	94		70-130	Pass	
b-BHC	%	96		70-130	Pass	
d-BHC	%	100		70-130	Pass	
Dieldrin	%	98		70-130	Pass	
Endosulfan I	%	97		70-130	Pass	
Endosulfan II	%	93		70-130	Pass	
Endosulfan sulphate	%	96		70-130	Pass	
Endrin	%	103		70-130	Pass	
Endrin aldehyde	%	89		70-130	Pass	
Endrin ketone	%	91		70-130	Pass	
g-BHC (Lindane)	%	96		70-130	Pass	
Heptachlor	%	89		70-130	Pass	
Heptachlor epoxide	%	97		70-130	Pass	
Hexachlorobenzene	%	84		70-130	Pass	
Methoxychlor	%	90		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Organophosphorus Pesticides</b>						
Diazinon	%	77		70-130	Pass	
Dimethoate	%	84		70-130	Pass	
Ethion	%	101		70-130	Pass	
Fenitrothion	%	103		70-130	Pass	
Methyl parathion	%	105		70-130	Pass	
Mevinphos	%	81		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Heavy Metals</b>						
Arsenic	%	99		70-130	Pass	
Cadmium	%	95		70-130	Pass	
Copper	%	97		70-130	Pass	
Lead	%	100		70-130	Pass	
Mercury	%	102		70-130	Pass	
Nickel	%	98		70-130	Pass	
Zinc	%	94		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	S19-Au03363	CP	%	99			70-130	Pass	
Cadmium	S19-Au03363	CP	%	95			70-130	Pass	
Chromium	S19-Au03363	CP	%	100			70-130	Pass	
Copper	S19-Au03363	CP	%	99			70-130	Pass	
Lead	S19-Au03363	CP	%	101			70-130	Pass	
Mercury	S19-Au03363	CP	%	108			70-130	Pass	
Nickel	S19-Au03363	CP	%	99			70-130	Pass	
Zinc	S19-Au03363	CP	%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Heavy Metals</b>				Result 1	Result 2	RPD			
Arsenic	S19-Au03321	NCP	mg/L	0.002	0.002	13	30%	Pass	
Cadmium	S19-Au03321	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S19-Au03321	NCP	mg/L	0.002	0.002	1.0	30%	Pass	
Copper	S19-Au03321	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S19-Au03321	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S19-Au03321	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S19-Au03321	NCP	mg/L	0.001	0.001	<1	30%	Pass	
Zinc	S19-Au03321	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

**Comments**
**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
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

**Authorised By**

Asim Khan	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)
Andrew Sullivan	Senior Analyst-Organic (NSW)


**Glenn Jackson  
General 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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**From:** Mohammad Hossein Bazyar <mb@geotesta.com.au>  
**Sent:** Tuesday, 29 June 2021 11:48 AM  
**To:** Asim Khan <AsimKhan@eurofins.com>  
**Cc:** Alex Gibson (GEOTESTA) <ag@geotesta.com.au>  
**Subject:** RE: Eurofins Test Results, Invoice - Report 802311 : Site 51134146 STATION LANE LOCHINVAR (NE966)

EXTERNAL EMAIL \*

Hi dear Asim,

Can you please arrange Hexavalent Chromium test on sample COM1 for this job. Please go ahead with one day turnaround time and send me the results by tomorrow noon.

Kind Regards

**Dr. Mohammad Hossein Bazyar**  
BEng MEng PhD MIEAust CPEng NER  
Senior Geotechnical Engineer



**GEOTESTA PTY LTD**

Geotechnical Engineers – Soil & Rock Testing – NATA accredited laboratory  
Geotechnical Instrumentation – Environmental Assessment  
Soil Contamination Testing

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Geotesta Pty Ltd (NSW)  
Unit 20, 1 Talavera Rd  
Macquarie Park  
NSW 2113



**NATA Accredited**  
**Accreditation Number 1261**  
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Arrangement for the mutual recognition of the  
equivalence of testing, medical testing, calibration,  
inspection and proficiency testing scheme providers  
reports.

**Attention:** - **Mohammad Hossein Bazyar**

**Report** **802311-W**  
Project name **51134146 STATION LANE LOCHINVAR**  
Project ID **NE966**  
Received Date **Jun 10, 2021**

<b>Client Sample ID</b>			<b>FB1</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins Sample No.</b>			<b>S21-Jn23377</b>
<b>Date Sampled</b>			<b>Jun 10, 2021</b>
Test/Reference	LOR	Unit	
<b>Heavy Metals</b>			
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 is reported.

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**

Metals M8

**Testing Site**

Sydney

**Extracted**

Jun 16, 2021

**Holding Time**

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

**Australia**

**Melbourne**  
6 Monterey Road  
Dandenong South VIC 3175  
Phone : +61 3 8564 5000  
NATA # 1261  
Site # 1254 & 14271

**Sydney**  
Unit F3, Building F  
16 Mars Road  
Lane Cove West NSW 2066  
Phone : +61 2 9900 8400  
NATA # 1261 Site # 18217

**Brisbane**  
1/21 Smallwood Place  
Murarrie QLD 4172  
Phone : +61 7 3902 4600  
NATA # 1261 Site # 20794

**Perth**  
46-48 Banksia Road  
Welshpool WA 6106  
Phone : +61 8 9251 9600  
NATA # 1261  
Site # 23736

**Newcastle**  
4/52 Industrial Drive  
Mayfield East NSW 2304  
PO Box 60 Wickham 2293  
Phone : +61 2 4968 8448  
NATA # 1261 Site # 25079

**New Zealand**

**Auckland**  
35 O'Rorke Road  
Penrose, Auckland 1061  
Phone : +64 9 526 45 51  
IANZ # 1327

**Christchurch**  
43 Detroit Drive  
Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

<b>Company Name:</b>	Geotesta Pty Ltd (NSW)	<b>Order No.:</b>		<b>Received:</b>	Jun 10, 2021 4:20 PM
<b>Address:</b>	Unit 20, 1 Talavera Rd Macquarie Park NSW 2113	<b>Report #:</b>	802311	<b>Due:</b>	Jun 16, 2021
<b>Project Name:</b>	51134146 STATION LANE LOCHINVAR	<b>Phone:</b>	1300852 216	<b>Priority:</b>	3 Day
<b>Project ID:</b>	NE966	<b>Fax:</b>		<b>Contact Name:</b>	- Mohammad Hossein Bazzyar
<b>Eurofins Analytical Services Manager : Asim Khan</b>					

Sample Detail						Metals M8	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B10
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	DI1	Jun 10, 2021		Soil	S21-Jn23362			X	X
2	DI2	Jun 10, 2021		Soil	S21-Jn23363			X	X
3	DI3	Jun 10, 2021		Soil	S21-Jn23364			X	X
4	DI4	Jun 10, 2021		Soil	S21-Jn23365			X	X
5	DI5	Jun 10, 2021		Soil	S21-Jn23366			X	X
6	DI6	Jun 10, 2021		Soil	S21-Jn23367			X	X
7	DI7	Jun 10, 2021		Soil	S21-Jn23368			X	X
8	DI8	Jun 10, 2021		Soil	S21-Jn23369			X	X
9	DI9	Jun 10, 2021		Soil	S21-Jn23370			X	X

**Australia**

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<b>Company Name:</b>	Geotesta Pty Ltd (NSW)	<b>Order No.:</b>		<b>Received:</b>	Jun 10, 2021 4:20 PM
<b>Address:</b>	Unit 20, 1 Talavera Rd Macquarie Park NSW 2113	<b>Report #:</b>	802311	<b>Due:</b>	Jun 16, 2021
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<b>Project ID:</b>	NE966	<b>Fax:</b>		<b>Contact Name:</b>	- Mohammad Hossein Bazayar
<b>Eurofins Analytical Services Manager : Asim Khan</b>					

Sample Detail						Metals M8	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B10
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>									
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>									
<b>Perth Laboratory - NATA Site # 23736</b>									
<b>Mayfield Laboratory - NATA Site # 25079</b>									
<b>External Laboratory</b>									
10	COM1	Jun 10, 2021		Soil	S21-Jn23371	X	X	X	
11	COM2	Jun 10, 2021		Soil	S21-Jn23372	X	X	X	
12	COM3	Jun 10, 2021		Soil	S21-Jn23373	X	X	X	
13	COM4	Jun 10, 2021		Soil	S21-Jn23374	X	X	X	
14	COM5	Jun 10, 2021		Soil	S21-Jn23375	X	X	X	
15	COM6	Jun 10, 2021		Soil	S21-Jn23376	X	X	X	
16	FB1	Jun 10, 2021		Water	S21-Jn23377	X			
17	D1	Jun 10, 2021		Soil	S21-Jn23378	X		X	
<b>Test Counts</b>						8	6	16	9

**Internal Quality Control Review and Glossary**
**General**

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

**Holding Times**

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

**Units**

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

**Terms**

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	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.
<b>TEQ</b>	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 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

**QC Data General Comments**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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
<b>Method Blank</b>								
<b>Heavy Metals</b>								
Arsenic		mg/L	< 0.001			0.001	Pass	
Cadmium		mg/L	< 0.0002			0.0002	Pass	
Copper		mg/L	< 0.001			0.001	Pass	
Lead		mg/L	< 0.001			0.001	Pass	
Mercury		mg/L	< 0.0001			0.0001	Pass	
Nickel		mg/L	< 0.001			0.001	Pass	
Zinc		mg/L	< 0.005			0.005	Pass	
<b>LCS - % Recovery</b>								
<b>Heavy Metals</b>								
Arsenic		%	103			80-120	Pass	
Cadmium		%	104			80-120	Pass	
Copper		%	103			80-120	Pass	
Lead		%	108			80-120	Pass	
Mercury		%	105			80-120	Pass	
Nickel		%	103			80-120	Pass	
Zinc		%	107			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S21-Jn23377	CP	%	99		75-125	Pass	
Cadmium	S21-Jn23377	CP	%	103		75-125	Pass	
Chromium	S21-Jn23377	CP	%	103		75-125	Pass	
Copper	S21-Jn23377	CP	%	102		75-125	Pass	
Lead	S21-Jn23377	CP	%	108		75-125	Pass	
Mercury	S21-Jn23377	CP	%	107		75-125	Pass	
Nickel	S21-Jn23377	CP	%	102		75-125	Pass	
Zinc	S21-Jn23377	CP	%	105		75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S21-Jn28576	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	S21-Jn28576	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S21-Jn23377	CP	mg/L	0.001	< 0.001	20	30%	Pass
Copper	S21-Jn28576	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead	S21-Jn28576	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury	S21-Jn28576	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S21-Jn28576	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	S21-Jn28576	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass

**Comments****Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
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

**Authorised by:**

Asim Khan                      Analytical Services Manager  
John Nguyen                  Senior Analyst-Metal (NSW)



**Glenn Jackson**  
**General 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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inspection and proficiency testing scheme providers  
reports.

Attention: - Mohammad Hossein Bazayr

Report **802311-S**  
Project name **51134146 STATION LANE LOCHINVAR**  
Project ID **NE966**  
Received Date **Jun 10, 2021**

Client Sample ID			DI1	DI2	DI3	DI4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23362	S21-Jn23363	S21-Jn23364	S21-Jn23365
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons</b>						
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-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	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
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
<b>BTEX</b>						
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	%	78	64	84	110
<b>Polycyclic Aromatic Hydrocarbons</b>						
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 <sup>N07</sup>	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

Client Sample ID			DI1	DI2	DI3	DI4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23362	S21-Jn23363	S21-Jn23364	S21-Jn23365
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
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	%	73	78	77	67
p-Terphenyl-d14 (surr.)	1	%	61	71	72	79
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchloroendate (surr.)	1	%	85	106	109	124
Tetrachloro-m-xylene (surr.)	1	%	75	83	83	92
<b>Organophosphorus Pesticides</b>						
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

Client Sample ID			DI1 Soil S21-Jn23362 Jun 10, 2021	DI2 Soil S21-Jn23363 Jun 10, 2021	DI3 Soil S21-Jn23364 Jun 10, 2021	DI4 Soil S21-Jn23365 Jun 10, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	66	86	90	102
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	3.8	4.3	3.8	3.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	88	84	75	47
Copper	5	mg/kg	24	26	22	18
Lead	5	mg/kg	5.4	7.2	< 5	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	53	51	50	26
Zinc	5	mg/kg	25	38	31	45
% Moisture	1	%	24	25	26	22

Client Sample ID			DI5 Soil S21-Jn23366 Jun 10, 2021	DI6 Soil S21-Jn23367 Jun 10, 2021	DI7 Soil S21-Jn23368 Jun 10, 2021	DI8 Soil S21-Jn23369 Jun 10, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons</b>						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	21	< 20
TRH C15-C28	50	mg/kg	65	< 50	110	51
TRH C29-C36	50	mg/kg	100	< 50	150	< 50
TRH C10-C36 (Total)	50	mg/kg	165	< 50	281	51
Naphthalene <sup>NO2</sup>	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			DI5	DI6	DI7	DI8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23366	S21-Jn23367	S21-Jn23368	S21-Jn23369
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons</b>						
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	140	< 100	230	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	140	< 100	230	< 100
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	0.3	< 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	%	120	62	90	109
<b>Polycyclic Aromatic Hydrocarbons</b>						
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 <sup>N07</sup>	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	%	80	69	77	80
p-Terphenyl-d14 (surr.)	1	%	77	55	71	76
<b>Organochlorine Pesticides</b>						
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

Client Sample ID			DI5	DI6	DI7	DI8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23366	S21-Jn23367	S21-Jn23368	S21-Jn23369
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchloroendate (surr.)	1	%	82	83	99	122
Tetrachloro-m-xylene (surr.)	1	%	93	78	85	88
<b>Organophosphorus Pesticides</b>						
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

Client Sample ID			DI5	DI6	DI7	DI8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23366	S21-Jn23367	S21-Jn23368	S21-Jn23369
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	90	68	85	103
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	4.1	45	5.2	4.4
Cadmium	0.4	mg/kg	< 0.4	3.2	< 0.4	< 0.4
Chromium	5	mg/kg	56	84	22	33
Copper	5	mg/kg	19	220	14	8.9
Lead	5	mg/kg	15	40	17	8.1
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	24	58	13	9.8
Zinc	5	mg/kg	69	3800	230	16
% Moisture	1	%	27	37	12	18

Client Sample ID			DI9	COM1	COM2	COM3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23370	S21-Jn23371	S21-Jn23372	S21-Jn23373
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Total Recoverable Hydrocarbons</b>						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	52	-	-	-
TRH C15-C28	50	mg/kg	170	-	-	-
TRH C29-C36	50	mg/kg	220	-	-	-
TRH C10-C36 (Total)	50	mg/kg	442	-	-	-
Naphthalene <sup>N02</sup>	0.5	mg/kg	< 0.5	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	20	mg/kg	< 20	-	-	-
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	310	-	-	-
TRH >C34-C40	100	mg/kg	120	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	430	-	-	-
<b>BTEX</b>						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	73	-	-	-
<b>Polycyclic Aromatic Hydrocarbons</b>						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	-	-
Acenaphthene	0.5	mg/kg	< 0.5	-	-	-

Client Sample ID			DI9	COM1	COM2	COM3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23370	S21-Jn23371	S21-Jn23372	S21-Jn23373
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	-
Anthracene	0.5	mg/kg	< 0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.5	mg/kg	< 0.5	-	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Chrysene	0.5	mg/kg	< 0.5	-	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-	-	-
Fluoranthene	0.5	mg/kg	< 0.5	-	-	-
Fluorene	0.5	mg/kg	< 0.5	-	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	-
Naphthalene	0.5	mg/kg	< 0.5	-	-	-
Phenanthrene	0.5	mg/kg	< 0.5	-	-	-
Pyrene	0.5	mg/kg	< 0.5	-	-	-
Total PAH*	0.5	mg/kg	< 0.5	-	-	-
2-Fluorobiphenyl (surr.)	1	%	84	-	-	-
p-Terphenyl-d14 (surr.)	1	%	77	-	-	-
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dibutylchloroendate (surr.)	1	%	103	102	127	106
Tetrachloro-m-xylene (surr.)	1	%	92	78	92	86

Client Sample ID			DI9	COM1	COM2	COM3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23370	S21-Jn23371	S21-Jn23372	S21-Jn23373
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	%	100	88	102	93
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	3.6	3.7	17	2.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	91	52	37
Copper	5	mg/kg	8.1	33	25	14
Lead	5	mg/kg	15	17	9.8	9.2
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.1	47	29	24
Zinc	5	mg/kg	33	50	25	35
% Moisture	1	%	18	29	29	29



Client Sample ID			COM4	COM5	COM6	D1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23374	S21-Jn23375	S21-Jn23376	S21-Jn23378
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	< 0.2	< 0.2	-
Dibutylchloroendate (surr.)	1	%	113	78	91	-
Tetrachloro-m-xylene (surr.)	1	%	88	85	88	-
<b>Organophosphorus Pesticides</b>						
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	-

Client Sample ID			COM4	COM5	COM6	D1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Jn23374	S21-Jn23375	S21-Jn23376	S21-Jn23378
Date Sampled			Jun 10, 2021	Jun 10, 2021	Jun 10, 2021	Jun 10, 2021
Test/Reference	LOR	Unit				
<b>Organophosphorus Pesticides</b>						
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	-
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	%	95	80	96	-
<b>Heavy Metals</b>						
Arsenic	2	mg/kg	5.3	7.3	26	2.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	60	70	71	8.9
Copper	5	mg/kg	14	22	42	6.8
Lead	5	mg/kg	8.7	< 5	17	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	18	32	36	6.8
Zinc	5	mg/kg	18	63	140	30
<b>% Moisture</b>						
	1	%	23	24	30	25

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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.

<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jun 11, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jun 11, 2021	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jun 11, 2021	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jun 11, 2021	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jun 11, 2021	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Jun 11, 2021	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Jun 11, 2021	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jun 11, 2021	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Jun 10, 2021	14 Days

**Australia**

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**Brisbane**  
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Phone : +61 7 3902 4600  
NATA # 1261 Site # 20794

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

**Newcastle**  
4/52 Industrial Drive  
Mayfield East NSW 2304  
PO Box 60 Wickham 2293  
Phone : +61 2 4968 8448  
NATA # 1261 Site # 25079

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<b>Company Name:</b>	Geotesta Pty Ltd (NSW)	<b>Order No.:</b>		<b>Received:</b>	Jun 10, 2021 4:20 PM
<b>Address:</b>	Unit 20, 1 Talavera Rd Macquarie Park NSW 2113	<b>Report #:</b>	802311	<b>Due:</b>	Jun 16, 2021
<b>Project Name:</b>	51134146 STATION LANE LOCHINVAR	<b>Phone:</b>	1300852 216	<b>Priority:</b>	3 Day
<b>Project ID:</b>	NE966	<b>Fax:</b>		<b>Contact Name:</b>	- Mohammad Hossein Bazzyar
<b>Eurofins Analytical Services Manager : Asim Khan</b>					

Sample Detail						Metals M8	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B10
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	DI1	Jun 10, 2021		Soil	S21-Jn23362			X	X
2	DI2	Jun 10, 2021		Soil	S21-Jn23363			X	X
3	DI3	Jun 10, 2021		Soil	S21-Jn23364			X	X
4	DI4	Jun 10, 2021		Soil	S21-Jn23365			X	X
5	DI5	Jun 10, 2021		Soil	S21-Jn23366			X	X
6	DI6	Jun 10, 2021		Soil	S21-Jn23367			X	X
7	DI7	Jun 10, 2021		Soil	S21-Jn23368			X	X
8	DI8	Jun 10, 2021		Soil	S21-Jn23369			X	X
9	DI9	Jun 10, 2021		Soil	S21-Jn23370			X	X

**Australia**

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NATA # 1261 Site # 18217

**Brisbane**  
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Phone : +61 7 3902 4600  
NATA # 1261 Site # 20794

**Perth**  
46-48 Banksia Road  
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NATA # 1261  
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<b>Company Name:</b>	Geotesta Pty Ltd (NSW)	<b>Order No.:</b>		<b>Received:</b>	Jun 10, 2021 4:20 PM
<b>Address:</b>	Unit 20, 1 Talavera Rd Macquarie Park NSW 2113	<b>Report #:</b>	802311	<b>Due:</b>	Jun 16, 2021
<b>Project Name:</b>	51134146 STATION LANE LOCHINVAR	<b>Phone:</b>	1300852 216	<b>Priority:</b>	3 Day
<b>Project ID:</b>	NE966	<b>Fax:</b>		<b>Contact Name:</b>	- Mohammad Hossein Bazayar
<b>Eurofins Analytical Services Manager : Asim Khan</b>					

Sample Detail						Metals M8	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B10
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>									
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X	X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>									
<b>Perth Laboratory - NATA Site # 23736</b>									
<b>Mayfield Laboratory - NATA Site # 25079</b>									
<b>External Laboratory</b>									
10	COM1	Jun 10, 2021		Soil	S21-Jn23371	X	X	X	
11	COM2	Jun 10, 2021		Soil	S21-Jn23372	X	X	X	
12	COM3	Jun 10, 2021		Soil	S21-Jn23373	X	X	X	
13	COM4	Jun 10, 2021		Soil	S21-Jn23374	X	X	X	
14	COM5	Jun 10, 2021		Soil	S21-Jn23375	X	X	X	
15	COM6	Jun 10, 2021		Soil	S21-Jn23376	X	X	X	
16	FB1	Jun 10, 2021		Water	S21-Jn23377	X			
17	D1	Jun 10, 2021		Soil	S21-Jn23378	X		X	
<b>Test Counts</b>						8	6	16	9

## Internal Quality Control Review and Glossary

### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	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.
<b>TEQ</b>	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 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

### QC Data General Comments

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons</b>							
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	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
<b>Method Blank</b>							
<b>BTEX</b>							
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	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
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	
<b>Method Blank</b>							
<b>Organochlorine Pesticides</b>							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Organophosphorus Pesticides</b>							
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	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
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	



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>LCS - % Recovery</b>						
<b>Total Recoverable Hydrocarbons</b>						
TRH C6-C9	%	87		70-130	Pass	
TRH C10-C14	%	98		70-130	Pass	
Naphthalene	%	114		70-130	Pass	
TRH C6-C10	%	86		70-130	Pass	
TRH >C10-C16	%	99		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>BTEX</b>						
Benzene	%	88		70-130	Pass	
Toluene	%	87		70-130	Pass	
Ethylbenzene	%	87		70-130	Pass	
m&p-Xylenes	%	89		70-130	Pass	
o-Xylene	%	89		70-130	Pass	
Xylenes - Total*	%	89		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Polycyclic Aromatic Hydrocarbons</b>						
Acenaphthene	%	114		70-130	Pass	
Acenaphthylene	%	110		70-130	Pass	
Anthracene	%	120		70-130	Pass	
Benz(a)anthracene	%	120		70-130	Pass	
Benzo(a)pyrene	%	114		70-130	Pass	
Benzo(b&j)fluoranthene	%	108		70-130	Pass	
Benzo(g,h,i)perylene	%	82		70-130	Pass	
Benzo(k)fluoranthene	%	119		70-130	Pass	
Chrysene	%	121		70-130	Pass	
Dibenz(a,h)anthracene	%	75		70-130	Pass	
Fluoranthene	%	119		70-130	Pass	
Fluorene	%	113		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	123		70-130	Pass	
Naphthalene	%	109		70-130	Pass	
Phenanthrene	%	116		70-130	Pass	
Pyrene	%	120		70-130	Pass	
<b>LCS - % Recovery</b>						
<b>Organochlorine Pesticides</b>						
Chlordanes - Total	%	98		70-130	Pass	
4,4'-DDD	%	92		70-130	Pass	
4,4'-DDE	%	106		70-130	Pass	
4,4'-DDT	%	85		70-130	Pass	
a-BHC	%	95		70-130	Pass	
Aldrin	%	106		70-130	Pass	
b-BHC	%	96		70-130	Pass	
d-BHC	%	92		70-130	Pass	
Dieldrin	%	97		70-130	Pass	
Endosulfan I	%	93		70-130	Pass	
Endosulfan II	%	90		70-130	Pass	
Endosulfan sulphate	%	89		70-130	Pass	
Endrin	%	86		70-130	Pass	
Endrin aldehyde	%	94		70-130	Pass	
Endrin ketone	%	92		70-130	Pass	
g-BHC (Lindane)	%	101		70-130	Pass	
Heptachlor	%	85		70-130	Pass	
Heptachlor epoxide	%	99		70-130	Pass	
Hexachlorobenzene	%	98		70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Methoxychlor	%	76			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Organophosphorus Pesticides</b>								
Diazinon	%	118			70-130	Pass		
Dimethoate	%	81			70-130	Pass		
Ethion	%	89			70-130	Pass		
Fenitrothion	%	97			70-130	Pass		
Methyl parathion	%	97			70-130	Pass		
Mevinphos	%	86			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Heavy Metals</b>								
Arsenic	%	101			80-120	Pass		
Cadmium	%	103			80-120	Pass		
Chromium	%	104			80-120	Pass		
Copper	%	102			80-120	Pass		
Lead	%	104			80-120	Pass		
Mercury	%	103			80-120	Pass		
Nickel	%	105			80-120	Pass		
Zinc	%	101			80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons</b>				Result 1				
TRH C10-C14	S21-Jn20756	NCP	%	84		70-130	Pass	
TRH >C10-C16	S21-Jn20756	NCP	%	87		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	S21-Jn20770	NCP	%	78		70-130	Pass	
Acenaphthylene	S21-Jn20770	NCP	%	75		70-130	Pass	
Anthracene	S21-Jn20770	NCP	%	84		70-130	Pass	
Benz(a)anthracene	S21-Jn20770	NCP	%	88		70-130	Pass	
Benzo(a)pyrene	S21-Jn20770	NCP	%	89		70-130	Pass	
Benzo(b&i)fluoranthene	S21-Jn20770	NCP	%	91		70-130	Pass	
Benzo(g,h,i)perylene	S21-Jn20770	NCP	%	87		70-130	Pass	
Benzo(k)fluoranthene	S21-Jn20770	NCP	%	87		70-130	Pass	
Chrysene	S21-Jn20770	NCP	%	93		70-130	Pass	
Dibenz(a,h)anthracene	S21-Jn20770	NCP	%	88		70-130	Pass	
Fluoranthene	S21-Jn20770	NCP	%	97		70-130	Pass	
Fluorene	S21-Jn20770	NCP	%	78		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S21-Jn20770	NCP	%	84		70-130	Pass	
Naphthalene	S21-Jn20770	NCP	%	76		70-130	Pass	
Phenanthrene	S21-Jn20770	NCP	%	84		70-130	Pass	
Pyrene	S21-Jn20770	NCP	%	100		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Organochlorine Pesticides</b>				Result 1				
Chlordanes - Total	S21-Jn20770	NCP	%	76		70-130	Pass	
4,4'-DDD	S21-Jn20770	NCP	%	88		70-130	Pass	
4,4'-DDE	S21-Jn20770	NCP	%	80		70-130	Pass	
4,4'-DDT	S21-Jn20770	NCP	%	73		70-130	Pass	
a-BHC	S21-Jn20770	NCP	%	79		70-130	Pass	
Aldrin	S21-Jn20770	NCP	%	87		70-130	Pass	
b-BHC	S21-Jn20770	NCP	%	74		70-130	Pass	
d-BHC	S21-Jn20770	NCP	%	82		70-130	Pass	
Dieldrin	S21-Jn20770	NCP	%	77		70-130	Pass	
Endosulfan I	S21-Jn20770	NCP	%	88		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	S21-Jn20770	NCP	%	84			70-130	Pass	
Endosulfan sulphate	S21-Jn20770	NCP	%	71			70-130	Pass	
Endrin	S21-Jn20770	NCP	%	86			70-130	Pass	
Endrin ketone	S21-Jn20770	NCP	%	79			70-130	Pass	
g-BHC (Lindane)	S21-Jn20770	NCP	%	80			70-130	Pass	
Heptachlor	S21-Jn20770	NCP	%	79			70-130	Pass	
Heptachlor epoxide	S21-Jn20770	NCP	%	76			70-130	Pass	
Hexachlorobenzene	S21-Jn20770	NCP	%	82			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Organophosphorus Pesticides</b>				Result 1					
Diazinon	S21-Jn20770	NCP	%	112			70-130	Pass	
Dimethoate	S21-Jn20770	NCP	%	74			70-130	Pass	
Ethion	S21-Jn20770	NCP	%	98			70-130	Pass	
Fenitrothion	S21-Jn20770	NCP	%	98			70-130	Pass	
Methyl parathion	S21-Jn20770	NCP	%	91			70-130	Pass	
Mevinphos	S21-Jn20770	NCP	%	97			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons</b>				Result 1					
TRH C6-C9	S21-Jn23368	CP	%	81			70-130	Pass	
Naphthalene	S21-Jn23368	CP	%	94			70-130	Pass	
TRH C6-C10	S21-Jn23368	CP	%	72			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>BTEX</b>				Result 1					
Benzene	S21-Jn23368	CP	%	84			70-130	Pass	
Toluene	S21-Jn23368	CP	%	81			70-130	Pass	
Ethylbenzene	S21-Jn23368	CP	%	76			70-130	Pass	
m&p-Xylenes	S21-Jn23368	CP	%	81			70-130	Pass	
o-Xylene	S21-Jn23368	CP	%	80			70-130	Pass	
Xylenes - Total*	S21-Jn23368	CP	%	80			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Arsenic	S21-Jn23370	CP	%	103			75-125	Pass	
Cadmium	S21-Jn23370	CP	%	106			75-125	Pass	
Chromium	S21-Jn23370	CP	%	105			75-125	Pass	
Copper	S21-Jn23370	CP	%	105			75-125	Pass	
Lead	S21-Jn23370	CP	%	110			75-125	Pass	
Mercury	S21-Jn23370	CP	%	111			75-125	Pass	
Nickel	S21-Jn23370	CP	%	106			75-125	Pass	
Zinc	S21-Jn23370	CP	%	112			75-125	Pass	
<b>Spike - % Recovery</b>									
<b>Organochlorine Pesticides</b>				Result 1					
Endrin aldehyde	S21-Jn23322	NCP	%	103			70-130	Pass	
Methoxychlor	S21-Jn17552	NCP	%	118			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons</b>				Result 1	Result 2	RPD			
TRH C6-C9	S21-Jn25259	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S21-Jn23362	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Jn23362	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Jn23362	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S21-Jn25259	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Jn25259	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S21-Jn23362	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Jn23362	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Jn23362	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate								
<b>BTEX</b>				Result 1	Result 2	RPD		
Benzene	S21-Jn25259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S21-Jn25259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S21-Jn25259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S21-Jn25259	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S21-Jn25259	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	S21-Jn25259	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Acenaphthene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S21-Jn20823	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
<b>Organochlorine Pesticides</b>				Result 1	Result 2	RPD		
Chlordanes - Total	S21-Jn20823	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S21-Jn20823	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
<b>Organophosphorus Pesticides</b>				Result 1	Result 2	RPD		
Azinphos-methyl	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S21-Jn20823	NCP	mg/kg	< 2	< 2	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Demeton-S	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S21-Jn20823	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S21-Jn20823	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S21-Jn20823	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C10-C14	S21-Jn23367	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S21-Jn23367	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S21-Jn23367	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C10-C16	S21-Jn23367	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S21-Jn23367	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S21-Jn23367	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S21-Jn23369	CP	mg/kg	4.4	< 2	100	30%	Fail Q15
Cadmium	S21-Jn23369	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S21-Jn23369	CP	mg/kg	33	8.1	120	30%	Fail Q15
Copper	S21-Jn23369	CP	mg/kg	8.9	< 5	100	30%	Fail Q15
Lead	S21-Jn23369	CP	mg/kg	8.1	< 5	120	30%	Fail Q15
Mercury	S21-Jn23369	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S21-Jn23369	CP	mg/kg	9.8	< 5	110	30%	Fail Q15
Zinc	S21-Jn23369	CP	mg/kg	16	6.2	89	30%	Fail Q15
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C10-C14	S21-Jn23370	CP	mg/kg	52	59	14	30%	Pass
TRH C15-C28	S21-Jn23370	CP	mg/kg	170	190	11	30%	Pass
TRH C29-C36	S21-Jn23370	CP	mg/kg	220	240	8.0	30%	Pass
TRH >C10-C16	S21-Jn23370	CP	mg/kg	< 50	56	16	30%	Pass
TRH >C16-C34	S21-Jn23370	CP	mg/kg	310	340	9.0	30%	Pass
TRH >C34-C40	S21-Jn23370	CP	mg/kg	120	140	14	30%	Pass

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Jn23376	CP	%	30	28	9.0	30%	Pass	

## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

### Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

### Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)



**Glenn Jackson**  
General 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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# CHAIN OF CUSTODY RECORD

ISBN 95 923 085 520

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Unit F3 Bldg F, 16 Mars Rd, Lane Cove West, NSW 2066  
02 9596 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory  
Unit 1, 21 Smellwood Pl, Marribe, QLD 4172  
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08 9251 9500 EnviroSampleWA@eurofins.com

Melbourne Laboratory  
2 Kingston Town Close, Oakleigh, VIC 3166  
03 8564 5006 EnviroSampleVIC@eurofins.com

Company		Project No		Project Manager		Relinquished by				
Address		Project Name		Report Format		Email for Results				
Contact Name		Analysis (Note: Where metals are requested, please specify "total" or "F-Filter")	Containers		Turn Around Requirements					
Phone No			1L Plastic	250mL Plastic	<input type="checkbox"/> Overnight (9am)*	<input type="checkbox"/> 1 Day*	<input type="checkbox"/> 2 Day*			
Special Direction			125mL Plastic	200mL Amber Glass	<input type="checkbox"/> 3 Day*	<input type="checkbox"/> 5 Day	<input type="checkbox"/> Other ( ) <small>* Surcharges apply</small>			
Purchase Order			40mL vial	125mL Amber Glass	Sample Comments / DG Hazard Warning					
Quote ID No			Other ( )	Jar						
No	Client Sample ID	Date	Matrix	Heavy Metals	TRH	PAH	BTEX	Asbestos	ph, Ec	Sulphate
	D1	10/06/21	Soil	X			X			
	D2	10/06/21	Soil	X						
	D3	10/06/21	Soil	X						
	D4	10/06/21	Soil	X						
	D5	10/06/21	Soil	X						
	D6	10/06/21	Soil	X			X			
	D7	10/06/21	Soil	X						
	D8	10/06/21	Soil	X						
	D9	10/06/21	Soil	X						
	COM1	10/06/21	Soil		X	X				
	COM2	10/06/21	Soil		X	X				
	COM3	10/06/21	Soil		X	X				
	COM4	10/06/21	Soil		X	X				
	COM5	10/06/21	Soil		X	X				
	COM6	10/06/21	Soil		X	X				
	FB1	10/06/21	Water		X					
	D1	10/06/21	Soil		X					
Total Counts				9	8	6		2		
Method of Shipment		<input type="checkbox"/> Courier (# )	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature		Date	Time	
Laboratory Use Only		Received By	BNE   MEL   PER   ADL   NEW		Signature	Date	Time	Temperature	Report No	

Jeremy

Cromo

10/6/21

4:20pm

10.36

802311



**Geotesta Pty Ltd (NSW)**  
**Unit 6, 20/22 Foundry Road**  
**Seven Hills**  
**NSW 2147**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 18217**

Accredited for compliance with ISO/IEC 17025 – Testing  
 NATA is a signatory to the ILAC Mutual Recognition  
 Arrangement for the mutual recognition of the  
 equivalence of testing, medical testing, calibration,  
 inspection, proficiency testing scheme providers and  
 reference materials producers reports and certificates.

**Attention:** - **Mohammad Hossein Bazyar**

**Report** **806519-S**  
 Project name **ADDITIONAL - 51134146 STATION LANE LOCHINVAR**  
 Project ID **NE966**  
 Received Date **Jun 29, 2021**

<b>Client Sample ID</b>			<b>COM1</b>
<b>Sample Matrix</b>			<b>Soil</b>
<b>Eurofins Sample No.</b>			<b>S21-Jn58167</b>
<b>Date Sampled</b>			<b>Jun 10, 2021</b>
<b>Test/Reference</b>	LOR	Unit	
<b>Chromium (hexavalent)</b>	1	mg/kg	< 5
<b>% Moisture</b>	1	%	18

**Sample History**

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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**

Chromium (hexavalent)

- Method: In-house method E057.2

% Moisture

- Method: LTM-GEN-7080 Moisture

**Testing Site**

Sydney

Sydney

**Extracted**

Jun 29, 2021

Jun 29, 2021

**Holding Time**

28 Days

14 Days

**Australia**

**Melbourne**  
6 Monterey Road  
Dandenong South VIC 3175  
Phone : +61 3 8564 5000  
NATA # 1261  
Site # 1254

**Sydney**  
Unit F3, Building F  
16 Mars Road  
Lane Cove West NSW 2066  
Phone : +61 2 9900 8400  
NATA # 1261 Site # 18217

**Brisbane**  
1/21 Smallwood Place  
Murarrie QLD 4172  
Phone : +61 7 3902 4600  
NATA # 1261 Site # 20794

**Perth**  
46-48 Banksia Road  
Welshpool WA 6106  
Phone : +61 8 9251 9600  
NATA # 1261  
Site # 23736

**Newcastle**  
4/52 Industrial Drive  
Mayfield East NSW 2304  
PO Box 60 Wickham 2293  
Phone : +61 2 4968 8448  
NATA # 1261 Site # 25079

**New Zealand**

**Auckland**  
35 O'Rorke Road  
Penrose, Auckland 1061  
Phone : +64 9 526 45 51  
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43 Detroit Drive  
Rolleston, Christchurch 7675  
Phone : 0800 856 450  
IANZ # 1290

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

<b>Company Name:</b>	Geotesta Pty Ltd (NSW)	<b>Order No.:</b>		<b>Received:</b>	Jun 29, 2021 11:48 AM
<b>Address:</b>	Unit 6, 20/22 Foundry Road Seven Hills NSW 2147	<b>Report #:</b>	806519	<b>Due:</b>	Jun 30, 2021
<b>Project Name:</b>	ADDITIONAL - 51134146 STATION LANE LOCHINVAR	<b>Phone:</b>	1300852 216	<b>Priority:</b>	1 Day
<b>Project ID:</b>	NE966	<b>Fax:</b>		<b>Contact Name:</b>	- Mohammad Hossein Bazyar
<b>Eurofins Analytical Services Manager : Asim Khan</b>					

<b>Sample Detail</b>						Chromium (hexavalent)	Moisture Set
<b>Melbourne Laboratory - NATA Site # 1254</b>							
<b>Sydney Laboratory - NATA Site # 18217</b>						X	X
<b>Brisbane Laboratory - NATA Site # 20794</b>							
<b>Perth Laboratory - NATA Site # 23736</b>							
<b>Mayfield Laboratory - NATA Site # 25079</b>							
<b>External Laboratory</b>							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	COM1	Jun 10, 2021		Soil	S21-Jn58167	X	X
<b>Test Counts</b>						1	1

**Internal Quality Control Review and Glossary**
**General**

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

**Holding Times**

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

**Units**

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

**Terms**

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	US Department of Defense Quality Systems Manual Version 5.3
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	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.
<b>TEQ</b>	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 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

**QC Data General Comments**

- 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.
- 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.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- 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.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- 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	
<b>Method Blank</b>										
Chromium (hexavalent)			mg/kg	< 1			1	Pass		
<b>LCS - % Recovery</b>										
Chromium (hexavalent)			%	84			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>Spike - % Recovery</b>										
				Result 1						
Chromium (hexavalent)			S21-Jn46771	NCP	%	91	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
<b>Duplicate</b>										
				Result 1	Result 2	RPD				
Chromium (hexavalent)			S21-Jn46770	NCP	mg/kg	< 5	< 5	<1	30%	Pass
% Moisture			S21-Jn58183	NCP	%	15	12	17	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

**Authorised by:**

Asim Khan                      Analytical Services Manager  
Charl Du Preez                Senior Analyst-Inorganic (NSW)



**Glenn Jackson**  
**General 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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