Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Detailed Site Investigation (Contamination)

Proposed Tourist and Visitor Development
231 Pacific Highway, Mount White

Prepared for
The Trustee for Mount White Trust

Project 202936.01
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Douglas Partners
Geotechnics / Environment / Groundwater

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
Author		6 December 2021
Reviewer	For D. Woods	6 December 2021

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1. Introduction

Douglas Partners Pty Ltd (DP) was engaged by The Trustee for Mount White Trust to complete this detailed site investigation for contamination (DSI) for a proposed tourist and visitor development at 231 Pacific Highway, Mount White (the site as shown on Drawing 1, Appendix A). The investigation was undertaken with reference to DP's proposal 208251.00.P.001.Rev0 dated 23 August 2021 and email dated 13 September 2021.

DP has previously prepared a geotechnical investigation for the site (DP, 2021), which was completed prior to the demolition of the Hawkesbury Inn. At the time of undertaking the current DSI, all structures on the site had been demolished. The objective of the DSI is to assess the suitability of the site for the proposed development from a contamination perspective, and whether further investigation and/or remediation/management is required. It is understood that the report will be used to support a development application for the proposed development.

This report must be read in conjunction with all appendices including the notes provided in Appendix A. The following key guidelines were consulted in the preparation of this report:

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013); and
- NSW EPA *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA, 2020).

2. Proposed Development

It is understood that the proposal is for a new house and bed and breakfast accommodation on the site, which is subject to a development application before Central Coast Council (CCC), as well as a planning proposal to allow additional permitted uses to allow the expansion of tourist and visitor development on the site. The development application is for a new building containing a dwelling, 4 bed and breakfast suites and dining areas, located close to the site of the former Hawkesbury Inn. The planning proposal proposes a small expansion of accommodation and other facilities on the site, generally to the north of the proposed new dwelling.

At the time of preparing this report, the extent of earthworks proposed at the site was not known, however, it has been assumed that finished levels would be close to the existing surface levels. The proposed development plan (i.e. Site Plan D.01) and the planning proposal concept plan (i.e. Block Plan Rz.01) are provided in Appendix A.

3. Scope of Work

DP carried out the following scope of works:

- Review of published geological, soil, topographic, hydrogeological and acid sulfate soil (ASS) risk maps;
- Review of key site history information including:
  - Available historical aerial photographs;
  - Recent aerial imagery obtained through MetroMaps;
  - NSW EPA public registers for notices and licences issued under the Contaminated Land Management Act 1997 (CLM Act) and the Protection of the Environment Operations Act 1997 (PEOA Act);
  - Readily accessible council records; and
  - SafeWork NSW records
- A site walkover to observe the current land uses and assess the potential for contaminating activities;
- Completion of a ground penetration radar (GPR) scan within the southern portion of the site (refer to Section 7.2) by an appropriately qualified service location contractor;
- Drilling of forty-five boreholes (Bores 101 to 107 and Bores 110 to 147) using a utility-mounted push-tube rig, terminating in natural soils or weathered rock at depths of up to 2.1m;
- Collection of soil samples from regular depth intervals based on field observation;
- Collection of two sediment grab samples (Bores 108 and 109) from the on-site creek;
- Field testing of soil and sediment samples with a photo-ionisation detector (PID) to assess the likely presence of volatile organic compounds;
- Conversion of three boreholes to groundwater monitoring wells (MW140, MW142 and MW145);
- Groundwater well development and sampling;
- Laboratory analysis of selected soil / sediment and groundwater samples for a range of commonly encountered contaminants as identified in the conceptual site model (CSM - refer to Section 8);
- Field sampling and laboratory analysis according to standard environmental protocols, including a Quality Assurance / Quality Control (QA/QC) plan, appropriate Chain of Custody procedures and in-house laboratory QA/QC testing; and
- Preparation of this report detailing the findings of the investigation including recommendations for further works.

4. Site Information

The key site information is presented below, and the site boundary is shown in Figure 1.

Site Address	231 Pacific Highway, Mount White
Legal Description	Lot 1, Deposited Plan 207158
Area	3.5 hectares (ha)
Zoning	RU1 Primary Production
Local Council Area	Central Coast Council
Current Use	Vacant land
Surrounding Uses	• North – Vacant land / rural residential land use; • East – Ashbrookes Road, and nursery (Mount White Nursery and Princeton Wholesale Nurseries) and restaurant (Saddles) beyond; • South – Pacific Highway and bushland beyond; and • West – Calverts Creek and rural residential land use / vacant land further west.

Figure 1: Site Location

5. Environmental Setting

Regional Topography	Gently undulating to rolling rises on Hawkesbury Sandstone plateau, with local relief to 40 m and slopes <15%.
Site Topography	The site lies at an elevation ranging from approximately 166 m to 175 m AHD, based on the survey plan (see Appendix A). Based on the site topography, the land slopes from the east / north east to the west / south west.
Soil Landscape	Reference to the *Gosford – Lake Macquarie 1:100,000 Soil Landscapes* Sheet indicates that the site is underlain by the Somersby (residual) soil landscape, characterised by deeply weathered Hawkesbury Sandstone plateau. These soils typically vary from yellow earths and earthy sands on crests and slopes, with grey earths in poorly drained areas, and leached sands and siliceous sands along drainage lines. These soils typically have localised permanent and seasonal waterlogging, moderate erosion hazard, very low soil fertility and are highly permeable.
Geology	Reference to the *Gosford-Lake Macquarie 1:100 000 Geology Sheet* indicates that the site is underlain by the Hawkesbury Sandstone of the Mesozoic era of the Triassic period characterised by quartz sandstone and minor shale lenses (grey siltstone, claystone and laminite).
Acid Sulfate Soils	Reference to published ASS risk maps indicates the site and areas within 500 m of the site are mapped as having no known occurrence of ASS material. Furthermore, given the site's elevation (>5 m AHD) and the mapped residual soil landscape, assessment of ASS was not considered to be warranted.
Surface Water	Calvert's creek is mapped along the western site boundary and a tributary of Calvert's creek (likely intermittent) intercepts the northern third of the site. Based on the site topography, surface water is anticipated to flow to the west / south west towards Calvert's Creek, and also to the south, within the northern third of the site, towards the tributary of Calvert's Creek, ultimately draining into Mooney Mooney Creek located approximately 2.6 km south east of the site.
Groundwater	Based on the site topography, groundwater is anticipated to flow from the east / north east to the west /south west, towards Calvert's Creek. A search of the publicly available registered groundwater bore database on 25 November 2021 indicated that there were five registered groundwater bores within approximately 500 m of the site as summarised in Table 1 below.

Table 1: Summary of Available Information from Nearby Registered Groundwater Bores

Bore ID	Approximate Location Relative to Site	Final Depth (m)	Standing Water Level (m bgl)	Authorised Purpose
GW100608	On-site	49	15	Stock, Domestic
GW042725	75 m, east (upgradient)	100.5	20.70	Stock, irrigation, domestic
GW100083	435 m, north	45	16	Stock, Domestic
GW104111	290 m, south west	72	21	Stock, Domestic
GW103584	355 m, south west	52	15	Stock, Domestic

DP notes that the on-site bore is authorised for stock / domestic purposes. Furthermore, given the local geology (i.e. Hawkesbury Sandstone), the groundwater in the fractured rock beneath the site is anticipated to be relatively fresh. Accordingly, potential beneficial uses could include drinking water.

6. Site History

6.1 Historical Aerial Photography

Historical aerial photographs from 1961 to 2021 obtained from public databases and MetroMap were reviewed to identify possible former land uses and hence the potential for contaminating activities to have impacted the site. The aerial photographs and an approximate site boundary are presented in Appendix B. It is noted that data obtained from aerial photos was limited due to the relatively small scale and poor resolutions. A summary of the aerial photograph review is given in Table 2 below.

Table 2: Summary of Historical Aerial Photographs

Year	Site	Surrounding Land Use
1961	Northern half • Appears to comprise predominantly bushland; • A small area within the north eastern corner of the site appears to be cleared. Southern half • A farmhouse/inn (see Section 6.3 below) and associated structures / swimming pool can be seen within the southern portion of the site; • A smaller structure (possible re-fuelling area – see Section 6.3) can be seen south of the inn; • The area immediately north/north west and east of the inn appears to be used for orchard land use (small-scale); • Small structures, positioned in a grid, can be seen north of the orchard land use, inferred to be poultry sheds or horse stables.	• Pacific Highway and Ashbrookes Road can be seen adjacent to the southern and eastern site boundary, respectively. • The surrounding land use generally comprises a mix of bushland and agricultural / orchard land use. • Structures can be seen south of the site (possible service station).
1965	Northern half • It appears that some of the bushland has been cleared. Southern half • The small structures (i.e. possible re-fuelling area and poultry sheds / horse shelters) noted in the 1961 aerial image have been demolished; • The orchard land use has reduced in scale (approximately 10 trees visible).	• The surrounding land use appears much the same as in 1961.
1976	Northern half	• A dam has been constructed east of the northern half of the site;

Year	Site	Surrounding Land Use
	• It appears that the area has been subject to further vegetation clearing and possibly stripping of surface vegetation / minor ground disturbance. <u>Southern half</u> • The inn appears to have expanded, however due to the poor resolution of the aerial image, it is difficult to ascertain the site details; • The agricultural / orchard land use is no longer evident.	• Structures (likely greenhouses) have been constructed east of the southern half of the site (consistent with the existing nursery use); • The surrounding land use to the north, south and west appears much the same as in 1965.
1984	<u>Northern half</u> • Appears to comprise predominantly bushland (vegetation re-growth); • The ground disturbance visible near the northern site boundary is inferred to be the gas/fuel pipeline easement (see Section 6.3.2) <u>Southern half</u> • A small structure can be seen within the central northern portion; • It appears that additional structures may have been constructed, associated with the inn.	• The surrounding land use appears much the same as in 1976. It is noted that an additional greenhouse/shade house has been constructed east of the site (possible nursery).
1991	<u>Northern half</u> • Appears much the same as in 1984. <u>Southern half</u> • Additional structures associated with the inn have been constructed; and possibly some of the original structures have been demolished; • Within the central portion, a ground disturbance / possible stockpiles can be seen, and it appears the area has been subject to placement of fill; • Two structures (possible sheds) have been constructed within the central portion.	• The surrounding land use appears much the same as in 1984, however the orchard land use north of the site is no longer observed.

Year	Site	Surrounding Land Use
1994	Northern half • Most of the vegetation has been cleared. Southern half • The areas of ground disturbance noted in the 1991 aerial image are no longer prominent, and the areas appear to be grass covered; • Two of the structures within the central / northern portion noted in the 1984 and 1991 aerial, appear to have been demolished, and a new structure appears to have been built.	• The surrounding land use appears much the same as in 1991.
2002	Northern half • Vegetation re-growth is evident. Southern half • A large rectangular ground disturbance can be seen within the central portion of the site (future tennis court); • An additional structure has been constructed, east of the structure noted in the 1994 aerial.	• The nursey east of the site appears to have expanded; • The surrounding land use appears much the same as in 1994. It is noted the possible service station, south of the site appears to have been demolished.
2007	Northern half • Appears much the same as in 2002. Southern half • The large rectangular ground disturbance noted in the 2002 aerial image is observed to be a tennis court; • The remainder of the area appears much the same as in 2002.	• The surrounding land use appears much the same as in 2002.
2014	• The site layout is generally consistent with the layout shown in the survey plan (see Appendix A) and in Figure 3 below. Northern half • The area has been subject to some vegetation clearing.	• The surrounding land use appears much the same as in 2007.

Year	Site	Surrounding Land Use
	Southern half • One of the structures, east of the tennis court observed since 1994 has been demolished; • The remainder of the area appears much the same as in 2007.	
2021	• All the structures on site have been demolished .	• The surrounding land use appears much the same as in 2021.

6.2 Public Registers and Planning Records

The EPA maintains a public database of contaminated sites under Section 58 of the CLM Act. The notices relate to investigation and / or remediation of site contamination considered to be significantly contaminated under the definition in the CLM Act.

A site will appear on the Contaminated Land: Record of Notices if the site has been issued a regulatory notice by the EPA. Sites appearing in the List of NSW Contaminated Sites Notified to the EPA indicate that the site is considered to be contaminated by the notifier and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation and is subject to further review by the EPA. The NSW EPA also issues environmental protection licenses under Section 308 of the POEO Act.

A summary of the EPA, Council, and SafeWork NSW records is presented below and the search results are included in Appendix B.

EPA Notices available under Section 58 of the Contaminated Lands Management Act (CLM Act) Database searched 24 November 2021	There were no records of notices for the site or adjacent sites.
Sites notified to EPA under Section 60 of the CLM Act Database searched 24 November 2021	The site and adjacent sites were not listed as a notified contaminated site.
Licences listed under Section 308 of the Protection of the Environment Operations Act 1997 (POEO Act) Database searched 24 November 2021	There were no records issued to the site or adjacent sites.
Council Records (accessed 24 November 2021)	The following building / development applications were found relating to the site: • 011.2000.00009786.001 - Development Application / Construction Certificate – Shed (storage) (Lodged: 11/10/2000); • 004.2006.00010101.001 - Building Application - Septic System Misc – (Lodged: 05/09/2006); • 024.2009.00003883.001 - Private Tree Works Application - Approval to carry out pruning works as required on one (1) Eucalyptus tree located at front of property. (Lodged: 22/01/2009) • 011.2021.00062054.001 - Development Application – Duplicate dwelling house & Bed/ Breakfast Accommodation (Lodged: 07/06/2021); • 011.2021.00062053.001 - Development Application – Integrated dwelling house & Bed/ Breakfast Accommodation (Lodged: 21/06/2021) • 010.2021.00061780.001 - Complying Development Cert. - Demolition of Dwelling & Ancillary Structures CDC/1221462 (Lodged: 12/07/2021)
SafeWork NSW (letter issued 26 October 2021)	No relevant records pertaining to the site.

6.3 Other Sources

6.3.1 Newspaper articles

A bulletin board with newspaper clippings was displayed at the site entrance, providing an insight into the history of the former Hawkesbury Inn. One of the newspaper articles, understood to be sourced from the Newcastle Sun, dated 16 November 1971, stated the following:

It has only been ten years since a ramshackle old petrol shop, on a barren plot of earth at Mount White was transformed…now known to thousands of inter-city travellers as the Hawkesbury Inn.

But for Mrs Ann Felton, the proprietor of The Inn, they were ten harrowing years. Mrs Felton's husband was the force behind the renovation and alterations to the old petrol station. He bought the old building and began to convert it into a restaurant.

6.3.2 Anecdotal Evidence

A dial before you dig search (DBYD) was completed prior to undertaking the field work, which identified a high pressure gas and fuel pipeline, owned by Jemena Gas Networks, and Ampol Australia Petroleum Pty Ltd (Ampol) Limited, respectively, intercepts the site as shown in Figure 2 below. Based on a phone discussion with DP staff and an Ampol representative in October 2021, it was confirmed that the gas and fuel pipelines are located in a shared trench, and that Ampol have in place an on-going program of pipeline integrity testing, which includes monitoring of corrosion and deformity of the pipeline. DP was informed that there has been no evidence of leaks in the fuel pipeline in the locality of the site.

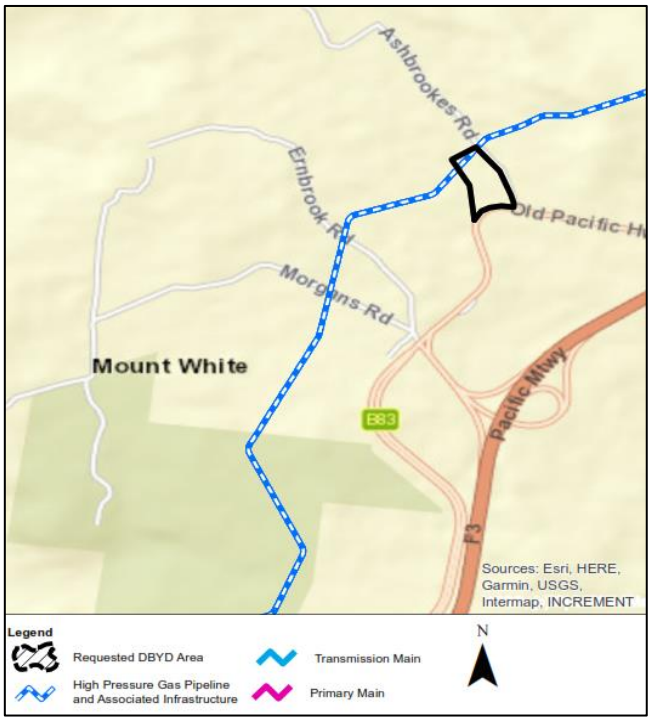


Figure 2: Alignment of high pressure gas (and fuel) pipeline intercepting the northern portion of the site (outlined in black). Figure extracted from Jemena Gas Networks DBYD search.

At the time of undertaking the site walkover (see Section 7.1), a local resident who had lived in the area since circa 1960s commented that the site previously had a small re-fuelling area located on the southern side of the former inn building, and the re-fuelling facilities were removed from the site 'a long time ago'. It was also mentioned that a service station was previously located across the road, on the other side of the Pacific Highway (i.e. structure noted in the aerial photographs from 1961 to 2002 / located downgradient of the site).

6.3.3 Real-estate advertisement

Figure 3 below shows the site layout of the southern half of the site, prior to the demolition of site structures, obtained from a real estate advertisement

Figure 3: Site layout prior to demolition of structures (source: TalbotPartners RealEstate).

6.4 Site History Integrity Assessment

The information used to establish the history of the site was obtained from reliable sources including the EPA and government / local government websites, and was supplemented with anecdotal evidence. It should be noted that the aerial photographs are only available for certain years / intervals, therefore some data gaps exist in the information from this source. Furthermore, the observed site features are open to different interpretations and can be affected by the time of day and/or year at which they were taken, as well as specific events, such as flooding. Care has been taken to consider different possible interpretations of aerial photographs and to consider them in conjunction with other lines of evidence.

6.5 Summary of Site History

The site history information suggests that in the 1950's, the site (or part of the site – likely the southern portion) was a former petrol station and from circa 1961, the petrol station was gradually converted into a restaurant (the Hawkesbury Inn). It appears that at least the above-ground infrastructure associated with the former petrol station was removed by 1965.

Based on review of the aerial imagery, the northern half of the site has remained much the same over the years, and has been subject to vegetation clearing, and re-growth and possibly minor ground disturbance. The southern half of the site was used for agricultural purposes including orchard land use (small-scale) in the 1960s, up until circa 1976 (or possibly 1965). Since 1961 to 2020, the southern portion of the site appears to have been subject to fill placement, and construction and demolition of various structures. The storage shed observed in the 2002 aerial image was likely constructed sometime between 2000 to 2002, based on council records. All structures at the site were demolished sometime between July and September 2021.

It is known a fuel pipeline traverses the northern portion of the site, however based on correspondence with an Ampol representative, DP was informed that there has been no evidence of leaks in the fuel pipeline in the locality of the site.

The surrounding land uses upgradient of the site include former orchard land use, and the existing nursery. The search of the EPA and Council records did not identify any significant findings relating to contamination of the site.

7. Site Inspections

7.1 Site Walkover

A site walkover was undertaken by an environmental engineer from DP on 6 September 2021. At the time of the walkover, all site structures had been demolished. Photographs taken during the walkover are presented in Figures 4 to 9 below. The general site topography was consistent with that described in Section 5.

The northern half of the site was generally grass covered with scattered trees (Figure 4). A tributary of Calverts Creek intercepted the northern third of the site and was observed to be dry at the time of the walkover (Figure 5).

The southern half of the site comprised areas of suspected fill (or ground disturbance) and some grass cover. The surface of the former tennis court had been filled with a sandy gravel comprising asphalt and basalt (Figure 6), and fill was observed in the locality of the former structures (Figure 7). Fragments of potential asbestos containing material (ACM) were observed on the ground surface in the locality of the former structures (Figure 8), and oyster shells were observed in the fill and at the ground surface (Figure 9) in several isolated areas in the central portion of the southern half of the site (refer to approximate area outlined in a purple dotted line on Drawing 1, Appendix A).

Figure 4: General site photograph of the northern portion of the site.

Figure 5: Intermittent tributary / creek line within the northern third of the site.

Figure 6: Former tennis court filled with a sandy gravel.

Figure 7: Fill observed in the locality of the former structures. Photo taken 6 September 2021.

Figure 8: Fragments of potential asbestos containing material observed on the ground surface.

Figure 9: Oyster shells observed on the ground surface.

7.2 Ground Penetration Radar Scan

A GPR scan was undertaken by an appropriately qualified service location contractor in the locality of the suspected former re-fuelling area on 7 October 2021. The purpose of the GPR scan was to detect potential anomalies in the ground surface, which could be used to indicate the potential presence of an underground storage tank. The results of the GPR scan identified the presence of several redundant services (i.e. cables and pipes), however, no positive indicators of the possible presence of existing or former re-fuelling infrastructure was identified.

7.3 Asbestos Clearance Inspections

Asbestos clearance inspections were undertaken at the site by a licenced asbestos assessor from Assessment Corp. The clearance certificates have been included in Appendix J.

An initial asbestos clearance inspection was undertaken at the site on 8 July 2021, prior to the demolition of the “main dwelling”, and following the removal of nominated in-situ asbestos cement (AC) pipe and ACM from nominated locations.

A second asbestos clearance inspection was undertaken on 1 September 2021 following the demolition of the “main dwelling and north-eastern shed”, and a final asbestos clearance inspection was completed on 1 October 2021, following DP’s walkover (see Section 7.1).

The asbestos clearance report, based on the inspection undertaken on 1 October 2021, stated the following: *It is of the opinion of the inspector that as far as reasonably practical the current scope of work has been completed to a satisfactory industry standard. Residual / remaining asbestos containing material (ACM) associated with the current scope of works was not identified by the inspector at the time of the inspection.*

Based on the visual observations made at the time of inspection ‘the area(s) inspected’ (as outlined in Section 1.5 of this Clearance Certificate) are considered safe for reoccupation / normal works to recommence (subject to the notes and limitations as outlined in Section 2.5 of this Clearance Certificate)

8. Preliminary Conceptual Site Model

A conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e. it enables an assessment of the potential source – pathway – receptor linkages (complete pathways).

Potential Sources

Based on the current investigation, the following potential sources of contamination and associated contaminants of potential concern (COPC) have been identified.

- S1: Fill: Associated with site regrading, construction/demolition of former buildings, imported fill, and filling of the former swimming pool / tennis court.
  - COPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), organophosphate pesticides (OPP), and asbestos.
- S2: Former agricultural and orchard land use / current offsite land use (nursery).
  - COPC include primarily OCP, OPP, and metals, and also TRH, BTEX, PAH from potential fuel leaks associated with machinery sheds.
- S3: Former re-fuelling area.
  - COPC include metals, TRH, BTEX and PAH.
- S4: Former structures.
  - COPC include asbestos, synthetic mineral fibres (SMF), lead (in paint) and PCB.

Potential Receptors

The following potential human receptors have been identified:

- R1: Construction and maintenance workers;
- R2: End users [workers and guests]; and
- R3: Adjacent site users [mainly rural residential land use].

Given the site is currently vacant, current site users are not considered to be relevant.

The following potential environmental receptors have been identified:

- R4: Surface water [Calvert's Creek - freshwater];
- R5: Groundwater; and
- R6: Terrestrial ecosystems.

Potential Pathways

The following potential pathways in relation to human receptors have been identified:

- P1: Ingestion and dermal contact; and
- P2: Inhalation of fibres/dust and/or vapours.

The following potential pathways in relation to the environmental receptors have been identified:

- P3: Surface water run-off;
- P4: Lateral migration of groundwater providing base flow to water bodies;
- P5: Leaching of contaminants and vertical migration into groundwater; and
- P6: Inhalation, ingestion and absorption.

Summary of Potentially Complete Exposure Pathways

A 'source–pathway–receptor' approach has been used to assess the potential risks of harm being caused to human or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (potential complete pathways). The possible pathways between the above source (S1 and S4) and receptors (R1 to R6) are provided in below Table 3.

Table 3: Summary of Potentially Complete Exposure Pathways

Source and COPC	Transport Pathway	Receptor	Risk Management Action Recommended
S1: Fill - metals, TRH, BTEX, PAH, PCB, OCP, OPP and asbestos S2: Former agricultural and orchard land use / current off-site land use (nursery) - OCP, OPP, metals, TRH, BTEX, PAH S3: Former refuelling area: metals, TRH, BTEX and PAH S4: Former buildings asbestos*, synthetic mineral fibres (SMF), lead (in paint) and PCB.	P1 – Ingestion and dermal contact P2 – Inhalation of fibres/ dust and/or vapours	R1 – Construction and maintenance workers R2 – End users	An intrusive investigation of site soils and associated contamination sampling (with respect to the sampling density as per NSW EPA, 1995) is recommended to assess possible contamination issues. Groundwater sampling is recommended within the southern portion of the site to assess potential contamination from the historical refuelling infrastructure.
	P2 – Inhalation of fibres/ dust and/or vapours	R3 – Adjacent site users	
	P3 – Surface water run-off P4 – Lateral migration of groundwater	R4 – Surface water	
	P5 – Leaching of contaminants and vertical migration into groundwater	R5 – Groundwater	
	P6 – Inhalation, ingestion and absorption	R6 – Terrestrial ecosystems	

*DP notes an asbestos clearance certificate was issued for the site, for the recent demolition activities (refer to Section 7.3).
** The fuel pipeline was assessed as not be a potential source of contamination based on the information provided by Ampol.

9. Sampling and Analysis Quality Plan

9.1 Data Quality Objectives

The DSI was devised with reference to the seven-step data quality objective process which is provided in Appendix B Schedule B2, NEPC (2013). The data quality objective process is outlined in Appendix H.

9.2 Soil Sampling Rationale

Based on the CSM and data quality objectives (DQO) the following sampling rationale was adopted.

Table A of NSW EPA (1995) recommends a minimum of 45 sampling points for a site of 3.5 ha for site characterisation based on the detection of circular hot spots using a systemic grid sampling pattern. In the current investigation, a total of 47 boreholes were positioned across accessible areas of the site to provide overall site coverage, and also to target the potential areas of environmental concern (PAEC) as summarised in Table 4 below.

The borehole locations are shown on Drawing 1, in Appendix A.

Table 4: Summary of Targeted Sampling Locations

Location Target	Identified From	Borehole ID
Intermittent tributary / creek (targeting potential contamination from off-site sources)	Site walkover	Bores 108 and 109
PAEC 1 (Former agricultural / orchard land use / area of former ground disturbance / former building footprint)	1961 and 1991 historical aerial and site walkover	Bores 125 to 139
PAEC 2 (Former re-fuelling area)	1961 historical aerial	Bores 140, 142, 144 to 145 and 146

Soil samples were collected from each borehole at depths of approximately 0.15 m, 0.5 m, 1.0 m and every 0.5 m thereafter, and changes in lithology or signs of contamination.

The general sampling methods are described in the field work methodology, included in Appendix F.

9.3 Groundwater Sampling Rationale

In order to assess the current groundwater contamination status at the site and evaluate whether historical land uses (i.e. former petrol station / re-fuelling area) have impacted on groundwater, sampling from three monitoring wells was undertaken.

The locations were selected based on the following rationale:

- MW140 – positioned to target possible former bowser area and hydraulically up-gradient of the former re-fuelling area / suspected tank location;
- MW145 – positioned in the location of possible re-instated fuel tank excavation; and
- MW142 – positioned hydraulically down-gradient of the former refuelling area.

The general sampling methods are described in the field work methodology, included in Appendix F.

9.4 Analytical Rationale

Based on the site observations and the location of soil samples within the subsoil strata (see Section 12.1), selected samples were analysed for the primary contaminants of concern as identified in Section 9. The analytical scheme was designed to obtain an indication of the potential presence and possible distribution of identified COPC, as outlined below:

Northern half of site

- Surface soil and sediment samples from the northern half of the site (Bores 101 to 124) were analysed for a reduced contamination suite comprising metals, OCP and OPP; and
- Selected locations where isolated fill was identified (Bores 105, 106, 120) were analysed for an extended suite including TRH, BTEX, PAH, PCB and asbestos.

Southern half of site (including PAEC 1 and PAEC 2)

- At locations where natural soils were encountered from the ground surface, the surface soil samples were analysed for a reduced contaminant suite comprising metals, OCP and OPP;
- At locations where fill was observed, the surface sample (and sample Bore 129/0.65) was typically analysed for an extended suite including TRH, BTEX, PAH, PCB and asbestos;
- At locations Bore 128, 138, 139 and 140, samples collected at depth were analysed for a reduced contaminant suite comprising metals, OCP and OPP; and
- Groundwater samples were analysed for a contaminant suite comprising metals, TRH, BTEX and PAH to assess potential contamination from the historical petrol station / re-fuelling area.

Entire site

- Three samples collected from depths of 0.1 to 0.5 m, including natural and fill soils were analysed for pH and CEC for derivation of the ecological investigation levels.

10. Site Assessment Criteria

The site assessment criteria (SAC) applied in the current investigation are informed by the CSM (Section 6.3.3) which identified human and environmental receptors to potential contamination on the site. Analytical results are assessed (as a Tier 1 assessment) against the SAC comprising primarily the investigation and screening levels of Schedule B1 of NEPC (2013).

The investigation and screening levels applied in the current investigation comprise levels adopted for a generic commercial land use scenario. A generic commercial land use scenario has been adopted in for this DSI, on the basis that site workers are likely to present the most significant exposure scenario to any contamination present at the site. The derivation of the SAC is included in Appendix E and the adopted SAC are listed on the summary analytical results tables in Appendix C.

11. Results

11.1 Sub Surface Conditions

Details of the subsurface conditions encountered are given in the borehole logs in Appendix D, together with notes defining classification methods and descriptive terms. A summary of the ground profile encountered is given below.

- PAVEMENT– Asphaltic concrete spray seal was encountered in Bores 144 and 145 to depths of 0.05 m;
- FILL – typically sand or gravel fill was encountered in certain boreholes as outlined below:
  - Silty sand fill with inclusions including trace glass, roadbase or charcoal to depths of up to 0.15 m was encountered in Bores 101, 105, 106 and 120 drilled within the northern half of the site. Clay fill was encountered in Bore 102 to depths of 0.25 m;
  - Sand or gravel fill with varying amounts of silt, sand, clay and gravel was encountered in most boreholes in PAEC 1, typically to depths of up to 0.3 m. Deeper fill to depths of up to 0.9 m was encountered at Bore 129 (drilled in the former tennis court), Bore 138 (drilled in the former swimming pool), and Bore 139 (drilled in the footprint of the former Inn). A summary of the inclusions is provided below:
    - Anthropogenic inclusions including metal, glass, plastic, concrete, brick, tile and/or asphalt were encountered in Bores 126, 131, and 136 to 139;
    - Asphalt and/or oyster shell fragments were encountered in Bores 127 to 129, 130 and 133;
    - Trace slag was encountered in Bore 135;
  - Sand or gravel fill to depths of up to 0.3 m was encountered in PAEC 2 and boreholes drilled in the southern portion of the site (i.e. south of PAEC 1). A summary of the inclusions is provided below:
    - Roadbase and / or asphalt was encountered in Bore 140, 142, 144 to 146; and
    - Trace glass was encountered in Bore 140 and concrete gravels were encountered in Bore 141.

- Silty SAND (topsoil) – Typically grey/brown silty sand was encountered in certain boreholes as outlined below:
  - Bores 103, 104, 107, 110 to 119 and 121 to 124 from the ground surface to depths of up to 0.4 m within the northern half of the site;
  - Bores 125, 132 and 134 from the ground surface to depths of up to 0.2 m in PAEC 1; and
  - Bores 127 to 130, 135 and 136, underlying fill to borehole termination at depths of up to 1.0 m in PAEC 1.
- SAND / gravelly SAND / silty SAND (alluvial) – encountered at four locations as outlined below:
  - Yellow brown and orange brown sand was encountered in Bore 108, and yellow brown gravelly sand was encountered in Bore 109 to depths 0.1 m (limit of investigation), sampled from the base of the intermittent tributary/creek; and
  - Grey-brown silty sand was encountered in Bore 131 and 133, drilled near Calvert's creek
- Clayey SAND / Sandy CLAY / SAND (residual):
  - Clayey sand or sandy clay was encountered in Bores 101 to 107, 110 to 112, and 115 to 124, typically underlying topsoil or fill to borehole termination at depths of up to 0.6 m, within the northern portion of the site. Sand was encountered in Bores 113 from depths of 0.2 to 0.6 m, in Bore 114 from depths of 0.3 to 0.6 m; and in Bore 119 from depths of 0.1 to 0.3 m; and
  - Clayey sand and/or sandy clay was encountered in Bores 125, 126, 132, 134, 137 to 142, and 144 to 147, underlying fill or topsoil to borehole termination at depths of up to 2 m, and in Bore 143 from the ground surface to borehole termination at 0.4 m within the southern portion of site.

During the DP (2021) investigation, the sub-surface conditions comprised topsoil, fill, and residual soils, underlain by sandstone, which are generally consistent with the current findings.

Free groundwater was observed at depths of 0.7 m in Bore 131, 0.5 m in Bore 133, 1.6 m in Bore 140 and 0.4 m in Bore 144. Seepage was observed at depths of 0.28 m in Bore 144 and 0.25 m in Bore 145. Possible seepage was observed at depths of 1.5 m to 1.8 m in Bores 137, 142 and 145. No free groundwater was observed in the other boreholes. It should be noted that groundwater levels are affected by climatic conditions and soil permeability and will therefore vary with time. Reference should be made to Section 11.2 for the groundwater level measurements prior to sampling.

The PID readings were all < 1 ppm indicating a low potential for gross contamination from volatile contaminants to be present in the soil. With the exception of the anthropogenic inclusions noted above, there were no other apparent records of visual or olfactory evidence (e.g. staining, odours) to suggest the presence of contamination.

11.2 Groundwater Levels and Field Parameters

Groundwater levels were gauged on 26 October 2021 using an electronic oil/water interface meter prior to sampling. The measured water levels prior to sampling are shown in Table 5.

Table 5: Summary of Groundwater Level Measurements on 26 October 2021

Well ID	Location of Monitoring Well	Ground Level * m (AHD)	SWL m (bgl)	SWL m (AHD)
MW140	Possible former bowser area / up-gradient	169.9	1.42	168.5
MW145	Location of possible re-instated fuel tank excavation	169.7	1.37	168.3
MW142	Down-gradient	169.1	1.78	167.3

Notes:
*Surveyed by dGPS
AHD – Australian Height Datum
SWL – standing water level
bgl – below ground level

Based on the groundwater level measurements, groundwater is interpreted to be flowing to the west / south west towards Calverts Creek. This was expected given the topography and the location of the down-gradient discharge point (i.e. Calverts Creek).

The stabilised groundwater field parameters recorded prior to sampling are summarised in Table 6 below.

Table 6: Summary of Field Parameters (Groundwater)

Well / Sample ID	Temp. (°C)	DO (ppm)	EC (µS/cm)	pH	Redox (mV)	Observations
MW140	Insufficient groundwater in well to obtain parameters					Clear, no odour / sheen
MW142	19.5	2.00	195	5.2	140	Clear, no odour / sheen
MW145	Insufficient groundwater in well to obtain parameters					Low turbidity, no odour / sheen

The pH was slightly acidic and the electrical conductivity values are typical of fresh water as would be expected of a Hawkesbury Sandstone, and the redox potential (Eh) indicates oxidising conditions.

No light non-aqueous phase liquid LNAPL was observed whilst sampling.

11.3 Laboratory Analytical Results

The laboratory results are summarised in Table C1 and Table C2, Appendix C, together with the adopted SAC. Laboratory certificates of analysis together with the chain of custody documentation are provided in Appendix I. A summary of the results is provided below.

Soil

- Concentrations of BTEX, OCP and OPP were below the PQL and SAC in all samples;
- Concentrations of PCB were below the PQL and / or SAC in all samples;
- The following results were obtained for metals:
  - Concentrations of nickel exceeded the ecological SAC of 60 mg/kg in sample 129/0.1 (73 mg/kg). DP notes that the surface fill at this location comprised asphalt and subangular igneous basalt gravel to depths of 0.15 m. Local basalt gravels are known to have nickel concentrations that can exceed ecological SAC. On this basis, the marginal nickel exceedance at this location is not considered to warrant any further investigation; and
  - Concentrations of nickel in all other samples, and concentration of other metals were below the PQL and/or SAC.
- The following results were obtained for PAH:
  - Concentrations of benzo(a)pyrene (BaP) exceeded the ecological SAC of 1.4 mg/kg in sample 127/0.1 (11 mg/kg), 128/0.1 (85 mg/kg), 129/0.65 (45 mg/kg) and 133/0.1 (5.2 mg/kg). Concentrations of BaP in all other samples were either below the PQL and / or SAC. It is noted that the B(a)P ecological SAC is a low reliability value. Higher reliability screening levels have been published in CRC CARE Risk-based Management and Remediation Guidance for Benzo(a)pyrene (CRC CARE, 2017). The high reliability value of 33 mg/kg (or ranging from 21 mg/kg to 135 mg/kg) for fresh B(a)P suggests that the concentrations of B(a)P detected at the site are unlikely to pose an unacceptable risk to terrestrial ecosystems and therefore the exceedance(s) are not considered to be of concern;
  - Concentrations of BaP TEQ exceeded the health-based SAC of 40 mg/kg in samples 128/0.1 (130 mg/kg) and 129/0.65 (68 mg/kg). Given that the concentration of BaP TEQ in sample 128/0.1 is over 2.5 times the SAC, this location is considered to be contamination hotspot. Concentrations of BaP TEQ in all other samples were either below the PQL and / or SAC; and
  - Concentrations of naphthalene and total PAH were below the PQL and / or SAC in all samples.
- The following results were obtained for TRH:
  - Concentrations of TRH F3 fraction exceeded the management limit SAC of 3,500 mg/kg and the ecological SAC of 1,700 mg/kg in sample 128/0.1 (3,700 mg/kg). Concentrations of the F3 fraction in all other samples were below the SAC; and
  - Concentrations of all other TRH fractions were below the PQL and/or SAC.

DP notes that asphalt and oyster shell fragments were observed in the fill at Bores 128 and 129. However, based on the results of sub-sampling/re-testing of observed inclusions and correspondence with a laboratory analyst from the primary laboratory, Envirolab Services, the likely source of PAH in samples 128/0.1 and 129/0.65 was considered to be carbonaceous material (i.e. ash, charcoal or residual material from fires) observed in the fill (see Figure 10 below). Furthermore, the laboratory analyst suggested that the PAH from this source may be relatively immobile (i.e. low leaching potential and low bioavailability) through the sub-surface, which could be confirmed with further investigation and laboratory testing. DP considers the concentration of TRH F3 fraction at location 128/0.1 may also be associated with the carbonaceous material.

- The following results were obtained for asbestos:
    - Chrysotile asbestos was detected in fibre cement material > 7mm in sample 131/0.1, but the concentrations of FA and AF were below the PQL. DP notes that the SAC states that there should be no visible asbestos in surface soils. Given that asbestos was detected in fibre cement material > 7mm at location 131/0.1, the result is considered to be an exceedance of the health-based SAC.
    - No asbestos was detected in all other soil samples tested for asbestos, and the concentrations of FA and AF were below the PQL and SAC.

Figure 10: Carbonaceous (i.e. ash, charcoal or residual material from fires) material observed in Sample 128/0.1

Groundwater

- Concentrations of arsenic, cadmium chromium, lead, mercury, TRH, BTEX and PAH were below the PQL and SAC in all groundwater samples;
- Concentrations of nickel were above the PQL in all samples, but below or equal to the SAC;
- Concentrations of copper exceeded the aquatic ecosystem SAC of 1.4 µg/L in sample MW142 (2 µg/L), the corresponding QC sample (QA1W – 2 µg//L) and sample MW145 (3 µg/L); and

- Concentrations of zinc exceeded the aquatic ecosystem SAC of 8 µg/L in all samples, with concentrations ranging from 15 µg/L to 58 µg/L.

Based on DP's experience in the area, the concentrations of copper and zinc in groundwater are considered likely to be attributed to the background concentrations that would be associated with the mineralogy of the fractured rock, and therefore the exceedances are not considered to warrant further investigation.

11.4 Data Quality Assurance and Quality Control

The data quality assurance and quality control (QA/QC) results are included in Appendix H. Based on the results of the field QA and field and laboratory QC, and evaluation against the data quality indicators (DQI) it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

12. Discussion

The current DSI comprised a limited review of site history information, a walkover, intrusive soil and groundwater sampling, and laboratory testing.

Based on review of the aerial imagery, the northern half of the site has remained much the same over the years, and has been subject to vegetation clearing, and re-growth and possibly minor ground disturbance. It is known that a major fuel and gas pipeline traverses the northern portion of the site, however based on correspondence with an Ampol representative, DP was informed that there has been no leaks in the fuel pipeline in the locality of the site. DP was unable to undertake our own investigations close to the existing pipeline due to the required setbacks from the operational pipeline. Within the southern half of the site, two PAEC were identified as shown on Drawing 1, Appendix A.

Based on review of the site history information, the following sources of contamination were identified at the site: (S1) fill; (S2) former agricultural and orchard land use / current off-site land use (nursery); (S3) re-fuelling area; and (S4) former structures. During the site walkover, fragments of potential ACM were observed on the ground surface, however, DP notes that additional work was completed by the demolition contractor an asbestos clearance inspection was subsequently undertaken by Assessment Corp, and a clearance certificate was issued for the site. The search of the EPA and Council records did not identify any significant findings relating to contamination of the site.

The northern portion of the site generally comprised natural soils from the ground surface, with fill encountered in five of twenty-four boreholes, to depths of up to 0.25 m. Relatively shallow fill to depths of up to 0.3 m was encountered at most locations within the southern half of the site (including PAEC 1 and PAEC 2), and deeper fill to depths of up to 0.9 m was encountered at Bore 129 (drilled in the former tennis court), Bore 138 (drilled in the former swimming pool), and Bore 139 (drilled in the footprint of the former inn). Inclusions including metal, glass, plastic, concrete, brick, tile, asphalt, oyster shell fragments, charcoal, trace slag and roadbase were encountered in certain bores as outlined in Section 11.1.

The groundwater laboratory results indicated that concentrations of contaminants were generally below the SAC, with the exception of copper and zinc. However, the concentrations of copper and zinc were considered likely to be attributed to the background concentrations that would be associated with the mineralogy of the fractured rock, and therefore the exceedances were not considered to warrant further investigation.

The soil laboratory results indicated the following:

- Northern half of site (i.e. Bores 101 to Bores 124): Concentrations of all contaminants were below the SAC;
- PAEC 2 and southern half of site (excluding PAEC 1): Concentrations of all contaminants were below the SAC;
- PAEC 1: Concentrations of PAH and/or TRH exceeded the health-based SAC in samples 128/0.1 and 129/0.65, and asbestos was detected in sample 131/0.1. Given that asbestos was detected in fibre cement material > 7 mm, the result is considered to be an exceedance of the health-based SAC.

DP notes the exceedances of the health-based SAC were in the general locality of the ground disturbance / possible filling activities observed in the 1991 historical aerial (refer to Drawing 1, Appendix A). Based on correspondence with the laboratory, the likely source of PAH (and TRH) in samples 128/0.1 and 129/0.65 was considered to be carbonaceous (i.e. ash, charcoal or residual material from fires) material observed in the fill.

Based on the field and laboratory results, further investigation is considered to be warranted in the locality of Bores 128, 129 and 131 (see Drawing 2, Appendix A) to further characterise and delineate the extent of soil contamination.

13. Conclusions and Recommendations

Based on the results of the DSI, it is considered that the site can be made suitable for the proposed hotel and conference centre development (from a site contamination standpoint), subject to the following recommendations:

- **PAEC 1**: Supplementary investigations to further characterise and delineation of the extent of contamination at the locations identified on Drawing 2, Appendix A. Based on current concept plans (see Appendix A), it appears that the area requiring further investigation is located in an area proposed for open space (i.e. exposed ground surface). The results could then be used to develop a remediation action plan (RAP) or environmental management plan (EMP) for the site. On this basis, as part of the future delineation scope of works, DP recommends undertaking the following additional field / laboratory testing, with a view of retaining contaminated material on site:
    - Leachability testing of samples, including toxicity characteristic leaching procedure (TCLP) to assess the potential for migration of contaminants through the sub-surface, as well as Australian Standard Leaching Procedure (ASLP) to assess leachability under typical site conditions;
    - Bioavailability testing to assess the potential risk of the contaminant posed to human health; and

  - o Undertake a detailed asbestos investigation of this area, at double density with reference to WA DoH (2021).

- **Remainder of the site (including remainder of PAEC 1)**: Implementation of an unexpected finds protocol (UFP), to establish a strategy / management procedure to be followed during construction works, should unexpected finds of contamination be uncovered.

14. References

CRC CARE. (2017). *Risk-based Management and Remediation Guidance for Benzo(a)pyrene.* Technical Report no. 39: Cooperative Research Centre for Contamination Assessment and Remediation of the Environment.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM].* Australian Government Publishing Services Canberra: National Environment Protection Council.

NSW EPA. (1995). *Contaminated Sites, Sampling Design Guidelines.* NSW Environment Protection Authority.

NSW EPA. (2020). *Guidelines for Consultants Reporting on Contaminated Land.* Contaminated Land Guidelines: NSW Environment Protection Authority.

WA DoH. (2021). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia.* WA Department of Health.

15. Limitations

Douglas Partners (DP) has prepared this report for this project at 231 Pacific Highway, Mount White in accordance with DP's proposal 208251.00.P.001.Rev0 dated 23 August 2021 and email dated 13 September 2021. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of The Trustee for Mount White Trust for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the environmental / groundwater components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Asbestos has been detected by laboratory analysis at one location, as documented in this report. Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints (as discussed above), or to parts of the site being inaccessible and not available for inspection/sampling, or to vegetation preventing visual inspection and reasonable access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present in other parts of the site.

Douglas Partners Pty Ltd

Appendix A

About This Report

Drawing 1

Drawing 2

Client-Supplied Plans

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

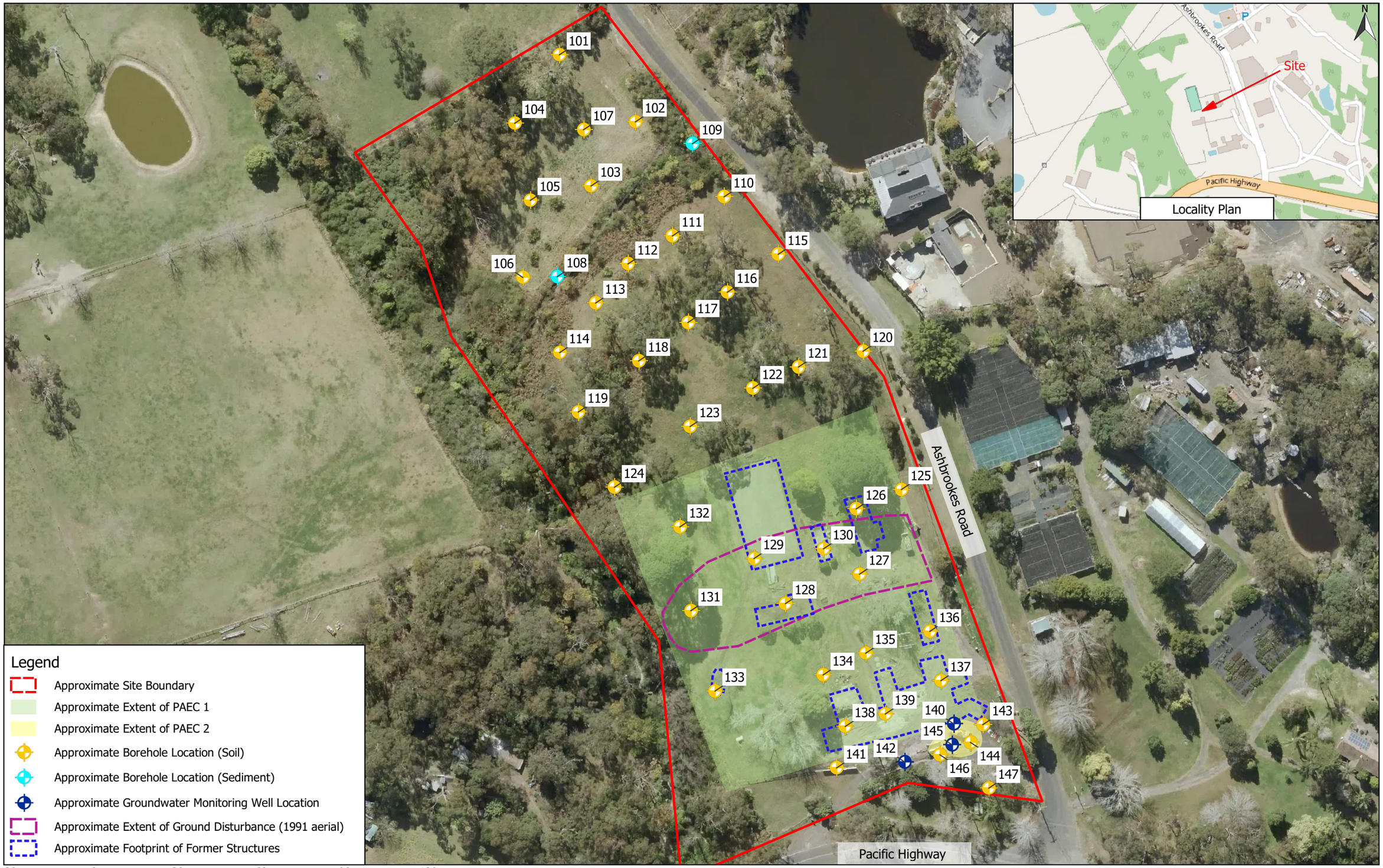
In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.



Drawing adapted from Metromap Image, dated 15 August 2021

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: The Trustee for Mount White Trust		TITLE: **Site and Sampling Location Plan**	PROJECT No:202936.01
OFFICE: Central Coast	DRAWN BY: CLN	**Proposed Hotel and Conference Centre**	DRAWING No: 1
SCALE: 1:1300 @ A3	DATE: 29.11.2021	**231 Pacific Highway, Mount White**	REVISION: 0

Drawing adapted from Metromap Image, dated 15 August 2021

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: The Trustee for Mount White Trust		
OFFICE: Central Coast	DRAWN BY: CLN	
SCALE: 1:1300 @ A3	DATE: 29.11.2021	

TITLE: **Areas Requiring Further Investigation**
Proposed Hotel and Conference Centre
231 Pacific Highway, Mount White

N

PROJECT No:	202936.01
DRAWING No:	2
REVISION:	0

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This drawing is issued as a preliminary concept design and must not be used for construction, cost estimation or any purpose other than for preliminary design purposes. Do not scale off this drawing, use figured dimensions where provided.

Rev.	Description	Date
DA	Development Application Issue	03/06/2021
DAa	Development Application Issue - revised	25/10/2021

John Singleton GROUP

MICHELLE LESLIE

White + Dickson Architects.

PO Box 4371 East Gosford NSW 2250
Tel: +61 2 4324 3632
Nominated Architect: Andrew Dickson RAIA (Arch Registration No.7657)

former Hawkesbury Inn site

John Singleton Group

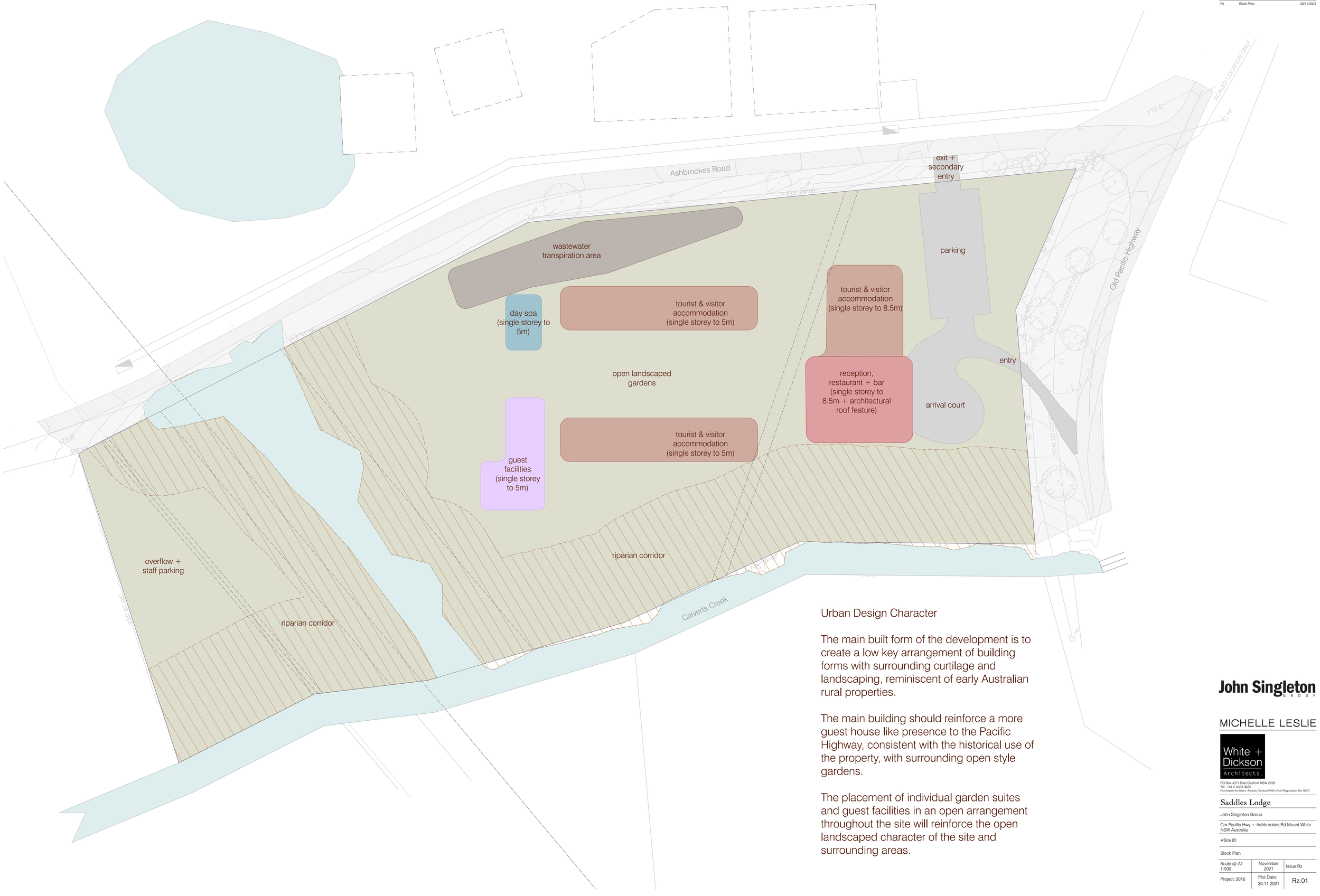
Cnr Pacific Hwy + Ashbrookes Rd Mount White NSW Australia

#Site ID

Site Plan

Scale @ A1 1:500	June 2021	Issue: DAa
Project: 2016	Plot Date: 25.10.2021	D.01

Rev.	Description	Date
Rz	Block Plan	30/11/2021



Urban Design Character

The main built form of the development is to create a low key arrangement of building forms with surrounding curtilage and landscaping, reminiscent of early Australian rural properties.

The main building should reinforce a more guest house like presence to the Pacific Highway, consistent with the historical use of the property, with surrounding open style gardens.

The placement of individual garden suites and guest facilities in an open arrangement throughout the site will reinforce the open landscaped character of the site and surrounding areas.

John Singleton GROUP

MICHELLE LESLIE

White + Dickson Architects.

PO Box 4371 East Gosford NSW 2250
Tel: +61 2 4324 3632
Nominated Architect: Andrew Dickson RAIA (Arch Registration No 7657)

Saddles Lodge

John Singleton Group

Cnr Pacific Hwy + Ashbrookes Rd Mount White NSW Australia

#Site ID

Block Plan

Scale @ A1 1:500	November 2021	Issue Rz
Project: 2016	Plot Date: 30.11.2021	Rz.01

Appendix B

Historical Aerial Photographs

EPA Searches

Council Records

SafeWork NSW Search Result

Photo 1 – Historical aerial photograph - 1961

Photo 2 – Historical aerial photograph - 1965

Douglas Partners Geotechnics / Environment / Groundwater	**Historical Aerial Photographs** **Detailed Site Investigation (Contamination)** **231 Pacific Highway, Mount White**	PROJECT: 202936.01 PLATE No: 1 REV: A
	CLIENT: The Trustee for Mount White Trust	DATE: 1 Dec 2021

Photo 3 – Historical aerial photograph - 1976

Photo 4 – Historical aerial photograph - 1984

Douglas Partners Geotechnics / Environment / Groundwater	**Historical Aerial Photographs** **Detailed Site Investigation (Contamination)** **231 Pacific Highway, Mount White**	PROJECT: 202936.01 PLATE No: 2 REV: A
	CLIENT: The Trustee for Mount White Trust	DATE: 1 Dec 2021

Photo 5 – Historical aerial photograph - 1991

Photo 6 – Historical aerial photograph - 1994

Douglas Partners Geotechnics / Environment / Groundwater	**Historical Aerial Photographs** **Detailed Site Investigation (Contamination)** **231 Pacific Highway, Mount White**	PROJECT: 202936.01 PLATE No: 3 REV: A
	CLIENT: The Trustee for Mount White Trust	DATE: 1 Dec 2021

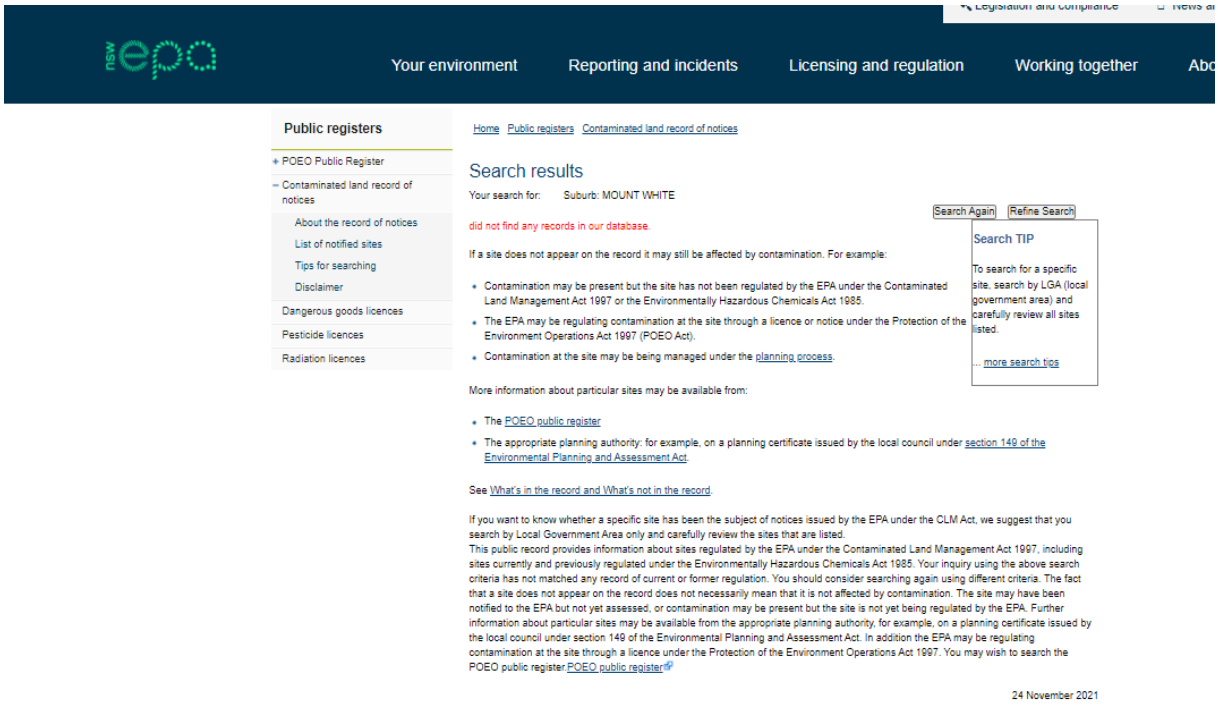
Photo 7 – Historical aerial photograph - 2002

Photo 8 – Historical aerial photograph - 2007

Photo 7 – Historical aerial photograph - 2014

Douglas Partners Geotechnics / Environment / Groundwater	**Historical Aerial Photographs** **Detailed Site Investigation (Contamination)** **231 Pacific Highway, Mount White**	PROJECT: 202936.01 PLATE No: 5 REV: A
	CLIENT: The Trustee for Mount White Trust	DATE: 1 Dec 2021

Appendix B
EPA Searches



nsw epa

Your environment | Reporting and incidents | Licensing and regulation | Working together | Abo

Public registers

- + POEO Public Register
- − Contaminated land record of notices
  - About the record of notices
  - List of notified sites
  - Tips for searching
  - Disclaimer
- Dangerous goods licences
- Pesticide licences
- Radiation licences

Home Public registers Contaminated land record of notices

Search results

Your search for: Suburb: MOUNT WHITE

Search Again | Refine Search

did not find any records in our database.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

More information about particular sites may be available from:

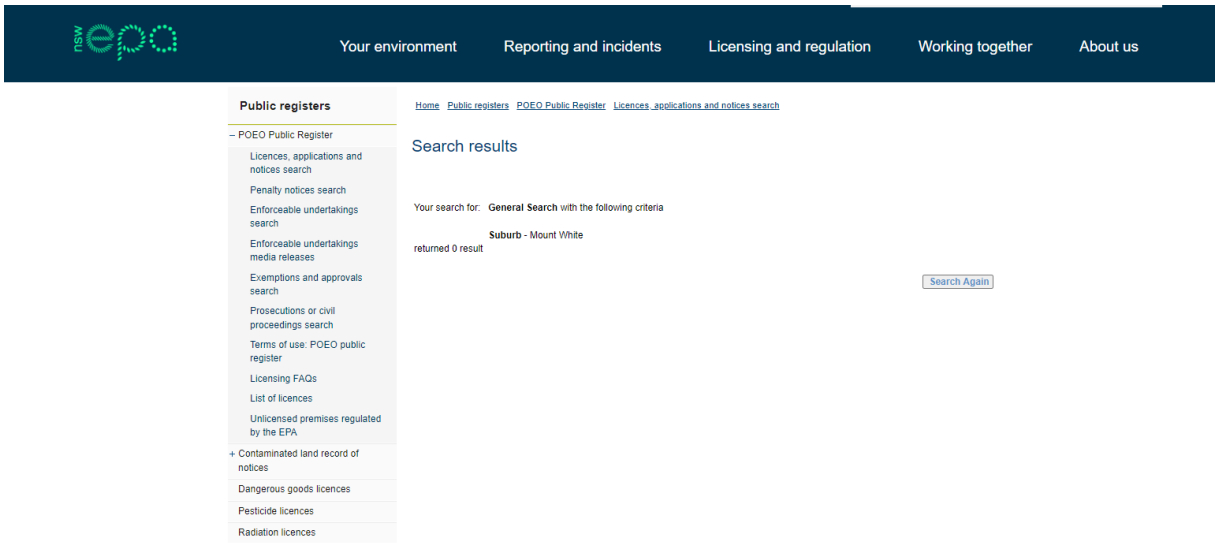
- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

24 November 2021

Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
5 MOUNT THORLEY	Lowes Petroleum (Former BP) Depot Mount Thorley	74 Mount Thorley ROAD	Other Petroleum	Regulation under CLM Act not required	-32.62443074	151.1025122
7 MOUNT VICTORIA	Caltex Service Station	36a Great Western HIGHWAY	Service Station	Regulation under CLM Act not required	-33.58436517	150.2465528
3 MOUNT VICTORIA	Former Mobil Service Station	81 Great Western HIGHWAY	Service Station	Regulation under CLM Act not required	-33.5889727	150.2511783
9 MUDGEE	BP Service Station Mudgee	77 Church STREET	Service Station	Regulation under CLM Act not required	-32.59545872	149.588123



Douglas Partners Pty Ltd

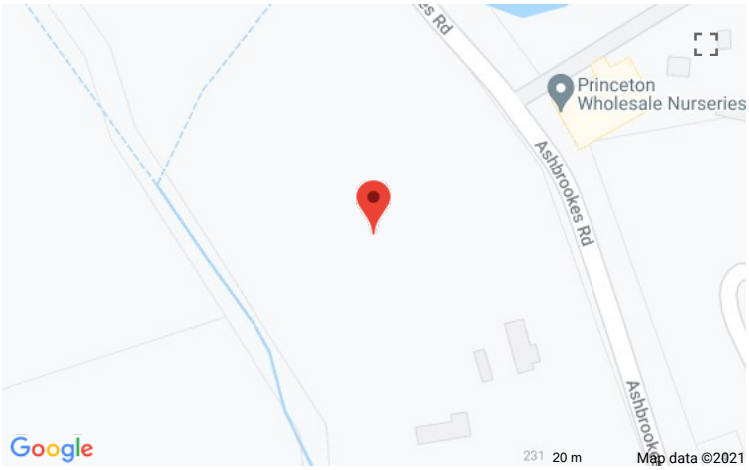
Search Options
- Find a Property
- Find an Application
- ePlanning Home

231 Pacific HWY MOUNT WHITE NSW 2250

Details
231 Pacific HWY MOUNT WHITE NSW 2250
Property Number: 9987

Titles
LOT: 1 DP: 207158
Lot / Deposited Plan
Land Area: 32700.00

Map



Applications

011.2000.00009786.001
Development Application - SHED (STORAGE) (Lodged: 11/10/2000)
012.2000.00009786.001
Construction Certificate - SHED (STORAGE) (Lodged: 11/10/2000)
004.2006.00010101.001
Building Application - Septic System Misc (Lodged: 05/09/2006)
024.2009.00003883.001
Private Tree Works Application - Approval to carry out pruning works as required on one (1) Eucalyptus tree located at front of property. (Lodged: 22/01/2009)
011.2021.00062054.001
Development Application - DUPLICATE Dwelling House & Bed/ Breakfast Accommodation (Lodged: 07/06/2021)
011.2021.00062053.001
Development Application - INTEGRATED Dwelling House & Bed/ Breakfast Accommodation (Lodged: 21/06/2021)
010.2021.00061780.001
Complying Development Cert. - Demolition of Dwelling & Ancillary Structures CDC/1221462 (Lodged: 12/07/2021)

Brent Kerry

From: Licensing <licensing@safework.nsw.gov.au>
Sent: Tuesday, 26 October 2021 3:04 PM
To: Brent Kerry
Subject: SafeWork NSW: 00610883 –Site Search application – Result not found - LOT 1 DP 207158 Pacific Highway Mount White NSW 2250 [ref:_00D281hl6J._5004a5GNl7:ref]

Security Classification: Sensitive Personal

Dear Brent

Re: Site Search for Schedule 11 Hazardous Chemicals on premises Application – Result not found

I refer to your application for a Site Search for Schedule 11 Hazardous Chemicals on premises for the following site: LOT 1 DP 207158 Pacific Highway Mount White NSW 2250.

A search of the records held by SafeWork NSW has not located any records pertaining to the above-mentioned premises.

If you have any further information or if you have any questions, please use one of the following options, quoting the SafeWork NSW enquiry reference number: 00610883

- Email: licensing@safework.nsw.gov.au
- Phone: 13 10 50

Kind regards

Gabriela Draper
Licensing Representative
SafeWork NSW | Better Regulation Division
Department of Customer Service
p- 13 10 50
e- licensing@safework.nsw.gov.au | www.customerservice.nsw.gov.au
Level 3, 32 Mann Street, Gosford, NSW 2250

Appendix C

Table C1: Summary of Laboratory Results

Table C2: Summary of Laboratory Results

Douglas Partners
Geotechnics | Environment | Groundwater

Table C1: Summary of Laboratory Results – Metals, TRH, BTEX, PAH

			Metals								TRH						BTEX				PAH			
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene b	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
		PQL	4	0.4	1	1	1	0.1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	1	0.05	0.5	0.05
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
101/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**10**	**14**	**11**	<0.1	**18**	**18**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
102/0.1	0 - 0.1 m	14/10/2021	**15**	<0.4	**33**	**2**	**13**	<0.1	**5**	**6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
103/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**4**	<1	**17**	<0.1	<1	**6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
104/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	**3**	**5**	**22**	<0.1	<1	**22**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
105/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**3**	**5**	**390**	<0.1	<1	**23**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
106/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**2**	**12**	**180**	<0.1	<1	**23**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
QA1	0 - 0.1 m	14/10/2021	<4	<0.4	**2**	**6**	**200**	<0.1	<1	**22**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
107/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**6**	**5**	**44**	<0.1	**1**	**36**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
108/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	**7**	<1	**6**	<0.1	**1**	**4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
109/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	**28**	**22**	**5**	<0.1	**23**	**19**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
110/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	<1	**1**	**2**	<0.1	<1	**5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
111/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	<1	<1	**1**	<0.1	<1	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
QA2	0 - 0.1 m	14/10/2021	<4	<0.4	<1	<1	**1**	<0.1	<1	**1**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
112/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	<1	<1	**1**	<0.1	<1	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
113/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	<1	<1	<1	<0.1	<1	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
114/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	<1	<1	**2**	<0.1	<1	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
115/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**4**	**1**	**5**	<0.1	<1	**6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
116/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**6**	**1**	**5**	<0.1	<1	**12**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
117/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**4**	**7**	**8**	<0.1	<1	**8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
QA3	0 - 0.1 m	14/10/2021	<4	<0.4	**3**	**4**	**6**	<0.1	<1	**5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
118/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	**3**	**1**	**4**	<0.1	<1	**4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
119/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	<1	**2**	**3**	<0.1	<1	**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
120/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	**7**	**3**	**10**	<0.1	<1	**22**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
121/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**4**	**1**	**7**	<0.1	<1	**9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
122/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	**5**	**2**	**7**	<0.1	<1	**11**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
QA4	0 - 0.1 m	14/10/2021	<5	<1	**5**	<5	**8**	<0.1	<2	**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
123/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	**6**	**5**	**7**	<0.1	<1	**24**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
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			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
124/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**3**	**2**	**5**	<0.1	<1	**8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
125/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**5**	<1	**10**	<0.1	<1	**6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
126/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**4**	**2**	**41**	<0.1	<1	**28**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**	<0.5	**1.1**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
127/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**3**	**15**	**34**	<0.1	**7**	**33**	<25	<50	<25	<50	**540**	**440**	<0.2	<0.5	<1	<1	<1	**11**	**16**	**89**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
128/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**8**	**35**	**96**	<0.1	**13**	**180**	<25	**72**	<25	**72**	**3700**	**1400**	<0.2	<0.5	<1	<1	<1	**85**	**130**	**1200**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
128/0.5	0.4 - 0.5 m	15/10/2021	<4	<0.4	**8**	<1	**4**	<0.1	**1**	**6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
129/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**11**	**63**	**3**	<0.1	**73**	**38**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.08**	<0.5	**0.2**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
129/0.65	0.6 - 0.7 m	15/10/2021	<4	<0.4	**8**	**4**	**16**	<0.1	**3**	**41**	<25	<50	<25	<50	**1200**	**510**	<0.2	<0.5	<1	<1	<1	**45**	**68**	**510**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
130/0.05	0 - 0.1 m	15/10/2021	<4	<0.4	**7**	**6**	**12**	<0.1	**2**	**180**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
131/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**5**	**14**	**30**	<0.1	**2**	**110**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.07**	<0.5	**0.3**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
132/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**5**	**2**	**7**	<0.1	<1	**19**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
133/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**10**	**12**	**16**	<0.1	**2**	**64**	<25	<50	<25	<50	**200**	<100	<0.2	<0.5	<1	<1	<1	**5.2**	**7.8**	**60**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
134/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**4**	**5**	**9**	<0.1	<1	**26**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
135/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**6**	**6**	**18**	<0.1	**1**	**44**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.07**	<0.5	**0.2**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
136/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**7**	**16**	**54**	<0.1	**5**	**43**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
QA6	0 - 0.1 m	15/10/2021	<5	<1	**8**	**12**	**52**	<0.1	**7**	**49**	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
137/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**7**	**15**	**23**	<0.1	**10**	**93**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.09**	<0.5	**0.4**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
138/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**6**	**10**	**12**	<0.1	**6**	**46**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
138/1.1	1 - 1.1 m	15/10/2021	<4	<0.4	**7**	<1	**5**	<0.1	**1**	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	370 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	NL 180	NL 370	- 1.4	40 -	4000 -
139/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**13**	**27**	**11**	<0.1	**33**	**50**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
139/0.5	0.4 - 0.5 m	15/10/2021	<4	<0.4	**6**	**6**	**11**	<0.1	**4**	**39**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
140/0.1	0 - 0.1 m	13/10/2021	<4	<0.4	**19**	**25**	**17**	<0.1	**30**	**73**	<25	<50	<25	<50	**270**	**400**	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
140/0.4	0.3 - 0.4 m	13/10/2021	<4	<0.4	**6**	<1	**4**	<0.1	<1	**35**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
141/0.1	0 - 0.1 m	13/10/2021	<4	<0.4	**4**	**4**	**21**	<0.1	**2**	**36**	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**	<0.5	**2.9**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
142/0.1	0 - 0.1 m	13/10/2021	<4	<0.4	**18**	**38**	**20**	<0.1	**34**	**41**	<25	<50	<25	<50	**390**	**680**	<0.2	<0.5	<1	<1	<1	**0.2**	<0.5	**2**
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
143/0.1	0 - 0.1 m	13/10/2021	<4	<0.4	**4**	<1	**5**	<0.1	<1	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
144/0.1	0 - 0.1 m	13/10/2021	<4	<0.4	**12**	**39**	**10**	<0.1	**49**	**37**	<25	<50	<25	<50	**120**	**240**	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
145/0.1	0 - 0.1 m	13/10/2021	<4	<0.4	**20**	**32**	**15**	<0.1	**44**	**53**	<25	<50	<25	<50	**240**	**420**	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
146/0.1	0 - 0.1 m	13/10/2021	<4	<0.4	**23**	**44**	**7**	<0.1	**52**	**37**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -
147/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	**9**	**10**	**18**	<0.1	**11**	**26**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			3000 160	900 -	3600 320	240000 160	1500 1800	730 -	6000 60	400000 480	- -	- 170	260 215	NL -	- 1700	- 3300	3 75	NL 135	NL 165	230 180	NL 370	- 1.4	40 -	4000 -

Lab result
HIL/HSL value EIL/ESL value

HIL/HSL exceedance | EIL/ESL exceedance | HIL/HSL and EIL/ESL exceedance | ML exceedance | ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report **Blue** = DC exceedance HSL 0-<1 Exceedance

Bold = Lab detections - = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable NL = Non limiting AD = Asbestos detected NAD = No Asbestos detected

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level ML = Management Limit DC = Direct Contact HSL

Notes:

a QA/QC replicate of sample listed directly below the primary sample

b Reported naphthalene laboratory result obtained from BTEXN suite

Site Assessment Criteria (SAC):

Reference should be made to the SAC section of the report. Summary information as follows:

SAC based on generic land use thresholds for Commercial/ industrial D

HIL D	Commercial / Industrial (NEPC, 2013)
HSL D	Commercial / Industrial (vapour intrusion) (NEPC, 2013)
DC HSL D	Direct contact HSL D Commercial/Industrial (direct contact) (CRC CARE, 2011)
EIL/ESL C/Ind	Commercial and Industrial (NEPC, 2013)
ML C/Ind	Commercial and Industrial (NEPC, 2013)

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Table C1: Summary of Laboratory Results – OCP, OPP, PCB, Asbestos

			OCP												OPP	PCB	Asbestos					
			DDD	Σ DDT+DDD+DDE[c]	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Endrin	Total Heptachlor	Hexachlor	Hexachlorobenzene	Methoxychlor	Chlorpyrifos	Total PCB	Asbestos in soil >0.1g/kg	Trace Analysis	ACM >1mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos (Confirmed)
		PQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	-	0	0	%(w/w)	-
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
1010/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1020/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1030/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1040/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1040/0.5	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
1060/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
QA1	0 - 0.1 m	14/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1070/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1080/0.05	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1080/0.05	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1100/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1110/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
QA2	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1120/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1130/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1140/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1150/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1160/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1170/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
QA3	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1180/0.05	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1190/0.05	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
1210/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1220/0.05	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
QA4	0 m	14/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1230/0.1	0 - 0.1 m	14/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
QA5	0 m	14/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1240/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1250/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
1260/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
1270/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
1280/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
1290/0.5	0.4 - 0.5 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1295/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1300/0.05	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1305/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	AD	NAD	0.4231	-	<0.001	AD
1320/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1330/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1340/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
QA6	0 - 0.1 m	15/10/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1370/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.2	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1380/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1381/0.1	1 - 1.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1390/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.6	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1395/0.5	0.4 - 0.5 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1400/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1400/0.4	0.3 - 0.4 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1410/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.4	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1420/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1430/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1440/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1450/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1460/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1465/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NAD	NAD	-	-	<0.001	NAD
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1480/0.1	0 - 0.1 m	13/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
1490/0.1	0 - 0.1 m	15/10/2021	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-

Lab result
HIL/HSL value | ESL/ESL value

HIL/HSL exceedance | ESL/ESL exceedance | HIL/HSL and ESL/ESL exceedance | ML exceedance | ML and HIL/HSL or ESL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report | Blue = DC exceedance | HSL 0–1 Exceedance

Bold = Lab detections | - = Not tested or No HIL/HSL/ESL/ESL (as applicable) or Not applicable | NL = Non limiting | AD = Asbestos detected | NAD = No Asbestos detected

HIL = Health investigation level | HSL = Health screening level (excluding DC) | ESL = Ecological investigation level | ESL = Ecological screening level | ML = Management Limit | DC = Direct Contact HSL

Notes:

a QA/QC replicate of sample listed directly below the primary sample

c Criteria applies to DDT only

Site Assessment Criteria (SAC):

Reference should be made to the SAC section of the report. Summary information as follows:

SAC based on generic land use thresholds for Commercial/ industrial D

HIL D	Commercial / industrial (NEPC, 2013)
HSL D	Commercial / industrial (vapour intrusion) (NEPC, 2013)
DC HSL D	Direct contact HSL D Commercial/industrial (direct contact) (CRC CARE, 2011)
ESL/ESL C/Ind	Commercial and Industrial (NEPC, 2013)
ML C/Ind	Commercial and Industrial (NEPC, 2013)

Table C2: Summary of Laboratory Results (Groundwater)				Drinking Water [a]	Aquatic Ecosystems[b]	Human Health[c]	Sample ID	MW140	MW142	QA1W	MW145
							Sampled Date	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Analyte		Units	PQL			2-4m, Sand					
Metals	Arsenic	µg/L	1	10	13			<1	<1	<1	<1
	Cadmium	µg/L	0.1	2	0.2			<0.1	<0.1	<0.1	<0.1
	Chromium (III+VI)	µg/L	1	50	1			<1	<1	<1	<1
	Copper	µg/L	1	2000	1.4			<1	2	2	3
	Lead	µg/L	1	10	3.4			<1	<1	<1	<1
	Mercury	µg/L	0.05	1	0.06*			<0.05	<0.05	<0.05	<0.05
	Nickel	µg/L	1	20	11			2	4	4	11
	Zinc	µg/L	1		8			15	57	58	23
TRH	F2-NAPHTHALENE	µg/L	50			NL		<50	<50	<50	<50
	C6-C10 less BTEX (F1)	µg/L	10			6000		<10	<10	<10	<10
BTEX	Benzene	µg/L	1	1	950	5000		<1	<1	<1	<1
	Ethylbenzene	µg/L	1	300	80	NL		<1	<1	<1	<1
	Toluene	µg/L	1	800	180	NL		<1	<1	<1	<1
	Xylene (m & p)	µg/L	2	600	75	NL		<2	<2	<2	<2
	Xylene (o)	µg/L	1		350	NL		<1	<1	<1	<1
PAH	Total PAHs	µg/L	0.1					<0.1	<0.1	<0.1	<0.1
	Anthracene	µg/L	0.1		0.01*			<0.1	<0.1	<0.1	<0.1
	Benzo(a) pyrene	µg/L	0.1	0.01	0.1*			<0.1	<0.1	<0.1	<0.1
	Fluoranthene	µg/L	0.1		1.0*			<0.1	<0.1	<0.1	<0.1
	Naphthalene	µg/L	0.2		16	NL		<0.2	<0.2	<0.2	<0.2
	Phenanthrene	µg/L	0.1		0.6*			<0.1	<0.1	<0.1	<0.1

Notes

[a] NHMRC, NRMMC (2021)

[b] ANZG (2018) - 95% LOP, freshwater

[c] NEPC (2013), HSL D

* 99% LOP adopted for contaminants where bioaccumulation and secondary poisoning effects should be considered

Appendix D

Borehole Logs

Sampling Methods

Soil Descriptions

Symbols and Abbreviations

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 173.2 AHD
EASTING: 332128.2
NORTHING: 6297110.9
DIP/AZIMUTH: 90°/--

BORE No: 101
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
173	0.15	FILL/Silty SAND: medium grained, brown, with gravel subangular igneous roadbase, with organics, trace glass, moist, fill		D/E	0.1		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, trace organics, moist, residual		D/E	0.3		PID<1ppm		
	0.4	Bore discontinued at 0.4m- Limit of Investigation							
172	1								1
171	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 172.5 AHD
EASTING: 332155.5
NORTHING: 6297086.8
DIP/AZIMUTH: 90°/--

BORE No: 102
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
172	0.25	FILL/CLAY: low plasticity, red brown, with basalt subangular igneous <50mm, w<PL, fill		D/E	0.1		PID<1ppm		
	0.5	Sandy CLAY: medium plasticity, yellow brown, trace ironstone, w<PL, residual		D/E	0.3		PID<1ppm		
	1	Bore discontinued at 0.5m- Limit of Investigation							
171	2								

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 171.4 AHD
EASTING: 332139.6
NORTHING: 6297063.8
DIP/AZIMUTH: 90°/--

BORE No: 103
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
171	0.2	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.5	Clayey SAND: medium grained, yellow brown mottled brown, moist		D/E	0.3		PID<1ppm		
		Bore discontinued at 0.5m- Limit of Investigation							
170	1								1
	2								2
169									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 171.6 AHD
EASTING: 332112.2
NORTHING: 6297086.3
DIP/AZIMUTH: 90°/--

BORE No: 104
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
171	0.1	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.05		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
	0.4	Bore discontinued at 0.4m- Limit of Investigation							
170	1								1
	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.8 AHD
EASTING: 332117.8
NORTHING: 6297058.6
DIP/AZIMUTH: 90°/--

BORE No: 105
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILL/Silty SAND: medium grained, brown and grey brown, trace gravel subangular igneous roadbase, trace glass (2 pieces), moist, fill		D/E	0.1		PID<1ppm		
	0.12	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.2		PID<1ppm		
				D/E	0.35		PID<1ppm		
	0.45	Bore discontinued at 0.45m- Limit of Investigation							
170	1								1
169	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.8 AHD
EASTING: 332115.1
NORTHING: 6297030.9
DIP/AZIMUTH: 90°/--

BORE No: 106
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		FILL/Silty SAND: medium grained, grey and grey brown, trace charcoal, trace glass, moist, fill		D/E	0.1		PID<1ppm		
	0.15	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
		- from 0.4m: orange brown and yellow brown							
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
169	1								1
168	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 171.9 AHD
EASTING: 332136.9
NORTHING: 6297084
DIP/AZIMUTH: 90°/--

BORE No: 107
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
171	0.15	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
	0.5	- from 0.4m: Sandy CLAY consistency							
	1	Bore discontinued at 0.5m- Limit of Investigation							
170	2								

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.9 AHD
EASTING: 332127.4
NORTHING: 6297031.2
DIP/AZIMUTH: 90°/--

BORE No: 108
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168.9	0.1	SAND: medium to coarse grained, yellow brown and orange brown, trace gravel ironstone, wet, alluvial, weathered from residual		D/E	0.05		PID<1ppm		
		Bore discontinued at 0.1m- Limit of Investigation							
168	1								1
167	2								2

RIG: Grab Sample **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: Grab Sample
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H. Sediment sample taken from base of creek

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.9 AHD
EASTING: 332176
NORTHING: 6297078.9
DIP/AZIMUTH: 90°/--

BORE No: 109
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.1	Gravelly SAND: poorly graded, yellow brown, gravel subangular igneous basalt and subrounded ironstone, wet, alluvial (sediment sample from creek)		D/E	0.05		PID<1ppm		
		Bore discontinued at 0.1m- Limit of Investigation							
170	1								1
169	2								2

RIG: Grab Sample **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: Grab Sample
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H. Sediment sample taken from base of creek

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 173.3 AHD
EASTING: 332187.4
NORTHING: 6297059.9
DIP/AZIMUTH: 90°/--

BORE No: 110
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
173	0.15	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
		Clayey SAND: fine to medium grained, yellow brown, trace organics, moist, residual		D/E	0.3		PID<1ppm		
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
172	1								1
	2								2
171									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 172.2 AHD
EASTING: 332168.8
NORTHING: 6297045.8
DIP/AZIMUTH: 90°/--

BORE No: 111
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
172		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
		- from 0.3m: grading to brown							
	0.35	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.5		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
	1								1
171									
	2								2
170									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 171.4 AHD
EASTING: 332152.9
NORTHING: 6297035.8
DIP/AZIMUTH: 90°/--

BORE No: 112
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
171	0.0	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.2	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
170	1								1
	2								2
169									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.8 AHD
EASTING: 332141.2
NORTHING: 6297021.7
DIP/AZIMUTH: 90°/--

BORE No: 113
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.2	SAND: medium grained, pale grey, moist, residual		D/E	0.4		PID<1ppm		
		- from 0.5m: brown							
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
170	1								1
169	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.3 AHD
EASTING: 332128.3
NORTHING: 6297003.9
DIP/AZIMUTH: 90°/--

BORE No: 114
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
170	0.0	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.3	SAND: medium grained, pale grey, moist, residual - from 0.5m: yellow brown		D/E	0.4		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
169	1								1
	2								2
168									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 173.5 AHD
EASTING: 332206.8
NORTHING: 6297039.2
DIP/AZIMUTH: 90°/--

BORE No: 115
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
173	0.15	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
	1								1
172									
	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 172.1 AHD
EASTING: 332188.6
NORTHING: 6297025.6
DIP/AZIMUTH: 90°/--

BORE No: 116
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
172	0.2	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.5	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
		Bore discontinued at 0.5m- Limit of Investigation							
171	1								1
170	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 171.3 AHD
EASTING: 332174.4
NORTHING: 6297014.7
DIP/AZIMUTH: 90°/--

BORE No: 117
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
171	0.25	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
170	1								1
	2								2
169									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.3 AHD
EASTING: 332156.7
NORTHING: 6297000.9
DIP/AZIMUTH: 90°/--

BORE No: 118
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
170	0.1	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.05		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
169	1								1
	2								2
168									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.3 AHD
EASTING: 332135
NORTHING: 6296982.6
DIP/AZIMUTH: 90°/--

BORE No: 119
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.1	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.05		PID<1ppm		
		SAND: medium grained, pale grey, trace clay, moist, residual		D/E	0.2		PID<1ppm		
	0.3	Clayey SAND: medium grained, yellow brown, with gravel ironstone, moist, residual - at 0.4m: band of ironstone gravel		D/E	0.4		PID<1ppm		
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
168	1								1
	2								2
167									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 173.1 AHD
EASTING: 332237.3
NORTHING: 6297004.4
DIP/AZIMUTH: 90°/--

BORE No: 120
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
173	0.1	FILL/Silty SAND: medium grained, brown, with rootlets, trace glass, trace ironstone gravel, moist, fill		D/E	0.05		PID<1ppm		
		Clayey SAND: medium grained, yellow brown and orange brown, moist, residual		D/E	0.3		PID<1ppm		
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
172	1								1
171	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 172.1 AHD
EASTING: 332214.1
NORTHING: 6296998.7
DIP/AZIMUTH: 90°/--

BORE No: 121
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
172	0.2	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.5	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.4		PID<1ppm		
171	1	Bore discontinued at 0.5m- Limit of Investigation							1
170	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 171.0 AHD
EASTING: 332197.7
NORTHING: 6296991.1
DIP/AZIMUTH: 90°/--

BORE No: 122
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
171	0.1	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.05		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
170	1								1
169	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.8 AHD
EASTING: 332175.2
NORTHING: 6296977.4
DIP/AZIMUTH: 90°/--

BORE No: 123
PROJECT No: 202936.01
DATE: 14/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.0	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.3	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.4		PID<1ppm		
	0.5	Bore discontinued at 0.5m- Limit of Investigation							
	1								1
168	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.3 AHD
EASTING: 332148
NORTHING: 6296955.5
DIP/AZIMUTH: 90°/--

BORE No: 124
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168	0.0	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
		- from 0.2m: trace rootlets							
	0.4	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.5		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
	1								1
167									
	2								2
166									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 171.8 AHD
EASTING: 332251.1
NORTHING: 6296954.7
DIP/AZIMUTH: 90°/--

BORE No: 125
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.15	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.2		PID<1ppm		
		- at 0.3m: band of ironstone gravels							
	0.35	Bore discontinued at 0.35m- Refusal on ironstone gravels							
171	1								1
170	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.3 AHD
EASTING: 332234.9
NORTHING: 6296947.7
DIP/AZIMUTH: 90°/--

BORE No: 126
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
170	0.15	FILL/Silty SAND: medium plasticity, grey brown, trace metal, trace plastic, trace concrete, trace clay, moist, fill		D/E	0.1		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
		- from 0.4m: Clayey SAND/Sandy CLAY							
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
169	1								1
	2								2
168									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.7 AHD
EASTING: 332236.1
NORTHING: 6296924.3
DIP/AZIMUTH: 90°/--

BORE No: 127
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.15	FILL/GRAVEL: poorly graded, grey and pale grey, gravel subangular igneous basalt and subangular asphalt <30mm, moist, fill - from 0.05m: gravel is predominately composed of angular oyster shell fragments (Calcareous)		D/E	0.1		PID<1ppm		
		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.25		PID<1ppm		
		- from 0.4m: Clayey SAND/Sandy CLAY							
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
	1								1
168	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.4 AHD
EASTING: 332209.4
NORTHING: 6296913.7
DIP/AZIMUTH: 90°/--

BORE No: 128
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168	0.3	FILL/Gravelly SAND: poorly graded, grey and slightly pale grey, gravels subangular igneous basalt, subangular asphalt <30mm, with angular oyster shell fragments <5mm, dry, fill		D/E	0.1		PID<1ppm		
	0.8	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.5		PID<1ppm		
	1	Bore discontinued at 0.8m- Limit of Investigation							1
167									
	2								2
166									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.9 AHD
EASTING: 332198.1
NORTHING: 6296929.9
DIP/AZIMUTH: 90°/--

BORE No: 129
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168	0.15	FILL/Sandy GRAVEL: poorly graded, grey, gravels subangular asphalt and subangular igneous basalt as dark grey brown, with silt, with rootlets, moist, fill		D/E	0.1		PID<1ppm		
		FILL: Clayey SAND/Sandy CLAY: medium grained, low plasticity, yellow brown and grey brown, moist, fill (reworked natural material most likely from cut side of tennis court)		D/E	0.3		PID<1ppm		
	0.6	FILL/Gravelly Silty SAND: poorly graded, grey and slightly pale grey, gravels angular oyster shell fragments <10mm, moist, fill		D/E	0.65		PID<1ppm		
	0.7	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.8		PID<1ppm		
	1 1.0	Bore discontinued at 1.0m- Limit of Investigation							1
167	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.4 AHD
EASTING: 332223.1
NORTHING: 6296933.4
DIP/AZIMUTH: 90°/--

BORE No: 130
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.1	FILL/Gravelly Clayey SAND: medium grained, brown and pale grey, gravels angular oyster shell fragments, trace rootlets, moist, fill		D/E	0.05		PID<1ppm		
		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.3		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
168	1								1
	2								2
167									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.1 AHD
EASTING: 332175.4
NORTHING: 6296911.2
DIP/AZIMUTH: 90°/--

BORE No: 131
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
167		FILL/Silty SAND: medium grained, grey, trace glass (bottles), trace rootlets, metal (pipe/rebar), trace sandstone gravels, moist to wet, fill		D/E	0.1		PID<1ppm		
	0.2	Silty SAND: fine grained, grey brown, with rootlets, wet, alluvial		D/E	0.3		PID<1ppm		
		- at 0.5m: seepage							
		- approximately 0.7m: hydrogen sulfide odour		D/E	0.7		PID<1ppm	▼	
	0.8	Bore discontinued at 0.8m- Limit of Investigation							
166	1								1
165	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: Free groundwater observed at 0.7m depth
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.2 AHD
EASTING: 332171.5
NORTHING: 6296941.3
DIP/AZIMUTH: 90°/--

BORE No: 132
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168	0.2	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
	0.5	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm		
		Bore discontinued at 0.5m- Limit of Investigation							
167	1								1
166	2								2

RIG: Hand Tools **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 75mm diameter Hand Auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 166.8 AHD
EASTING: 332184.1
NORTHING: 6296882.3
DIP/AZIMUTH: 90°/--

BORE No: 133
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
166	0.0	FILL/Silty SAND: medium grained, grey, with angular oyster shells, wet, fill		D/E	0.1		PID<1ppm	▼	
	0.3	Silty SAND: fine grained, grey brown, wet, alluvial							
	0.6	Bore discontinued at 0.6m- Limit of Investigation		D/E	0.6		PID<1ppm		
	1								1
165	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: Free groundwater observed at 0.5m depth
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.4 AHD
EASTING: 332223
NORTHING: 6296888.1
DIP/AZIMUTH: 90°/--

BORE No: 134
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168	0.2	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.1		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.4		PID<1ppm		
	0.7	Bore discontinued at 0.7m- Limit of Investigation							
167	1								1
	2								2
166									

RIG: Hand Tools **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 75mm diameter Hand Auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H. Charcoal and oyster shells scattered on surface surrounding borehole

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.0 AHD
EASTING: 332238.3
NORTHING: 6296895.9
DIP/AZIMUTH: 90°/--

BORE No: 135
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169		FILL/Clayey Silty SAND: medium grained, yellow brown mottled brown, trace subangular slag fragments, trace rootlets		D/E	0.1		PID<1ppm		
	0.35	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil							
		- from 0.5m: Clayey SAND/Sandy CLAY		D/E	0.5		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
168	1								1
167	2								2

RIG: Hand Tools **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 75mm diameter Hand Auger
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.2 AHD
EASTING: 332261.3
NORTHING: 6296903.8
DIP/AZIMUTH: 90°/--

BORE No: 136
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
170	0.15	FILL/Silty SAND: medium grained, brown and yellow brown, trace organics, moist, fill - from 0.1m to 0.15m: subangular igneous basalt <50mm and layer of plastic sheeting		D/E	0.1		PID<1ppm		
		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.3		PID<1ppm		
	0.8	Bore discontinued at 0.8m- Limit of Investigation							
169	1								1
168	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.0 AHD
EASTING: 332265.3
NORTHING: 6296886.1
DIP/AZIMUTH: 90°/--

BORE No: 137
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
170		FILL/SAND: medium grained, grey brown, with clay, trace brick, concrete, asphalt, tile (building waste), trace silt, moist, fill		D/E	0.1		PID<1ppm		
	0.3	Sandy CLAY: low plasticity, yellow brown, w<PL (moist), residual		D/E	0.5		PID<1ppm		
	0.7	Bore discontinued at 0.7m- Limit of Investigation						▽	
169	1								1
168	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm and 100mm diameter Push Tube Sampler
WATER OBSERVATIONS: Possible seepage at 1.5m
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▽	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.5 AHD
EASTING: 332230.9
NORTHING: 6296869.6
DIP/AZIMUTH: 90°/--

BORE No: 138
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168		FILL/Clayey SAND: medium grained, poorly graded, brown and mottled yellow brown, trace gravels, bricks, igneous basalt and concrete, wet, fill		D/E	0.1		PID<1ppm		
				D/E	0.5		PID<1ppm		
	0.9								
	1	Sandy CLAY: low plasticity, yellow brown, w<PL (moist), residual		D/E	1.1		PID<1ppm		1
	1.4	Bore discontinued at 1.4m- Limit of Investigation							
167									
	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.0 AHD
EASTING: 332245.3
NORTHING: 6296874.1
DIP/AZIMUTH: 90°/--

BORE No: 139
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169		FILL/SAND: medium grained, grey brown, with clay, trace brick, trace concrete, trace plastic, moist, fill		D/E	0.1		PID<1ppm		
		- from 0.2m to 0.3m: band of subangular igneous basalt gravels (most likely drainage layer)							
	0.4	FILL/Clayey SAND: medium grained, yellow brown mottled brown, moist, fill (reworked natural)		D/E	0.5		PID<1ppm		
	0.7	Sandy CLAY: low plasticity, yellow brown, w<PL (moist), residual		D/E	0.8		PID<1ppm		
168	1 1.0	Bore discontinued at 1.0m- Limit of Investigation							1
167	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.9 AHD
EASTING: 332269.9
NORTHING: 6296870.5
DIP/AZIMUTH: 90°/--

BORE No: 140
PROJECT No: 202936.01
DATE: 13/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.2	FILL/Sandy GRAVEL: poorly graded, grey, gravels subangular igneous roadbase <50mm, trace glass, asphalt, and organics, moist, fill		D/E	0.1		PID<1ppm		Stickup +0.5m
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.4		PID<1ppm		From 0m to 0.4m, bentonite From 0m to 0.5m, 50mm dia PVC
168	1.0	Sandy CLAY: low plasticity, yellow brown, w<PL (moist), residual		D/E	1.1		PID<1ppm		From 0.4m to 2.0m, sand From 0.5m to 2.0m, 50mm dia machine slotted PVC
				D/E	1.7		PID<1ppm	▼	
	2.0	Bore discontinued at 2.0m- Refusal on suspected sandstone							At 2.0m, end cap

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: Free groundwater observed at 1.6m depth
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.2 AHD
EASTING: 332227.8
NORTHING: 6296854.7
DIP/AZIMUTH: 90°/--

BORE No: 141
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
168	0.0	FILL/Silty SAND: medium grained, brown, with rootlets, moist, fill		D/E	0.1		PID<1ppm		
		- at 0.2m: band of subangular concrete gravels		D/E	0.2		PID<1ppm		
	0.3	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.4		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
167	1								1
166	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.1 AHD
EASTING: 332252.3
NORTHING: 6296856.8
DIP/AZIMUTH: 90°/--

BORE No: 142
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.15	FILL/Sandy GRAVEL: coarse grained, poorly graded, grey and grey brown, gravels subangular asphalt and subangular igneous basalt, moist, fill		D/E	0.1		PID<1ppm		Stickup +0.5m
		Clayey SAND: medium grained, yellow brown, moist, residual							From 0m to 0.5m, bentonite From 0m to 0.6m, 50mm dia PVC
				D/E	0.4		PID<1ppm		
	0.8	Sandy CLAY: low plasticity, yellow brown, w<PL (moist), residual							
168	1			D/E	1.0		PID<1ppm		1
									From 0.5m to 2.1m, sand From 0.5m to 2.1m, 50mm dia machine slotted PVC
				D/E	1.5		PID<1ppm	▽	
	2			D/E	2.0		PID<1ppm		2
167	2.1	Bore discontinued at 2.1m- Refusal on inferred weathered sandstone							At 2.1m, end cap

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**

TYPE OF BORING: 60mm and 100mm diameter Push Tube Sampler

WATER OBSERVATIONS: No free groundwater observed. Possible seepage at 1.8m

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▽	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.0 AHD
EASTING: 332280.3
NORTHING: 6296870.3
DIP/AZIMUTH: 90°/--

BORE No: 143
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
170		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.1		PID<1ppm		
	0.4	Bore discontinued at 0.4m- Limit of Investigation							
169	1								1
168	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.8 AHD
EASTING: 332275.9
NORTHING: 6296863.9
DIP/AZIMUTH: 90°/--

BORE No: 144
PROJECT No: 202936.01
DATE: 13/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.05	ASPHALTIC CONCRETE: spray seal							
		FILL/Sandy GRAVEL: poorly graded, grey, gravels subangular igneous roadbase <50mm		D/E	0.1		PID<1ppm		
	0.28	- from 0.28m: seepage						▷	
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.4		PID<1ppm	▼	
	0.8	Sandy CLAY: low plasticity, yellow brown, w<PL (moist), residual							
	1			D/E	1.0		PID<1ppm		1
	1.5	Bore discontinued at 1.5m- Refusal on ironstone gravels							
168	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: Seepage at 0.28m, free groundwater observed at 0.4m depth

REMARKS: Location coordinates are in MGA94 Zone 56 H. Learving hole open caused Sandy Gravel to collapse into borehole due to high cements of seepage

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.7 AHD
EASTING: 332269.3
NORTHING: 6296863
DIP/AZIMUTH: 90°/--

BORE No: 145
PROJECT No: 202936.01
DATE: 13/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.05	ASPHALTIC CONCRETE: spray seal							Stickup +0.5m
		FILL/Clayey Sandy GRAVEL: poorly graded, brown and grey, gravels igneous roadbase <50mm, moist, wet, fill		D/E	0.1		PID<1ppm		
	0.25	- from 0.25m: seepage observed						▽	From 0m to 0.4m, bentonite
		Clayey SAND: medium grained, yellow brown, moist, residual							From 0m to 0.5m, 50mm dia PVC
169				D/E	0.5		PID<1ppm		
	0.8	Sandy CLAY (CL): low plasticity, yellow brown, w<PL (moist), residual							
	1			D/E	1.0		PID<1ppm		1
									From 0.4m to 1.7m, sand
									From 0.5m to 1.7m, 50mm dia machine slotted PVC
		- from 1.3m: red brown and yellow brown, with ironstone gravels							
				D/E	1.5		PID<1ppm	▽	
168	1.7	Bore discontinued at 1.7m- Refusal on inferred weathered sandstone							At 1.7m, end cap
	2								2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: Seepage at 0.25m. Possible seepage at 1.5m
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	⫧	Water level	V	Shear vane (kPa)

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BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.5 AHD
EASTING: 332264.9
NORTHING: 6296859.4
DIP/AZIMUTH: 90°/--

BORE No: 146
PROJECT No: 202936.01
DATE: 13/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.2	FILL/Gravelly SAND: poorly graded, grey, gravels subangular igneous roadbase, moist, fill		D/E	0.1		PID<1ppm		
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.5		PID<1ppm		
	0.9	Sandy CLAY: low plasticity, yellow brown, w<PL (moist), residual		D/E	1.0		PID<1ppm		1
168	1.5	Bore discontinued at 1.5m- Limit of Investigation		D/E	1.5		PID<1ppm		2

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.4 AHD
EASTING: 332282.5
NORTHING: 6296847.5
DIP/AZIMUTH: 90°/--

BORE No: 147
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
169	0.0	FILL/Silty SAND: medium grained, brown, with gravels subangular basalt <50mm, moist, fill		D/E	0.1		PID<1ppm		
	0.15	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.4		PID<1ppm		
	0.6	Bore discontinued at 0.6m- Limit of Investigation							
168	1								1
	2								2
167									

RIG: Utility Mounted Rig **DRILLER:** MJH **LOGGED:** MJH **CASING:**
TYPE OF BORING: 60mm diameter Push Tube Sampler
WATER OBSERVATIONS: No free groundwater observed
REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U_x	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

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Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

  4,6,7
  N=13

- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

  15, 30/40 mm

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 – 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 – 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse)
- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse)
- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with 'Mix of Soil and Cobbles/Boulders' with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Soil Descriptions

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;
- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) Non-cohesive and free-running.
- Moist (M) Soil feels cool, darkened in colour.
  Soil tends to stick together.
  Sand forms weak ball but breaks easily.
- Wet (W) Soil feels cool, darkened in colour.
  Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- ‘Moist, dry of plastic limit’ or ‘w <PL’ (i.e. hard and friable or powdery).
- ‘Moist, near plastic limit’ or ‘w ≈ PL (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- ‘Moist, wet of plastic limit’ or ‘w >PL’ (i.e. soils usually weakened and free water forms on the hands when handling).
- ‘Wet’ or ‘w ≈LL’ (i.e. near the liquid limit).
- ‘Wet’ or ‘w >LL’ (i.e. wet of the liquid limit).

Symbols & Abbreviations

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Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U_{50}	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

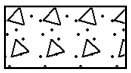
Symbols & Abbreviations

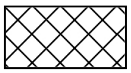
Graphic Symbols for Soil and Rock

General

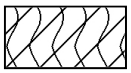

Asphalt

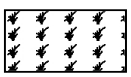

Road base

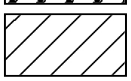

Concrete


Filling

Soils


Topsoil

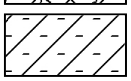

Peat


Clay


Silty clay

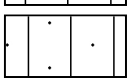

Sandy clay

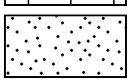

Gravelly clay

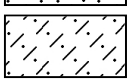

Shaly clay

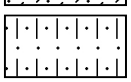

Silt


Clayey silt


Sandy silt

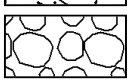

Sand


Clayey sand


Silty sand


Gravel

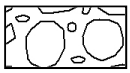

Sandy gravel


Cobbles, boulders

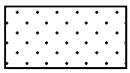

Talus

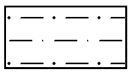
Sedimentary Rocks

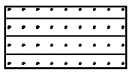

Boulder conglomerate

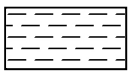

Conglomerate


Conglomeratic sandstone

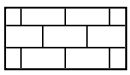

Sandstone


Siltstone

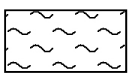

Laminite

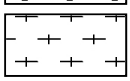

Mudstone, claystone, shale

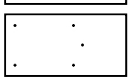

Coal


Limestone

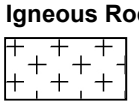
Metamorphic Rocks

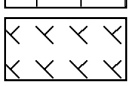

Slate, phyllite, schist


Gneiss


Quartzite

Igneous Rocks


Granite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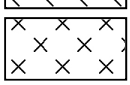
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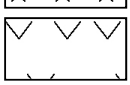
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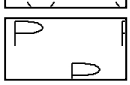
Porphyry

Appendix E

Site Assessment Criteria

Appendix E
Site Assessment Criteria

E1.0 Introduction

E1.1 Guidelines

The following key guidelines were consulted for deriving the site assessment criteria (SAC):

- NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM] (NEPC, 2013).
- CRC CARE *Health screening levels for petroleum hydrocarbons in soil and groundwater* (CRC CARE, 2011).
- ANZG *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018).
- NHMRC, NRMMC *Australian Drinking Water Guidelines 6 2011, Version 3.2* (NHMRC, NRMMC, 2016).

E1.2 General

The SAC applied in the current investigation were informed by the CSM which identified human and environmental receptors to potential contamination at the site. Analytical results were assessed (as a Tier 1 assessment) against the SAC comprising primarily the investigation and screening levels of Schedule B1 of NEPC (2013).

The following inputs are relevant to the selection and/or derivation of the SAC:

- Land use: commercial.
  - Corresponding to land use category 'D', commercial / industrial such as shops, offices, factories and industrial sites.
- Soil type: sand (based on dominant soil type – see Logs, Appendix D).

E2.0 Soils

E2.1 Health Investigation and Screening Levels

The generic health investigation levels (HIL) and health screening levels (HSL) are considered to be appropriate for the assessment of human health risk via all relevant pathways of exposure associated with contamination at the site. The adopted soil HIL and HSL for the contaminants of concern are in Table E1 and Table E2.

Table E1: Health Investigation Levels (mg/kg)

Contaminant	HIL-D
Metals	
Arsenic	3000
Cadmium	900
Chromium (VI)	3600
Copper	240 000
Lead	1500
Mercury (inorganic)	730
Nickel	6000
Zinc	400 000
PAH	
B(a)P TEQ	40
Total PAH	4000
OCP	
DDT+DDE+DDD	3600
Aldrin and dieldrin	45
Chlordane	530
Endosulfan	2000
Endrin	100
Heptachlor	50
HCB	80
Methoxychlor	2500
OPP	
Chlorpyrifos	2000
PCB	
PCB	7

Table E2: Health Screening Levels (mg/kg)

Contaminant	HSL-D
SAND	**0 m to <1 m**
Benzene	3
Toluene	NL
Ethylbenzene	NL
Xylenes	230
Naphthalene	NL
TRH F1	260
TRH F2	NL

Notes: TRH F1 is TRH C_6-C_{10} minus BTEX

TRH F2 is TRH >C_{10}-C_{16} minus naphthalene

The soil saturation concentration (Csat) is defined as the soil concentration at which the porewater phase cannot dissolve any more of an individual chemical. The soil vapour that is in equilibrium with the porewater will be at its maximum. If the derived soil HSL exceeds Csat, a soil vapour source concentration for a petroleum mixture could not exceed a level that would results in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'

The HSL for direct contact derived from CRC CARE (2011) are in Table E3.

Table E3: Health Screening Levels for Direct Contact (mg/kg)

Contaminant	DC HSL-D
Benzene	430
Toluene	99 000
Ethylbenzene	27 000
Xylenes	81 000
Naphthalene	11 000
TRH F1	26 000
TRH F2	20 000
TRH F3	27 000
TRH F4	38 000

Notes: TRH F1 is TRH C_6-C_{10} minus BTEX

TRH F2 is TRH >C_{10}-C_{16} minus naphthalene

E2.2 Asbestos in Soil

The HSL for asbestos in soil are based on likely exposure levels for different scenarios published in NEPC (2013) for the following forms of asbestos:

- Bonded asbestos containing material (ACM); and
- Fibrous asbestos and asbestos fines (FA and AF).

The HSL are in Table E4.

Table E4: Health Screening Levels for Asbestos

Form of Asbestos	HSL-D
ACM	0.05%
FA and AF	0.001%
FA and AF and ACM	No visible asbestos for surface soil *

Notes: Surface soils defined as top 10 cm.
* Based on site observations at the sampling points and the analytical results of surface samples.

E2.3 Ecological Investigation Levels

Ecological investigation levels (EIL) and added contaminant limits (ACL), where appropriate, have been derived in NEPC (2013) for arsenic, copper, chromium (III), nickel, lead, zinc, DDT and naphthalene. The adopted EIL, derived using the interactive (excel) calculation spreadsheet on the NEPM toolbox website are shown in Table E6 with inputs into their derivation shown in **Error! Reference source not found.**.

Table E5: Inputs to the Derivation of the Ecological Investigation Levels

Variable	Input	Rationale
Age of contaminants	"Aged" (>2 years)	Given the likely source of soil contaminants (i.e. historical site use / fill), the contamination is considered as "aged"
pH	7.0	Based on the average of three samples
CEC	5 $cmol_c/kg$	DP notes the average CEC result was was 2.9 $cmol_c/kg$, however, DP have opted to use the lowest CEC value given in Table 1B(1) of NEPC (2013) instead
Clay content	1%	Consistent with a 'sand' soil type
Traffic volumes	high	The site is located adjacent the Pacific Highway

State / Territory	NSW	The site is located in NSW

Table E6: Ecological Investigation Levels (mg/kg)

Contaminant	EIL-D
Metals	
Arsenic	160
Copper	160
Nickel	60
Chromium III	320
Lead	1800
Zinc	480
PAH	
Naphthalene	370
OCP	
DDT	640

E2.4 Ecological Screening Levels

Ecological screening levels (ESL) are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. The adopted ESL are shown in Table E7.

Table E7: Ecological Screening Levels (mg/kg)

Contaminant	Soil Type	EIL-D
Benzene	Coarse	75
Toluene	Coarse	135
Ethylbenzene	Coarse	165
Xylenes	Coarse	180
TRH F1	Coarse/ Fine	215*
TRH F2	Coarse/ Fine	170*
TRH F3	Coarse	1700
TRH F4	Coarse	3300
B(a)P	Coarse	1.4

Notes: ESL are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability
TRH F1 is TRH C_6-C_{10} minus BTEX
TRH F2 is TRH >C_{10}-C_{16} including naphthalene

E2.5 Management Limits

In addition to appropriate consideration and application of the HSL and ESL, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards;
- Effects on buried infrastructure eg: penetration of, or damage to, in-ground services.

The adopted management limits are in Table E8.

Table E8: Management Limits (mg/kg)

Contaminant	Soil Type	ML-D
TRH F1	Coarse	700
TRH F2	Coarse	1000
TRH F3	Coarse	3500
TRH F4	Coarse	10 000

Notes: TRH F1 is TRH C_6-C_{10} including BTEX
TRH F2 is TRH >C_{10}-C_{16} including naphthalene

E3.0 Groundwater

E3.1 Introduction

The groundwater investigation levels (GIL) used for interpretation of the groundwater data (as a Tier 1 assessment) have been selected based on the potential risks posed from contamination sourced from the site to receptors at or down-gradient of the site, as identified by the conceptual site model (CSM). The receptors, exposure points and pathways are summarised in Table E9.

Table E9: Summary of Potential Receptors and Potential Risks

Receptor	Location	Exposure Point	Exposure Pathway
Surface water aquatic ecosystem	Down-gradient from site.	Receiving surface water body at the groundwater discharge point.	Exposure to contaminants.
Occupants of buildings	On site and down-gradient from site.	Enclosed buildings (proposed).	Inhalation of VOC (including TRH and BTEX) overlying VOC impacted groundwater via the vapour intrusion pathway.
Human consumption	On site and down-gradient from site.	Groundwater production bores (existing or proposed)	Ingestion of contaminants in water used for drinking water supply.

The rationale for the selection of GIL is in Table E10.

Table E10: Groundwater Investigation Level Rationale

Receptor / Beneficial Use	GIL	Source	Comments / Rationale
Aquatic ecosystem	DGV	ANZG (2018)	Freshwater 99% LOP for bioaccumulative contaminants 95% LOP for non-bioaccumulative contaminants
Building occupants (vapour intrusion)	HSL	NEPC (2013)	2 m to <4 m
Drinking water	GV	NHMRC (2021)	Health-based GV

Notes: DGV default guideline value
% LOP percentage level of protection of species
HSL health screening level
GV guideline value

E3.2 Groundwater Investigation Levels for Aquatic Ecosystems

The DGV for the protection of aquatic ecosystems derived from ANZG (2018) are in Table E11.

Table E11: Groundwater Investigation Levels for Protection of Aquatic Ecosystems (µg/L)

Contaminant	Fresh Water
Metals	
Arsenic	24 (As III) / 13 (As V)
Cadmium	0.2
Chromium (VI)	1.0
Copper	1.4
Lead	3.4
Mercury (inorganic)	0.06[A]
Nickel	11
Zinc	8
BTEX	
Benzene	950
Toluene	180
Ethylbenzene	80

Contaminant	Fresh Water
m-Xylene	75
o-Xylene	350
p-Xylene	200
PAH	
B(a)P	0.1[A]
Anthracene	0.01[A]
Fluoranthene	1.0 [A]
Phenanthrene	0.6 [A]
Napthalene	16

Notes: A – 99% Species Protection Level

E3.3 Health Screening Levels for Vapour Intrusion

The HSL to evaluate potential vapour intrusion risks derived from NEPC (2013) are in Table E12

Table E12: Groundwater Health Screening Levels for Vapour Intrusion (µg/L)

Contaminant	HSL-D	Solubility Limit
SAND	**2 m to <4 m**	**-**
Benzene	5000	59 000
Toluene	NL	61 000
Ethylbenzene	NL	3900
Xylenes	NL	21 000
Naphthalene	NL	170
TRH F1	6000	9000
TRH F2	NL	3000

Notes: TRH F1 is TRH C_6-C_{10} minus BTEX

TRH F2 is TRH >C_{10}-C_{16} minus naphthalene

The solubility limit is defined as the groundwater concentration at which the water cannot dissolve any more of an individual chemical based on a petroleum mixture. The soil vapour that is in equilibrium with the groundwater will be at its maximum. If the derived groundwater HSL exceeds the water solubility limit, a soil vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'.

E3.4 Groundwater Investigation Levels for Drinking Water

The GV for the drinking water derived from NHMRC, NRMMC (2021) are in Table E13.

Table E13: Groundwater Investigation Levels for Drinking Water (µg/L)

Contaminant	Guideline Value (Drinking Water)
Metals	
Arsenic	10
Cadmium	2
Chromium (VI)	50
Copper	2000
Lead	10
Mercury (inorganic)	1
Nickel	20
Zinc	NC
BTEX	
Benzene	1
Ethlybenzene	300
Toluene	800
Xylene	600
PAH	
BaP	0.01

Appendix F

Field Work Methodology

Appendix F
Field Work Methodology

F1.0 Guidelines

The following key guideline was consulted for the field work methodology:

F1.0 NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM] (NEPC, 2013).

F2.0 Field Work

Field work was undertaken on 13 to 15 October 2021 by a DP engineering geologist and environmental engineer. The field work comprised the drilling of 45 boreholes (Bores 101 to 107 and Bores 110 to 147) using a utility mounted push-tube rig to depths terminating in natural soils; collection of two sediment grab samples (Bores 108 and 109) using hand tools from the on-site creek; and groundwater sampling from three monitoring wells (MW140, MW142 and MW145).

The sampling procedures adopted for soil / sediment and groundwater are outlined below, and the general sample handling procedure is given in Section F5. The decontamination procedure adopted is outlined in Section F6.

F3.0 Soil Sampling

Soil sampling was carried out in accordance with DP standard operating procedures. The general sampling and sample management procedures comprised:

- Collection of soil or sediment samples directly from the hand tools or the push tube at the nominated sample depth;
- Use of disposable nitrile gloves when collecting all samples. Gloves were replaced prior to the collection of each sample thereby minimising potential for cross-contamination;
- Samples collected for laboratory analysis were transferred into a new laboratory prepared glass jar, with minimal headspace, and sealed with a Teflon lined lid. Each jar was individually sealed to reduce the potential for cross contamination during transportation to the laboratory;
- Collection of ~500 ml samples for FA and AF analysis;
- Collection of 10% replicate samples for QC purposes;
- Collection of replicate samples in zip-lock bags for PID screening;

- Use of chain of custody documentation so that sample tracking and custody could be cross-checked at any point in the transfer of samples from the field to the laboratory. Copies of completed chain of custody forms are included in Appendix I.

Field Testing

Field testing was carried out in accordance with DP standard operating procedures. The general sampling and sample management procedures comprised:

PID Field Test

- Calibrate the PID with isobutylene gas at 100 ppm and with fresh air prior to commencement of each successive day's field work;
- Allow the headspace in the PID zip-lock bag samples to equilibrate; and
- Screen using the PID.

F4.0 Groundwater Sampling

Monitoring Well Installation

Monitoring wells were constructed using class 18 uPVC machine slotted screen and blank sections with screw threaded joints. The screened section of each well were backfilled with a washed sand filter pack to approximately 0.5 m above the screened interval. Each well was completed with a hydrated bentonite plug of approximately 0.5 m thick to the surface and finished as a stick-up (no monument).

Monitoring Well Development

Groundwater monitoring wells were developed as soon as practicable following well installation. The purpose of well development is to remove sediments and/or drilling fluid introduced to the well during drilling and to facilitate connection of the monitoring well to the aquifer. The wells were developed by pumping to remove a minimum of five well volumes, or until dry.

Groundwater Sampling

The general sampling procedure comprised:

- Purging of the groundwater monitoring wells;
- Use of an interface probe to measure the standing water level (SWL) and also to detect light non-aqueous phase liquids (LNAPL), if present;
- Sampling was undertaken using low-flow sampling techniques utilising a micro purge bladder pump. The pump was set to the lowest possible flow rate that could produce laminar flow;
- The pump was fitted with a well-dedicated bladder and tubing and lowered into the well to the approximate mid-point of the well screen;

- Recording of groundwater parameters including pH, EC, redox potential, dissolved oxygen and temperature, measured using a calibrated water quality meter, until stabilisation of parameters was achieved (see Table F1 below). It should be noted that at monitoring wells MW140 and MW145, the samples were collected prior to stabilisation of field parameters due to poor recharge and insufficient volume of water in the well;
- Collection of groundwater samples from the approximate mid-point of the well screen;
- Transfer of samples directly into appropriately preserved bottles, with minimum aeration. For analysis of metals, the relevant sample was filtered in the field using an in-line disposable 0.45 µm filter.

Table F1: Stabilisation criteria for groundwater sampling

Parameter	Stabilisation Criteria
pH	+/- 0.1
Electrical Conductivity (EC)	+/- 3%
Oxidation/reduction potential / redox	+/- 10 mV
Turbidity	+/- 10% (when turbidity is greater than 10 NTUs)
Dissolve Oxygen	+/- 0.3 mg/L

F5.0 Sample handling and management

The general sample handling and management comprised the following:

- Labelling of sample jars or bottles (as relevant) with individual and unique identification including project number, sample ID, and date of sampling. Appropriate jars / bottles were used, depending on the analysis to be undertaken (*eg* acid-washed and preserved jars for metals in water);
- Placement of samples in an insulated cooler and maintained at a cool temperature using ice until transported to the analytical laboratory; and
- Use of chain of custody documentation so that sample tracking and custody could be cross-checked at any point in the transfer of samples from the field to the laboratory.

F6.0 Decontamination Procedure

The decontamination procedure adopted comprised the following:

- Disposable sampling equipment, including gloves (for soil, sediment, and groundwater sampling), pump bladders and tubing (*i.e.* for groundwater sampling), was replaced between collection of each sample;
- Non-disposal sampling equipment was decontaminated using a “triple rinse” procedure as follows:
    1. Removing individual parts (if applicable) and washing in tap water;

2. Decontamination using phosphate-free detergent (*ie* Liquinox); and
3. Final rinse in deionised water

Appendix G

Quality Assurance / Quality Control

Appendix G
Quality Assurance and Quality Control

G1.0 Field and Laboratory Data Quality Assurance and Quality Control

The field and laboratory data quality assurance and quality control (QA/QC) procedures and results are summarised in the following Table G1. Reference should be made to the field work methodology and the laboratory results / certificates of analysis for further details. The relative percentage difference (RPD) results, along with the other field QC samples are included at the end of this appendix.

Table G1: Field and Laboratory Quality Control

Item	Evaluation / Acceptance Criteria	Compliance
Analytical laboratories used	NATA accredited for the analysis performed	C*
Holding times	Various based on type of analysis	PC (see Section G1.1)
Intra-laboratory replicates	5% of primary samples; <30% RPD	PC (see Section G1.2)
Inter-laboratory replicates	5% of primary samples; <30% RPD	
Rinsates	1 per sampling event; <PQL	PC (see Section G1.3)
Laboratory / Reagent Blanks	1 per batch; <PQL	C
Laboratory Duplicate	1 per lab batch; As laboratory certificate	PC (see Section G1.4)
Matrix Spikes	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	
Surrogate Spikes	All organics analysis; 70-130% recovery (inorganics); 60-140% recovery (organics)	
Control Samples	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Standard Operating Procedures (SOP)	Adopting SOP for all aspects of the sampling field work	C

Notes:

C = compliance; PC = partial compliance; NC = non-compliance

** DP notes that the asbestos analysis is reported outside Envirolab's scope of NATA accreditation.

G1.1 Holding times

A holding time breach was reported for the samples analysed for pH (i.e. for derivation of the ecological SAC) as the samples were analysed outside the recommended holding time. DP notes that analysis of samples marginally past the holding time is not considered to significantly affect the data quality. Furthermore, all samples analysed for the COPC were analysed within the recommended holding time.

G1.2 Replicate analysis

The results from the replicate analysis (RPD values) indicated in bold in Table QA1 and Table QA2 were outside the acceptable range. All other replicate results were within the acceptable range. However, the results outside the acceptable range are not considered to be of concern because:

- In many cases, the high RPD value reflects small differences between small absolute values;
- Replicates, rather than homogenised duplicates, were used to minimise risk of volatile loss, hence greater variability can be expected;
- Most of the recorded concentrations were relatively close to the PQL and, so the variability observed was unlikely to result in a false negative result when comparing concentrations against the SAC. In summary, the QC data is determined to be of sufficient quality to be considered acceptable for the assessment.

G1.3 Rinsate Blank

The following comment was made in the laboratory reports issued by the primary laboratory regarding the detectable TRH concentrations in the rinsate sample (see Table QA3):

- The positive result in the rinsate sample is due to a single peak with no hydrocarbon profile that is consistent with the use of plastic containers.

DP considers a single peak isn't consistent with cross contamination from TRH in the field.

G.14 Additional Laboratory Comments

The following comments were made in the laboratory reports issued by the primary laboratory:

- PAHs in Soil - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in sample/s 280737-31ms have caused interference;
- TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in samples #31 and 50 have caused interference;

G2.0 Acid Extractable Metals in Soil:

- The laboratory RPD acceptance criteria has been exceeded for 280737-20 for Cr. Therefore a triplicate result has been issued as laboratory sample number 280737-57;
- The laboratory RPD acceptance criteria has been exceeded for 280737-40 for Pb and Ni. Therefore a triplicate result has been issued as laboratory sample number 280737-58;
- The laboratory RPD acceptance criteria has been exceeded for 280737-44 for Pb. Therefore a triplicate result has been issued as laboratory sample number 280737-59;
- # Low spike recovery was obtained for this sample. Sample matrix interference is suspected. However, an acceptable recovery was obtained for the LCS;
- PCB_S:The PQL has been raised due to interferences from analytes (other than those being tested) in sample/s 280737-46.

Overall, the number of anomalies noted by the laboratory are relatively small compared to the number of samples analysed. Therefore, DP regards the QC data to be sufficient to be acceptable for this assessment.

G3.0 Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following data quality indicators (DQIs) as outlined in NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013):

- Completeness: a measure of the amount of usable data from a data collection activity;
- Comparability: the confidence (qualitative) that data may be considered to be equivalent for each sampling and analytical event;
- Representativeness: the confidence (qualitative) of data representativeness of media present on-site;
- Precision: a measure of variability or reproducibility of data; and
- Accuracy: a measure of closeness of the data to the 'true' value.

Table 2: Data Quality Indicators

Data Quality Indicator	Method(s) of Achievement
Completeness	Boreholes positioned to provide overall site coverage, and also targeting the PAEC.
	Preparation of borehole logs, sample location plan and chain of custody records.
	Preparation of field groundwater sampling sheets.
	Laboratory sample receipt information received confirming receipt of samples intact and appropriateness of the chain of custody.
	Samples analysed for contaminants of potential concern (COPC) identified in the Conceptual Site Model (CSM).
	Completion of chain of custody (COC) documentation.
	NATA accredited laboratory results certificates provided by the laboratory.
	Satisfactory frequency and results for field and laboratory quality control (QC) samples as discussed in Section 1.
Comparability	Using appropriate techniques for sample recovery, storage and transportation, which were the same for the duration of the project.
	Experienced sampler(s) used.
	Use of NATA registered laboratories, with test methods the same or similar between laboratories.
	Satisfactory results for field and laboratory QC samples.
Representativeness	Target media sampled.
	Number of samples recovered and analysed are considered to be representative of the target media and complying with DQOs.
	Samples were generally extracted and analysed within holding times (see Section G1.1).
	Samples were analysed in accordance with the COC.
Precision	Field staff followed standard operating procedures.
	Acceptable RPD between original samples and replicates (refer to Section 1).
	Satisfactory results for all other field and laboratory QC samples.
Accuracy	Field staff followed standard operating procedures.
	Satisfactory results for all field and laboratory QC samples.

Based on the above, it is considered that the DQIs have been generally complied with.

G4.0 Conclusion

Based on the results of the field QA and field and laboratory QC, and evaluation against the DQIs it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

Douglas Partners Pty Ltd

Table QA1: Relative Percentage Difference Results – Inter and Intra Laboratory Duplicates (Soils)

			Metals								TRH						BTEX			
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
QA1	0 - 0.1 m	14/10/2021	<4	<0.4	2	6	200	<0.1	<1	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1
106/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	2	12	180	<0.1	<1	23	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1
		Difference	0	0	0	6	20	0	0	1	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	0%	**67%**	11%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
QA2	0 - 0.1 m	14/10/2021	<4	<0.4	<1	<1	1	<0.1	<1	1	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1
111/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	<1	<1	1	<0.1	<1	2	-	-	-	-	-	-	-	-	-	-
		Difference	0	0	0	0	0	0	0	1	-	-	-	-	-	-	-	-	-	-
		RPD	0%	0%	0%	0%	0%	0%	0%	**67%**	-	-	-	-	-	-	-	-	-	-
QA3	0 - 0.1 m	14/10/2021	<4	<0.4	3	4	6	<0.1	<1	5	-	-	-	-	-	-	-	-	-	-
117/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	4	7	8	<0.1	<1	8	-	-	-	-	-	-	-	-	-	-
		Difference	0	0	1	3	2	0	0	3	-	-	-	-	-	-	-	-	-	-
		RPD	0%	0%	29%	**55%**	29%	0%	0%	**46%**	-	-	-	-	-	-	-	-	-	-
QA4	0 m	14/10/2021	<5	<1	5	<5	8	<0.1	<2	10	-	-	-	-	-	-	-	-	-	-
122/0.05	0 - 0.1 m	14/10/2021	<4	<0.4	5	2	7	<0.1	<1	11	-	-	-	-	-	-	-	-	-	-
		Difference	1	0.6	0	3	1	0	1	1	-	-	-	-	-	-	-	-	-	-
		RPD	22%	**86%**	0%	**86%**	13%	0%	**67%**	10%	-	-	-	-	-	-	-	-	-	-
QA5	0 m	14/10/2021	<5	<1	4	<5	50	<0.1	<2	33	-	-	-	-	-	-	-	-	-	-
123/0.1	0 - 0.1 m	14/10/2021	<4	<0.4	6	5	7	<0.1	<1	24	-	-	-	-	-	-	-	-	-	-
		Difference	1	0.6	2	0	43	0	1	9	-	-	-	-	-	-	-	-	-	-
		RPD	22%	**86%**	**40%**	0%	**151%**	0%	**67%**	**32%**	-	-	-	-	-	-	-	-	-	-
QA6	0 m	14/10/2021	<5	<1	8	12	52	<0.1	7	49	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
136/0.1	0 - 0.1 m	15/10/2021	<4	<0.4	7	16	54	<0.1	5	43	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1
		Difference	1	0.6	1	4	2	0	2	6	15	0	15	0	0	0	0	0	0.5	0.5
		RPD	22%	**86%**	13%	29%	4%	0%	**33%**	13%	**86%**	0%	**86%**	0%	0%	0%	0%	0%	**67%**	**67%**

Table QA2: Relative Percentage Difference Results – Intra Laboratory Duplicates (Groundwater)

		Metals								TRH		BTEX					PAH
		Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	F2-NAPHTHALENE	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Total PAHs
Sample ID	Date	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW142	26/10/2021	<1	<0.1	<1	2	<1	<0.05	4	57	<50	<10	<1	<1	<1	<2	<1	<0.1
QA1W	26/10/2021	<1	<0.1	<1	2	<1	<0.05	4	58	<50	<10	<1	<1	<1	<2	<1	<0.1
	Difference	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	RPD	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%

Table QA3A: Rinsate Blank Results

		Metals								TRH						BTEXN			
		Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Naphthalene
	PQL	0.05	0.01	0.01	0.01	0.03	0.0005	0.02	0.02	10	50	10	50	100	100	1	1	1	1
Sample ID	Sample Date	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
RB1	14/10/2021	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02	<10	**77**	<10	**77**	<100	<100	<1	<1	<1	<1
RB1W	26/10/2021	<0.05	<0.01	<0.01	<0.01	<0.03	<0.0005	<0.02	<0.02	<10	**120**	<10	**120**	<100	<100	<1	<1	<1	<1

Appendix H

Data Quality Objectives

Appendix H
Data Quality Objectives

H1.0 Data Quality Objectives

The DSI has been devised broadly in accordance with the seven-step data quality objective (DQO) process which is provided in Appendix B, Schedule B2 of NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013).

Step	Summary
1: State the problem	The objective of the investigation was to confirm the contamination status of the site with respect to the proposed land use, and whether further investigation and/or management is required. It is understood that the report will be used to support a development application for the proposed development. A preliminary conceptual site model (CSM) has been prepared (Section 8) for the site.
2: Identify the decisions / goal of the study	The site history has identified possible contaminating previous uses which are identified in the CSM (Section 8). The CSM identified the associated contaminants of potential concern (COPC) and the likely impacted media. The site assessment criteria (SAC) for each of the COPC are detailed in Appendix E. The decision is to establish whether or not the results fall below the SAC or whether or not the 95% upper confidence limit of the sample population falls below the SAC. On this basis, an assessment of the site's suitability from a contamination perspective and whether (or not) further assessment and / or remediation is required will be derived.
3: Identify the information inputs	The inputs to the investigation include; • Review of site history information (see Section 6); • Observations made during the site walkover (see Section 7); • The lithology of the site as described in the logs and field observations (see Section 11.1); • The recorded groundwater field parameters and observations (see Section 11.2); • Laboratory results of samples, analysed using NATA accredited laboratories and methods, where possible; • Field and laboratory QA/QC data (see Appendix G); and • Adopted SAC (see Appendix E).
4: Define the study boundaries	The lateral boundaries of the investigation area are shown on Drawing 1, Appendix A. The vertical boundaries are to the extent of contamination impact as determined from the site history assessment and site observations. The assessment is limited to the timeframe over which the field investigation was undertaken.

Step	Summary
5: Develop the analytical approach (or decision rule)	• The decision rule is to compare all analytical results with the SAC (Appendix E) based on NEPC (2013)). Where guideline values are absent, other sources of guideline values accepted by NEPC (2013) shall be adopted where possible; • Where a sample result exceeds the adopted criterion, a further site-specific assessment will be made as to the risk posed by the presence of that contaminant(s); • Initial comparisons will be with individual results then, where required, summary statistics (including mean, standard deviation and 95% upper confidence limit (UCL) of the arithmetic mean (95% UCL) to assess potential risks posed by the site contamination; • Quality control results are to be assessed according to their relative percent difference (RPD) values. For field duplicates, triplicates and laboratory results, RPDs should generally be below 30%. The field and laboratory quality assurance assessment is included in Appendix G.
6: Specify the performance or acceptance criteria 6: Specify the performance or acceptance criteria (*continued*)	**Baseline condition**: Contaminants at the site and/or statistical analysis of data (in line with NEPC (2013)) exceed human health and environmental SAC and pose a potentially unacceptable risk to receptors (null hypothesis). **Alternative condition**: Contaminants at the site and statistical analysis of data (in line with NEPC (2013)) comply with human health and environmental SAC and as such, do not pose a potentially unacceptable risk to receptors (alternative hypothesis). Unless conclusive information from the collected data is sufficient to reject the null hypothesis, it is assumed that the baseline condition is true. •
7: Optimise the design for obtaining data	Sampling design and procedures that were implemented to optimise data collection for achieving the DQOs included the following: • Suitably experienced engineers and scientists were chosen to conduct field work and sample analysis interpretation; • Professional judgement to identify and sample potentially affected areas; and • Only NATA accredited laboratories using NATA endorsed methods were used to perform laboratory analysis whenever possible.

Douglas Partners Pty Ltd

Appendix I

Laboratory Certificates of Analysis and Chain-of-Custody Documentation

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 280737

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	**202936.01, Mount White**
Number of Samples	55 Soil, 1 Water
Date samples received	20/10/2021
Date completed instructions received	20/10/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	27/10/2021
Date of Issue	27/10/2021

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Asbestos Approved By
Analysed by Asbestos Approved Analyst: Panika Wongchanda
Authorised by Asbestos Approved Signatory: Lucy Zhu

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Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Josh Williams, LC Supervisor
Lucy Zhu, Asbestos Supervisor
Priya Samarawickrama, Senior Chemist
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	90	91	91	97	87

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	96	85	91	76	77

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	75	86	80	89	91

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	91	93	82	94	98

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		280737-53	280737-54
Your Reference	UNITS	QA1	QA2
Depth		0.00-0.10	0.00-0.10
Date Sampled		14/10/2021	14/10/2021
Type of sample		Soil	Soil
Date extracted	-	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<3	<3
Surrogate aaa-Trifluorotoluene	%	89	103

svTRH (C10-C40) in Soil						
Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	23/10/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	230
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	450
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	680
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	540
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	440
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	980
Surrogate o-Terphenyl	%	81	81	80	79	82

svTRH (C10-C40) in Soil						
Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	23/10/2021	22/10/2021	23/10/2021	22/10/2021	22/10/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	2,100	<100	730	<100	100
TRH C_{29} - C_{36}	mg/kg	2,100	<100	680	<100	130
Total +ve TRH (C10-C36)	mg/kg	4,200	<50	1,400	<50	230
TRH >C_{10} -C_{16}	mg/kg	72	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	72	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	3,700	<100	1,200	<100	200
TRH >C_{34} -C_{40}	mg/kg	1,400	<100	510	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	5,200	<50	1,700	<50	200
Surrogate o-Terphenyl	%	94	79	88	81	83

svTRH (C10-C40) in Soil						
Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	78	76	77	76	77

svTRH (C10-C40) in Soil						
Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	23/10/2021	22/10/2021	23/10/2021	23/10/2021	23/10/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	300	<100	470	160	290
Total +ve TRH (C10-C36)	mg/kg	300	<50	470	160	290
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	270	<100	390	120	240
TRH >C_{34} -C_{40}	mg/kg	400	<100	680	240	420
Total +ve TRH (>C10-C40)	mg/kg	670	<50	1,100	370	670
Surrogate o-Terphenyl	%	79	76	82	78	79

svTRH (C10-C40) in Soil			
Our Reference		280737-53	280737-54
Your Reference	UNITS	QA1	QA2
Depth		0.00-0.10	0.00-0.10
Date Sampled		14/10/2021	14/10/2021
Type of sample		Soil	Soil
Date extracted	-	21/10/2021	21/10/2021
Date analysed	-	23/10/2021	23/10/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	76	76

PAHs in Soil						
Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.7
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.3
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.9
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.3	11
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	11
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	8.6
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.2	9.7
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	17
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.1	11
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	6.4
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.8
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	8.4
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	1.1	89
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	16
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	16
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	16
Surrogate p-Terphenyl-d14	%	88	87	96	97	93

PAHs in Soil						
Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	0.5	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	2.1	<0.1	1.3	<0.1	1.3
Acenaphthene	mg/kg	12	<0.1	3.6	<0.1	0.3
Fluorene	mg/kg	11	<0.1	3.8	<0.1	0.6
Phenanthrene	mg/kg	98	<0.1	31	<0.1	3.6
Anthracene	mg/kg	24	<0.1	9.9	<0.1	1.2
Fluoranthene	mg/kg	230	0.1	91	0.1	11
Pyrene	mg/kg	190	<0.1	75	<0.1	9.5
Benzo(a)anthracene	mg/kg	110	<0.1	47	<0.1	4.9
Chrysene	mg/kg	120	<0.1	50	<0.1	5.7
Benzo(b,j+k)fluoranthene	mg/kg	160	<0.2	86	<0.2	8.5
Benzo(a)pyrene	mg/kg	85	0.08	45	0.07	5.2
Indeno(1,2,3-c,d)pyrene	mg/kg	51	<0.1	26	<0.1	3.9
Dibenzo(a,h)anthracene	mg/kg	14	<0.1	6.3	<0.1	0.8
Benzo(g,h,i)perylene	mg/kg	65	<0.1	31	0.1	3.6
Total +ve PAH's	mg/kg	1,200	0.2	510	0.3	60
Benzo(a)pyrene TEQ calc (zero)	mg/kg	130	<0.5	68	<0.5	7.8
Benzo(a)pyrene TEQ calc(half)	mg/kg	130	<0.5	68	<0.5	7.8
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	130	<0.5	68	<0.5	7.8
Surrogate p-Terphenyl-d14	%	108	103	94	100	104

PAHs in Soil						
Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.07	<0.05	0.09	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	0.4	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	92	96	95	92

PAHs in Soil						
Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.6	0.3	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.5	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.3	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.6	0.4	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.3	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	2.9	2.0	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	90	90	90	84

Organochlorine Pesticides in soil						
Our Reference		280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference	UNITS	101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	83	77	79	77

Organochlorine Pesticides in soil						
Our Reference		280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference	UNITS	106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	76	79	79	75	76

Organochlorine Pesticides in soil						
Our Reference		280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference	UNITS	111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	75	78	76	74	73

Organochlorine Pesticides in soil						
Our Reference		280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference	UNITS	116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	72	70	84	83	83

Organochlorine Pesticides in soil						
Our Reference		280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference	UNITS	121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	81	87	88	84

Organochlorine Pesticides in soil						
Our Reference		280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference	UNITS	126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	85	81	87	89

Organochlorine Pesticides in soil						
Our Reference		280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference	UNITS	129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	84	87	83	89

Organochlorine Pesticides in soil						
Our Reference		280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference	UNITS	134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	86	83	84	84

Organochlorine Pesticides in soil						
Our Reference		280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference	UNITS	138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	81	83	79	76

Organochlorine Pesticides in soil						
Our Reference		280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference	UNITS	141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	81	82	80	77

Organochlorine Pesticides in soil					
Our Reference		280737-51	280737-52	280737-54	280737-55
Your Reference	UNITS	146/0.1	147/0.1	QA2	QA3
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	81	80	78

Organophosphorus Pesticides in Soil						
Our Reference		280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference	UNITS	101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	83	77	79	77

Organophosphorus Pesticides in Soil						
Our Reference		280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference	UNITS	106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	76	79	79	75	76

Organophosphorus Pesticides in Soil						
Our Reference		280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference	UNITS	111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	75	78	76	74	73

Organophosphorus Pesticides in Soil						
Our Reference		280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference	UNITS	116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	72	70	84	83	83

Organophosphorus Pesticides in Soil						
Our Reference		280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference	UNITS	121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	81	87	88	84

Organophosphorus Pesticides in Soil						
Our Reference		280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference	UNITS	126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	85	81	87	89

Organophosphorus Pesticides in Soil						
Our Reference		280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference	UNITS	129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	84	87	83	89

Organophosphorus Pesticides in Soil						
Our Reference		280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference	UNITS	134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	86	83	84	84

Organophosphorus Pesticides in Soil						
Our Reference		280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference	UNITS	138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	81	83	79	76

Organophosphorus Pesticides in Soil						
Our Reference		280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference	UNITS	141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	81	82	80	77

Organophosphorus Pesticides in Soil			
Our Reference		280737-51	280737-52
Your Reference	UNITS	146/0.1	147/0.1
Depth		0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021
Type of sample		Soil	Soil
Date extracted	-	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	80	81

PCBs in Soil						
Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	77	76	83	86	85

PCBs in Soil						
Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	89	86	87	89

PCBs in Soil						
Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	1.2	3.0	1.6
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	1.2	3.0	1.6
Surrogate TCMX	%	86	83	84	84	81

PCBs in Soil						
Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	0.3	<0.6	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	0.3	<0.6	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	79	81	80	77

Acid Extractable metals in soil						
Our Reference		280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference	UNITS	101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	15	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	33	4	3	3
Copper	mg/kg	14	2	<1	5	5
Lead	mg/kg	11	13	17	22	390
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	18	5	<1	<1	<1
Zinc	mg/kg	18	6	6	22	23

Acid Extractable metals in soil						
Our Reference		280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference	UNITS	106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	6	7	28	<1
Copper	mg/kg	12	5	<1	22	1
Lead	mg/kg	180	44	6	5	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	1	1	23	<1
Zinc	mg/kg	23	36	4	19	5

Acid Extractable metals in soil						
Our Reference		280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference	UNITS	111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	<1	<1	<1	4
Copper	mg/kg	<1	<1	<1	<1	1
Lead	mg/kg	1	1	<1	2	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	2	1	2	2	6

Acid Extractable metals in soil						
Our Reference		280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference	UNITS	116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	4	3	<1	7
Copper	mg/kg	1	7	1	2	3
Lead	mg/kg	5	8	4	3	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	12	8	4	10	22

Acid Extractable metals in soil						
Our Reference		280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference	UNITS	121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	5	6	3	5
Copper	mg/kg	1	2	5	2	<1
Lead	mg/kg	7	7	7	5	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	9	11	24	8	6

Acid Extractable metals in soil						
Our Reference		280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference	UNITS	126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	3	8	8	11
Copper	mg/kg	2	15	35	<1	63
Lead	mg/kg	41	34	96	4	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	7	13	1	73
Zinc	mg/kg	28	33	180	6	38

Acid Extractable metals in soil						
Our Reference		280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference	UNITS	129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	7	5	5	10
Copper	mg/kg	4	6	14	2	12
Lead	mg/kg	16	12	30	7	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	2	<1	2
Zinc	mg/kg	41	180	110	19	64

Acid Extractable metals in soil						
Our Reference		280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference	UNITS	134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	6	7	7	6
Copper	mg/kg	5	6	16	15	10
Lead	mg/kg	9	18	54	23	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	1	5	10	6
Zinc	mg/kg	26	44	43	93	46

Acid Extractable metals in soil						
Our Reference		280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference	UNITS	138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	13	6	19	6
Copper	mg/kg	<1	27	6	25	<1
Lead	mg/kg	5	11	11	17	4
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	33	4	30	<1
Zinc	mg/kg	2	50	39	73	35

Acid Extractable metals in soil						
Our Reference		280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference	UNITS	141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	18	4	12	20
Copper	mg/kg	4	38	<1	39	32
Lead	mg/kg	21	20	5	10	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	34	<1	49	44
Zinc	mg/kg	36	41	2	37	53

Acid Extractable metals in soil						
Our Reference		280737-51	280737-52	280737-53	280737-54	280737-55
Your Reference	UNITS	146/0.1	147/0.1	QA1	QA2	QA3
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	23	9	2	<1	3
Copper	mg/kg	44	10	6	<1	4
Lead	mg/kg	7	18	200	1	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	52	11	<1	<1	<1
Zinc	mg/kg	37	26	22	1	5

Acid Extractable metals in soil				
Our Reference		280737-57	280737-58	280737-59
Your Reference	UNITS	120/0.05 - [TRIPLICATE]	138/0.1 - [TRIPLICATE]	140/0.1 - [TRIPLICATE]
Depth		0.0-0.10	0.00-0.10	0.00-0.10
Date Sampled		14/10/2021	15/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	9	6	33
Copper	mg/kg	3	11	29
Lead	mg/kg	9	11	13
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	7	36
Zinc	mg/kg	19	42	72

Moisture						
Our Reference		280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference	UNITS	101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	13	22	12	21	16

Moisture						
Our Reference		280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference	UNITS	106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	15	17	24	9.2	9.0

Moisture						
Our Reference		280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference	UNITS	111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	8.2	9.0	6.4	10	7.2

Moisture						
Our Reference		280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference	UNITS	116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	11	13	11	8.3	12

Moisture						
Our Reference		280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference	UNITS	121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	9.5	15	8.3	11	15

Moisture						
Our Reference		280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference	UNITS	126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	14	9.6	4.3	9.7	6.0

Moisture						
Our Reference		280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference	UNITS	129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	13	11	22	16	28

Moisture						
Our Reference		280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference	UNITS	134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	11	16	11	12	16

Moisture						
Our Reference		280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference	UNITS	138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	12	13	12	14	15

Moisture						
Our Reference		280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference	UNITS	141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	13	5.9	9.6	9.9	15

Moisture						
Our Reference		280737-51	280737-52	280737-53	280737-54	280737-55
Your Reference	UNITS	146/0.1	147/0.1	QA1	QA2	QA3
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	9.9	13	12	8.2	13

Asbestos ID - soils NEPM						
Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	517.78	473.02	519.6	568.58	638.85
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	585.5	776.13	594.96	515.37	459.17
Sample Description	-	Brown coarse-grained soil & debris	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	0.8209	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	See Above	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	0.4231	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	721.9	731.71	564.48	458.86	728.74
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	625.27	731.61	627.63	258.96	292.12
Sample Description	-	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Misc Inorg - Soil				
Our Reference		280737-1	280737-29	280737-43
Your Reference	UNITS	101/0.1	128/0.5	139/0.5
Depth		0.0-0.10	0.40-0.50	0.40-0.50
Date Sampled		14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	25/10/2021	25/10/2021	25/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021
pH 1:5 soil:water	pH Units	6.0	6.5	8.3

CEC				
Our Reference		280737-1	280737-29	280737-43
Your Reference	UNITS	101/0.1	128/0.5	139/0.5
Depth		0.0-0.10	0.40-0.50	0.40-0.50
Date Sampled		14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	27/10/2021	27/10/2021	27/10/2021
Date analysed	-	27/10/2021	27/10/2021	27/10/2021
Exchangeable Ca	meq/100g	1.8	0.9	3.7
Exchangeable K	meq/100g	0.2	<0.1	<0.1
Exchangeable Mg	meq/100g	1.5	0.2	0.3
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	3.6	1.1	4.0

vTRH(C6-C10)/BTEXN in Water		
Our Reference		280737-56
Your Reference	UNITS	RB1
Depth		-
Date Sampled		14/10/2021
Type of sample		Water
Date extracted	-	20/10/2021
Date analysed	-	21/10/2021
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	103

svTRH (C10-C40) in Water		
Our Reference		280737-56
Your Reference	UNITS	RB1
Depth		-
Date Sampled		14/10/2021
Type of sample		Water
Date extracted	-	21/10/2021
Date analysed	-	22/10/2021
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	77
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	77
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	80
Surrogate o-Terphenyl	%	75

Metals in Water - Dissolved		
Our Reference		280737-56
Your Reference	UNITS	RB1
Depth		-
Date Sampled		14/10/2021
Type of sample		Water
Date digested	-	21/10/2021
Date analysed	-	21/10/2021
Arsenic - Dissolved	mg/L	<0.05
Cadmium - Dissolved	mg/L	<0.01
Chromium - Dissolved	mg/L	<0.01
Copper - Dissolved	mg/L	<0.01
Lead - Dissolved	mg/L	<0.03
Mercury - Dissolved	mg/L	<0.0005
Nickel - Dissolved	mg/L	<0.02
Zinc - Dissolved	mg/L	<0.02

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			25/10/2021	5	25/10/2021	25/10/2021		25/10/2021	25/10/2021
TRH C_6 - C_9	mg/kg	25	Org-023	<25	5	<25	<25	0	85	84
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	5	<25	<25	0	85	84
Benzene	mg/kg	0.2	Org-023	<0.2	5	<0.2	<0.2	0	81	84
Toluene	mg/kg	0.5	Org-023	<0.5	5	<0.5	<0.5	0	80	80
Ethylbenzene	mg/kg	1	Org-023	<1	5	<1	<1	0	95	92
m+p-xylene	mg/kg	2	Org-023	<2	5	<2	<2	0	84	82
o-Xylene	mg/kg	1	Org-023	<1	5	<1	<1	0	82	80
Naphthalene	mg/kg	1	Org-023	<1	5	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	93	5	90	81	11	92	90

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-50
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	40	25/10/2021	25/10/2021		25/10/2021	25/10/2021
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	40	<25	<25	0	75	89
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	40	<25	<25	0	75	89
Benzene	mg/kg	0.2	Org-023	[NT]	40	<0.2	<0.2	0	72	86
Toluene	mg/kg	0.5	Org-023	[NT]	40	<0.5	<0.5	0	73	86
Ethylbenzene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	84	98
m+p-xylene	mg/kg	2	Org-023	[NT]	40	<2	<2	0	74	88
o-Xylene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	73	89
Naphthalene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	40	89	93	4	83	102

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	5	<50	<50	0	94	91
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	5	<100	<100	0	93	91
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	5	<100	110	10	109	101
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	5	<50	<50	0	94	91
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	5	<100	100	0	93	91
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	5	<100	<100	0	109	101
Surrogate o-Terphenyl	%		Org-020	80	5	81	81	0	105	81

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		23/10/2021	23/10/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	102	104
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	101	#
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	127	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	102	104
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	101	#
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	127	#
Surrogate o-Terphenyl	%		Org-020	[NT]	20	80	79	1	112	99

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		23/10/2021	23/10/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	30	<50	<50	0	90	123
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	30	<100	<100	0	86	109
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	30	<100	<100	0	109	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	30	<50	<50	0	90	123
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	30	<100	<100	0	86	109
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	30	<100	<100	0	109	#
Surrogate o-Terphenyl	%		Org-020	[NT]	30	79	77	3	107	100

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	40	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	40	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	40	76	75	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	23/10/2021	23/10/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	44	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	44	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	44	300	280	7	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	44	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	44	270	240	12	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	44	400	380	5	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	44	79	78	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	23/10/2021	23/10/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	49	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	49	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	49	160	220	32	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	49	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	49	120	190	45	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	49	240	320	29	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	49	78	76	3	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	84	86
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	83	81
Fluorene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	86	86
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	84	84
Anthracene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	92	90
Pyrene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	93	91
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	87	81
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	5	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	5	<0.05	<0.05	0	96	94
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	100	5	88	85	3	93	89

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	92	123
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	91	#
Fluorene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	93	#
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	96	#
Anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	104	#
Pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	103	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	93	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	20	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	20	<0.05	<0.05	0	92	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	20	96	96	0	106	98

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	93	84
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	89	79
Fluorene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	95	86
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	94	83
Anthracene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	30	0.1	<0.1	0	104	96
Pyrene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	103	93
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	93	83
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	30	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	30	0.08	<0.05	46	96	106
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	30	103	100	3	106	90

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	40	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	40	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	40	95	94	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	44	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	44	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	44	88	90	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	49	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	49	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	49	90	89	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	100	88
HCB	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	85	79
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	73	73
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	105	109
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	86	82
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	88	82
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	86	92
Endrin	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	105	92
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	82	78
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	90	86
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	89	5	77	77	0	83	81

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	106	86
HCB	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	92	89
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	79	75
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	116	111
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	94	79
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	96	90
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	110	85
Endrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	107	96
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	88	79
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	88	94
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	83	84	1	91	81

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	104	88
HCB	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	99	89
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	73	65
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	113	96
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	94	77
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	96	86
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	104	87
Endrin	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	105	82
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	88	73
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	90	82
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	30	89	89	0	93	80

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	40	84	81	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	44	79	81	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	49	80	79	1	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	68	66
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	89	97
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	81	75
Malathion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	112	103
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	82	90
Parathion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	74	80
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	98	94
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	89	5	77	77	0	83	81

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	68	68
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	95	91
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	71	75
Malathion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	116	103
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	98	104
Parathion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	74	105
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	98	81
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	83	84	1	91	81

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	80	66
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	97	85
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	77	65
Malathion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	108	91
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	102	88
Parathion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	72	64
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	94	90
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	30	89	89	0	93	80

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	40	84	81	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	44	79	81	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	49	80	79	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	77	74
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	89	5	77	77	0	83	81

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	72	118
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	20	83	84	1	91	81

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	72	68
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	30	89	89	0	93	80

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	40	3.0	3.8	24	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	40	84	81	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	44	0.3	0.1	100	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	44	79	81	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	49	80	79	1	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date prepared	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Date analysed	-			25/10/2021	5	25/10/2021	25/10/2021		25/10/2021	25/10/2021
Arsenic	mg/kg	4	Metals-020	<4	5	<4	<4	0	103	102
Cadmium	mg/kg	0.4	Metals-020	<0.4	5	<0.4	<0.4	0	101	92
Chromium	mg/kg	1	Metals-020	<1	5	3	3	0	101	101
Copper	mg/kg	1	Metals-020	<1	5	5	5	0	105	103
Lead	mg/kg	1	Metals-020	<1	5	390	330	17	97	75
Mercury	mg/kg	0.1	Metals-021	<0.1	5	<0.1	<0.1	0	101	105
Nickel	mg/kg	1	Metals-020	<1	5	<1	<1	0	100	102
Zinc	mg/kg	1	Metals-020	<1	5	23	21	9	99	88

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date prepared	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Date analysed	-			[NT]	20	25/10/2021	25/10/2021		25/10/2021	25/10/2021
Arsenic	mg/kg	4	Metals-020	[NT]	20	<4	<4	0	103	106
Cadmium	mg/kg	0.4	Metals-020	[NT]	20	<0.4	<0.4	0	103	98
Chromium	mg/kg	1	Metals-020	[NT]	20	7	22	103	102	98
Copper	mg/kg	1	Metals-020	[NT]	20	3	3	0	105	117
Lead	mg/kg	1	Metals-020	[NT]	20	10	11	10	100	90
Mercury	mg/kg	0.1	Metals-021	[NT]	20	<0.1	<0.1	0	101	103
Nickel	mg/kg	1	Metals-020	[NT]	20	<1	<1	0	101	96
Zinc	mg/kg	1	Metals-020	[NT]	20	22	23	4	107	85

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date prepared	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Date analysed	-			[NT]	30	25/10/2021	25/10/2021		25/10/2021	25/10/2021
Arsenic	mg/kg	4	Metals-020	[NT]	30	<4	<4	0	96	#
Cadmium	mg/kg	0.4	Metals-020	[NT]	30	<0.4	<0.4	0	98	76
Chromium	mg/kg	1	Metals-020	[NT]	30	11	9	20	98	91
Copper	mg/kg	1	Metals-020	[NT]	30	63	56	12	100	124
Lead	mg/kg	1	Metals-020	[NT]	30	3	5	50	95	78
Mercury	mg/kg	0.1	Metals-021	[NT]	30	<0.1	<0.1	0	106	124
Nickel	mg/kg	1	Metals-020	[NT]	30	73	65	12	96	98
Zinc	mg/kg	1	Metals-020	[NT]	30	38	33	14	97	74

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	25/10/2021	25/10/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	40	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	40	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	40	6	7	15	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	40	10	14	33	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	40	12	8	40	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	40	6	10	50	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	40	46	50	8	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	25/10/2021	25/10/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	44	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	44	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	44	19	22	15	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	44	25	34	31	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	44	17	11	43	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	44	30	41	31	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	44	73	87	18	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	25/10/2021	25/10/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	49	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	49	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	49	12	13	8	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	49	39	47	19	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	49	10	11	10	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	49	49	52	6	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	49	37	34	8	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			25/10/2021	1	25/10/2021	25/10/2021		25/10/2021	[NT]
Date analysed	-			25/10/2021	1	25/10/2021	25/10/2021		25/10/2021	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	1	6.0	6.1	2	100	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-43
Date prepared	-			27/10/2021	29	27/10/2021	27/10/2021		27/10/2021	27/10/2021
Date analysed	-			27/10/2021	29	27/10/2021	27/10/2021		27/10/2021	27/10/2021
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	29	0.9	1.0	11	109	#
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	29	<0.1	<0.1	0	110	107
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	29	0.2	0.2	0	104	108
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	29	<0.1	<0.1	0	115	112

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			20/10/2021	[NT]	[NT]	[NT]	[NT]	20/10/2021	[NT]
Date analysed	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	99	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate toluene-d8	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-023	103	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
Date analysed	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
Surrogate o-Terphenyl	%		Org-020	73	[NT]	[NT]	[NT]	[NT]	76	[NT]

QUALITY CONTROL: Metals in Water - Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
Date analysed	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
Arsenic - Dissolved	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	95	[NT]
Cadmium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	94	[NT]
Chromium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	89	[NT]
Copper - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	93	[NT]
Lead - Dissolved	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	93	[NT]
Mercury - Dissolved	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	100	[NT]
Nickel - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	91	[NT]
Zinc - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	92	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

TRH Water(C10-C40) NEPM - The positive result in the rinsate sample is due to a single peak with no hydrocarbon profile that is consistent with the use of plastic containers.

PAHs in Soil - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in sample/s 280737-31ms have caused interference.

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in samples #31 and 50 have caused interference.

pH Samples were out of the recommended holding time for this analysis.

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 280737-20 for Cr. Therefore a triplicate result has been issued as laboratory sample number 280737-57.
- The laboratory RPD acceptance criteria has been exceeded for 280737-40 for Pb and Ni. Therefore a triplicate result has been issued as laboratory sample number 280737-58.
- The laboratory RPD acceptance criteria has been exceeded for 280737-44 for Pb. Therefore a triplicate result has been issued as laboratory sample number 280737-59
- # Low spike recovery was obtained for this sample. Sample matrix interference is suspected. However, an acceptable recovery was obtained for the LCS

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Factual description of asbestos identified in the soil samples: NEPM
Sample 280737-33; Chrysotile asbestos identified in 4.2306g of fibre cement material >7mm

CEC - # High spike recovery was obtained for this sample. The sample was re-digested and re-spiked and the high recovery was confirmed. This is suspected to be from matrix interferences. However, an acceptable recovery was obtained for the LCS.

PCB_S:The PQL has been raised due to interferences from analytes (other than those being tested) in sample/s 280737-46.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	202936.01	**Suburb:**	Mount White	**To:**	*Envirolab Services*
Project Manager:	Brent Kerry	**Order Number:**		**Sampler:**	MJH
Email:	Brent.Kerry@douglaspartners.com.au			**Attn:**	*Sample Receipt*
Turnaround time:	☑ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day			**Contact:**	*(02) 9910 6200 samplereceipt@envirolab.com.au*
Prior Storage:	☑ Fridge ☐ Freezer ☐ Shelf	**Do samples contain 'potential' HBM?**	☑ No ☐ Yes (If YES, then handle, transport and store in accordance with FPM HAZID)		

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX				Notes/ Preservation/ Additional Requirements
1	101/0.1	0.00	0.10	14/10/21	S	G	X	X	X				X					All asbestos testing 500ml NEPC method
2	102/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
3	103/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
4	104/0.05	0.00	0.10	14/10/21	S	G	X	X	X									
5	105/0.1	0.00	0.10	14/10/21	S	G						X						
6	106/0.1	0.00	0.10	14/10/21	S	G						X						
7	107/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
8	108/0.05	0.00	0.10	14/10/21	S	G	X	X	X									
9	109/0.05	0.00	0.10	14/10/21	S	G	X	X	X									
10	110/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
11	111/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
12	112/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
13	113/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
14	114/0.1	0.00	0.10	14/10/21	S	G	X	X	X									

Chatswood NSW 2...
Ph: (02) 9910 ... 10:00
280737 19/10/21
Date Received: 20/10/21
Time Received: 10:15
Received By: TJ HAW
Temp: Cool/Ambient
Ice/Icepack
Cooling Token/Trip:

Metals to analyse:

Number of samples in container:		**Transported to laboratory by:**	TNT
Send results to:	Douglas Partners Pty Ltd		
Address:	Unit 5, 3 Teamster Close, Tuggerah NSW 2	**Phone:** (02) 4351 1422	
Relinquished by:	BHenry	**Date:** 18/10/21	**Signed:** BHenry

LAB RECEIPT

Lab Ref. No:	280737
Received by:	TJ HAW
Date & Time:	19/10 10:00 20/10/21 10:15
Signed:	

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	202936.01	**Suburb:**	Mount White	**To:**	*Envirolab Services*
Project Manager:	Brent Kerry	**Order Number:**		**Dispatch date:**	*12 Ashley St, Chatswood NSW 2067*

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water	G - glass P - plastic	HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX			
15	115/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
16	116/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
17	117/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
18	118/0.05	0.00	0.10	14/10/21	S	G	X	X	X								
19	119/0.05	0.00	0.10	14/10/21	S	G	X	X	X								
20	120/0.05	0.00	0.10	14/10/21	S	G						X					
21	121/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
22	122/0.05	0.00	0.10	14/10/21	S	G	X	X	X								
23	123/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
24	124/0.1	0.00	0.10	15/10/21	S	G	X	X	X								
25	125/0.1	0.00	0.10	15/10/21	S	G	X	X	X								
26	126/0.1	0.00	0.10	15/10/21	S	G						X					
27	127/0.1	0.00	0.10	15/10/21	S	G						X					
28	128/0.1	0.00	0.10	15/10/21	S	G						X					
29	128/0.5	0.40	0.50	15/10/21	S	G	X	X	X				X				
30	129/0.1	0.00	0.10	15/10/21	S	G						X					
31	129/0.65	0.60	0.70	15/10/21	S	G						X					
32	130/0.05	0.00	0.10	15/10/21	S	G	X	X	X								

#L807378 TT

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	202936.01	Suburb:	Mount White	To:	Envirolab Services

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes											Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water	G - glass P - plastic	HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX				
33	131/0.1	0.00	0.10	15/10/21	S	G						X						
34	132/0.1	0.00	0.10	15/10/21	S	G	X	X	X									
35	133/0.1	0.00	0.10	15/10/21	S	G						X						
36	134/0.1	0.00	0.10	15/10/21	S	G	X	X	X									
37	135/0.1	0.00	0.10	15/10/21	S	G						X						
38	136/0.1	0.00	0.10	15/10/21	S	G						X						
39	137/0.1	0.00	0.10	15/10/21	S	G						X						
40	138/0.1	0.00	0.10	15/10/21	S	G						X						
41	138/1.1	1.00	1.10	15/10/21	S	G	X	X	X									
42	139/0.1	0.00	0.10	15/10/21	S	G						X						
43	139/0.5	0.40	0.50	15/10/21	S	G	X	X	X				X					
44	140/0.1	0.00	0.10	13/10/21	S	G						X						
45	140/0.4	0.30	0.40	13/10/21	S	G	X	X	X									
46	141/0.1	0.00	0.10	13/10/21	S	G						X						
47	142/0.1	0.00	0.10	13/10/21	S	G						X						
48	143/0.1	0.00	0.10	13/10/21	S	G	X	X	X									
49	144/0.1	0.00	0.10	13/10/21	S	G						X						
50	145/0.1	0.00	0.10	13/10/21	S	G						X						
51	146/0.1	0.00	0.10	13/10/21	S	G	X	X	X									

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 202936.01 **Suburb:** Mount White **To:** *Envirolab Services*

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water	G - glass P - plastic	HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX			
S2	147/0.1	0.00	0.10	15/10/21	S	G	X	X	X								
S3	QA1	0.00	0.10	14/10/21	S	G	X							X			
S4	QA2	0.00	0.10	14/10/21	S	G	X	X						X			
S5	QA3	0.00	0.10	14/10/21	S	G	X	X									
S6	RB1			14/10/21	W	G + P	X							X			

#280737.

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 281390

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	**202936.01, Mount White**
Number of Samples	5 Water
Date samples received	28/10/2021
Date completed instructions received	28/10/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	04/11/2021
Date of Issue	03/11/2021

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water						
Our Reference		281390-1	281390-2	281390-3	281390-4	281390-5
Your Reference	UNITS	MW140	MW142	MW145	QA1W	RB1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
Date analysed	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	102	99	99	99	99
Surrogate toluene-d8	%	98	98	99	98	97
Surrogate 4-BFB	%	106	104	106	108	105

svTRH (C10-C40) in Water						
Our Reference		281390-1	281390-2	281390-3	281390-4	281390-5
Your Reference	UNITS	MW140	MW142	MW145	QA1W	RB1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	01/11/2021	01/11/2021	01/11/2021	01/11/2021	01/11/2021
Date analysed	-	02/11/2021	02/11/2021	02/11/2021	02/11/2021	02/11/2021
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	130
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50	<50	130
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	120
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	120
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50	<50	120
Surrogate o-Terphenyl	%	85	87	86	86	104

PAHs in Water - Low Level					
Our Reference	UNITS	281390-1	281390-2	281390-3	281390-4
Your Reference		MW140	MW142	MW145	QA1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water
Date extracted	-	01/11/2021	01/11/2021	01/11/2021	01/11/2021
Date analysed	-	01/11/2021	01/11/2021	01/11/2021	01/11/2021
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	83	92	90	89

HM in water - dissolved						
Our Reference		281390-1	281390-2	281390-3	281390-4	281390-5
Your Reference	UNITS	MW140	MW142	MW145	QA1W	RB1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
Date analysed	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	2	3	2	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	4	11	4	<1
Zinc-Dissolved	µg/L	15	57	23	58	<1

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date extracted	-			29/10/2021	2	29/10/2021	01/11/2021		29/10/2021	[NT]
Date analysed	-			29/10/2021	2	29/10/2021	02/11/2021		29/10/2021	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	2	<10	<10	0	102	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	2	<10	<10	0	102	[NT]
Benzene	µg/L	1	Org-023	<1	2	<1	<1	0	87	[NT]
Toluene	µg/L	1	Org-023	<1	2	<1	<1	0	98	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	2	<1	<1	0	107	[NT]
m+p-xylene	µg/L	2	Org-023	<2	2	<2	<2	0	110	[NT]
o-xylene	µg/L	1	Org-023	<1	2	<1	<1	0	107	[NT]
Naphthalene	µg/L	1	Org-023	<1	2	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	100	2	99	99	0	102	[NT]
Surrogate toluene-d8	%		Org-023	98	2	98	99	1	99	[NT]
Surrogate 4-BFB	%		Org-023	104	2	104	102	2	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
Date analysed	-			02/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	97	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	97	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
Surrogate o-Terphenyl	%		Org-020	88	[NT]	[NT]	[NT]	[NT]	80	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			01/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
Date analysed	-			01/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	87	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	82	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			29/10/2021	1	29/10/2021	29/10/2021		29/10/2021	[NT]
Date analysed	-			29/10/2021	1	29/10/2021	29/10/2021		29/10/2021	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	99	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	100	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	100	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	97	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	107	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	107	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	99	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	15	15	0	100	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Dissolved Metals: no filtered, preserved sample was received, therefore the unpreserved sample was filtered through 0.45µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

TRH Water(C10-C40) NEPM - The positive result in the rinsate sample is due to a single peak with no hydrocarbon profile that is consistent with the use of plastic containers.

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	202936.01	**Suburb:**	Mount White	**To:**	*Envirolab Services*
Project Manager:	Brent Kerry	**Order Number:**		**Sampler:** BJK	*12 Ashley St, Chatswood NSW 2067*
Email:	Brent.Kerry@douglaspartners.com.au			**Attn:**	*Sample Receipt*
Turnaround time:	☑ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day			**Contact:**	*(02) 9910 6200 samplereceipt@envirolab.com.au*
Prior Storage:	☑ Fridge ☐ Freezer ☐ Shelf	**Do samples contain 'potential' HBM?**	☑ No ☐ Yes (If YES, then handle, transport and store in accordance with FPM HAZID)		

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Combo-3L	HM	TRH/BTEX	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX				Notes/ Preservation/ Additional Requirements
1	MW140	-	-	26/10/21	GW	G & P	X											All GW samples field filtered.
2	MW142	-	-	26/10/21	GW	G & P	X											All GW samples field filtered.
3	MW145	-	-	26/10/21	GW	G & P	X											All GW samples field filtered.
4	QA1W	-	-	26/10/21	GW	G & P	X											All GW samples field filtered.
5	RB1W	-	-	26/10/21	W	G & P		X	X									

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 281390
Date Received: 28/10/2021
Time Received: 1040
Received By:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Metals to analyse:

Number of samples in container:

Transported to laboratory by: TNT

Send results to: Douglas Partners Pty Ltd

Address: Unit 5, 3 Teamster Close, Tuggerah NSW

Phone: (02) 4351 1422

Relinquished by: Brent Kerry

Date: 27/10/21

Signed:

LAB RECEIPT

Lab Ref. No: 281390

Received by:

Date & Time: 28/10/2021 1040

Signed:

* Please note:

- Limit Sample volumes
- CPQL Results for TRH/BTEX, PAH expected

* 281390

CERTIFICATE OF ANALYSIS

Work Order	: **ES2138103**	Page	: 1 of 5
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 202936.01	Date Samples Received	: 21-Oct-2021 17:20
Order number	: ----	Date Analysis Commenced	: 22-Oct-2021
C-O-C number	: ----	Issue Date	: 28-Oct-2021 13:54
Sampler	: MJH		
Site	: Mount White		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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

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

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QA4 0.00-0.10	QA5 0.40-0.50	QA6 0.40-0.50	----	----
			Sampling date / time	14-Oct-2021 00:00	14-Oct-2021 00:00	14-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2138103-001	ES2138103-002	ES2138103-003	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content								
Moisture Content	----	1.0	%	**----**	**----**	**11.3**	**----**	**----**
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**12.2**	**14.6**	**----**	**----**	**----**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	**----**	**----**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	**----**	**----**
Chromium	7440-47-3	2	mg/kg	**5**	**4**	**8**	**----**	**----**
Copper	7440-50-8	5	mg/kg	<5	<5	**12**	**----**	**----**
Lead	7439-92-1	5	mg/kg	**8**	**50**	**52**	**----**	**----**
Nickel	7440-02-0	2	mg/kg	<2	<2	**7**	**----**	**----**
Zinc	7440-66-6	5	mg/kg	**10**	**33**	**49**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	**----**	**----**	<10	**----**	**----**
C10 - C14 Fraction	----	50	mg/kg	**----**	**----**	<50	**----**	**----**
C15 - C28 Fraction	----	100	mg/kg	**----**	**----**	<100	**----**	**----**
C29 - C36 Fraction	----	100	mg/kg	**----**	**----**	<100	**----**	**----**
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg	**----**	**----**	<50	**----**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	**----**	**----**	<10	**----**	**----**
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	**----**	**----**	<10	**----**	**----**
>C10 - C16 Fraction	----	50	mg/kg	**----**	**----**	<50	**----**	**----**
>C16 - C34 Fraction	----	100	mg/kg	**----**	**----**	<100	**----**	**----**
>C34 - C40 Fraction	----	100	mg/kg	**----**	**----**	<100	**----**	**----**
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg	**----**	**----**	<50	**----**	**----**
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg	**----**	**----**	<50	**----**	**----**
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	**----**	**----**	<0.2	**----**	**----**
Toluene	108-88-3	0.5	mg/kg	**----**	**----**	<0.5	**----**	**----**
Ethylbenzene	100-41-4	0.5	mg/kg	**----**	**----**	<0.5	**----**	**----**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	**----**	**----**	<0.5	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QA4 0.00-0.10	QA5 0.40-0.50	QA6 0.40-0.50	----	----
			Sampling date / time	14-Oct-2021 00:00	14-Oct-2021 00:00	14-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2138103-001	ES2138103-002	ES2138103-003	--------	--------
				Result	Result	Result	----	----
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	----	----
^ **Sum of BTEX**	----	0.2	mg/kg	----	----	<0.2	----	----
^ **Total Xylenes**	----	0.5	mg/kg	----	----	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg	----	----	<1	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	**92.8**	----	----
Toluene-D8	2037-26-5	0.2	%	----	----	**88.9**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	**89.2**	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2138103**	Page	: 1 of 5
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 202936.01	Date Samples Received	: 21-Oct-2021
Order number	: ----	Date Analysis Commenced	: 22-Oct-2021
C-O-C number	: ----	Issue Date	: 28-Oct-2021
Sampler	: MJH		
Site	: Mount White		
Quote number	: EN/222		
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No. of samples analysed	: 3		

Accreditation No. 825
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ISO/IEC 17025 - Testing

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3975128)									
ES2138023-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	8	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
ES2138270-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	12	23.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	<5	41.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	14	10.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	10	8	15.5	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3975129)									
ES2138101-003	Anonymous	EA055: Moisture Content	----	0.1	%	10.8	9.9	8.2	0% - 50%
ES2138270-005	Anonymous	EA055: Moisture Content	----	0.1	%	13.0	13.2	1.8	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3975127)									
ES2138023-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2138270-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3970878)									
ES2138101-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3970923)									
ES2137799-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2137799-007	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3970878)									
ES2138101-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	160	130	22.2	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3970923)									
ES2137799-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2137799-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 3970923)									
ES2137799-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2137799-007	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3975128)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	106	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	95.2	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	121	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	110	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	103	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	115	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	92.9	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3975127)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	106	70.0	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970878)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	95.9	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	99.6	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970923)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	91.2	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970878)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	91.7	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	106	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970923)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	91.4	68.4	128
EP080: BTEXN (QCLot: 3970923)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	100	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.0	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.7	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.2	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	98.3	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	92.2	63.0	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3975128)							
ES2138023-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	86.0	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	72.4	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	75.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	90.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	74.8	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	87.6	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	67.8	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3975127)							
ES2138023-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	112	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970878)							
ES2138101-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	98.4	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	99.2	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	110	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970923)							
ES2137799-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	80.4	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970878)							
ES2138101-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	98.2	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	99.5	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	114	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970923)							
ES2137799-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	75.3	70.0	130
EP080: BTEXN (QCLot: 3970923)							
ES2137799-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	70.5	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	73.7	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	76.9	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	78.3	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	79.2	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	80.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2138103**	Page	: 1 of 4
Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Telephone	: +61 2 8784 8555
Project	: 202936.01	Date Samples Received	: 21-Oct-2021
Site	: Mount White	Issue Date	: 28-Oct-2021
Sampler	: MJH	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055)							
QA6 - 0.40-0.50	**14-Oct-2021**	**----**	----	----	**25-Oct-2021**	28-Oct-2021	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
QA4 - 0.00-0.10, QA5 - 0.40-0.50	**14-Oct-2021**	**----**	----	----	**25-Oct-2021**	28-Oct-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
QA4 - 0.00-0.10, QA5 - 0.40-0.50, QA6 - 0.40-0.50	**14-Oct-2021**	**25-Oct-2021**	12-Apr-2022	✓	**26-Oct-2021**	12-Apr-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
QA4 - 0.00-0.10, QA5 - 0.40-0.50, QA6 - 0.40-0.50	**14-Oct-2021**	**25-Oct-2021**	11-Nov-2021	✓	**26-Oct-2021**	11-Nov-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
QA6 - 0.40-0.50	**14-Oct-2021**	**22-Oct-2021**	28-Oct-2021	✓	**25-Oct-2021**	28-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
QA6 - 0.40-0.50	**14-Oct-2021**	**26-Oct-2021**	28-Oct-2021	✓	**27-Oct-2021**	05-Dec-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
QA6 - 0.40-0.50	**14-Oct-2021**	**22-Oct-2021**	28-Oct-2021	✓	**25-Oct-2021**	28-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
QA6 - 0.40-0.50	**14-Oct-2021**	**26-Oct-2021**	28-Oct-2021	✓	**27-Oct-2021**	05-Dec-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
QA6 - 0.40-0.50	**14-Oct-2021**	**22-Oct-2021**	28-Oct-2021	✓	**25-Oct-2021**	28-Oct-2021	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2138103**

Client	: **DOUGLAS PARTNERS PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: brent.kerry@douglaspartners.com.au	E-mail	: Sepan.Mahamad@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 202936.01	Page	: 1 of 2
Order number	: ----	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Mount White		
Sampler	: MJH		

Dates

Date Samples Received	: 21-Oct-2021 17:20	Issue Date	: 22-Oct-2021
Client Requested Due Date	: 28-Oct-2021	Scheduled Reporting Date	: **28-Oct-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 10.2 - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 3 / 3

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-05 TRH/BTEXN/8 Metals
ES2138103-001	14-Oct-2021 00:00	QA4 0.00-0.10	✓	✓	
ES2138103-002	14-Oct-2021 00:00	QA5 0.40-0.50	✓	✓	
ES2138103-003	14-Oct-2021 00:00	QA6 0.40-0.50	✓		✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE INVOICES

- A4 - AU Tax Invoice (INV)	Email	apinvoices@douglaspartners.com.au

BRENT KERRY

- *AU Certificate of Analysis - NATA (COA)	Email	brent.kerry@douglaspartners.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	brent.kerry@douglaspartners.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	brent.kerry@douglaspartners.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	brent.kerry@douglaspartners.com.au
- A4 - AU Tax Invoice (INV)	Email	brent.kerry@douglaspartners.com.au
- Chain of Custody (CoC) (COC)	Email	brent.kerry@douglaspartners.com.au
- EDI Format - ESDAT (ESDAT)	Email	brent.kerry@douglaspartners.com.au
- EDI Format - XTab (XTAB)	Email	brent.kerry@douglaspartners.com.au

Douglas Partners Geotechnics | Environment | Groundwater #280737

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	202936.01	**Suburb:**	Mount White	**To:**	*ALS Sydney*
Project Manager:	Brent Kerry	**Order Number:**		**Sampler:**	MJH
Email:	Brent.Kerry@douglaspartners.com.au			**Attn:**	*Sample Receipt*
Turnaround time:	☑ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day			**Contact:**	
Prior Storage:	☑ Fridge ☐ Freezer ☐ Shelf	**Do samples contain 'potential' HBM?**	☑ No ☐ Yes (If YES, then handle, transport and store in accordance with FPM HAZID)		

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Heavy Metals	TRH/BTEX									Notes/ Preservation/ Additional Requirements
1	QA4	0.00	0.10	14/10/21	S	G	X										
2	QA5	0.40	0.50	15/10/21	S	G	X										
3	QA6	0.40	0.50	15/10/21	S	G	X	X									

Environmental Division
Sydney
Work Order Reference
ES2138103

Telephone : +61-2-8784 8555

Metals to analyse:			**LAB RECEIPT**
Number of samples in container:	**Transported to laboratory by:**	TNT	**Lab Ref. No:**
Send results to:	Douglas Partners Pty Ltd		**Received by:**
Address:	Unit 5, 3 Teamster Close, Tuggerah NSW	**Phone:** (02) 4351 1422	**Date & Time:**
Relinquished by:	**Date:** 18/10/21	**Signed:**	**Signed:**

Relin'd 21/10/21 Phay

Appendix J

Asbestos Clearance Certificates

ASSESSMENTCORP.

ASBESTOS CLEARANCE CERTIFICATE

PROJECT DETAILS:	
Project Name:	Asbestos Clearance Certificate
Inspection Date:	08/07/2021
Site Address:	231 Pacific Highway, Mount White, NSW 2250
Client Name:	Robbie Lee Developments PTY LTD
Client Address:	5/38 Anzac Road, Long Jetty NSW 2261
Client Contact:	Robbie Lee
Inspector:	Louis Biffin – Competent Person

DOCUMENT CONTROL:		
Reference:	1339-01-CL	
Issue Date:	09/07/2021	
Signatories:	Prepared By:	Authorised By:
		
	Louis Biffin	Jake Moyle
	Competent Person	Licensed Asbestos Assessor (NSW LAA001236)

ISSUE STATUS:			
Revision:	**Format:**	**Client:**	**Client Contact:**
01	PDF	Robbie Lee Developments PTY LTD	Robbie Lee

1	CLEARANCE INSPECTION DETAILS:			
1.1	Date of Inspection:	08/07/2021	Time of Inspection:	14:00
1.2	Site Address:	231 Pacific Highway, Mount White, NSW 2250		
1.3	Inspection Location:	Main dwelling and nominated ground / trench surfaces		
1.4	Scope of Works:	Removal of nominated in-situ asbestos cement (AC) pipe and asbestos containing material (ACM) from the nominated locations to the main dwelling		
1.5	Area(s) Inspected:	• Visible and safely accessible timber framing surfaces to: ○ External, first floor, eaves (all eaves) ○ External, ground floor, eaves (all eaves) ○ External, ground floor, walls (all walls) ○ External, first floor, cladding (south-western, north-western, north-eastern walls) ○ Internal, ground floor, south-western laundry, walls (all walls) ○ Internal, ground floor, south-western laundry, ceiling (approximate area: 2m x 3m) ○ Internal, ground floor, north-eastern toilet, walls (all walls) ○ Internal, ground floor, north-eastern toilet, ceiling (approximate area 1m x 1m) ○ Internal, ground floor, south-eastern bathroom, ceiling (approximate area: 2m x 5m) ○ Internal, ground floor, south-eastern bathroom, western wall infill panel (approximate area 2m x 3m) ○ Internal, ground floor, central hallway, walls (all walls) ○ Internal, ground floor, central hallway, ceiling (approximate area: 1m x 4m) ○ External, ground floor, north-western awning (approximate area: 6m x 3m) ○ Internal, first floor, south-eastern bathroom, walls (all walls) ○ Internal, first floor, south-eastern bathroom, ceiling (approximate area: 3m x 3m) ○ Internal, first floor, south-eastern bathroom, compressed flooring (approximate area: 3m x 3m) ○ Internal, first floor, south-eastern bedroom, walls (all walls) ○ Internal, first floor, south-eastern bedroom, ceiling (approximate area: 4m x 3m) ○ Internal, first floor, western bathroom, walls (western and southern) ○ Internal, first floor, north-western bathroom, walls (all walls) • Visible and safely accessible ground / trench surfaces to the former in-situ pipe running from south-east to north-west (approximate length: 25m)		

2	VISUAL INSPECTION:	
2.1	Inspection Details:	Competent person, Louis Biffin undertook a visual inspection at 231 Pacific Highway, Mount White, NSW 2250 on the 08/07/2021. It is of the opinion of the inspector that as far as reasonably practical the current scope of work has been completed to a satisfactory industry standard. Residual / remaining asbestos containing material (ACM) associated with the current scope of works was not identified by the inspector at the time of the inspection. Based on the visual observations made at the time of inspection 'the area(s) inspected' (as outlined is Section 1.5 of this Clearance Certificate) are considered safe for reoccupation / normal works to recommence (Subject to the notes and limitations as outlined in Section 2.5 of this Clearance Certificate).
2.2	Notes and Limitations	• The visual inspection and following clearance certificate are strictly limited to the areas outlined in the "Areas Inspected". • Assessment Corp. (A.C) define the immediate surrounding area as a maximum of 0.5m from the area(s) detailed in Section 1.5.

		• The inspection was carried out at the time of the completion of the remediation works and was dependent upon site conditions at that time. • Inaccessible / restricted areas may contain hazardous materials. • It is possible that asbestos materials are present in areas that were inaccessible/visually obscured during the inspection. It is also possible that asbestos materials may be present beneath the ground surface. If any asbestos containing/suspected asbestos containing materials are encountered on site, access to the materials should be appropriately restricted and advice sought from a suitably qualified and experienced consultant such as Assessment Corp (A.C). • Assessment Corp (A.C) perform all work in a punctilious and professional manner, with strict due diligence and detailed care. However, the nature of the services we provide and the disproportion between any damage or loss which may arise from the work or the Clearance Certificate prepared and the cost of our services, is such that A.C cannot guarantee that all asbestos material / issues of concern have been identified and/or addressed. Subsequently, A.C's liability to the client or any other party resulting from the performance or non-performance of the service, whether under contract law, tort law or otherwise, is limited to the maximum of up to five (5) times the total fee excluding expenses. • The appointed licensed asbestos removal contractor is responsible for ensuring all work is conducted in a safe and competent manner by suitably trained staff, the necessary approvals are obtained from regulatory authorities prior to starting any asbestos removal or maintenance activities (if applicable) and that work methods and procedures comply with the relevant legislation, codes of practice and industry standards, as required. • Any party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval and acceptance of the limitations and exclusions stated within this document else this document should not be used or relied upon for any purpose.

3	RE-OCCUPATION
3.1	It is the opinion of Assessment Corp (A.C) that the the area(s) inspected (as outlined is Section 1.5 of this Clearance Certificate) are considered safe for reoccupation / normal works to recommence (Subject to the notes and limitations as outlined in Section 2.2 of this Clearance Certificate). Any party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval and acceptance of the limitations and exclusions stated within this document else this document should not be used or relied upon for any purpose. This Clearance Certificate and / or information produced by Assessment Corp (A.C) should not be reproduced and / or presented / reviewed except in full. Please contact Assessment Corp. on 0447 011 422 or via email info@assessmentcorp.com.au with any queries.

ASSESSMENTCORP.

ASBESTOS CLEARANCE CERTIFICATE

PROJECT DETAILS:	
Project Name:	Asbestos Clearance Certificate
Inspection Date:	01/09/2021
Site Address:	231 Pacific Highway, Mount White, NSW 2250
Client Name:	Robbie Lee Developments PTY LTD
Client Address:	5/38 Anzac Road, Long Jetty NSW 2261
Client Contact:	Robbie Lee
Inspector(s):	Shaun Muir – Licensed Asbestos Assessor (NSW LAA001267)
	Louis Biffin – Competent Person

DOCUMENT CONTROL:		
Reference:	1339-02-CL	
Issue Date:	01/09/2021	
Signatories:	Prepared By:	Authorised By:
		
	Louis Biffin	Jake Moyle
	Competent Person	Licensed Asbestos Assessor (NSW LAA001236)

ISSUE STATUS:			
Revision:	**Format:**	**Client:**	**Client Contact:**
01	PDF	Robbie Lee Developments PTY LTD	Robbie Lee

1	CLEARANCE INSPECTION DETAILS:			
1.1	Date of Inspection:	01/09/2021	Time of Inspection:	10:00
1.2	Site Address:	231 Pacific Highway, Mount White, NSW 2250		
1.3	Inspection Location:	Nominated ground surfaces to former main dwelling and north-eastern shed		
1.4	Scope of Works:	Removal of asbestos containing materials (ACM) from the nominated locations at the property, 231 Pacific Highway, Mount White, NSW 2250.		
1.5	Area(s) Inspected:	Visible and safely accessible ground surfaces to: • External, footprint to former main dwelling and associated structures located at the approximate coordinates (WGS84) 33°27'16.0"S 151°11'42.3"E (Approximate area: 55m x 40m) • External, footprint to former north-eastern shed located at the approximate coordinates (WGS84) 33°27'15.0"S 151°11'42.8"E (Approximate area: 25m x 8m)		

2	VISUAL INSPECTION:	
2.1	Inspection Details:	Licenced Asbestos Assessor, Shaun Muir (NSW LAA001267) Competent person, Louis Biffin undertook a visual inspection at 231 Pacific Highway, Mount White, NSW 2250 on the 01/09/2021. It is of the opinion of the inspector that as far as reasonably practical the current scope of work has been completed to a satisfactory industry standard. Residual / remaining asbestos containing material (ACM) associated with the current scope of works was not identified by the inspector at the time of the inspection. Based on the visual observations made at the time of inspection 'the area(s) inspected' (as outlined is Section 1.5 of this Clearance Certificate) are considered safe for reoccupation / normal works to recommence (Subject to the notes and limitations as outlined in Section 2.2 of this Clearance Certificate).
2.2	Notes and Limitations	• The visual inspection and following clearance certificate are strictly limited to the areas outlined in the "Areas Inspected". • Assessment Corp. (A.C) define the immediate surrounding area as a maximum of 0.5m from the area(s) detailed in Section 1.5. • The inspection was carried out at the time of the completion of the remediation works and was dependent upon site conditions at that time. • Inaccessible / restricted areas may contain hazardous materials. • Rubble / debris was observed within the area(s) inspected. Rubble / debris can obscure the ground surface and limit the accuracy of any visual inspection. Rubble / debris may also be an indication of other impacts, including potential ACM. Consider these points, for added assurance it is recommended that the area is re-inspected periodically, and any suspected ACM be managed in accordance with an Unexpected Finds Procedure. • It is possible that asbestos materials are present in areas that were inaccessible/visually obscured during the inspection. It is also possible that asbestos materials may be present beneath the ground surface. If any asbestos containing/suspected asbestos containing materials are encountered on site, access to the materials should be appropriately restricted and advice sought from a suitably qualified and experienced consultant such as Assessment Corp (A.C). • Assessment Corp (A.C) perform all work in a punctilious and professional manner, with strict due diligence and detailed care. However, the nature of the services we provide and the disproportion between any damage or loss which may arise from the work or the Clearance Certificate prepared and the cost of our services, is such that A.C cannot guarantee that all asbestos material / issues of concern have been identified and/or addressed. Subsequently,

		A.C's liability to the client or any other party resulting from the performance or non-performance of the service, whether under contract law, tort law or otherwise, is limited to the maximum of up to five (5) times the total fee excluding expenses. • The appointed licensed asbestos removal contractor is responsible for ensuring all work is conducted in a safe and competent manner by suitably trained staff, the necessary approvals are obtained from regulatory authorities prior to starting any asbestos removal or maintenance activities (if applicable) and that work methods and procedures comply with the relevant legislation, codes of practice and industry standards, as required. • Any party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval and acceptance of the limitations and exclusions stated within this document else this document should not be used or relied upon for any purpose.

3	RE-OCCUPATION
3.1	It is the opinion of Assessment Corp (A.C) that the the area(s) inspected (as outlined is Section 1.5 of this Clearance Certificate) are considered safe for reoccupation / normal works to recommence (Subject to the notes and limitations as outlined in Section 2.2 of this Clearance Certificate). Any party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval and acceptance of the limitations and exclusions stated within this document else this document should not be used or relied upon for any purpose. This Clearance Certificate and / or information produced by Assessment Corp (A.C) should not be reproduced and / or presented / reviewed except in full. Please contact Assessment Corp. on 0447 011 422 or via email info@assessmentcorp.com.au with any queries.

ASSESSMENTCORP.

ASBESTOS CLEARANCE CERTIFICATE

PROJECT DETAILS:	
Project Name:	Asbestos Clearance Certificate
Inspection Date:	01/10/2021
Site Address:	231 Pacific Highway, Mount White, NSW 2250
Client Name:	Robbie Lee Developments PTY LTD
Client Address:	5/38 Anzac Road, Long Jetty NSW 2261
Client Contact:	Robbie Lee
Inspector:	Louis Biffin – Competent Person

DOCUMENT CONTROL:		
Reference:	1339-03-CL	
Issue Date:	01/10/2021	
Signatories:	Prepared By:	Authorised By:
		
	Louis Biffin	Jake Moyle
	Competent Person	Licensed Asbestos Assessor (NSW LAA001236)

ISSUE STATUS:			
Revision:	**Format:**	**Client:**	**Client Contact:**
01	PDF	Robbie Lee Developments PTY LTD	Robbie Lee

1	CLEARANCE INSPECTION DETAILS:			
1.1	Date of Inspection:	01/10/2021	Time of Inspection:	08:00
1.2	Site Address:	231 Pacific Highway, Mount White, NSW 2250		
1.3	Inspection Location:	Nominated and surrounding ground surfaces to former main dwelling and north-eastern shed (Refer to site schematic in section 4.1)		
1.4	Scope of Works:	Removal of asbestos containing materials (ACM) from the nominated locations at the property, 231 Pacific Highway, Mount White, NSW 2250.		
1.5	Area(s) Inspected:	Visible and safely accessible ground surfaces to: - External, footprints and surrounding surfaces to associated structures located at the approximate coordinates (WGS84) 33°27'14.9''S 151°11'41.9''E (Approximate area 96m x 82m)		

2	VISUAL INSPECTION:	
2.1	Inspection Details:	Competent person, Louis Biffin undertook a visual inspection at 231 Pacific Highway, Mount White, NSW 2250 on the 01/10/2021. It is of the opinion of the inspector that as far as reasonably practical the current scope of work has been completed to a satisfactory industry standard. Residual / remaining asbestos containing material (ACM) associated with the current scope of works was not identified by the inspector at the time of the inspection. Based on the visual observations made at the time of inspection 'the area(s) inspected' (as outlined is Section 1.5 of this Clearance Certificate) are considered safe for reoccupation / normal works to recommence (Subject to the notes and limitations as outlined in Section 2.5 of this Clearance Certificate).
2.2	Notes and Limitations	• The visual inspection and following clearance certificate are strictly limited to the areas outlined in the "Areas Inspected". • Assessment Corp. (A.C) define the immediate surrounding area as a maximum of 0.5m from the area(s) detailed in Section 1.5. • The inspection was carried out at the time of the completion of the remediation works and was dependent upon site conditions at that time. • Inaccessible / restricted areas may contain hazardous materials. • Rubble / debris was observed within the area(s) inspected. Rubble / debris can obscure the ground surface and limit the accuracy of any visual inspection. Rubble / debris may also be an indication of other impacts, including potential ACM. Consider these points, for added assurance it is recommended that the area is re-inspected periodically, and any suspected ACM be managed in accordance with an Unexpected Finds Procedure. • Grass / dense vegetation was present in the areas inspected at the time of the inspection. Grass / dense vegetation can obscure the view of the ground surface and can influence the accuracy of the inspection. For added assurance removal all grass surrounding the removal area and undertake a re-inspection. • It is possible that asbestos materials are present in areas that were inaccessible/visually obscured during the inspection. It is also possible that asbestos materials may be present beneath the ground surface. If any asbestos containing/suspected asbestos containing materials are encountered on site, access to the materials should be appropriately restricted and advice sought from a suitably qualified and experienced consultant such as Assessment Corp (A.C).

		• Assessment Corp (A.C) perform all work in a punctilious and professional manner, with strict due diligence and detailed care. However, the nature of the services we provide and the disproportion between any damage or loss which may arise from the work or the Clearance Certificate prepared and the cost of our services, is such that A.C cannot guarantee that all asbestos material / issues of concern have been identified and/or addressed. Subsequently, A.C's liability to the client or any other party resulting from the performance or non-performance of the service, whether under contract law, tort law or otherwise, is limited to the maximum of up to five (5) times the total fee excluding expenses. • The appointed licensed asbestos removal contractor is responsible for ensuring all work is conducted in a safe and competent manner by suitably trained staff, the necessary approvals are obtained from regulatory authorities prior to starting any asbestos removal or maintenance activities (if applicable) and that work methods and procedures comply with the relevant legislation, codes of practice and industry standards, as required. • Any party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval and acceptance of the limitations and exclusions stated within this document else this document should not be used or relied upon for any purpose.

3	RE-OCCUPATION
3.1	It is the opinion of Assessment Corp (A.C) that the the area(s) inspected (as outlined is Section 1.5 of this Clearance Certificate) are considered safe for reoccupation / normal works to recommence (Subject to the notes and limitations as outlined in Section 2.2 of this Clearance Certificate). Any party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval and acceptance of the limitations and exclusions stated within this document else this document should not be used or relied upon for any purpose. This Clearance Certificate and / or information produced by Assessment Corp (A.C) should not be reproduced and / or presented / reviewed except in full. Please contact Assessment Corp. on 0447 011 422 or via email info@assessmentcorp.com.au with any queries.

4	SITE SCHEMATIC
4.1