Appendix 9

Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Preliminary Site Investigation (Contamination)

Proposed Residential Subdivision
129 Marys Mount Road, Goulburn

Prepared for
Goulburn Estates No 1 Pty Ltd

Project 212367.01
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Douglas Partners
Geotechnics / Environment / Groundwater

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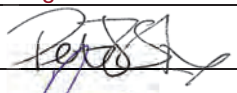
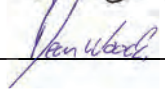
Author		Peter Storey	4 August 2022
Reviewer		Dean Woods	4 August 2022

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Executive Summary

Douglas Partners Pty Ltd (DP) has been engaged by Goulburn Estates No 1 Pty Ltd to complete this preliminary site investigation (contamination) (PSI) undertaken for a proposed residential subdivision for 129 Marys Mount Road, Goulburn (the site). The site is shown on Drawing 1, Appendix A. The investigation was undertaken in accordance with DP's proposal 212367.01.P.001.Rev1 dated 31 May 2022.

The objective of the PSI was to assess the potential for contamination at the site based on past and present land uses and to comment on the need for further investigation and/or management with regard to the proposed development.

The following scope of works was undertaken to meet the project objectives:

- Review of readily available site history, comprising historic and current titles and deposited plans; historic and recent aerial photographs; public databases held under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997; readily accessible Council Records; and the Section 10.7 (2&5) planning certificate;
- Review of site information, including previous reports and published information on geological, topographical hydrogeological, soil salinity and acid sulfate soil (ASS) conditions;
- Conduct a site walkover and observe situations that indicate a potential for contamination and identify environmental receptors;
- Positioning of 46 test pits across the footprint of the development. The test pits were excavated to a target depth of 0.5 m into natural or a maximum depth of 2.0 m.
- Soil sampling from multiple depths during the field work.
    - Laboratory testing on 39 soil samples for one or all of the following:
        - Total recoverable hydrocarbons (TRH);
        - Benzene, toluene, ethylbenzene and total xylenes (BTEX);
        - Polycyclic aromatic hydrocarbons (PAHs);
        - Polychlorinated biphenyls (PCBs);
        - Organochlorine pesticides/organophosphate pesticides (OCP/OPP); and
        - Metals (As, Cd, Cr, Cu, Hg, Ni, Pb and Zn); and
        - Asbestos.
- Three samples were tested for pH, Cation Exchange Capacity (CEC) and Clay Content in order to produce site specific investigation levels. Four additional duplicate samples were tested for quality control purposes.
- Preparation of this report presenting the results of the assessment.

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

- S1: Potential fill: associated with construction of site residence, fill pad to the north of the residence and on-site shed buildings.

  - COPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), phenols and asbestos.
- S2: Potential pesticide use associated with livestock grazing.
  - COPC include arsenic, OCP and OPP.

Analytical results of soil samples were mostly within the adopted health-based (i.e. HIL-A / HSL-A/B) and management limits for residential land use, with the exception of several reported concentrations of chromium greater than the HIL-A. DP notes that none of the reported chromium concentrations that exceeded the HIL-A were greater than 250% of the HIL. The 95% $UCL_{average}$ was less than the HIL (80.46 mg/kg) and the standard deviation of the results was less than 50% of the HIL (31.62 mg/kg).

In addition, a sample collected from the fill platform area in the north-eastern portion of the site reported a concentration of lead greater than the HIL-A.

The analytical results were all within the adopted ecological based limits for residential land use.

DP considers that the site is suitable for the proposed residential subdivision and for permitted uses under the current site zoning, from a site contamination perspective, subject to the following measures during any future development works:

- A Construction Environment Management Plan should be prepared prior to construction including an ‘unexpected finds protocol’ (i.e. asbestos in fill, buried waste or hydrocarbon affected soils including staining and odours and evidence of heavy pesticide use) and implemented during potential future site works; and
- DP considers that based on current information, the fill material within the fill platform located in the north-eastern portion of the site (north of the current residence) is not suitable for on-site reuse. The fill platform area should be disposed off-site. Prior to off-site disposal, it should be subject to a waste classification with reference to NSW EPA (2014).
- DP understands that the fill platform area is located within Stage 1E, which is understood to be a later development stage . DP considers the site is suitable for the proposed development, however the fill material should be disposed from site. A remediation action plan should be prepared which will provide strategies for remediation of the area, management of waste and the requirement for further testing.
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Report on Preliminary Site Investigation (Contamination)
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1. Introduction

Douglas Partners Pty Ltd (DP) has been engaged by Goulburn Estates No 1 Pty Ltd to complete this preliminary site investigation (contamination) (PSI) undertaken for a proposed residential subdivision for 129 Marys Mount Road, Goulburn (the site). The site is shown on Drawing 1, Appendix A. The investigation was undertaken in accordance with DP's proposal 212367.01.P.001.Rev1 dated 31 May 2022.

DP understands that Goulburn Estates No 1 Pty Ltd intend to develop the site for a residential subdivision. The size of the site is approximately 40 hectares and the proposed development will involve the construction of up to 280 residential blocks and associated roadways and services over three stages.

The notice of determination for the development application submitted to Goulburn Mulwaree Council includes condition 38 which states '*An assessment of potential site contamination is to be undertaken prior to the issuing of a Subdivision Works Certificate. A suitably qualified consultant shall be engaged to investigate the likelihood and/or extent of site contamination, and a Contamination Report shall be prepared for Council's approval in accordance with the publication "Guidelines for Consultants Reporting on Contaminated Sites' by the NSW Office of Environment and Heritage)*'.

The objective of the PSI was to assess the potential for contamination at the site based on past and present land uses and to comment on the need for further investigation and/or management with regard to the proposed development.

This report must be read in conjunction with all appendices including the notes provided in Appendix B.

The following key guidelines were consulted in the preparation of this report:

- National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure, 1999 as amended 2013;
- NSW EPA, *Consultants Reporting on Contaminated Land*, May 2020;
- NSW EPA, *Sampling Design Guidelines*, September 1995; and
- NSW Government State Environmental Planning Policy (Resilience and Hazards) 2021.

2. Proposed Development

It is understood that the development of the site will include the creation of 280 residential lots across three stages, internal pavements, installation of services and bioretention ponds. Based on the provided earthworks plans, it is estimated that cut and fill depths up to around 2.5 m will be required for the subdivision. The proposed staging plan in presented in Drawing 2, Appendix A.

3. Scope of Works

The following scope of works was undertaken to meet the project objectives:

- Review of readily available site history, comprising historic and current titles and deposited plans; historic and recent aerial photographs; public databases held under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997; readily accessible Council Records; and the Section 10.7 (2&5) planning certificate;
- Review of site information, including previous reports and published information on geological, topographical hydrogeological, soil salinity and acid sulfate soil (ASS) conditions;
- Conduct a site walkover and observe situations that indicate a potential for contamination and identify environmental receptors;
- Positioning and excavation of 46 test pits across the footprint of the development. The test pits were excavated to a target depth of 0.5 m into natural soil, a maximum depth of 2.0 m, or prior refusal.
- Soil sampling from multiple depths during the field work.
    - Laboratory testing on 39 soil samples for one or all of the following:
        - Total recoverable hydrocarbons (TRH);
        - Benzene, toluene, ethylbenzene and total xylenes (BTEX);
        - Polycyclic aromatic hydrocarbons (PAHs);
        - Polychlorinated biphenyls (PCBs);
        - Organochlorine pesticides/organophosphate pesticides (OCP/OPP); and
        - Metals (As, Cd, Cr, Cu, Hg, Ni, Pb and Zn); and
        - Asbestos.
- Three samples were tested for pH, Cation Exchange Capacity (CEC) and Clay Content in order to produce site specific investigation levels. Four additional duplicate samples were tested for quality control purposes.
- Preparation of this report presenting the results of the assessment.

4. Site Information

Site Address	129 Marys Mount Road, Goulburn
Legal Description	Lot 1 Deposited Plan (DP) 1225759 Lot 1 DP 920161 Lot 1 DP 981909
Approximate Area	40.1 hectares
Zoning	Zone R2: Low Density Residential
	Zone RU6: Transition
Local Council Area	Goulburn Mulwaree Shire Council

Current Use	Rural residential property
Surrounding Uses	North – Agricultural land East – Low density residential and rural residential South – Low density residential West – Low density residential

4.1 Site Description

The site is located at 129 Marys Mount Road in Goulburn, which is just north of the intersection of Cavanagh Street and Marys Mount Road. A recently constructed residential subdivision (with some completed houses) is located to the west and existing residences are present to the south of Mary's Mount Road. A completed residential development is located just south-east of the site and a rural-residential property is located to the east.

At the time of the investigation, the site was generally heavy vegetated with a sparsely wooded area located in the south-eastern portion of the site, which is outside the proposed developable area. An existing residence was located in the north-eastern portion of the site with two shed buildings located to the north of the residence. A fill platform with building and demolition waste was also located to the north of the residence.

Three farm dams are located at the site, two in the western portion of the site, and one in the northern portion of the site. A drainage path links two the dams with boggy conditions at the surface and over other parts of the site. Sedge or rush type grass (which is indicative of waterlogged soils or formerly waterlogged soils) was also observed within the vicinity of the dams, drainage path and other parts of the site.

Surface levels generally fall to the south-west/west from a high point of approximately 685 m AHD at the existing residence in the north-eastern corner to approximately 650 m AHD at the southern boundary.

The site location is shown in Figure 1.

Figure 1: Site Location

5. Environmental Setting

Regional Topography	The surrounding around is generally undulating sloping down towards the south.
Site Topography	The site is undulating and falls from a high point in the north-east down towards the south-west of the site. There is a broad valley aligned north-east to south-west in the north-western portion of the site, with a drainage line linking two of the farm dams on site.
Soil Landscape	The site is mapped as being on the Monastery Hill Soil Landscape. The landscape is described as being formed on dolerite intrusions. On crests and sideslopes orange coloured soils are indicated to be present with mottled grey clay present at depths greater than 1 m. Prairies soils and alluvial soils are indicated to be present on footslopes and in drainage lines.
Geology	NSW Dept of Primary Industries (2008) indicates that the site is underlain primarily by the Forest Lodge Quartz Monzodiorite of the Silurian-Devonian aged Turrallo Group. The south-eastern part of the site is underlain by the Rhyanna Formation, also of Silurian-Devonian age, which typically comprises siltstone interbedded with tuff.

Acid Sulfate Soils	The Australian Source Resource Information System (www.asris.csiro.au) indicated the site is located in an areas of low probability of occurrence (Bn(p4)) of acid sulfate soils.
Surface Water	There are three farm dams located on site, located in the western portion of the site. The Wollondilly River is located approximately 1.2 km to the south of the site at its closest point.
Groundwater	The 'Hydrogeological Landscape for the Hawkesbury Nepean Catchment Management Authority, Goulburn Region' (NSW DECCW, 2011) indicates that the site lies within the Mulwaree Hydrogeological Landscape. The Mulwaree Hydrogeological Landscape is characterised by unconfined aquifers in fractured rocks. Flow also occurs through colluvial and alluvial sediments, with hydraulic conductivity typically being low to moderate. Depths to water are generally shallow to intermediate ranging from less than 2 m to 8 m below ground level with aquifers generally providing low yields. Groundwater quality is marginal to brackish (800 µS/cm to 4800 µS/cm). The low yield together with high salinity indicates that the likelihood of beneficial uses of groundwater in the surrounding area is low.

5.1 Surface Water and Groundwater

A search of the publicly available registered groundwater bore database indicated that there are 10 registered groundwater bores within 1 km of the site. The 10 groundwater bores from within 1 km of the site are summarised in Table 1.

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

Bore ID Authorised Purpose Completion Year, Status	Location Relative to Site	Final Depth (m)	Standing Water Level (m bgl)
GW020949 Unknown 1954, unknown	325 m, SW	13	3.7
GW038230 Domestic, Stock 1974, unknown	365 m, E	31.30	14.0
GW043473 Domestic, Stock 1973, current	925 m, SW	17.6	9.7
GW101524 Domestic, Stock 1944 current	615 m, NE	13.4	-
GW106741 Domestic 2004, current	905 m, S	56.0	-

Bore ID Authorised Purpose Completion Year, Status	Location Relative to Site	Final Depth (m)	Standing Water Level (m bgl)
GW107152 Domestic, Stock 2005, current	365 m, E	72.0	-
GW107189 Domestic 2004, current	755 m, S	90.0	24.0
GW107224 Domestic, Stock 2005, current	350 m, E	72.0	10.0
GW108053 Domestic 2006, current	900 m, SW	32.0	-
GW111194 Stock 2005, current	795 m, SW	50.0	-

Based on the topography and the location of the nearest surface water feature, it is anticipated that groundwater will flow towards the Wollondilly River, located to the south of the site.

6. Site History

6.1 Historical Aerial Photography

Several historical aerial photographs were obtained from public databases. Extracts of the aerial photographs are included in Appendix D. A summary of key features observed for the site and surrounding land is presented in Table 2.

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Table 2: Summary of Historical Aerial Photographs

Year	Site	Surrounding Land Use
1975	The site was predominantly undeveloped grazing land. Disturbed earth was present in the eastern portion of the site where the current residential property is located. A shed was located to the north of the disturbed ground, and an additional area of disturbed ground was present to the north of the shed. Three farm dams were present in the western portion of the site, with the remainder of the site covered by grass with sporadic stands of trees present.	The surrounding land was predominantly open agricultural land. Some residential housing was present approximately 500 m to the south and south-east of the site
1987	Largely unchanged from the previous photograph. Construction of the current dwelling appeared to be complete and an additional shed building was present adjacent to the northern boundary of the site.	Largely unchanged from the previous photograph. Some additional development of residential housing had occurred.
1991	Largely unchanged from the previous photograph. It appeared that miscellaneous material were stockpiled to the south of the shed on the northern site boundary.	Largely unchanged from the previous photograph.
1997	Largely unchanged from the previous photograph.	Largely unchanged from the previous photograph.
2013	Largely unchanged from the previous photograph.	Extensive residential development had occurred to the south of the site. A subdivision site was under development immediately to the south-east of the site.
2021	Largely unchanged from the previous photograph	Further residential development had occurred or was underway. The subdivision to the south-east of the site appeared to have been completed. Earthworks were underway immediately to the west of the site.

6.2 Public Registers and Planning Records

EPA Notices available under Section 58 of the Contaminated Lands Management Act (CLM Act)	There were no records of notices for the site or adjacent sites. The nearest site for which there was a record was the Mobil Service Station at 129 Lagoon Street, Goulburn, located 2.8 km to the south-east of the site.

Database searched 20 June 2022	Given the distance from the site, it is not considered a potential source of contamination.
Sites notified to EPA under Section 60 of the CLM Act Database searched 20 June 2022	The site and adjacent sites were not listed as a notified contaminated site. The nearest site listed as a notified contaminated site was the Goulburn Tannery located at 13 Gibson Street, Goulburn, 1.4 km to the south of the site. Given the distance from the site, it is not considered a potential source of contamination.
Licences listed under Section 308 of the Protection of the Environment Operations Act 1997 (POEO Act) Database searched 20 June 2022	There were no records issued to the site or adjacent sites.
Planning Certificate(s)	A planning certificate for the site, dated 22 July 2022 was obtained from Goulburn Mulwaree Council. The following information was stated: The land was not significantly contaminated, subject to a management order, subject of an approved voluntary management proposal, subject to an ongoing management order, nor subject of a site audit statement, at the time the certificate was issued. The land is not reported to contain loose fill asbestos. Part of the land was reported to be bush fire prone land. The land is not located in bio-diversity certified land. The site is not located in a mine subsidence or road widening/construction area.

6.3 Site History Integrity Assessment

The information used to establish the history of the site was sourced from reputable and reliable reference documents, many of which were official records held by Government departments/agencies. The databases maintained by various Government agencies potentially can contain high quality information, but some of these do not contain any data at all.

In particular, aerial photographs can provide high quality information that is generally independent of memory or documentation. They are only available at intervals of several years, so some gaps exist in the information from this source. 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.

6.4 Summary of Site History

Information on historical aerial photographs indicates that the current on site residence was constructed circa 1975 and that the site layout has changed little since that date. The remaining areas of the site have not been developed and likely used for grazing purposes.

7. Site Walkover

7.1 Observations

A site walkover was undertaken by an environmental scientist on 17 June 2022. The general site topography was consistent with that described in Section 5. The site layout appears to have remained unchanged from the 2021 aerial photograph. The following key site features pertinent to the PSI were observed (refer to photographs in Appendix E).

- The site generally consisted of hill slopes of grazing grassland/paddock with a large cluster of trees located within the south-east portion of the site and rock outcropping located within the northern portion of the site.
- The site was boggy and surface water was present across the south-west portion of the site;
- A residential building and garages were present in the north-east portion of the site. What appeared to be a livestock shed was located approximately 185 m north of the residential building. Several stockpiles of fill (road gravel comprised of igneous blue-grey rock), inert waste (timber, vegetation, scrap metal, corrugated iron and concrete) were noted around the shed;
- A footprint of a former structure was located approximately 50 m to the north of the residential building. The footprint comprised of a brick outline and appeared to be located on an area of cut and fill earthworks. Various amounts of inert waste surrounded the area and was located within the area. The waste comprised of bricks, concrete, food packaging waste and vegetation waste. Several small stockpiles surrounded the area. The stockpiles were heavily vegetated, however, brick and concrete fragments were observed on the surface of the stockpiles;
- Three dams were present within the site and appeared have been constructed from site-won material. The dams were located along the drainage line aligned in a north-east to south-west orientation. Building rubble was observed in the northernmost portion of the drainage line which appeared to comprise concrete and terracotta pipe;
- In the middle of the north-central paddock, a ‘44 gallon’ drum that was cut in half had been placed on the ground surface, along with several concrete brick blocks. The only label on the drum was a ‘flammable’ warning sign, indicating the drum possibly contained hydrocarbons of some description. There was no staining of soils or odours within the area;
- An underground fibre optic easement runs through the site from the western boundary to the northern boundary and then follows the northern boundary eastwards;
- There was no asbestos containing materials noted during the site inspection, however it is noted that an inspection of the residence was not made at the time of the inspection as occupants were still present;
- There was no evidence of underground fuel storage tanks or above fuel storage tanks were noted during the site inspection; and

- There was no evidence of stressed vegetation observed at the site.

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: Potential fill: associated with construction of site residence, fill pad to the north of the residence and on-site shed buildings.
  - COPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), phenols and asbestos.
- S2: Potential pesticide use associated with livestock grazing.
  - COPC include arsenic, OCP and OPP.

The areas of environmental concern listed above are shown on Drawing 3, Appendix A.

Potential Receptors

The following potential human receptors have been identified:

- R1: Current users [on-site residents];
- R2: Construction and maintenance workers;
- R3: End users [future on-site residents]; and
- R4: Adjacent site users [neighbouring residents].

The following potential environmental receptors have been identified:

- R5: Groundwater; and
- R6: Terrestrial ecosystems.

It is noted that surface waters have been excluded as a potential receptor. On site dams will be drained and in-filled during development and as the Wollondilly River is located over a kilometre to the south of the site, it is not considered to be a receptor.

Potential Pathways

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

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

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

- P3: Leaching of contaminants and vertical migration into groundwater; and
- P4: 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 sources (S1 and S2) and receptors (R1 to R6) are provided in Table 3.

Table 3: Summary of Potentially Complete Exposure Pathways

Source and COPC	Transport Pathway	Receptor	Risk Management Action
S1: Fill, Metals, TRH, BTEX, PAH, OCP and asbestos	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Current users [on-site residents] R2: Construction and maintenance workers R3: End users [future subdivision residents] R4: Adjacent site users [neighbouring residents]	An intrusive investigation is recommended to assess possible contamination including testing of the soils and if deeper contamination is noted, groundwater testing may also be required.
	P3: Leaching of contaminants and vertical migration into groundwater	R5: Groundwater	
	P4: Inhalation, ingestion and absorption	R6: Terrestrial ecosystems	
S2: Potential pesticide use, Arsenic, OPP, OCP	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Current users [on-site residents] R2: Construction and maintenance workers R3: End users [future subdivision residents]	An intrusive investigation is recommended to assess possible contamination including testing of the soils and if deeper contamination is

Source and COPC	Transport Pathway	Receptor	Risk Management Action
		R4: Adjacent site users [neighbouring residents]	noted, groundwater testing may also be required.
	P5: Leaching of contaminants and vertical migration into groundwater	R5: Groundwater	
	P6: Inhalation, ingestion and absorption	R6: Terrestrial ecosystems	

9. Sampling, Analysis and Quality Control Plan

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

9.1 Soil Sampling Rationale

Based on the CSM and DQO, it was considered that 42 test pit locations placed in an approximate grid pattern and undertaken concurrently with the geotechnical investigation, would be appropriate to provide information regarding the contamination status of the site. In addition, following the site walkover, four test pit locations were positioned to target AECs identified during the site walkover.

The site covers an area of approximately 40.1 ha. The NSW EPA Sampling Design Guidelines (1995) recommends larger sites are divided into 5 ha portions with a minimum of 55 locations per 5 ha portion. Given the preliminary nature of the assessment for due diligence purposes, it was considered that the 46 locations completed provide an adequate preliminary indication of the potential for contamination to be present at the site.

The test pit and borehole locations are shown on Drawing 4, Appendix A.

Soil samples were collected from each borehole at depths of approximately 0.1 m, 0.5 m, 1.0 m and every 1.0 m thereafter, and changes in lithology or signs of contamination. Samples were collected targeting the soil strata that previous environmental works had identified contamination (e.g. the general sampling methods are described in the field work methodology, included in Appendix G.

10. Site Assessment Criteria

The site assessment criteria (SAC) applied in the current investigation were informed by the CSM (Section 8) which identified human and environmental receptors to potential contamination on 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 investigation and screening levels applied in the current investigation comprise a residential with garden/accessible soil land use scenario, considered appropriate for the proposed development of low density residential lots. The derivation of the SAC is included in Appendix H and the adopted SAC are listed on the summary analytical results tables in Appendix I.

11. Field Work Results

11.1 Ground Conditions

Details of the subsurface conditions encountered are summarised in the borehole and test pit logs included in Appendix J, which must be read in conjunction with the accompanied explanatory notes that define classification methods and descriptive terms. The test pits encountered variable subsurface conditions underlying the site with the general principal succession of strata as follows:

- TOPSOIL: Silty clay with varying clay and gravel contents, variably wet to dry, to depth of between 0.1 m – 0.3 m in all pits except pits TP104, TP110, TP 121, TP123 and TP124.
- FILL: generally low to high plasticity silty clay, yellow brown to dark brown, from surface to depths ranging from 0.45 m to 1.3 m within the dam walls of pits TP104, TP110 and TP121 and in pits TP123 and TP124 (fill platform). In pits TP123 and TP124, the fill contained building and demolition rubble including brick, concrete, glass and terracotta fragments.
- SANDY GRAVEL/GRAVELLY SAND: generally loose, grey fine to medium grained sandy gravel or gravelly sand, encountered in pits TP101, TP104, TP105, TP108, TP109, TP112, TP114, TP116, TP203 to TP210, TP212 and TP305 to TP310 to depths of 0.3 m to 1.6 m.
- SILTY CLAY/SANDY CLAY/CLAY: generally medium to high plasticity, stiff to very stiff yellow brown mottled orange becoming brown silty clay or clay with varying sand content, encountered in all pits with the exception of pits TP104, TP114, TP 123, TP124, TP211 and TP306 to depths of 0.6 m to 3.0 m
- SILTSTONE/SANDSTONE: generally fine grained, orange, medium strength, highly weathered and highly fractured, becoming high strength and moderately weathered with depth siltstone or sandstone in pits TP123, TP124. TP204 to TP210, TP306 and TP308 to TP310 to a maximum depth of investigation of 3.0 m.
- MONZODIORITE: generally fine to medium grained, orange brown, very low to low strength, highly weathered and highly fractured, becoming medium strength with depth monzodiorite encountered in pits TP206, TP207, TP212, and TP301 to TP304 to a maximum depth of investigation of 3.0 m

11.2 Contamination Observations

There were no observations of visual or olfactory evidence (e.g.: staining, odours, free phase product) to suggest the presence of contamination within the soil observed in the investigation.

11.3 Laboratory Analytical Results

The laboratory certificate of analysis together with the chain of custody and sample receipt information is provided in Appendix J.

The results of laboratory analysis are summarised in the following tables in Appendix I:

- Table I1: Summary of Laboratory Results – Metals, TRH, BTEX, PAH; and
- Table I2: Summary of Laboratory Results – OCP, OPP, PCB and Asbestos.

12. Discussion

12.1 Soils

Analytical results of soil samples were mostly within the adopted health-based (i.e. HIL-A / HSL-A/B) and management limits for residential land use, with the exception of the following:

- Reported chromium concentration in the sample collected from pit TP104 / 0.5 m (110 mg/kg) exceeded the HIL-A;
- Reported chromium concentration in the sample collected from pit TP106 / 1.0 m (120 mg/kg) exceeded the HIL-A;
- Reported chromium concentration in the sample collected from pit TP107 / 0.1 m (110 g/kg) exceeded the HIL-A;
- Reported chromium concentration in the sample collected from pit TP111 / 0.5 m (140 mg/kg) exceeded the HIL-A;
- Reported chromium concentration in the sample collected from pit TP115 / 0.1 m (110 mg/kg) exceeded the HIL-A;
- Reported chromium concentration in the sample collected from pit TP117 / 1.0 m (110 mg/kg) exceeded the HIL-A;
- Reported chromium concentration in the sample collected from pit TP120 / 1.0 m (140 mg/kg) exceeded the HIL-A;
- Reported chromium concentration in the sample collected from pit TP207 / 0.5 m (110 mg/kg) exceeded the HIL-A; and
- Reported lead concentration in the sample collected from pit TP123 / 0.1 m (850 mg/kg) exceeded the HIL-A.

The reported concentrations of chromium listed above that exceed the HIL-A (100 mg/kg) are noted to only marginally exceed the HIL-A (100 mg/kg). NEPC (1999, as amended 2013) allows for the use of summary statistics when comparing reported concentrations of contaminants with investigation levels. Reported results for chromium from samples collected across the site were used to calculate the 95% upper confidence limit of the mean (95% $UCL_{average}$). DP notes that none of the reported chromium concentrations that exceeded the investigation level were greater than 250% of the HIL, the 95% $UCL_{average}$ was less than the HIL (80.46 mg/kg) and the standard deviation of the results was less than 50 % of the HIL (31.62 mg/kg).

The test pit logs indicate that ground conditions are relatively uniform across the site (see section 11.1 and test pit logs, Appendix J). With the exception of pit TP104, samples where reported chromium concentrations exceeded the HIL-A were collected from natural soils and in areas of the site where potential application of pesticides was the predominant area of environmental concern. Chromium has been used in preservation of timber, however, no history of timber treatment at the site was indicated and it is considered possible that the reported concentrations represent background concentrations. Background concentrations of total chromium are reported to range from 5 mg/kg to 1,000 mg/kg (Berkman, 1989).

The reported concentration of lead in pit TP123 / 0.1 m of 850 mg/kg is noted to be greater than 250% of the HIL-A (300 mg/kg) and it is considered that this may represent a 'hotspot'. It is noted that pit TP123 was located in an area where fill material was located. Building and demolition rubble was noted to be stockpiled on the site surface in this area, and additionally, brick, concrete, glass and terracotta fragments were also observed within the fill.

The analytical results were all within the adopted ecological based limits for residential land use.

12.2 Data Quality Assurance and Quality Control

The data quality assurance and quality control (QA/QC) results are included in Appendix L. 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.

13. Revised Conceptual Site Model

The CSM presented in Section 8 has been updated to incorporate the findings of this PSI.

A 'source-pathway-receptor' approach has been used to assess the potential risks of harm being caused to human, water or environmental receptors from contamination sources on or in the vicinity of the site, via transport pathways (complete pathways).

Table 4: Revised Summary of Potentially Complete Exposure Pathways

Source and COPC	Transport Pathway	Receptor	Risk Management Action
S1: Fill, Metals, TRH, BTEX, PAH, OCP and asbestos	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Current users [on-site residents] R2: Construction and maintenance workers R3: End users [future subdivision residents] R4: Adjacent site users [neighbouring residents]	Fill material was encountered in isolated areas of the site, mainly within dam walls, the current residence and a fill platform to the north of the residence. A reported concentration of lead in a sample collected from the fill platform area (pit TP123)

Source and COPC	Transport Pathway	Receptor	Risk Management Action
	P3: Leaching of contaminants and vertical migration into groundwater	R5: Groundwater	exceeded the HIL-A by more than 250%. Based on current information DP considers that the material within this fill platform is not suitable for on-site reuse. It should be subject to further assessment or disposed off-site. If disposed off-site, prior to off-site disposal the material should be subject to a waste classification with reference to NSW EPA (2014).
	P4: Inhalation, ingestion and absorption	R6: Terrestrial ecosystems	
S2: Potential pesticide use, Arsenic, OPP, OCP	P1: Ingestion and dermal contact P2: Inhalation of dust and/or vapours	R1: Current users [on-site residents] R2: Construction and maintenance workers R3: End users [future subdivision residents] R4: Adjacent site users [neighbouring residents]	The results of laboratory analysis indicated that concentrations of CoPC were below the site assessment criteria. It is considered that this exposure pathway is unlikely to be complete. Given the sampling density was less than the SDG (NSW 1995) it is nonetheless recommended that a construction environment management (CEMP) plan should be prepared and implemented during construction.
	P5: Leaching of contaminants and vertical migration into groundwater	R5: Groundwater	
	P6: Inhalation, ingestion and absorption	R6: Terrestrial ecosystems	

Reported concentrations of chromium marginally exceeded the HIL-A (residential with gardens / accessible soil). Review of the site history and the CSM did not identify a potential source of the chromium. DP notes that none of the reported chromium concentrations that exceeded the HIL-A were greater than 250% of the HIL. The 95% $UCL_{average}$ was less than the HIL (80.46 mg/kg) and the standard deviation of the results was less than 50% of the HIL (31.62 mg/kg).

14. Conclusions and Recommendations

Douglas Partners Pty Ltd (DP) has been engaged by Goulburn Estates No 1 Pty Ltd to complete this preliminary site investigation (contamination) (PSI) undertaken for a proposed residential subdivision for 129 Marys Mount Road, Goulburn (the site). The site is shown on Drawing 1, Appendix A. The investigation was undertaken in accordance with DP's proposal 212367.01.P.001.Rev1 dated 31 May 2022.

The objective of the PSI was to assess the potential for contamination at the site based on past and present land uses and to comment on the need for further investigation and/or management with regard to the proposed development.

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

- S1: Potential fill: associated with construction of site residence, fill pad to the north of the residence and on-site shed buildings.
  - COPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), organochlorine pesticides (OCP), phenols and asbestos.
- S2: Potential pesticide use associated with livestock grazing.
  - COPC include arsenic, OCP and OPP.

Analytical results of soil samples were mostly within the adopted health-based (i.e. HIL-A / HSL-A/B) and management limits for residential land use, with the exception of several reported concentrations of chromium greater than the HIL-A. DP notes that none of the reported chromium concentrations that exceeded the HIL-A were greater than 250% of the HIL. The 95 % $UCL_{average}$ was less than the HIL (80.46 mg/kg) and the standard deviation of the results was less than 50% of the HIL (31.62 mg/kg).

In addition, a sample collected from the fill platform area in the north-eastern portion of the site reported a concentration of lead greater than the HIL-A.

The analytical results were all within the adopted ecological based limits for residential land use.

DP considers that the site is suitable for the proposed residential subdivision and for permitted uses under the current site zoning, from a site contamination perspective, subject to the following measures during any future development works:

- A Construction Environment Management Plan should be prepared prior to construction including an ‘unexpected finds protocol’ (i.e. asbestos in fill, buried waste or hydrocarbon affected soils including staining and odours and evidence of heavy pesticide use) and implemented during potential future site works; and
- DP considers that based on current information, the fill material within the fill platform located in the north-eastern portion of the site (north of the current residence) is not suitable for on-site reuse. The fill platform area should be disposed off-site. Prior to off-site disposal, it should be subject to a waste classification with reference to NSW EPA (2014).
- DP understands that the fill platform area is located within Stage 1E, which is understood to be a later development stage . DP considers the site is suitable for the proposed development, however the fill material should be disposed from site. A remediation action plan should be prepared which will provide strategies for remediation of the area, management of waste and the requirement for further testing.

15. References

Berkman, D. A. (1989). *Field Geologists' Manual.* Parkville, Vic: Australiasian Institiute of Mining and Metallurgy.

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. (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.* NSW Environment Protection Authority.

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

16. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at 129 Marys Mount Road, Goulburn in accordance with DP's proposal dated 31 May 2022 and acceptance received from Andrew Cooper. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Goulburn Estates No 1 Pty Ltd 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 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.

Douglas Partners Pty Ltd

Appendix A

Drawings

LOCALITY MAP

Notes:
1. Drawing projection WGS 84
2. Latest available aerial imagery sourced from metromap.com accessed 15/04/2021

Legend

Approximate Site Boundary

25 0 25 50 75 100 m

Appendix 9

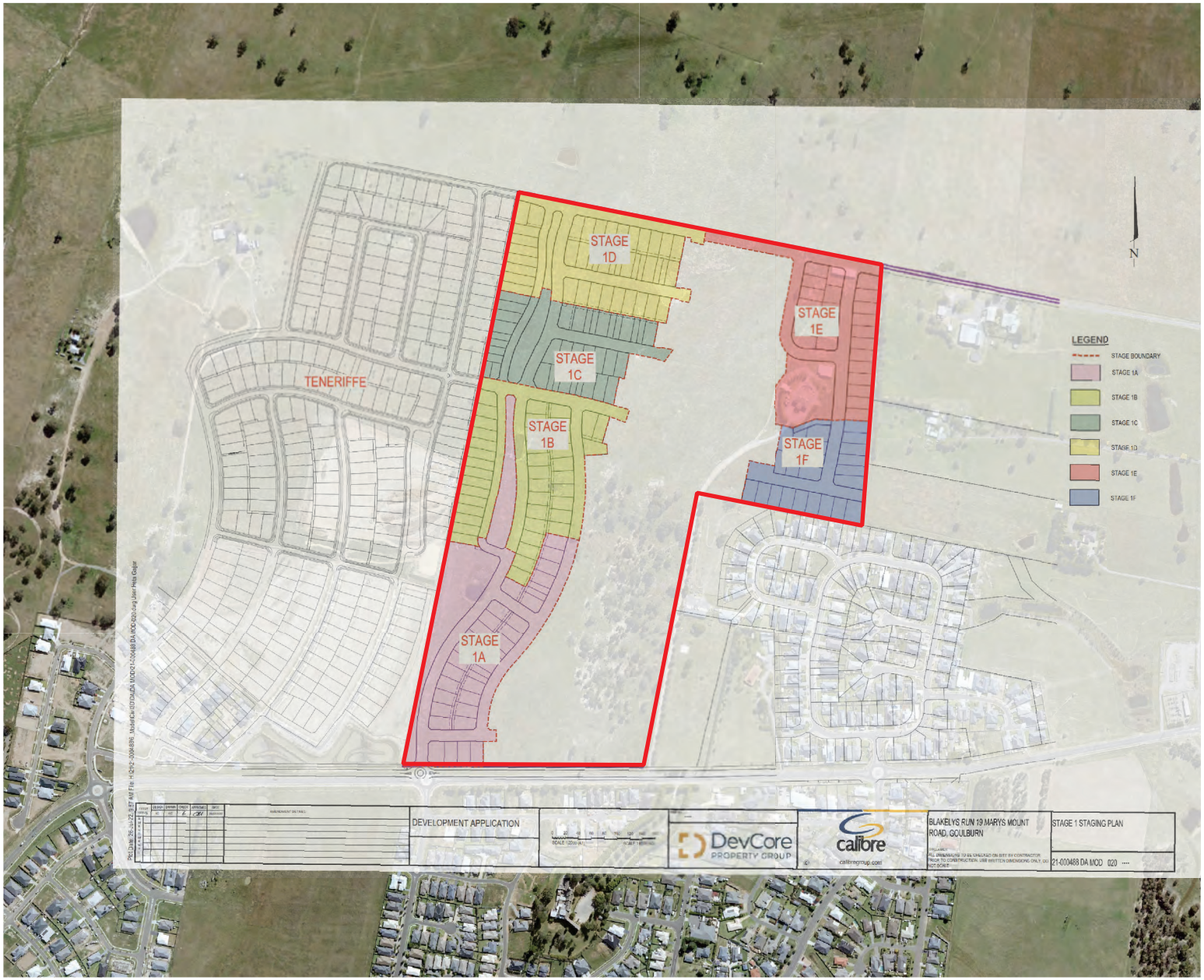
Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Goulburn Estates No 1 Pty Ltd		
OFFICE:	Canberrra	DRAWN BY:	PJS
SCALE:	1:2500 @ A3	DATE:	24.07.2022

TITLE: **Site Location and Site Layout Plan**
Proposed Residential Subdivision
1239 Marys Mount Road, Goulburn

N

PROJECT No:	212367.01
DRAWING No:	1
REVISION:	0



LOCALITY MAP

Notes:
1. Drawing projection GDA94 / MGA zone 55
2. Latest available aerial imagery sourced from metromap.com accessed 15/04/2021
3. Proposed Layout sourced from client

Legend

Approximate Site Boundary

75 0 75 150 225 300 m

Appendix 9

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd	TITLE: **Proposed Site Layout Plan**	PROJECT No: 12345.12
	OFFICE: Canberra DRAWN BY: PJS	**Proposed Residential Subdivision**	DRAWING No: 2
	SCALE: 1:6000 @ A3 DATE: 02.08.2022	**129 Marys ount Road**	REVISION: 0

LOCALITY MAP

Notes:
1. Drawing projection WGS 84
2. Latest available aerial imagery sourced from metromap.com accessed 15/04/2021
3. Test locations shown are approximate only

Legend

- Approximate Site Boundary

Areas of Environmental Concern

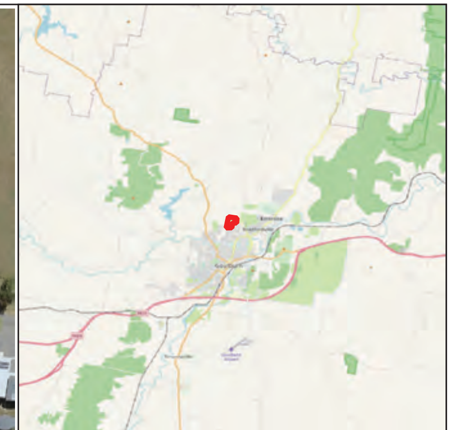
- AEC1: Fill Areas
- AEC2: Potential Pesticide Use

25 0 25 50 75 100 m

Appendix 9

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd	TITLE: **Areas of Environmental Concern** **Proposed Residential Subdivision** **129 Marys Mount Road, Goulburn**	PROJECT No: 212367.01
	OFFICE: Canberra / DRAWN BY: PJS		DRAWING No: 3
	SCALE: 1:2500 @ A3 / DATE: 24.07.2022		REVISION: 0

Appendix 9



LOCALITY MAP

Legend

- Approximate Site Boundary
- Approximate Test Pit Location

25 0 25 50 75 100 m

Douglas Partners Geotechnics / Environment / Groundwater	
CLIENT:	Goulburn Estates No 1 Pty Ltd
OFFICE:	Canberra
DRAWN BY:	PJS
SCALE:	
DATE:	24.07.2022
TITLE:	**Test Pit Location Plan**
	Proposed Residential Subdivision
	129 Marys Mount Road, Goulburn
PROJECT No:	212367.01
DRAWING No:	4
REVISION:	0

Appendix B

About This Report

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

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

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

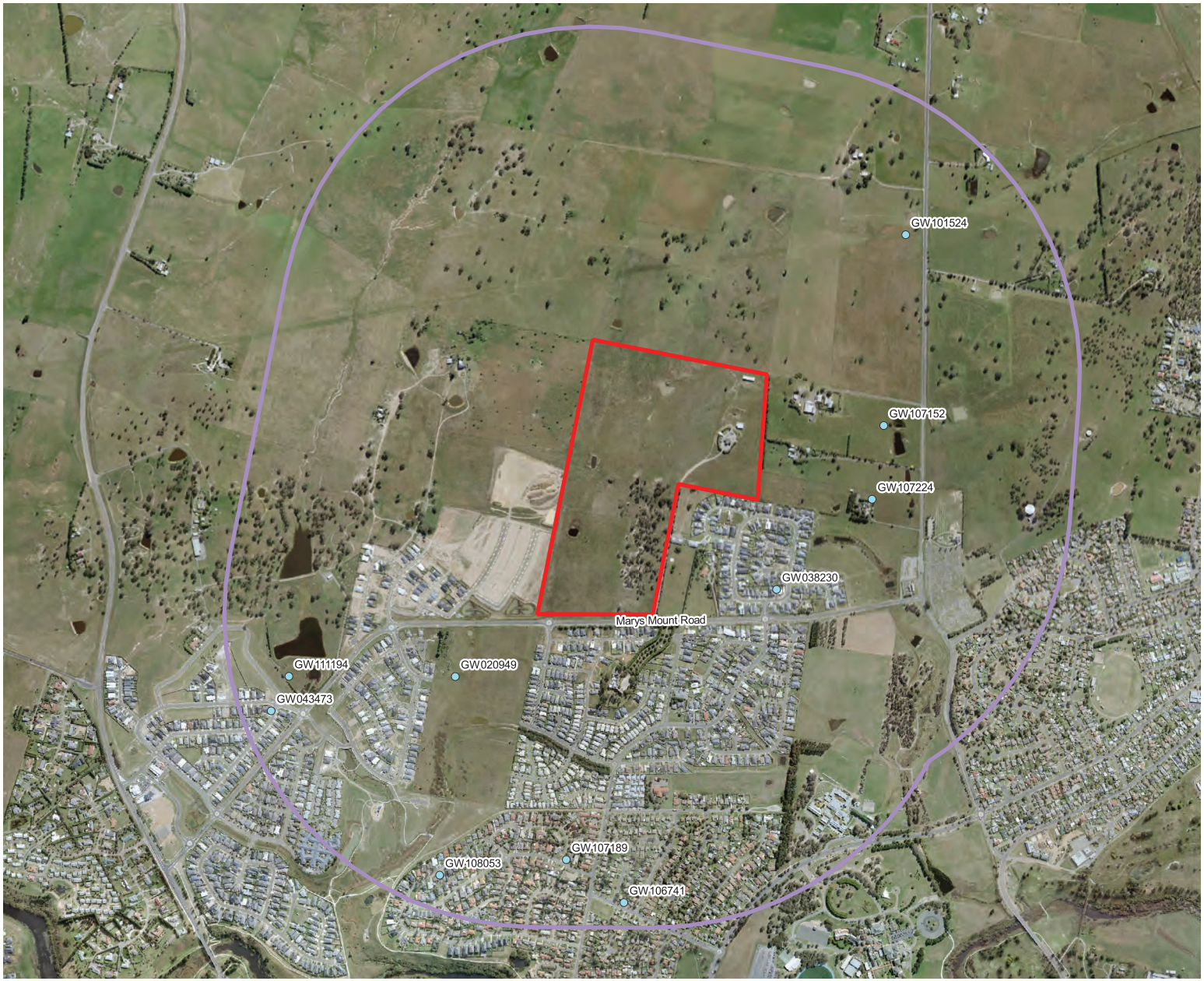
Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate 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.

Appendix C

Site History Search



LOCALITY MAP

Notes:
1. Drawing projection GDA94 / MGA zone 55
2. Latest available aerial imagery sourced from metromap.com accessed 15/04/2021
3. Groundwater bore locations shown are approximate only

Legend

- Approximate Site Boundary
- 1 Km Site Buffer
- Registered Groundwater Bore Location

0.1 0 0.1 0.2 0.3 0.4 0.5 km

Appendix 9

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Goulburn Estates No 1 Pty Ltd		
OFFICE:	Canberra	DRAWN BY:	PJS
SCALE:	1:12500 @ A3	DATE:	19.07.2022

TITLE: **Registered Groundwater Bore Location Plan**
Proposed Residential Subdivision
129 Marys Mount Road, Goulburn, NSW

N

PROJECT No:	212367.01
DRAWING No:	C1
REVISION:	0

LOCALITY MAP

Notes:
1. Drawing projection WGS 84
2. Latest available aerial imagery sourced from metromap.com accessed 15/04/2021
3. Groundwater bore locations shown are approximate only

Legend

- Approximate Site Boundary
- 1 Km Site Buffer
- Contaminated Site Notified to NSW EPA

0.1 0 0.1 0.2 0.3 0.4 0.5 km

Appendix 9

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT:	Goulburn Estates No 1 Pty Ltd		
OFFICE:	Canberra	DRAWN BY:	PJS
SCALE:	1:10000 @ A3	DATE:	24.07.2022

TITLE: **Contaminated Sites Notified to NSW EPA Location Plan**
Proposed Residential Subdivision
129 Marys Mount Road, Goulburn, NSW

N

PROJECT No:	212367.01
DRAWING No:	C2
REVISION:	0

WaterNSW
Work Summary

GW020949

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): NOT KNOWN

Work Type: Bore open thru rock
Work Status:
Construct.Method: Cable Tool
Owner Type: Private

Commenced Date:
Completion Date: 01/09/1954
Final Depth: 13.00 m
Drilled Depth: 13.00 m

Contractor Name: (None)
Driller:
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	3
Licensed:			

Region: 10 - Sydney South Coast
River Basin: 212 - HAWKESBURY RIVER
Area/District:
CMA Map: 8828-4S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)
Northing: 6153899.000
Easting: 748635.000
Latitude: 34°43'36.4"S
Longitude: 149°42'55.3"E

GS Map: -
MGA Zone: 55
Coordinate Source: PR.,ACC.MAP

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	Threaded Steel	-0.50	12.80	152			

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
13.00	13.00	0.00	Fractured	3.70		2.27			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	3.66	3.66	Clay Grey Gravel	Clay	
3.66	12.95	9.29	Granite Decomposed Water Supply	Granite	

Remarks

09/05/1979: GRAVEL IN BASE OF BORE

Appendix 9

***** End of GW020949 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW038230

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): DOMESTIC, STOCK

Work Type: Bore open thru rock
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 01/05/1974
Final Depth: 21.30 m
Drilled Depth: 21.30 m

Contractor Name: (None)
Driller:
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description: 1001-3000 ppm
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	3
Licensed:			

Region: 10 - Sydney South Coast
CMA Map: 8828-4S
River Basin: 212 - HAWKESBURY RIVER
Area/District:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)
Northing: 6154179.000
Easting: 749661.000
Latitude: 34°43'26.4"S
Longitude: 149°43'35.3"E

GS Map: -
MGA Zone: 55
Coordinate Source: GD.,ACC.MAP

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	P.V.C.	-0.20	11.70	152			Driven into Hole

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
16.40	21.20	4.80	Fractured	14.00		0.88			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	Topsoil	Topsoil	
0.30	5.48	5.18	Clay	Clay	
5.48	11.58	6.10	Clay Sandy	Clay	
11.58	21.33	9.75	Dolerite Fractured Water Supply	Dolerite	
5.48	11.58	6.10	Limestone Bands	Limestone	

Remarks

Appendix 9

04/02/1976: SITED LOT 2 DP 546443

***** End of GW038230 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW043473

Licence: 10WA114894
Licence Status: CURRENT

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s): DOMESTIC, STOCK

Work Type: Bore open thru rock
Work Status:
Construct.Method: Rotary
Owner Type: Private

Commenced Date:
Completion Date: 01/08/1973
Final Depth: 17.60 m
Drilled Depth: 17.70 m

Contractor Name: (None)
Driller:
Assistant Driller:

Property: N/A NSW
GWMA: -
GW Zone: -
Standing Water Level (m):
Salinity Description: Good
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	1
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 15//750037

Region: 10 - Sydney South Coast
River Basin: 212 - HAWKESBURY RIVER
Area/District:
CMA Map: 8828-4S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)
Northing: 6153791.000
Easting: 748046.000
Latitude: 34°43'40.4"S
Longitude: 149°42'32.3"E

GS Map: -
MGA Zone: 55
Coordinate Source: GD.,ACC.MAP

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	P.V.C.	-0.20	2.60	152			Driven into Hole

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
16.40	17.60	1.20	Fractured	9.70		1.26			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	Topsoil	Topsoil	
0.30	2.74	2.44	Clay Gravel	Clay	
2.74	6.71	3.97	Basalt Black	Basalt	
6.71	17.68	10.97	Quartz Porphyry Water Supply	Quartz	

Appendix 9

***** End of GW043473 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW101524

Licence: 10WA115209
Licence Status: CURRENT

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s): STOCK, DOMESTIC

Work Type: Bore
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 01/01/1944
Final Depth: 13.40 m
Drilled Depth:

Contractor Name:
Driller:
Assistant Driller:

Property: GILDEA 509 Middle Arm Rd GOULBURN 2580 NSW
GWMA: -
GW Zone: -
Standing Water Level (m): 4.270
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:		UNKNOWN	
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 1//916825

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6155309.000
Easting: 750073.000
Latitude: 34°42'49.4"S
Longitude: 149°43'50.3"E

GS Map: -
MGA Zone: 55
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	13.40	152			(Unknown)
1	1	Casing	Steel	0.00	13.40	152			

Remarks

01/01/1944: Form A Remarks:
LITTLE DETAIL.
MAX PUMPED = 200 GALLS PER HOUR

***** End of GW101524 *****

Appendix 9

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW106741

Licence: 10WA115545 **Licence Status:** CURRENT

Authorised Purpose(s): DOMESTIC
Intended Purpose(s): DOMESTIC

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Rotary Air
Owner Type: Private

Commenced Date:
Completion Date: 06/12/2004
Final Depth: 56.00 m
Drilled Depth: 56.00 m

Contractor Name: Watermin Drillers Pty Ltd
Driller: Allan Ross Jones
Assistant Driller:

Property: LENANE 27 Howard Blvde GOULBURN 2580 NSW
GWMA: -
GW Zone: -
Standing Water Level (m):
Salinity Description:
Yield (L/s): 0.379

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	60//250802
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 60//250802

Region: 10 - Sydney South Coast
River Basin: 212 - HAWKESBURY RIVER
Area/District:
CMA Map: 8828-4S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6153176.000
Easting: 749173.000
Latitude: 34°43'59.3"S
Longitude: 149°43'17.2"E

GS Map: -
MGA Zone: 55
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	16.00	165			Rotary Air
1		Hole	Hole	16.00	56.00	139			Rotary Air
1	1	Casing	Pvc Class 9	-0.30	16.00	125			Driven into Hole, Glued

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
25.00	26.00	1.00	Unknown			0.13			
30.00	30.50	0.50	Unknown			0.25			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	topsoil	Topsoil	
1.00	4.00	3.00	clay	Clay	
4.00	15.00	11.00	shale, soft	Shale	

15.00	56.00	41.00	granite	Granite	**Appendix 9**

Remarks

27/01/2010: updated from original form A

***** End of GW106741 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW107152

Licence: 10WA115569
Licence Status: CURRENT

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s): DOMESTIC, STOCK

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Rotary Air
Owner Type: Private

Commenced Date:
Completion Date: 03/04/2005
Final Depth: 72.00 m
Drilled Depth: 72.00 m

Contractor Name: Watermin Drillers Pty Ltd
Driller: Allan Ross Jones
Assistant Driller:

Property: AVONLEA 118 Middle Arm Rd GOULBURN 2580 NSW
GWMA: -
GW Zone: -
Standing Water Level (m):
Salinity Description:
Yield (L/s): 0.126

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	1 919845
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 1//919845

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6154701.000
Easting: 750003.000
Latitude: 34°43'09.2"S
Longitude: 149°43'48.2"E

GS Map: -
MGA Zone: 55
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	32.00	139			Rotary Air
1		Hole	Hole	32.00	72.00	0			Unknown
1	1	Casing	Pvc Class 9	-0.30	32.00	125			Driven into Hole, Glued

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
52.00	53.00	1.00	Unknown			0.13			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	topsoil	Topsoil	
1.00	5.00	4.00	clay	Clay	
5.00	32.00	27.00	granite, soft	Granite	
32.00	72.00	40.00	granite	Granite	

Remarks

Appendix 9

19/03/2010: updated from original form A

***** End of GW107152 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW107189

Licence: 10WA115474
Licence Status: CURRENT

Authorised Purpose(s): DOMESTIC
Intended Purpose(s): DOMESTIC

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Down Hole Hamm
Owner Type: Private

Commenced Date:
Completion Date: 31/07/2004
Final Depth: 90.00 m
Drilled Depth: 90.00 m

Contractor Name: Bungendore Water Bores
Driller: Daniel Robert Hill
Assistant Driller:

Property: DUFFY 1 Oakwood Ave GOULBURN 2580 NSW
GWMA: -
GW Zone: -
Standing Water Level (m): 24.000
Salinity Description:
Yield (L/s): 0.069

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	29//809677
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 29//809677

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6153313.000
Easting: 748988.000
Latitude: 34°43'55.0"S
Longitude: 149°43'09.8"E

GS Map: -
MGA Zone: 55
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	15.00	200			Down Hole Hammer
1		Hole	Hole	15.00	90.00	150			Down Hole Hammer
1	1	Casing	Pvc Class 9	0.00	15.00	160			Driven into Hole

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
58.00	60.00	2.00	Unknown	24.00		0.07		02:00:00	

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	2.00	2.00	soil, sticky clay	Soil	
2.00	9.00	7.00	shale, yellow brown	Shale	
9.00	9.00	0.00	volcanics, balck	Volcanic	

Remarks

Appendix 9

23/03/2010: updated from original form A

***** End of GW107189 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW107224

Licence: 10WA115555
Licence Status: CURRENT

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s): DOMESTIC

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Down Hole Hamm
Owner Type: Private

Commenced Date:
Completion Date: 28/02/2005
Final Depth: 72.00 m
Drilled Depth: 72.00 m

Contractor Name: Bungendore Water Bores
Driller: Daniel Robert Hill
Assistant Driller:

Property: AMISFIELD 82 Middle Arm Rd GOULBURN 2580 NSW
GWMA: -
GW Zone: -
Standing Water Level (m): 10.000
Salinity Description:
Yield (L/s): 0.500

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	1 921213
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 1//921213

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6154465.000
Easting: 749966.000
Latitude: 34°43'16.8"S
Longitude: 149°43'47.0"E

GS Map: -
MGA Zone: 55
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	72.00	200			Down Hole Hammer
1		Annulus	Waterworn/Rounded	0.00	72.00	1			Graded
1	1	Casing	Pvc Class 9	0.00	72.00	160			Seated on Bottom, Screwed and Glued
1	1	Opening	Slots - Vertical	18.00	66.00	160		0	PVC Class 9, SL: 150.0mm, A: 2.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
19.00	23.00	4.00	Unknown	10.00		0.19		00:30:00	
63.00	65.00	2.00	Unknown	10.00		0.31		01:30:00	

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	3.00	3.00	loamy soil	Loam	
3.00	20.00	17.00	volcanic, weathered	Volcanic	
20.00	72.00	52.00	volcanic	Volcanic	

Appendix 9

Remarks

24/03/2010: updated from original form A

***** End of GW107224 *****

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WaterNSW
Work Summary

GW108053

Licence: 10WA115658 **Licence Status:** CURRENT

Authorised Purpose(s): DOMESTIC
Intended Purpose(s): DOMESTIC

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Rotary Air
Owner Type: Private

Commenced Date:
Completion Date: 27/05/2006
Final Depth: 32.00 m
Drilled Depth: 32.00 m

Contractor Name: Watermin Drillers Pty Ltd
Driller: Allan Ross Jones
Assistant Driller:

Property: SHEEHAN 61 Green Valley Rd GOULBURN 2580 NSW
GWMA: -
GW Zone: -
Standing Water Level (m):
Salinity Description:
Yield (L/s): 0.379

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	251 1056787
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 251//1056787

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6153264.000
Easting: 748584.000
Latitude: 34°43'57.0"S
Longitude: 149°42'54.0"E

GS Map: -
MGA Zone: 55
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	32.00	139			Rotary Air
1		Annulus	Waterworn/Rounded	0.00	33.00				Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 9	-0.30	32.00	125			Seated on Bottom, Glued
1	1	Opening	Slots - Horizontal	20.00	22.00	125		0	Casing - Machine Slotted, PVC Class 9, Glued, SL: 60.0mm, A: 2.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
21.00	21.10	0.10	Unknown			0.38			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	topsoil	Topsoil	
1.00	2.00	1.00	clay	Clay	

2.00	11.00	9.00	granite, decomposed	Granite	
11.00	32.00	21.00	granite	Granite	

Remarks

28/04/2010: updated from original form A

***** End of GW108053 *****

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WaterNSW
Work Summary

GW111194

Licence: 10WA115604 **Licence Status:** CURRENT

Authorised Purpose(s): STOCK
Intended Purpose(s): STOCK

Work Type: Bore
Work Status: Supply Obtained
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 01/01/2005
Final Depth: 50.00 m
Drilled Depth: 50.00 m

Contractor Name: (None)
Driller: Unkown Unknown
Assistant Driller:

Property: GANTER 55 Marys Mount Rd GOULBURN 2580 NSW
GWMA: -
GW Zone: -
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ARGYLE	NARRANGARRIL	71//1006688
Licensed:	ARGYLE	NARRANGARRIL	Whole Lot 71//1006688

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6153904.000
Easting: 748103.000
Latitude: 34°43'36.7"S
Longitude: 149°42'34.4"E

GS Map: -
MGA Zone: 55
Coordinate Source: Unknown

Remarks

02/11/2010: Type of casing: PVC
Diameter of casing: 150mm.
02/11/2010: Bore unused,no pump attached.

***** End of GW111194 *****

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Goulburn Mulwaree Council
Locked Bag 22
Goulburn NSW 2580

Civic Centre
184 - 194 Bourke Street
Goulburn NSW 2580
t (02) 4823 4444
e council@goulburn.nsw.gov.au
www.goulburn.nsw.gov.au

Contact: Planning & Environment

Douglas Partners
2/73 Sheppard Street
HUME NSW 2620

SECTION 10.7 (2) PLANNING CERTIFICATE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Receipt No.: 353728
Applicant's Reference: 212367.01
Certificate No: PLAN/0087/2223

DESCRIPTION OF PROPERTY

Address: **129 Marys Mount Road GOULBURN NSW 2580**
Legal Description: **Lot 1 DP 920161**

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1 Names of relevant planning instruments and DCP's

(1) The name of each environmental planning instrument that applies to the development on the land.

State Environmental Planning Policies (SEPP)

SEPP (Primary Production) 2021	*SEPP (Building Sustainability Index: BASIX) 2004*
SEPP (Resources and Energy) 2021	*SEPP (Precincts - Regional) 2021*
SEPP (Resilience and Hazards) 2021	*SEPP (Transport and Infrastructure) 2021*
SEPP (Industry and Employment) 2021	*SEPP (Biodiversity and Conservation) 2021*
SEPP No. 65 - Design Quality of Residential Apartment Development	*SEPP (Exempt and Complying Development Codes) 2008*
SEPP (Planning Systems) 2021	*SEPP (Housing) 2021*

Local Environmental Plan (LEP)

Goulburn Mulwaree Local Environmental Plan 2009

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless Secretary has notified the Council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

Draft Amendments to the *Goulburn Mulwaree Local Environmental Plan 2009*
Nil.
Draft State Environmental Planning Policies (SEPP's)

Draft Environment SEPP

ISEPP – Amendment – Health Infrastructure

Explanation of Intended Effect – Agri-tourism and small scale agriculture development

Explanation of Intended Effect – Proposed amendments to clause 4.6 of the Standard Instrument LEP

Explanation of Intended Effect – Employment Zones Reform (includes a draft amendment to the Standard Instrument Principal Local Environmental Plan (2006) (SI LEP))

- *Note: Public exhibition for Employment Zones Reform*
  The NSW Department of Planning and Environment is currently exhibiting the translation of existing Business and Industrial zones into the new Employment zones. To view the detail and make a submission please visit the department's Planning Portal

Explanation of Intended Effect – State Environmental Planning Policy (Infrastructure) 2007 – Proposed amendment - landscape rehydration infrastructure

Explanation of Intended Effect – SEPP (State Environmental Planning Policy (Transport & Infrastructure) - Changes to protect fuel pipelines

For further information please visit the Planning NSW and NSW Planning Portal web sites:

https://www.planning.nsw.gov.au/Policy-and-Legislation/State-Environmental-Planning-Policies-Review

https://www.planningportal.nsw.gov.au/exhibition

(3) The name of each development control plan that applies to the carrying out of development on the land.

Goulburn Mulwaree Development Control Plan 2009

(4) In this clause, proposed environmental planning instruments includes a planning proposal for a LEP or a draft environmental planning instrument.

2 Zoning and land use under relevant LEP's

(a) The identity of the zone is R2 Low Density Residential
RU6 Transition
under the *Goulburn Mulwaree Local Environmental Plan 2009*.

(b) The purposes for which the plan or instrument provides that development may be carried out within the zone without the need for development consent.

(c) The purposes for which the plan or instrument provides that development may not be carried out within the zone except with development consent.

(d) The purposes for which the plan or instrument provides that development is prohibited within the zone.

The answers for parts (b) to (d) are set out in the land use table below:

Zone R2 Low Density Residential

1 Objectives of zone
- To provide for the housing needs of the community within a low density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To maintain the economic strength of commercial centres by limiting the retailing of food and clothing.

2 Permitted without consent
Home occupations; Roads.

3 Permitted with consent
Boarding houses; Centre-based child care facilities; Dwelling houses; Group homes; Home industries; Neighbourhood shops; Oyster aquaculture; Pond-based aquaculture; Respite day care centres; Tank-based aquaculture; Any other development not specified in item 2 or 4.

4 Prohibited
Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training

establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Jetties; Hostels; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Recreation facilities (indoor); Recreation facilities (major); Registered clubs; Research stations; Residential care facilities; Residential flat buildings; Restricted premises; Rural industries; Rural workers' dwellings; Service stations; Sewage treatment plants; Sex services premises; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Water supply systems; Wharf or boating facilities; Wholesale supplies.

Zone RU6 Transition

1 Objectives of zone

- To protect and maintain land that provides a transition between rural and other land uses of varying intensities or environmental sensitivities.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.

2 Permitted without consent

Environmental facilities; Environmental protection works; Extensive agriculture; Home occupations; Roads.

3 Permitted with consent

Backpackers' accommodation; Bed and breakfast accommodation; Cellar door premises; Dwelling houses; Farm stay accommodation; Home industries; Kiosks; Landscaping material supplies; Markets; Oyster aquaculture; Plant nurseries; Roadside stalls; Rural supplies; Tank-based aquaculture; Timber yards; Any other development not specified in item 2 or 4.

4 Prohibited

Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Attached dwellings; Boat building and repair facilities; Business premises; Camping grounds; Caravan parks; Crematoria; Dual occupancies; Electricity generating works; Exhibition homes; Exhibition villages; Group homes; Heavy industrial storage establishments; Heavy industries; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Intensive livestock agriculture; Intensive plant agriculture; Livestock processing industries; Marinas; Mooring pens; Mortuaries; Multi dwelling housing; Passenger transport facilities; Pond-based aquaculture Recreation facilities (major); Registered clubs; Residential flat buildings; Restricted premises; Retail premises; Rural workers' dwellings; Sawmill or log processing works; Semi-detached dwellings; Seniors housing; Service stations; Sex services premises; Shop top housing; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Wharf or boating facilities; Wholesale supplies.

(e) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed.

Yes.

There is a minimum allotment size of 100ha for the erection of a dwelling in certain rural and conservation zones pursuant to Part 4 of the *Goulburn Mulwaree Local Environmental Plan 2009*.

If you are unsure about the application of Part 4 for the erection of a dwelling under the *Goulburn Mulwaree Local Environmental Plan 2009,* you can contact Council at council@goulburn.nsw.gov.au. An application form for a dwelling entitlement report can be found on Council's website.

(f) Whether the land includes or comprises critical habitat.

No the land does not include or comprise critical habitat.

(g) Whether the land is located in a heritage conservation area.

No. The land is not within a heritage conservation area.

(h) Whether an item of environmental heritage is situated on the land.

No. An item of environmental heritage is not situated on the land.

2A Zoning and land use under *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*

Not applicable to the Goulburn Mulwaree Local Government Area.

3 Complying development

Whether or not the land to which the certificate relates is land on which complying development may be carried out under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*?

Housing Code
No. Complying development under the Housing Code cannot be carried out on the land because the land is affected by the following exclusions:
The Inland Code applies to the land.

The land is unsewered land to which *State Environmental Planning Policy (Biodiversity and Conservation) 2021* applies (if the development will result in an increase to the number of bedrooms on the site or a site disturbance area of more than 250m^2).

The Greenfield Housing Code applies to part of the land.

Low Rise Housing Diversity Code
No. Complying development under the Low Rise Housing Diversity Code cannot be carried out on the land because the land is affected by the following exclusions:
The land is unsewered land to which *State Environmental Planning Policy (Biodiversity and Conservation) 2021* applies (if the development will result in an increase to the number of bedrooms on the site or a site disturbance area of more than 250m^2).

Greenfield Housing Code
Yes. Complying development under the Greenfield Housing Code can be carried out on part of the land.

Inland Code
No. Complying development under the Inland Code cannot be carried out on the land because the land is affected by the following exclusions:
The Greenfield Housing Code applies to part of the land.

The land is unsewered land to which *State Environmental Planning Policy (Biodiversity and Conservation) 2021* applies (if the development will result in an increase to the number of bedrooms on the site or a site disturbance area of more than 250m^2).

Rural Housing Code
No. Complying development under the Rural Housing Code cannot be carried out on the land because the land is affected by the following exclusions:
The Inland Code applies to the land.

The land is unsewered land to which *State Environmental Planning Policy (Biodiversity and Conservation) 2021* applies (if the development will result in an increase to the number of bedrooms on the site or a site disturbance area of more than 250m^2).

Housing Alterations Code
No. Complying development under the Housing Code cannot be carried out on the land because the land is affected by the following exclusions:
The land is unsewered land to which *State Environmental Planning Policy (Biodiversity and Conservation) 2021* applies (if the development will result in an increase to the number of bedrooms

on the site or a site disturbance area of more than 250m^2).

General Development Code
No. Complying development under the General Development Code cannot be carried out on the land because the land is affected by the following exclusions:
The land is unsewered land to which *State Environmental Planning Policy (Biodiversity and Conservation) 2021* applies (if the development will result in an increase to the number of bedrooms on the site or a site disturbance area of more than 250m^2).

Commercial and Industrial Alterations Code
Yes. Complying development under the Commercial and Industrial Alterations Code can be carried out on the land.

Commercial and Industrial (New Buildings and Additions) Code
No. Complying development under the Commercial and Industrial (New Buildings and Additions) Code cannot be carried out on the land due to the zoning of the land.

Container Recycling Facilities Code
No. Complying development under the Container Recycling Facilities Code cannot be undertaken on the land due to the zoning of the land.

Note: Complying development can be carried out on any other land under this code, if the conditions of s 5B.2(2) of the *State Environmental Planning Policy (Exempt and Complying Codes) 2008* are satisfied.

Subdivisions Code
Yes. Complying development under the Subdivisions Code can be carried out on the land.

Demolition Code
Yes. Complying development under the Demolition Code can be carried out on the land.

Fire Safety Code
Yes. Complying development under the Fire Safety Code can be carried out on the land.

Note. If the land is a lot to which the Housing Code, Rural Housing Code, Housing Alterations Code, General Development Code, Commercial and Industrial Alterations Code or Commercial and Industrial (New Buildings and Additions) Code (within the meaning of the *State Environmental Planning Policy (Exempt and Complying Development Codes)* 2008 applies, complying development may be carried out on any part of the lot that is not affected by the provisions of Clause 1.19 of that Policy.

4B Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works

Not applicable to the Goulburn Mulwaree Local Government Area.

5 Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of Section 15 of the *Mine Subsidence Compensation Act 1961*.

No.

6 Road widening and road realignment

Whether or not the land is affected by Road widening or road realignment under:

(a) Division 2 of Part 3 of the *Roads Act 1993*; or
(b) any environmental planning instrument; or
(c) any resolution of the Council.

No.

7 Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by Policy:

(a) adopted by the council, or

(b) adopted by any other public authority,

that restricts development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding)?

Yes. Part of the land is bush fire prone land. Additional controls apply in the *Goulburn Mulwaree Development Control Plan 2009.*

7A Flood related development controls

(1) If the land or part of the land is within the flood planning area and subject to flood related development controls.

No.

Note: This land is outside the flood planning area referred to in one or more of the following documents.

- *Wollondilly and Mulwaree Rivers Flood Study 2003*
- *Wollondilly and Mulwaree Rivers Flood Study 2016*

You should make your own enquiries as to the potential for periodic inundation and flooding events.

(2) If the land or part of the land is between the flood planning area and the probable maximum flood and subject to flood related development controls.

No.

Note: This land is outside the flood planning area referred to in one or more of the following documents.

- *Wollondilly and Mulwaree Rivers Flood Study 2003*
- *Wollondilly and Mulwaree Rivers Flood Study 2016*

You should make your own enquiries as to the potential for periodic inundation and flooding events.

(3) In this clause –

Flood planning area has the same meaning as in the Floodplain Development Manual.

Floodplain Development Manual means the *Floodplain Development Manual* (ISBN 0 7347 5476 0) published by the NSW Government in April 2005.

Probable maximum flood has the same meaning as in the Floodplain Development Manual.

8 Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument makes provision in relation to the acquisition of the land by a public authority, as referred to in Section 3.15 of the Act?

No.

9 Contribution plans

The name of each contributions plan applying to the land.

Goulburn Mulwaree Local Infrastructure Contributions Plan 2021

The land may be affected by any of the following plans under Section 64 of the *Local Government Act 1993*:

Development Servicing Plan for Water Supply, Sewerage and Stormwater 2017.

9A Biodiversity certified land

If the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*, a statement to that effect.

No. Council is not aware that the land is biodiversity certified under Part 8 of the Biodiversity Conservation Act 2016.

Note. Biodiversity certified land includes land certified under Part 7AA of the *Threatened Species Conservation Act 1995* that is taken to be certified under Part 8 of the *Biodiversity Conservation Act 2016.*

10 Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016,* a statement to the effect (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of Environment and Heritage).

No. Council has not been notified of a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016* relating to the land.

Note. Biodiversity stewardship agreements include biobanking agreements under Part 7A of the *Threatened Species Conservation Act 1995* that are taken to be biodiversity stewardship agreements under Part 5 of the *Biodiversity Conservation Act 2016***.**

10A Native vegetation clearing set asides

If the land contains a set aside area under Section 60ZC of the *Local Land Services Act 2013*, a statement to that effect (but only if the council has been notified of the existence of the set aside area by the Local Land Services or it is registered in the public register under that section).

No. Council has not been notified that the land contains an area set aside under Section 60ZC of the *Local Land Services Act 2013*.

11 Bush fire prone land

Whether or not some or all of the land is bush fire prone land.

Yes. Part of the land is bush fire prone land. Additional controls apply in the *Goulburn Mulwaree Development Control Plan 2009.*

12 Property vegetation plans

If the land is land to which a property vegetation plan approved under Part 4 of the *Native Vegetation Act 2003* (and that continues in force) applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

No. Council is not aware of a property vegetation plan under the *Native Vegetation Act 2003* relating to the land.

13 Orders under *Trees (Disputes Between Neighbours) Act 2006*

Whether an order under the *Trees (Disputes Between Neighbours) Act 2006* has been made to carry out work in relation to a tree on the land (but only if Council has been notified of the order)?

No. An order under the *Trees (Disputes Between Neighbours) Act 2006* has not been made.

14 Directions under Part 3A

Whether there is a direction by the Minister in force under the former Section 75P (2) (c1) of the Act.

No direction is in force.

15 Site compatibility certificates and conditions for seniors housing

If the land is land to which *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* applies:

(a) Whether or not Council is aware of a current site compatibility certificate (seniors housing), in respect of the proposed development on the land.

Council is not aware of any current site compatibility certificates (seniors housing) in respect of proposed development on the land.

(b) Whether or not any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after October 2007 in respect of the land.

No terms referred to in clause 18(2) of *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* have been imposed as conditions of consent to a development application for the land granted after 11 October 2007.

16 Site compatibility certificates for infrastructure, schools or TAFE establishments

Whether or not Council is aware of a valid site compatibility certificate in respect of proposed development on the land.

No. Council is not aware of any valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments) in respect of proposed development on the land.

17 Site compatibility certificates and conditions for affordable rental housing

(1) Whether or not Council is aware of a current site compatibility certificate (affordable rental housing) in respect of proposed development on the land.

No. Council is not aware of any current site compatibility certificate (affordable rental housing) in respect of proposed development on the land.

(2) Whether or not any terms of a kind referred to in clause 17 (1) or 38 (1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that have been imposed as a condition of consent to a development application in respect of the land.

No terms referred to in clause 17(1) or 37(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* have been imposed as conditions of consent to a development application in respect of the land.

18 Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

(2) The date of any subdivision order that applies to the land.

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of *Environmental Planning and Assessment Regulation 2000*.

Not applicable.

19 Site verification certificates

Whether or not Council is aware of a current site verification certificate, in respect of the land.

No. Council is not aware of a current site verification certificate in respect of the land.

20 Loose-fill asbestos insulation

Whether or not the land includes any residential premises (as defined in Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on a register of residential premises that contain or have contained loose-fill asbestos insulation.

No the land has not been identified in the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation.

21 Affected Building Notices and Building Product Orders

(1) Whether or not there is any affected building notice of which Council is aware that is in force in respect to the land.

No. Council is not aware of any affected building notice that is in force in respect of the land.

(2) (a) Whether there is any building product rectification order of which Council is aware that is in force in respect of the land and has not been fully complied with.

No. Council is not aware of any building product rectification order that is in force in respect of the land.

(b) Whether any notice of intention to make a building product rectification order of which Council is aware has been given in respect of the land and is outstanding.

No. Council is not aware of any intention to make a building product rectification order in respect of the land and is outstanding.

Additional Matters

Note. The following matters are prescribed by Section 59 (2) of the *Contaminated Land Management Act 1997* as additional matters to be specified in a planning certificate:

(a) Whether or not the land to which the certificate relates is significantly contaminated land within the meaning of that Act.

No. The land is not significantly contaminated as at the date this certificate is issued.

(b) Whether or not the land to which the certificate relates is subject to a management order within the meaning of that Act.

No. The land is not subject to a management order as at the date this certificate is issued.

(c) Whether or not the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of the Act.

No. The land is not the subject of an approved voluntary management proposal as at the date this certificate is issued.

(d) Whether or not the land to which this certificate relates is subject to an ongoing maintenance order within the meaning of that Act.

No. The land is not subject to an ongoing maintenance order as at the date this certificate is issued.

(e) Whether or not the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such statement has been provided at any time to the local authority issuing the certificate.

No. The land is not the subject of a site audit statement as at the date this certificate is issued.

Legislation referred to in this certificate can be found at www.legislation.nsw.gov.au.

SECTION 10.7 (5) PLANNING CERTIFICATE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

At the date of this certificate, Council is aware of the following matters affecting the above mentioned land (other than those matters set out in Schedule 4 of the *Environmental Planning and Assessment Regulation 2000*.

A Does the land have frontage to a Classified Road and consequently affected by Clauses 3.3.6, 4.1.7, 6.4.2 and 6.4.3 of *Goulburn Mulwaree Development Control Plan 2009*?

No.

B Is the land identified on the Height of Buildings Map and consequently affected by Clause 4.3 of *Goulburn Mulwaree Local Environmental Plan 2009*?

No.

C Is the land identified on the Floor Space Ratio Map and consequently affected by Clauses 4.4 and 4.5 of *Goulburn Mulwaree Local Environmental Plan 2009*?

No.

D Is the land located within 50 metres of a zone boundary and consequently affected by Clause 5.3 of *Goulburn Mulwaree Local Environmental Plan 2009*?

Yes.

E Is a permit required from Council to clear vegetation under the *State Environmental Planning Policy (Biodiversity and Conservation) 2021,* Chapter 2 Vegetation in Non-Rural Areas?

No. The *State Environmental Planning Policy (Biodiversity and Conservation) 2021,* Chapter 2 Vegetation in Non-Rural Areas does not apply to the RU6 zoned part of the land. For vegetation clearing on this land refer to Part 5A of the *Local Land Services Act 2013*.

Yes. The State Environmental Planning Policy (Biodiversity and Conservation) 2021, Chapter 2 Vegetation in non-rural areas applies to the R2 zoned part of the land.

Note: The requirements for approval of vegetation clearing are varied depending on the location and uses of the land and the intention of the clearing. The question above relates only to whether a permit is required from Council under the *State Environmental Planning Policy (Biodiversity and Conservation) 2021,* Chapter 2 Vegetation in Non-Rural Areas.

F Is the land identified on the Urban Release Area Map and consequently affected by Part 6 of *Goulburn Mulwaree Local Environmental Plan 2009*?

Yes part of the land.

G Is the land identified on the Terrestrial Biodiversity Map and consequently affected by Clause 7.2 *Goulburn Mulwaree Local Environmental Plan 2009*?

No.

Information regarding loose-fill asbestos insulation

Some residential homes located in the Goulburn Mulwaree local government area have been identified as potentially containing loose-fill asbestos insulation, for example in the roof space. NSW Fair Trading maintains a Register of homes that are affected by loose-fill asbestos insulation.

You should make your own enquiries as to the age of the buildings on the land to which this certificate relates and, if it contains a building constructed prior to 1980, the council strongly recommends that any potential purchaser obtain advice from a licensed asbestos assessor to determine whether loose-fill asbestos is present in any building on the land and, if so, the health risks (if any) this may pose for the building's occupants.

Contact NSW Fair Trading for further information.

Date of Certificate
21 July 2022

for **Aaron Johansson**
Chief Executive Officer
Goulburn Mulwaree Council

Notice to Prospective Purchasers/Residents

1. Urban Land and Rural land in the Goulburn Mulwaree Local Government Area

Due to extensive growth and development within and alongside the urban areas of the Goulburn Mulwaree Local Government Area, non-residential land uses including rural areas increasingly adjoin residential developments. These mixed land uses and zones have resulted in the potential for land use conflicts.

Goulburn Mulwaree Council supports the right of persons carrying out legitimate non-residential land use activities on urban land. Furthermore, Council supports the rights of persons to carry out legitimate rural and agricultural uses and practices on rural land.

Council advises that whilst some land use activities will have formal consent from Council and/or other Government Agencies for operations, other activities may not require consent and are undertaken within the objectives of the land use zone.

Council will not support any action that will unreasonably interfere with the existing use or ongoing operation of land uses, particularly where such activities or uses are carried out in accordance with existing approvals, industry standards and relevant legislation. Many farms, businesses and commercial enterprises carry out operations as required, early in the morning or late in the evening. These operations may involve vehicle movements, machinery noise and trade and supply activities which may impact upon the amenity of an area.

Prospective purchasers of land are encouraged to undertake their own enquiries into any operations or activities on adjoining, neighbouring or nearby properties that may cause amenity impacts from noise, dust, odour etc. Intending purchasers are advised that legitimate land uses in urban and rural areas may include, but are not limited to:

Urban activities

Agricultural produce stores; Building trade supply retailers; Childcare centres and schools; Concrete batching plants; Equine training and stabling facilities; Food businesses; Home businesses; Landscape supplies; Medical practices and services; Motor vehicle and/or heavy machinery workshops; Motorsport facilities; Nurseries; Nursing homes and aged care facilities; Petrol stations; Public recreation facilities including aquatic centres, playgrounds and sporting fields; Pubs and clubs; Recycling facilities; Retail suppliers/ shops; Steel fabrication and engineering; Transport depots; Veterinary practices; Vehicle retailers; Waste management facilities; Water and waste water treatment facilities; Wholesalers.

Rural activities

Abattoir operations; Intensive livestock farming; Dairies; Livestock waste disposal systems; Stockyard activities; Animal husbandry practices (castration, dehorning, mulesing etc.); Presence of livestock (noisy animals, including crowing roosters); Livestock movement on Council roads; Clearing and land cultivation; Bush fire hazard reduction burning; Burning of stubble for cropping operations; Construction of fire breaks; Earthmoving including construction of dams, drains and contour banks; Construction of access roads and tracks; Pumping and irrigation; Harvesting operations; Grain receipt operations; Transportation of rural produce; Fodder conservation; Chaff cutting operations; Silage productions; Growing of any agricultural crop or pasture species which may produce detectable aromas or pollens e.g. canola & Lucerne; Slashing and mowing of vegetation; Logging; Spreading of fertilisers, including lime and gypsum; Crop spraying by both aerial and ground operations; Control and eradication of noxious weeds; Authorised measures to control agricultural pests including baiting, ripping, fumigation and shooting; Planting of trees and shrubs for woodblocks, windbreaks etc.; Fencing construction and erection; Tourist facilities; Manufacture and repair of agricultural machinery; Processing of rural commodities; Council Landfill Facilities; Council Sewerage Treatment Works.

Prospective purchasers are encouraged to attend locations of interest during different times of the day to determine the suitability of land for their intended use.

In addition to the above, Council suggests an awareness of rural land management responsibilities, in particular weeds management that accompany ownership.

2. Unauthorised Development

2.1 Background

The need for obtaining approval/consent is an important step in the development process as it ensures that a number of important assessments are carried out prior to the commencement of works. These assessments and their subsequent approvals provide a variety of safeguards for the landowner and the wider community, and therefore ensure the safety of any building/land user and the protection of the environment. Obtaining consent also serves to ensure that third party protections such as insurance remain valid.

In accordance with the *Environmental Planning & Assessment Act 1979*, the term 'development' can be applied to most works, including but not limited to:

- use of land;
- subdivision of land;
- the erection of a building;
- the carrying out of work; and
- the demolition of a building or work.

The following information is provided as a courtesy and is general in nature. It is not to be construed as either town planning or legal advice. It is therefore important that you seek your own professional advice in relation to your rights and obligations in respect of any matters that this advice may raise.

2.2 Common Misconceptions

"Weekenders"

The term "weekender" (i.e. the temporary use of a dwelling for short term accommodation) is not a defined land use within NSW and therefore is not an approved land use under the *Goulburn Mulwaree Local Environmental Plan (GM LEP) 2009.* Therefore, a "weekender" is not considered to be a legitimate building or land use classification. A building is either considered to be a non-habitable structure (i.e. a shed) or a habitable dwelling. Any use of a structure as a dwelling (regardless of frequency of use) is considered to be a dwelling and requires all relevant approvals.

"Weekenders" are sometimes the result of the unauthorised conversion of existing buildings, such as farm sheds, into a building intended for habitation. In circumstances where a building is intended for the purpose of human habitation (for example sleeping, living, meal preparation, ablutions, etc.), the building is classified as a dwelling and must be assessed as a Class 1 structure in accordance with the *Building Code of Australia*. These are the same standards that a dwelling house is constructed to meet.

Furthermore, *any* form of habitation requires the land to contain a dwelling entitlement (as some lots in rural areas are below the minimum lot size for a dwelling under GMLEP 2009 and do not have a historical entitlement to a dwelling). Council cannot grant approval to a Development Application for a dwelling on land that does not possess such an entitlement. It is particularly important in rural areas to ensure that a lot does enjoy a dwelling entitlement – see Council's website for a dwelling entitlement enquiry form.

Conversion of Sheds to "Granny Flats"

As with "weekenders", a "granny flat" is not a defined land use under the GM LEP. The closest land use definition is a secondary dwelling, which requires development consent. Secondary dwellings must be assessed as a Class 1 structure in accordance with the *Building Code of Australia* to ensure the safety, health and amenity of any occupant that may use the structure.

Farm Buildings/Rural Sheds

Provisions exist under the *State Environmental Planning Policy (Exempt & Complying Development Codes) 2008* for some structures to be erected on rural lands without the need for consent. Notwithstanding this, any structure erected under this instrument must meet strict development standards to ensure that minimum environmental and safety requirements can be met. These provisions may be available on land zoned RU1 Primary Production, RU2 Rural Landscape, RU3 Forestry or RU6 Transition.

Importantly this type of development can only proceed where it is ancillary to an agricultural use on the same land holding. “Agriculture” is specifically defined under the GM LEP, and for an activity to be classified as “agriculture”, the activity conducted on the land must be a form of *commercial activity* related to aquaculture, extensive agriculture, intensive livestock agriculture or extensive plant agriculture.

Landowners and prospective purchasers are advised that a significant area of the Goulburn Mulwaree Council Local Government Area is located within the Sydney Drinking Water Catchment. As a result, much of the rural area is zoned as “conservation” – i.e. C2 Environmental Conservation, C3 Environmental Management and C4 Environmental Living and therefore prohibits many land uses, such as rural sheds, from being constructed or undertaken without having an appropriate consent in place.

Clearing of Vegetation

Much of the Goulburn Mulwaree Council Local Government Area contains threatened species and various *Endangered Ecological Communities* (EEC’s) and *Critically Endangered Ecological Communities* (CEEC’s), including but not limited to Grassy Box Woodland, Tallong Midge Orchid, Glossy Black Cockatoo habitat and Koala habitat.

A raft of legislation and plans exist to preserve native vegetation, including but not limited to the *Biodiversity Conservation Act 2016, State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017, State Environmental Planning Policy (Koala Habitat Protection) 2020* and the *Goulburn Mulwaree Development Control Plan 2009*.

It is recommended that professional guidance be sought prior to undertaking any vegetation removal, including destruction of grasslands or when carrying out bushfire protection measures, as thresholds apply and approvals may be required.

Earthworks & Road Construction

Earthworks are defined within the GM LEP as the excavation or filling of land. Some forms of earthworks can be undertaken without consent under the *State Environmental Planning Policy (Exempt & Complying Development Codes) 2008*, however thresholds apply and a number of environmental considerations must be demonstrated.

If not considered or planned appropriately, earthworks can adversely affect neighbours by disrupting or intensifying natural water flow paths, and can cause significant environmental harm by destabilising the structure of the topsoil leading to erosion and soil degradation.

As with earthworks, some roads (both public and private) can be constructed without consent, however, some environmental zones require consent to be obtained first. In addition to drainage considerations, the design and construction of a road must also take into account matters such as the impact upon vegetation, especially if clearing is required, as this may trigger the need for obtaining consent.

Additional considerations apply to the management of sites subject to earthworks or road construction given the presence of the Goulburn Mulwaree Local Government Area in the Sydney Drinking Water Catchment, particularly in relation to erosion and sediment control. Further information can be obtained from either Council or Water NSW.

Enclosure of Existing Carports and Verandahs

Carports and verandahs are often enclosed to provide additional living or storage space via cost effective means. Consent is often required prior to carrying out such works, as consideration needs to be given to a variety of matters. These include an assessment of the structural integrity of the existing structure, as well as ensuring other habitable areas are not adversely impacted, such as living spaces not losing access to light and ventilation. These assessments ensure that following any works the occupants of the building will remain safe, and that the building will continue to function as intended.

2.3 Summary

Council understands that the purchase of land and property is a significant investment, and often the single biggest financial commitment made by many, therefore, it is recommended by Council that you carry out thorough due diligence research prior to committing to a purchase and ensure that:

- The improvements to the land that you are purchasing are authorised/approved.
- Any improvements that you wish to make to the land or any existing buildings, including any new works or alterations, are permissible.

Appendix 9

ADDITIONAL INFORMATION THAT DOES NOT FORM PART OF THE CERTIFICATE

In instances where Council is notified of the presence of unauthorised development, Council has a duty of care to the community and potential property buyers to ensure that the appropriate compliance pathway is actioned. In other words, properties that are found to contain illegal/unlawful development on the land will be subject to compliance and enforcement action. This may result in the need to remove any work and any associated infrastructure, the need to restore or rehabilitate land, issuing of Penalty Infringement Notices, or even prosecution. The responsibility for ensuring the relevant approvals are in place is with the current property owner (i.e. responsibility goes with the land when transferred to a new owner).

No responsibility will be taken for purchases made because of advertising content or false/misleading sales pitches, these matters should be addressed with the relevant government licencing agency i.e. NSW Office of Fair Trading.

If in doubt, ask!

Further information can be obtained by contacting Council on 02 4823 4444 or email council@goulburn.nsw.gov.au.

CS–mh MONASTERY HILL SOIL LANDSCAPE

GENERAL

West of Goulburn city. The landscape has formed on teschenite (dolerite) intrusions.

On crests and sideslopes are duplex orange coloured soils with acid to alkaline reaction, no development of A_2 horizons and massive to moderately structured upper B horizons. These are similar to yellowish Chocolate Soils (Db3.11, Dy4.12, Dy5.53). Below about 1 m an alkaline mottled grey clay occurs.

Prairie Soils (Gn4.42), Grey Clays (Ug6.2) and Alluvial Soils (Um1) occur on footslopes and in drainage lines. More information on this landscape can be found in Scown, Murphy and Johnston (1988).

ASSOCIATED SOIL LANDSCAPES: Sooley and Bullamalita.

CLIMATIC ZONE: 3D

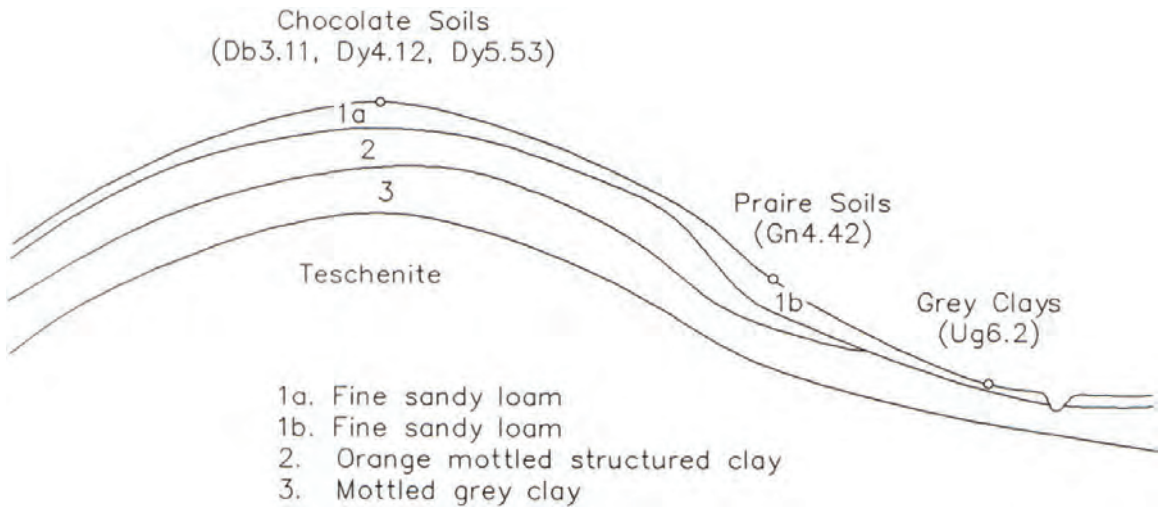
Annual average rainfall for Goulburn city is around 640 mm. Summers are hot and winters are very mild to cold.

GEOLOGY

This soil landscape has formed on two teschenite intrusions which have penetrated upper Silurian sediments. The upper Silurian sediments include an extensive outcrop of limestone.

Soils have formed *in situ* and from alluvial-colluvial material derived from the parent rock.

CS–mh MONASTERY HILL SOIL LANDSCAPE



LANDFORM

Undulating rises. Relief 10 – 30 m. Slope gradients <10%. Permanent erosional stream channels, closely to very widely spaced, form a non-directional or convergent integrated tributary pattern. Elevations are between 670 – 700 m.

NATIVE VEGETATION

Savannah woodland of yellow box and Blakelys red gum.

EXISTING LAND USE

Lying on the outskirts of Goulburn, this landscape is undergoing land use change from mainly rural activities (grazing and the growing of fodder crops) to urban subdivision areas and some hobby farm development.

SOIL EROSION

Prior to the current urban developments, this area was not significantly eroded. Disturbance of the soil surface for urban development will create a significant short-term erosion problem. This is of particular significance because of the close proximity of the Wollondilly river.

CS–mh MONASTERY HILL SOIL LANDSCAPE	
	Chocolate Soils
Dominance	Dominant
Landform element	Crests, sideslopes
Surface condition	Friable
Drainage	Impeded
Soil permeability	Moderate
Watertable depth	100 cm
Available water-holding capacity	High
Depth to bedrock	>120 cm
Flood hazard	Not present
pH (topsoil)	6.5
Fertility (chemical)	Moderate
Known nutrient deficiencies	N, P, K, S
Soil salinity	Not evident
Erodibility (topsoil)	Moderate
Erodibility (subsoil)	Low
Erosion hazard	Low
Structural degradation hazard	Low
Land capability classification	III, IV
USCS (subsoil)	CL, CH
Shrink-swell potential	Moderate
Mass movement hazard	Not evident

Appendix D

Historical Aerial Photographs

LOCALITY MAP

Notes:
1. Drawing projection GDA94 / MGA zone 55

Legend

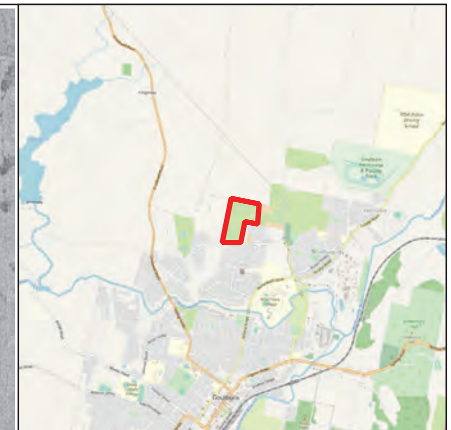
- Approximate Site Boundary
- 250 m Site Buffer

50 0 50 100 150 200 m

Appendix 9

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd	TITLE: **Historical Aerial Photograph - 1975** **Proposed Residential Subdivision** **129 Marys Mount Road, Goulburn, NSW**	PROJECT No: 212367.01
	OFFICE: Canberra / DRAWN BY: PJS		DRAWING No: D1
	SCALE: 1:5586 @ A3 / DATE: 20.07.2022		REVISION: 0

Appendix 9



LOCALITY MAP

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Nngpjc Ø9:4pr/wMGA:zg. 58:6:@z. :3r Aw.tt

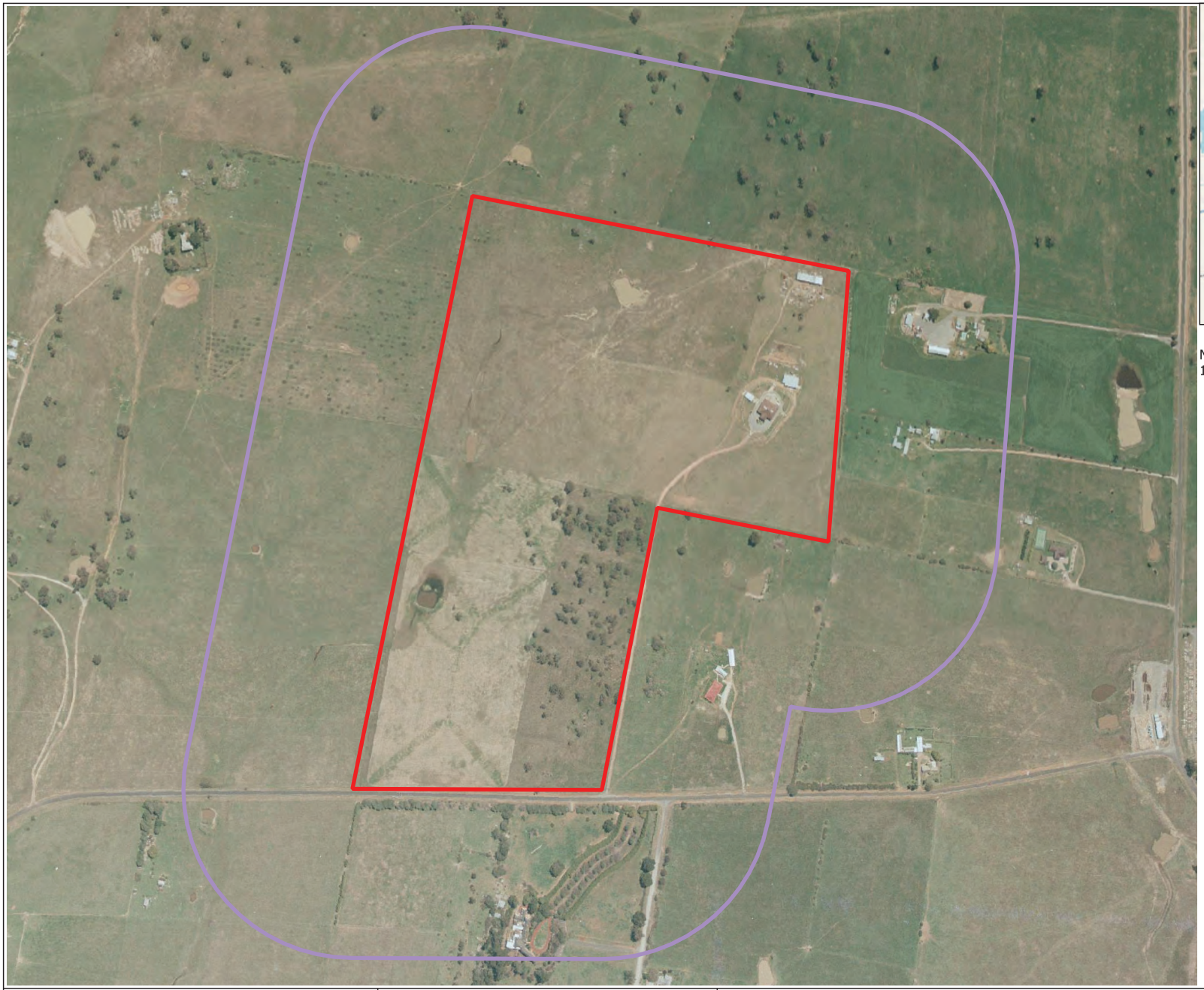
Legend

- Approximate Site Boundary
- 250 m Site Buffer

50 0 50 100 150 200 m

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd	TITLE:	**Historical Aerial Photograph - 1987**
	OFFICE: Canberra	DRAWN BY: PJS	**Proposed Residential Subdivision**
	SCALE: Ndtes:1 :.	DATE: 20.07.2022	**129 Marys Mount Road, Goulburn, NSW**

PROJECT No:	212367.01
DRAWING No:	D2
REVISION:	0



LOCALITY MAP

Notes:
1. Drawing projection GDA94 / MGA zone 55

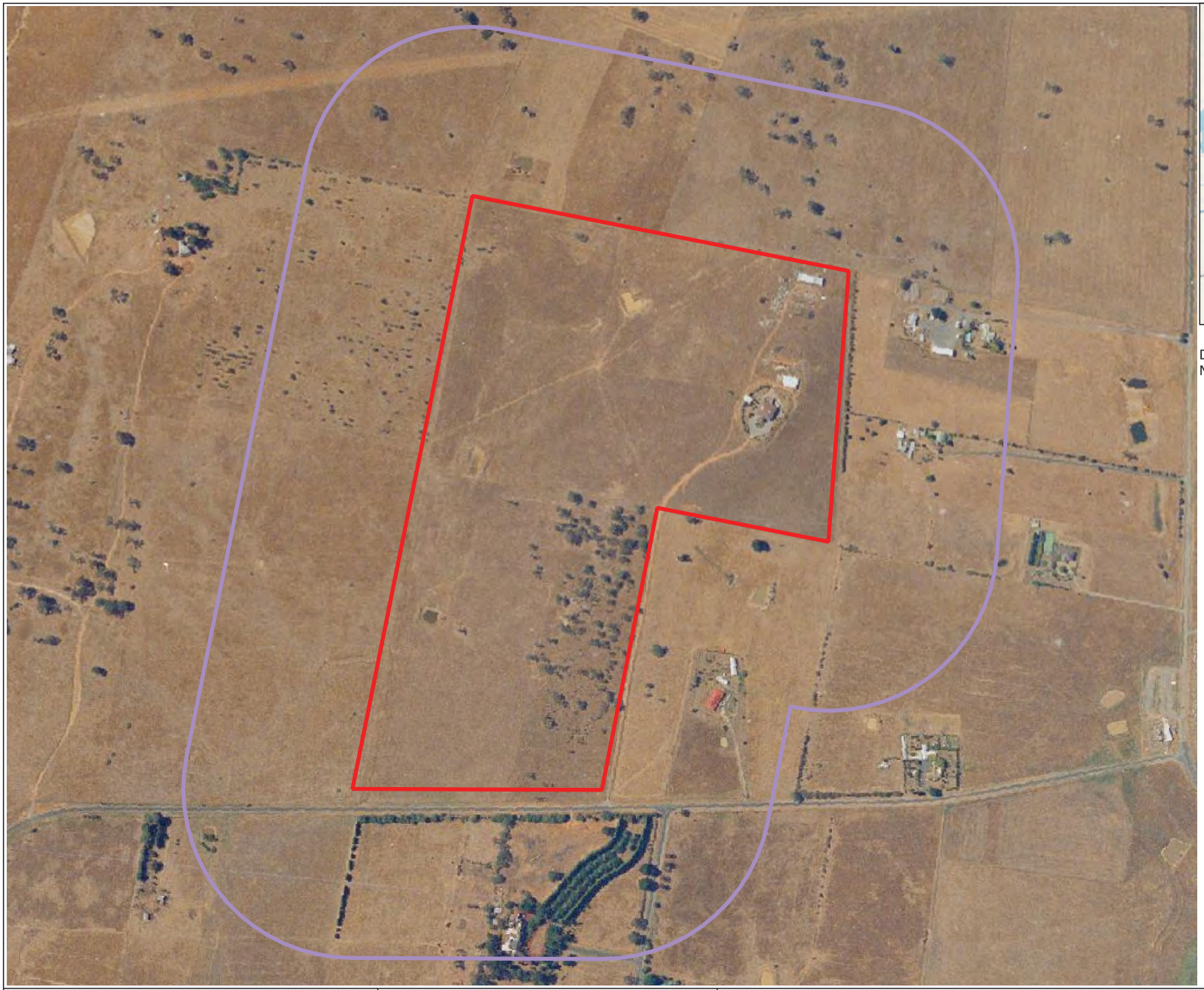
Legend

- Approximate Site Boundary
- 250 m Site Buffer

50 0 50 100 150 200 m

Appendix 9

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd	TITLE: **Historical Aerial Photograph - 1991** **Proposed Residential Subdivision** **129 Marys Mount Road, Goulburn, NSW**	PROJECT No: 212367.01
	OFFICE: Canberra / DRAWN BY: PJS		DRAWING No: D3
	SCALE: 1:5586 @ A3 / DATE: 20.07.2022		REVISION: 0



LOCALITY MAP

Legend

Approximate Site Boundary

250 m Site Buffer

50 0 50 100 150 200 m

Appendix 9

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd		TITLE: **Historical Aerial Photograph - 1997** **Proposed Residential Subdivision** **129 Marys Mount Road, Goulburn, NSW**	N	PROJECT No: 212367.01
	OFFICE: Canberra	DRAWN BY: PJS			DRAWING No: D4
	SCALE: Not to Scale	DATE: 20.07.2022			REVISION: 0

LOCALITY MAP

Notes:
1. Drawing projection GDA94 / MGA zone 55

Legend

Approximate Site Boundary

250 Site Buffer

50 0 50 100 150 200 m

Appendix 9

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd		TITLE: **Historical Aerial Photograph - 2013** **Proposed Residential Subdivision** **129 Marys Mount Road, Goulburn, NSW**	N	PROJECT No: 212360.71
	OFFICE: Canberra	DRAWN BY: PJS			DRAWING No: Dp
	SCALE: 1:5586 @ A3	DATE: 20.70.2722			REVISION: 7

LOCALITY MAP

Legend

- Approximate Site Boundary
- 250 m Site Buffer

50 0 50 100 150 200 m

Appendix G

Douglas Partners Geotechnics / Environment / Groundwater	CLIENT: Goulburn Estates No 1 Pty Ltd	TITLE: **Historical Aerial Photograph - 2021** **Proposed Residential Subdivision** **129 Marys Mount Road, Goulburn, NSW**	PROJECT No: 212367.01
	OFFICE: Canberra / DRAWN BY: PJS		DRAWING No: D6
	SCALE: Not to Scale / DATE: 20.07.2022		REVISION: 0

Appendix E

Site Photographs

Photo 1: View of site looking south-west

Photo 2: View of site looking towards current residence

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	212367.01
	129 Marys Mount Road	Plate	1
	Goulburn	REV:	A
	Client: Goulburn Estates No 1 Pty Ltd	DATE:	20-Jul-22

Photo 3: View of the site looking to the south-east

Photo 4: View of the site looking to the south-east

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	212367.01
	129 Marys Mount Road	Plate	2
	Goulburn	REV:	A
	Client: Goulburn Estates No 1 Pty Ltd	DATE:	20-Jul-22

Photo 5: View of the site looking to the south

Photo 6: View of farm building in th e north-east corner of the site

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	212367.01
	129 Marys Mount Road	Plate	3
	Goulburn	REV:	A
	Client: Goulburn Estates No 1 Pty Ltd	DATE:	20-Jul-22

Photo 7: View of waste material on ground surface

Photo 8: View of waste material on ground in fill platform area

Douglas Partners Geotechnics | Environment | Groundwater	**Site Photographs**	PROJECT:	212367.01
	129 Marys Mount Road	Plate	4
	Goulburn	REV:	A
	Client: Goulburn Estates No 1 Pty Ltd	DATE:	20-Jul-22

Photo 9: View of waste material on ground in fill platform area

Photo 10: View of waste material on ground in fill platform area

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT:	212367.01
	129 Marys Mount Road	Plate	5
	Goulburn	REV:	A
	Client: Goulburn Estates No 1 Pty Ltd	DATE:	20-Jul-22

Photo 11: View of waste material on ground in fill platform area

Photo 12: View of waste material on ground in fill platform area

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**		PROJECT:	212367.01
	129 Marys Mount Road		Plate	6
	Goulburn		REV:	A
	Client	Goulburn Estates No 1 Pty Ltd	DATE:	20-Jul-22

Appendix F

Data Quality Objectives

Appendix F
Data Quality Objectives
129 Marys Mount Road, Goulburn

F1.0 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 is to confirm the contamination status of the site with respect to the proposed land use. The report is being undertaken as the land is to be redeveloped and subdivided. The requirements of the regulator, Goulburn Mulwaree Council, will also be considered by consulting their Development Control Plan (DCP), Local Environment Plan (LEP) and any other requirements based on our recent experience with Council on similar sites. A preliminary conceptual site model (CSM) has been prepared (Section 8) for the proposed development. The project team consisted of experienced environmental engineers and scientists working in the roles of Project Principal, Project Reviewer, Project Manager, field staff.
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 and Section 13). The CSM identifies 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 H. 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 will be derived and a decision made on whether (or not) further assessment and / or remediation will be required.
3: Identify the information inputs	Inputs to the investigation will be the results of analysis of samples to measure the concentrations of COPC identified in the CSM (Section 8 and Section 13) at the site using NATA accredited laboratories and methods, where possible. The SAC for each of the COPC are detailed in Appendix H.
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. Constraints to the assessment are identified and discussed in the conclusions of the report, Section 14.

Step	Summary
5: Develop the analytical approach (or decision rule)	The decision rule is to compare all analytical results with SAC (Appendix H, 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%; for field blanks and rinsates, results should be at or less than the limits of reporting (NEPC, 2013). The field and laboratory quality assurance assessment is included in Appendix G.
6: Specify the performance or acceptance criteria	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). Unless conclusive information from the collected data is sufficient to reject the null hypothesis, it is assumed that the baseline condition is true. Uncertainty that may exist due to the above potential decision errors shall be mitigated as follows: • As well as a primary screening exercise, the use of the 95% UCL as per NEPC (2013) may be applied, i.e.: 95% is the defined confidence level associated with the UCL on the geometric mean for contaminant data. The resultant 95%UCL shall subsequently be screened against the corresponding SAC. • The statistical assessment will only be able to be applied to certain data-sets, such as those obtained via systematic sampling. Identification of areas for targeted sampling will be via professional judgement and errors will not be able to have a probability assigned to them.
7: Optimise the design for obtaining data	As the purpose of the sampling program is to assess for potential contamination across the site, the sampling program is reliant on professional judgement to identify and sample the potentially affected areas. Further details regarding the proposed sampling plan are presented in Section X.

References

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

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Appendix G

Fieldwork Methodology

Appendix G
Fieldwork Methodology
129 Marys Mount Road, Goulburn

G1.0 Guidelines

The following key guidelines were consulted for the field work methodology:

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

G2.0 Soil Sampling

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

- Collect soil samples directly from the excavator bucket at the nominated sample depth
- Transfer samples in laboratory-prepared glass jars with Teflon lined lids by hand, capping immediately and minimising headspace within the sample jar;
- Collect replicate samples in zip-lock bags for PID screening;
- Wear a new disposable nitrile glove for each sample point thereby minimising potential for cross-contamination;
- Collect 10% replicate samples for QC purposes;
- Label sample containers with individual and unique identification details, including project number, sample location and sample depth (where applicable);
- Place samples into a cooled, insulated and sealed container for transport to the laboratory; and
- Use chain of custody documentation.

G2.1 Field Testing

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

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.

G3.0 References

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

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Appendix H

Derivation of Site Assessment Criteria

Appendix H
Derivation of Site Assessment Criteria
129 Marys Mount Road, Goulburn

H1.0 Introduction

H1.1 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).

H1.2 General

The SAC applied in the current investigation are informed by the CSM which identified human and environmental receptors to potential contamination at 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 following inputs are relevant to the selection and/or derivation of the SAC:

- Land use: residential
    - Corresponding to land use category 'A', residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry)), also includes children's day care centres, preschools and primary schools.
- Soil type: sand

A variety of soil types were encountered during the fieldwork. As a conservative measure the soil type 'sand' has been selected to derive site assessment criteria.

H2.0 Soils

H2.1 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 1 and Table 2.

Table 1: Health Investigation Levels (mg/kg)

Contaminant	HIL-A
Metals	
Arsenic	100
Cadmium	20
Chromium (VI)	100
Copper	6000
Lead	300
Mercury (inorganic)	40
Nickel	400
Zinc	7400
PAH	
B(a)P TEQ	3
Total PAH	300
Phenols	
Phenol	3000
Pentachlorophenol	100
OCP	
DDT+DDE+DDD	240
Aldrin and dieldrin	6
Chlordane	50
Endosulfan	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
OPP	
Chlorpyrifos	160
PCB	
PCB	1

Table 2: Health Screening Levels (mg/kg)

Contaminant	HSL-A&B	HSL-A&B	HSL-A&B	HSL-A&B
SAND	**0 m to <1 m**	**1 m to <2 m**	**2 m to <4 m**	**4 m+**
Benzene	0.5	0.5	0.5	0.5
Toluene	160	220	310	540
Ethylbenzene	55	NL	NL	NL
Xylenes	40	60	95	170
Naphthalene	3	NL	NL	NL
TRH F1	45	70	110	200
TRH F2	110	240	440	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 3.

Table 3: Health Screening Levels for Direct Contact (mg/kg)

Contaminant	DC HSL-A	DC HSL-IMW
Benzene	100	1100
Toluene	14 000	120 000
Ethylbenzene	4500	85 000
Xylenes	12 000	130 000
Naphthalene	1400	29 000
TRH F1	4400	82 000
TRH F2	3300	62 000
TRH F3	4500	85 000
TRH F4	6300	120 000

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

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

IMW intrusive maintenance worker

H2.2 Asbestos in Soil

Based on the CSM and/or current site access limitations, a detailed asbestos assessment was not considered to be warranted at this stage. However, due to the history of widespread use of ACM products across Australia, ACM can be encountered unexpectedly and sporadically at a site. Therefore, the presence or absence of asbestos at a limit of reporting of 0.1 g/kg (AS:4964) has been adopted for this investigation / assessment as an initial screen.

H2.3 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 5, with inputs into their derivation shown in Table 4.

Table 4: Inputs to the Derivation of the Ecological Investigation Levels

Variable	Input	Rationale
Age of contaminants	"Aged" (>2 years)	Identified contaminant source likely greater than 2 years
pH	5.9	Average of on-site measurements
CEC	6.1 $cmol_c/kg$	Average of on-site measurements
Clay content	27%	Average of on-site measurements
Traffic volumes	High	Located in high traffic area
State / Territory	NSW	Site is located in NSW

Table 5: Ecological Investigation Levels (mg/kg)

Contaminant	EIL-A-B-C
Metals	
Arsenic	100
Copper	140
Nickel	55
Chromium III	570
Lead	1100
Zinc	380
PAH	
Naphthalene	170
OCP	

Contaminant	EIL-A-B-C
DDT	180

Notes: EIL-A-B-C urban residential and public open space

H2.4 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 6.

Table 6: Ecological Screening Levels (mg/kg)

Contaminant	Soil Type	ESL-A-B-C
Benzene	Coarse	50
Toluene	Coarse	85
Ethylbenzene	Coarse	70
Xylenes	Coarse	105
TRH F1	Coarse/ Fine	180*
TRH F2	Coarse/ Fine	120*
TRH F3	Coarse	300
TRH F4	Coarse	2800
B(a)P	Coarse	0.7

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
ESL-A-B-C urban residential and public open space

H2.5 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 7.

Table 7: Management Limits (mg/kg)

Contaminant	Soil Type	ML-A-B-C	ML-D
TRH F1	Coarse	700	700
TRH F2	Coarse	1000	1000
TRH F3	Coarse	2500	3500
TRH F4	Coarse	10 000	10 000

Notes: TRH F1 is TRH C_6-C_{10} including BTEX
TRH F2 is TRH >C_{10}-C_{16} including naphthalene
ML-A-B-C residential, parkland and public open space

H3.0 References

CRC CARE. (2011). *Health screening levels for petroleum hydrocarbons in soil and groundwater.* Parts 1 to 3, Technical Report No. 10: 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.

Douglas Partners Pty Ltd

Appendix I

Results Tables

Douglas Partners
Geotechnics / Environment / Groundwater

Table I1: 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 [a]	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	0.1	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
Pit 101	0.1 m	16/06/2022	<4	<0.4	59	12	17	<0.1	11	12	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 102	0.5 m	16/06/2022	<4	<0.4	60	22	15	<0.1	27	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 103	1 m	16/06/2022	<4	<0.4	68	19	16	<0.1	22	20	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 104	0.5 m	16/06/2022	<4	<0.4	110	29	19	<0.1	32	28	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
RI 01	0 m	16/06/2022	<4	<0.4	79	21	12	<0.1	30	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 105	0.1 m	16/06/2022	<4	<0.4	44	8	13	<0.1	7	10	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 106	1 m	16/06/2022	<4	<0.4	120	36	25	<0.1	30	21	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 107	0.1 m	16/06/2022	<4	<0.4	110	10	27	<0.1	12	14	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 108	0.5 m	16/06/2022	<4	<0.4	78	30	10	<0.1	29	21	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 109	0.1 m	16/06/2022	5	<0.4	100	14	19	<0.1	10	8	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 110	0.1 m	16/06/2022	<4	<0.4	86	24	22	<0.1	26	39	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
RI 02	0 m	16/06/2022	<4	<0.4	79	22	19	<0.1	23	33	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 111	0.5 m	17/06/2022	4	<0.4	140	16	23	<0.1	24	25	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 112	1 m	16/06/2022	<4	<0.4	82	40	21	<0.1	51	32	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 113	0.35 m	17/06/2022	<4	<0.4	62	18	15	<0.1	17	39	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 114	0.1 m	16/06/2022	<4	<0.4	81	16	16	<0.1	10	28	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 115	0.1 m	16/06/2022	<4	<0.4	110	12	17	<0.1	10	12	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
RI 04	0 m	16/06/2022	<4	<0.4	120	15	23	<0.1	12	12	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 117	1 m	16/06/2022	<4	<0.4	110	49	13	<0.1	45	30	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 118	0.1 m	16/06/2022	<4	<0.4	57	14	25	<0.1	10	25	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 119	0.1 m	16/06/2022	<4	<0.4	80	23	19	<0.1	18	36	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 120	1 m	16/06/2022	<4	<0.4	140	72	19	<0.1	55	50	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
RI 03	0 m	16/06/2022	<4	<0.4	130	59	16	<0.1	48	30	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 121	0.1 m	17/06/2022	<4	<0.4	54	19	21	<0.1	19	27	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 122	0.1 m	17/06/2022	6	<0.4	63	6	30	<0.1	7	14	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 123	0.1 m	17/06/2022	<4	<0.4	20	24	890	1.1	8	130	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	0.2	<0.5	2.3
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 124	0.5 m	17/06/2022	13	<0.4	25	29	240	0.7	10	270	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	0.2	<0.5	1.9
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 202	0.1 m	17/06/2022	<4	<0.4	77	7	21	<0.1	6	6	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 203	0.5 m	16/06/2022	<4	<0.4	61	20	23	<0.1	16	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 205	0.1 m	16/06/2022	<4	<0.4	57	5	45	<0.1	5	11	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 207	1 m	16/06/2022	<4	<0.4	110	9	21	<0.1	10	8	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 209	0.5 m	16/06/2022	<4	<0.4	58	22	24	<0.1	16	14	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 210	0.1 m	16/06/2022	6	<0.4	81	23	82	<0.1	19	36	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 211	0.1 m	16/06/2022	<4	<0.4	62	20	12	<0.1	16	24	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 301	0.5 m	17/06/2022	<4	<0.4	39	11	21	<0.1	15	17	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 302	0.1 m	17/06/2022	<4	<0.4	79	25	17	<0.1	30	24	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 304	0.1 m	17/06/2022	<4	<0.4	52	14	19	<0.1	25	24	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 305	1 m	17/06/2022	<4	<0.4	32	9	25	<0.1	10	24	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	0.2
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 306	0.5 m	17/06/2022	4	<0.4	20	15	100	<0.1	5	39	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 307	0.1 m	17/06/2022	6	<0.4	34	18	83	<0.1	12	79	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 308	0.1 m	17/06/2022	<4	<0.4	25	8	71	<0.1	6	26	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 309	0.1 m	17/06/2022	7	<0.4	59	5	110	<0.1	5	52	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
RI 08	0 m	17/06/2022	<4	<0.4	35	11	21	<0.1	16	17	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	
Pit 116	0.5 m	16/06/2022	<4	<0.4	100	43	14	<0.1	33	25	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
			100	20	570	1400	1100	40	550	7400	120	60	180	120	3000	2800	50	85	70	105	170	0.7	300	

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
c Criteria applies to DDT only

Site Assessment Criteria (SAC):
Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:
SAC based on generic land use thresholds for Residential A with garden/accessible soil
HIL A Residential / Low - High Density (NEPC, 2013)
HSL A/B Residential / Low - High Density (vapour intrusion) (NEPC, 2013)
DC HSL A Direct contact HSL A Residential (Low density) (direct contact) (CRC CARE, 2011)
EIL/ESL UR/POS Urban Residential and Public Open Space (NEPC, 2013)
ML R/PPOS Residential, Parkland and Public Open Space (NEPC, 2013)

Appendix 9

Douglas Partners
Geotechnics / Environment / Groundwater

Table I2: Summary of Laboratory Results – OCP, OPP, PCB, Asbestos

			OCP												OPP	PCB								Asbestos		
			DDD	DDT+DDE+DDD ^c	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Endrin	Total Endosulfan	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyrifos	Aroclor 1016	Total PCB	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Asbestos ID in soil >0.1g/kg	Trace Analysis	Asbestos (SH s)
		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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	-	-
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			
Pit 101	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 102	0.5 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 103	1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 104	0.5 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit101	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 105	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 106	1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 107	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 108	0.5 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 109	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 110	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
R102	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 111	0.5 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 112	1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 113	0.35 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 114	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 115	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
R104	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 117	1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 118	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 119	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 120	1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
R103	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 121	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 122	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 123	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 124	0.5 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 202	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 203	0.5 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 205	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 207	1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 209	0.5 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 210	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 211	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 301	0.5 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 302	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 304	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 305	1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 306	0.5 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 307	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 308	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 309	0.1 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
R108	0 m	17/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD
Pit 116	0.5 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	NAD

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
c Criteria applies to DDT only

Site Assessment Criteria (SAC):

Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:

SAC based on generic land use thresholds for Residential A with garden/accessible soil
HIL A Residential / Low - High Density (NEPC, 2013)
HSL A/B Residential / Low - High Density (vapour intrusion) (NEPC, 2013)
DC HSL A Direct contact HSL A Residential (Low density) (direct contact) (CRC CARE, 2011)
EIL/ESL UR/POS Urban Residential and Public Open Space (NEPC, 2013)
ML R/P/POS Residential, Parkland and Public Open Space (NEPC, 2013)

Appendix 9

1	**UCL Statistics for Uncensored Full Data Sets**										**Appendix 9**	
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.122/07/2022 12:01:25								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	**Total Chromium**											
12												
13	**General Statistics**											
14	Total Number of Observations			39			Number of Distinct Observations				27	
15							Number of Missing Observations				0	
16	Minimum			20			Mean				71.92	
17	Maximum			140			Median				63	
18	SD			31.62			Std. Error of Mean				5.063	
19	Coefficient of Variation			0.44			Skewness				0.328	
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic			0.954			**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value			0.939			Data appear Normal at 5% Significance Level					
24	Lilliefors Test Statistic			0.124			**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value			0.14			Data appear Normal at 5% Significance Level					
26	**Data appear Normal at 5% Significance Level**											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL			80.46			95% Adjusted-CLT UCL (Chen-1995)				80.53	
31							95% Modified-t UCL (Johnson-1978)				80.5	
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic			0.523			**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value			0.752			Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic			0.116			**Kolmogorov-Smirnov Gamma GOF Test**					
37	5% K-S Critical Value			0.142			Detected data appear Gamma Distributed at 5% Significance Level					
38	**Detected data appear Gamma Distributed at 5% Significance Level**											
39												
40	**Gamma Statistics**											
41	k hat (MLE)			4.664			k star (bias corrected MLE)				4.322	
42	Theta hat (MLE)			15.42			Theta star (bias corrected MLE)				16.64	
43	nu hat (MLE)			363.8			nu star (bias corrected)				337.1	
44	MLE Mean (bias corrected)			71.92			MLE Sd (bias corrected)				34.6	
45							Approximate Chi Square Value (0.05)				295.6	
46	Adjusted Level of Significance			0.0437			Adjusted Chi Square Value				294.1	
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))			82.03			95% Adjusted Gamma UCL (use when n<50)				82.46	
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic			0.927			**Shapiro Wilk Lognormal GOF Test**					
53	5% Shapiro Wilk Critical Value			0.939			Data Not Lognormal at 5% Significance Level					
54	Lilliefors Test Statistic			0.149			**Lilliefors Lognormal GOF Test**					

Appendix 9

55	5% Lilliefors Critical Value					0.14	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					2.996	Mean of logged Data					4.165
60	Maximum of Logged Data					4.942	SD of logged Data					0.507
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					85.77	90% Chebyshev (MVUE) UCL					91.59
64	95% Chebyshev (MVUE) UCL					100	97.5% Chebyshev (MVUE) UCL					111.8
65	99% Chebyshev (MVUE) UCL					134.8						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					80.25	95% Jackknife UCL					80.46
72	95% Standard Bootstrap UCL					79.94	95% Bootstrap-t UCL					81.03
73	95% Hall's Bootstrap UCL					80.3	95% Percentile Bootstrap UCL					80.38
74	95% BCA Bootstrap UCL					80.74						
75	90% Chebyshev(Mean, Sd) UCL					87.11	95% Chebyshev(Mean, Sd) UCL					93.99
76	97.5% Chebyshev(Mean, Sd) UCL					103.5	99% Chebyshev(Mean, Sd) UCL					122.3
77												
78	**Suggested UCL to Use**											
79	95% Student's-t UCL					80.46						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

Appendix J

Test Pit Logs

Soil Descriptions

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Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. 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	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

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

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

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	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

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;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Rock Descriptions

Rock Strength

Rock strength is defined by the Point Load Strength Index ($Is_{(50)}$) and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

Term	Abbreviation	Point Load Index $Is_{(50)}$ MPa	Approx Unconfined Compressive Strength MPa*
Extremely low	EL	<0.03	<0.6
Very low	VL	0.03 - 0.1	0.6 - 2
Low	L	0.1 - 0.3	2 - 6
Medium	M	0.3 - 1.0	6 - 20
High	H	1 - 3	20 - 60
Very high	VH	3 - 10	60 - 200
Extremely high	EH	>10	>200

* Assumes a ratio of 20:1 for UCS to $Is_{(50)}$

Degree of Weathering

The degree of weathering of rock is classified as follows:

Term	Abbreviation	Description
Extremely weathered	EW	Rock substance has soil properties, i.e. it can be remoulded and classified as a soil but the texture of the original rock is still evident.
Highly weathered	HW	Limonite staining or bleaching affects whole of rock substance and other signs of decomposition are evident. Porosity and strength may be altered as a result of iron leaching or deposition. Colour and strength of original fresh rock is not recognisable
Moderately weathered	MW	Staining and discolouration of rock substance has taken place
Slightly weathered	SW	Rock substance is slightly discoloured but shows little or no change of strength from fresh rock
Fresh stained	Fs	Rock substance unaffected by weathering but staining visible along defects
Fresh	Fr	No signs of decomposition or staining

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

Term	Description
Fragmented	Fragments of <20 mm
Highly Fractured	Core lengths of 20-40 mm with some fragments
Fractured	Core lengths of 40-200 mm with some shorter and longer sections
Slightly Fractured	Core lengths of 200-1000 mm with some shorter and loner sections
Unbroken	Core lengths mostly > 1000 mm

Rock Descriptions

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

$$\text{RQD \%} = \frac{\text{cumulative length of 'sound' core sections} \geq \text{100 mm long}}{\text{total drilled length of section being assessed}}$$

where 'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

Term	Separation of Stratification Planes
Thinly laminated	< 6 mm
Laminated	6 mm to 20 mm
Very thinly bedded	20 mm to 60 mm
Thinly bedded	60 mm to 0.2 m
Medium bedded	0.2 m to 0.6 m
Thickly bedded	0.6 m to 2 m
Very thickly bedded	> 2 m

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

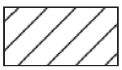

Concrete

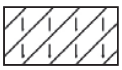

Filling

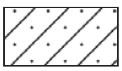
Soils


Topsoil

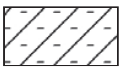

Peat

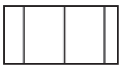

Clay

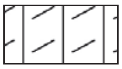

Silty clay

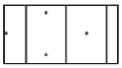

Sandy clay

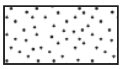

Gravelly clay

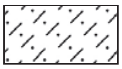

Shaly clay

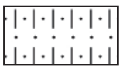

Silt


Clayey silt


Sandy silt

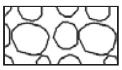

Sand

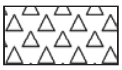

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

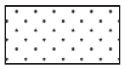

Talus

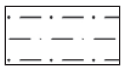
Sedimentary Rocks

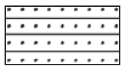

Boulder conglomerate

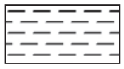

Conglomerate


Conglomeratic sandstone


Sandstone


Siltstone

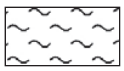

Laminite

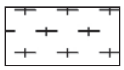

Mudstone, claystone, shale

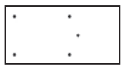

Coal


Limestone

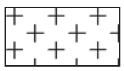
Metamorphic Rocks

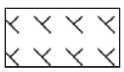

Slate, phyllite, schist

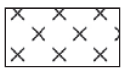

Gneiss

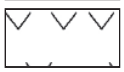

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:748954 **N:** 6154169
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 101
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand; dark brown; clay fraction low plasticity; sand fraction fine to coarse; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(GW) Gravelly SAND, with silt; grey; sand fraction fine to coarse; gravel fraction fine to medium		possibly ALV	(L)	W						
	0.4	(CH) Silty CLAY, trace sand; yellow brown; clay fraction high plasticity; sand fraction fine to coarse		possibly RES or ALV	(VST)	=PL		E		0.5		
	0.9	(CI-CH) Silty CLAY; yellow browm mottled grey; medium to high plasticity; with ironstone nodules		possibly RES or ALV		<PL		E		1.0		
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:748971 **N:** 6154242
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 102
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand; dark brown; clay fraction low plasticity; sand fraction fine to coarse; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(CH) Silty CLAY; yellow brown; high plasticity		possibly ALV or RES	(VST)	=PL		E		0.5		
	0.6	(CH) CLAY; grey; high plasticity; trace rootlets		possibly ALV or RES	(VST)	=PL						
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749060 **N:** 6154299
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 103
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; brown; clay fraction low plasticity; sand fraction fine to coarse; with rootlets		TOP	NA	>PL		E		0.1		
	0.15	(CI-CH) Silty CLAY, trace sand; yellow brown mottled orange; clay fraction medium to high plasticity; sand fraction fine to coarse		possibly RES	(VST)	=PL		E		0.5		
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749003 **N:** 6154388
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 104
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CH) Silty CLAY, trace sand, trace gravel; yellow brown/dark brown; clay fraction high plasticity; sand fraction fine to coarse; gravel fraction fine to medium		FILL	(VST)	=PL		E		0.1		
							R101	E		0.5		
	1							E		1.0		
	1.3	(GP) Sandy GRAVEL, with silt; grey; gravel fraction medium to coarse; sand fraction fine to coarse; with rootlets		ALV	(L)	W		E		1.5		
	1.6	Test pit discontinued at 1.60m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749077 **N:** 6154372
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 105
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; brown; clay fraction low plasticity; sand fraction fine to coarse; with rootlets		TOP	NA	>PL		E		0.1		
	0.15	(GP) Sandy GRAVEL, with silt; grey; gravel fraction medium to coarse; sand fraction fine to coarse; with rootlets		ALV	(L)	W						
	0.3	(CI-CH) Silty CLAY, trace sand; yellow brown mottled orange; clay fraction medium to high plasticity; sand fraction fine to coarse		possibly RES	(ST TO VST)	=PL		E		0.5		
	0.7	(CH) CLAY, trace sand; dark yellow brown; clay fraction high plasticity; sand fraction fine to coarse		RES	(VST)	=PL						
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749020 **N:** 6154461
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 106
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, with sand; brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	=PL		E		0.1		
		0.3	(CI) Sandy CLAY, with gravel; yellow brown mottled orange; clay fraction medium plasticity; sand fraction fine to coarse; gravel fraction fine		possibly ALV	(ST TO VST)	=PL		E		0.5		
		1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749093 **N:** 6154445
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 107
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand; brown; clay fraction low plasticity; sand fraction fine to medium; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(CL-CI) Silty CLAY, trace sand; orange brown; clay fraction low to medium plasticity; sand fraction fine to coarse; trace rootlets		possibly ALV	(ST)	>PL						
	0.4	(CI) Silty CLAY, trace sand; yellow brown mottled orange; clay fraction medium plasticity; sand fraction fine to coarse		possibly RES	(VST)	=PL		E		0.5		
	0.6	(CH) CLAY, trace sand; dark yellow brown; clay fraction high plasticity; sand fraction fine to coarse		RES	(VST)	<PL						
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE **E:**749036 **N:** 6154535
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 108
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	=PL		E		0.1		
	0.2	(GP) Sandy GRAVEL, with silt; grey; gravel fraction medium to coarse; sand fraction fine to coarse; with rootlets		ALV	(L)	W						
	0.45	(CI) Silty CLAY, trace sand; yellow brown mottled orange; clay fraction medium plasticity; sand fraction fine to coarse		possibly ALV	(ST TO VST)	=PL		E		0.5		
	1							E		1.0		
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749109 **N:** 6154518
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 109
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	<PL		E		0.1		
	0.2	(GP) Sandy GRAVEL, with silt; grey; gravel fraction medium to coarse; sand fraction fine to coarse; with rootlets		ALV	(L)	W		E		0.5		
	0.6	(CL) Silty CLAY, with sand, with gravel; orange brown mottled grey and yellow; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine			(ST TO VST)	=PL						
	1				(VST TO H)	<PL		E		1.0		
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

EXPORTED 25/07/22 12:06. TEMPLATE ID: DP_101.02.00_SOILLOG

TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749052 **N:** 6154608
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 110
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CL) Silty CLAY, with sand; dark brown; clay fraction low plasticity; sand fraction fine to medium; with rootlets		FILL	(ST TO VST)	=PL	R102	E		0.1		
								E		0.5		
					(ST)	>PL						
	0.7	(CI) Silty CLAY; dark orange brown mottled dark yellow brown and grey; medium plasticity		possibly ALV	(ST TO VST)	=PL						
	1							E		1.0		
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749125 **N:** 6154592
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 111
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; grey; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	>PL		E		0.1		
	0.15	(ML) Clayey SILT, with sand, trace gravel; grey; silt fraction low plasticity; sand fraction fine to coarse; gravel fraction fine		ALV	S	=PL						
	0.3	(CI) Silty CLAY; yellow brown mottled orange and grey; medium plasticity; with ironstone nodules		RES	(ST TO VST)	=PL		E		0.5		
	0.6	(CI-CH) CLAY; orange brown mottled yellow and grey; medium to high plasticity		RES	(ST TO VST)	=PL						
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749085 **N:** 6154570
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 112
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; dark brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(GP) Sandy GRAVEL, with silt; grey; gravel fraction medium to coarse; sand fraction fine to coarse; with rootlets		ALV	(L)	W						
	0.4	(CI) Silty CLAY, trace sand; dark grey mottled dark yellow brown; clay fraction medium plasticity; sand fraction fine to coarse		possibly ALV	(ST TO VST)	=PL		E		0.5		
	0.6	(CH) CLAY, trace sand; dark yellow grey; clay fraction high plasticity; sand fraction fine to coarse		RES	(VST)	<PL						
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749069 **N:** 6154681
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 113
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(ML) Clayey SILT, with sand; brown with black sections (possible rotten wood/roots - no odour); silt fraction low plasticity; sand fraction fine to coarse		ALV	(S)	=LL		E		0.35		
	0.4	(CI-CH) Silty CLAY; orange brown mottled yellow; medium to high plasticity		RES	(VST)	=PL		E		0.5		
	0.8	(CH) CLAY, trace sand; dark yellow brown; clay fraction high plasticity; sand fraction fine to medium		RES	(ST TO VST)	=PL		E		1.0		
	1											
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749142 **N:** 6154665
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 114
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; dark brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(GP) Sandy GRAVEL, with silt; grey; gravel fraction medium to coarse; sand fraction fine to coarse; with rootlets		ALV	(L)	W		E		0.5		
	0.55	(CH) CLAY, trace sand; dark yellow grey; clay fraction high plasticity; sand fraction fine		RES	(H)	<PL		E		1.0		
	1.0	Test pit discontinued at 1.00m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749085 **N:** 6154754
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 115
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; grey; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	>PL	R104	E		0.1		
	0.25	(ML) Clayey SILT, with sand, trace gravel; grey; silt fraction low plasticity; sand fraction fine to coarse; gravel fraction fine		ALV	S	=PL						
	0.45	(CI) Silty CLAY, trace sand; orange brown mottled yellow; clay fraction medium plasticity; sand fraction fine to coarse		RES	(VST)	=PL		E		0.5		
	0.7	(CH) CLAY, trace sand; dark yellow brown mottled orange red; clay fraction high plasticity; sand fraction fine to coarse		RES	(VST)	<PL						
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749158 **N:** 6154738
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 116
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; dark brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(GP) Sandy GRAVEL, with silt; grey; gravel fraction medium to coarse; sand fraction fine to coarse; with rootlets		ALV	(L)	W						
	0.4	(CH) CLAY, trace sand; dark yellow grey mottled orange; clay fraction high plasticity; sand fraction fine		possibly RES	(H)	<PL		E		0.5		
	1							E		1.0		
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749101 **N:** 6154827
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 117
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand; dark brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	>PL		E		0.1		
	0.2	(ML) Clayey SILT, with sand; grey; silt fraction low plasticity; sand fraction fine		ALV	(S)	=LL						
	0.4	(CI-CH) Silty CLAY; dark grey mottled orange; medium to high plasticity; with ironstone nodules		RES	(VST)	=PL		E		0.5		
	0.8	(CH) CLAY, trace sand; dark yellow grey; clay fraction high plasticity; sand fraction fine		possibly RES	(H)	<PL		E		1.0		
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749174 **N:** 6154811
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 118
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand; dark brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	=PL		E		0.1		
	0.2	(ML) Clayey SILT, with sand, trace gravel; grey; silt fraction low plasticity; sand fraction fine to coarse; gravel fraction fine		ALV	S	=PL						
	0.4	(CI) Silty CLAY, trace sand; dark grey; clay fraction medium plasticity; sand fraction fine		RES	(VST)	=PL		E		0.5		
	0.6	(CH) CLAY, trace sand; dark yellow grey; clay fraction high plasticity; sand fraction fine		possibly RES	(H)	<PL						
	1.0	Test pit discontinued at 1.00m depth Limit of investigation						E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749248 **N:** 6154795
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 119
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Sandy CLAY; dark brown; clay fraction low plasticity; sand fraction fine to medium; with rootlets		TOP	NA	<PL		E		0.1		
	0.2	(CI) Sandy CLAY; dark yellow brown; clay fraction medium plasticity; sand fraction fine to coarse		RES	(ST TO VST)	=PL		E		0.5		
	0.8	(CH) CLAY, trace sand; dark yellow grey; clay fraction high plasticity; sand fraction fine		possibly RES	(H)	<PL				1		
	1 / 1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749191 **N:** 6154884
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 120
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, trace sand; dark brown; clay fraction low plasticity; sand fraction fine; with rootlets		TOP	NA	=PL		E		0.1		
		0.2	(CI) CLAY, trace sand; dark red brown; clay fraction medium plasticity; sand fraction fine to medium		RES	(VST)	=PL		E		0.5		
		0.6	(CI) Sandy CLAY, trace gravel; dark yellow brown; clay fraction medium plasticity; sand fraction fine to coarse; gravel fraction fine to coarse; with ironstone nodules		XWM	(VST)	=PL						
		1.0	Test pit discontinued at 1.00m depth Limit of investigation					R103	E		1.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749264 **N:** 6154868
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 121
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CH) Silty CLAY, trace sand, trace gravel; yellow brown/dark brown; clay fraction high plasticity; sand fraction fine to coarse; gravel fraction fine to medium		FILL	(VST)	=PL		E		0.1		
	0.45	(ML) Clayey SILT, with sand, with gravel; grey; silt fraction low plasticity; sand fraction fine to coarse; gravel fraction fine to medium		ALV	(VS)	>LL		E		0.5		
	0.8	(CI) Silty CLAY; orange brown mottled grey and yellow; medium plasticity		RES	(VST)	=PL		E		1.0		
	1											
	1.1	Test pit discontinued at 1.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749364 **N:** 6154740
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 122
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with gravel, trace gravel; brown; clay fraction low plasticity; gravel fraction fine to medium; gravel fraction fine to coarse		TOP	NA	=PL		E		0.1		
	0.2	(CL) Silty CLAY, with sand, with gravel; pale brown; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine to coarse; with rootlets		COL	(ST)	=PL						
	0.4	(CI) Silty CLAY; orange brown mottled grey; medium plasticity		RES	(ST TO VST)	=PL		E		0.5		
	0.6	Test pit discontinued at 0.60m depth Limit of investigation										
	1									1		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749544 **N:** 6154751
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 123
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CL-CI) Sandy CLAY, with gravel; brown and orange brown mottled red; clay fraction low to medium plasticity; sand fraction fine to coarse; gravel fraction fine to coarse; trace brick, terracotta and concrete fragments		FILL	NA	=PL		E		0.1		
								E		0.5		
	1							E		1.0		
	1.1	SILTSTONE: fine grained, red brown, dry, low to medium strength, highly to moderately weathered										
	1.3	Test pit discontinued at 1.30m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749516 **N:** 6154749
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 124
PROJECT No: 212367.01
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
No free groundwater observed	0.0	FILL/ (CL) Silty CLAY, with sand, with gravel; dark brown; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine to coarse; with bricks and concrete fragments, trace glass fragments		FILL	NA	=PL		E		0.1		
								E		0.5		
	0.8	FILL/ (CL-CI) Sandy CLAY, with gravel; brown and orange brown mottled red; clay fraction low to medium plasticity; sand fraction fine to coarse; gravel fraction fine to coarse; trace brick, terracotta and concrete fragments		FILL	NA	=PL		E		1.0		
	1.2	SILTSTONE: fine grained, red brown, dry, low to medium strength, highly to moderately weathered										
	1.3	Test pit discontinued at 1.30m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: Kobelco SK755R mini-excavator
OPERATOR: JCF Contracting
LOGGED: SDG
METHOD: 450mm wide toothed bucket
REMARKS: Surface levels and coordinates are approximate only and must not be relied upon.

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749112 **N:** 6154132
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 201
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0.0	TOPSOIL/ (CL) Silty CLAY, with sand, trace gravel; pale grey; clay fraction low plasticity; sand fraction fine; gravel fraction fine to coarse; with rootlets		TOP	NA	=LL		E		0.1	DCP/150	5 10 15
	0.2	(CL) Silty CLAY, with sand, with gravel; grey; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine to medium		COL	ST	=PL						
	0.3	(CL-CI) Gravelly CLAY; orange brown; clay fraction low to medium plasticity; gravel fraction fine to coarse		COL	VST	=PL						
					ST	>PL		D		0.5		
					VST	=PL						
	0.7	(CI) Silty CLAY, with gravel; orange brown mottled yellow; clay fraction medium plasticity; gravel fraction fine to medium		possibly RES or COL	VST	=PL		B		0.8		
	1							D		1.0	PP	200-350
								E				
	1.2	(CH) CLAY, with gravel; yellow grey brown grey; clay fraction high plasticity; gravel fraction fine to coarse		RES	VST	<PL					PP	250-380
	1.5	Test pit discontinued at 1.50m depth						D		1.5		
	2									2		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS:

OPERATOR: JCF

LOGGED: SDG

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749148 **N:** 6154209
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 202
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0.0	TOPSOIL/ (CL) Silty CLAY, with sand, trace gravel; pale grey; clay fraction low plasticity; sand fraction fine; gravel fraction fine to coarse; with rootlets		TOP	NA	=LL		E		0.1	DCP/150	5 10 15
	0.2	(CL) Silty CLAY, with sand, with gravel; grey; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine to medium		COL	F	>PL						
	0.4	(CL-CI) Gravelly CLAY; orange brown; clay fraction low to medium plasticity; gravel fraction fine to coarse; with ironstone nodules		COL	VST	=PL		D E		0.5		
	0.6	(CI) Silty CLAY, trace sand; orange brown mottled grey; clay fraction medium plasticity; sand fraction fine			VST	=PL						
	1			RES	H	<PL		D E		1.0	PP	>400
	1.5	Test pit discontinued at 1.50m depth						D		1.5		
	2									2		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS:

OPERATOR: JCF

LOGGED: SDG

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749273 **N:** 6154616
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 203
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-rounded; with rootlets		TOP	NA	=PL to >PL		E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL; grey; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; trace rootlets		COL	MD	W						
	0.4	(CL) Silty CLAY; orange mottled red and grey; medium plasticity; trace rootlets		COL	ST	<PL to =PL		E		0.5		
								D		0.6	PP	130-140
	0.7	(CH) CLAY; yellow; high plasticity; frau fine ironstone nodules			ST							
	1							E		1.0		
										1.2	PP	150-170
								B				
										1.4		
				COL		<PL to =PL		D		1.5	PP	150-170
					(ST)							
	2									2	PP	150-170
	2.5	(CI-CH) Silty CLAY; orange yellow brown mottled grey; medium to high plasticity		RES	(VST TO H)	<PL		D		2.7	PP	>400
	3.0	Test pit discontinued at 3.00m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS:

OPERATOR: JCF

LOGGED: TBO

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749354 **N:** 6154603
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 204
PROJECT No: 212367.02
DATE: 16/05/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium, sub-angular; gravel fraction fine, sub-angular; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL; grey brown; gravel fraction fine to medium, sub-angular to sub-rounded; sand fraction fine to coarse; with rootlets		COL	MD	M		D		0.3		
	0.4	(CI) Silty CLAY; red orange mottled yellow; medium plasticity; trace rootlets		COL	ST	<PL to =PL		E		0.5		
										0.6		
								B		0.7	PP	190-200
								D		0.8		
	1.0	SILTSTONE: fine grained, yellow orange mottled grey, dry, low to medium strength, highly weathered, highly fractured						E		1.0		
	2									2.0		
								B				
								D		2.2		
	3.0	Test pit discontinued at 3.00m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 1.6m

OPERATOR: JCF

LOGGED: TBO

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749387 **N:** 6154669
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 205
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-rounded; with rootlets		TOP	NA	<PL to =PL		E		0.1	DCP/150	5 10 15
	0.2	(GC) Clayey Sandy GRAVEL, with silt; grey; gravel fraction fine to medium, sub-rounded to rounded; clay fraction fine to medium; sand fraction fine to coarse; trace rootlets		COL	MD	W		D		0.4		
	0.5	(CL) Silty CLAY, trace sand; red mottled orange and grey; clay fraction medium plasticity; sand fraction fine to coarse; trace rootlets trace rock fragments			ST			E		0.5		
	1			COL becoming RES	(VST)	<PL		D E		1.0		
										1.4		
								B		1.6		
	1.7	SILTSTONE: fine grained, yellow orange mottled grey, dry, low to medium strength, highly weathered, highly fractured										
	2									2.0		
								B		2.2		
		2.3-3.0m: blue grey, high strength, moderately weathered, fractured										
								D		2.5		
	3.0	Test pit discontinued at 3.00m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 2.1m

OPERATOR: JCF

LOGGED: TBO

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749282 **N:** 6154682
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 206
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-rounded; with rootlets		TOP	NA	<PL to =PL		E		0.0 0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; with rootlets		COL	L TO MD	W		E		0.5		
	0.5	(CI-CH) Silty CLAY; red mottled orange; medium to high plasticity; trace rootlets		COL	ST VST	<PL to =PL		D		0.6	PP	100-120
	0.8	(CH) CLAY; yellow orange; high plasticity; trace ironstone nodules		RES	(VST TO H)	<PL		D E		1.0	PP	280-300
	1							B		1.2 1.4		
	1.4	MONZODIORITE: fine to coarse grained, orange, dry, low strength, highly weathered, highly fractured						D		1.6		
	2									2		
		2.6-3.0m: medium strength, highly weathered, highly fractured						D		2.7		
	3.0	Test pit discontinued at 3.00m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 1.8m

OPERATOR: JCF

LOGGED: TBO

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749330 **N:** 6154761
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 207
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-rounded to rounded; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; trace rootlets		COL	L TO VD	W		D		0.4		
	0.5	(CH) CLAY; yellow orange; high plasticity; trace rootlets trace ironstone nodules			ST			E		0.5		
					VST							
	1			COL becoming RES	(VST)	<PL		D E		1.0	PP	360
								B		1.4 1.6		
	1.9	MONZODIORITE: fine to coarse grained orange, dry, low strength, highly weathered, highly fractured										
	2									2		
		2.3-3.0m: medium strength, highly weathered, fractured						D B		2.6 2.8		
	3.0	Test pit discontinued at 3.00m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

EXPORTED 22/06/22 11:39. TEMPLATE ID: DP_101.02.00_SOILLOG

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 2.3

OPERATOR: JCF

LOGGED: TBO

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE **E:**749425 **N:** 6154738
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 208
PROJECT No: 212367.02
DATE: 06/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
06/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-angular to sub-rounded; with rootlets		TOP	NA			E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL; pale brown; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; with rootlets		COL	MD	D to M						
	0.5	(CL) Silty CLAY, trace gravel; red orange; clay fraction medium plasticity; gravel fraction fine, sub-rounded; trace rootlets		COL		=PL		E		0.5		
	0.7	(CH) CLAY; red mottled yellow; high plasticity; with fine to medium rock fragments		RES	ST	<PL		D		0.6	PP	<100
								B		0.7		
								D		0.9	PP	390
	1.0	SILTSTONE: fine grained, yellow orange mottled grey, dry, low to medium strength, highly weathered, highly fractured						E		1.0		
								D		1.5		
	2									2		
		2.4-2.8m: blue grey mottled white, high strength, moderately weathered, fractured						D		2.5		
	2.8	Test pit discontinued at 2.80m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 1.6m

OPERATOR: JCF

LOGGED: TBO

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749386 **N:** 6154806
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 209
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine, sub-angular to sub-rounded; with rootlets		TOP	NA	=PL		E		0.1		
		0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; with rootlets		COL	(MD)	W						
		0.5	(CI) Silty CLAY; orange mottled red; medium plasticity; trace rootlets		COL	VST	=PL		E		0.5	DCP/150	5 10 15
		0.9							D		0.7	PP	140
		1	(CH) CLAY; yellow orange; high plasticity; trace rock frgaments						E		1.0		
					COL becoming RES	(VST)	<PL to =PL		D		1.5	PP	180-200
									B		1.7		
		2									2		
		2.1	SILTSTONE: fine grained, orange, iron staining; dry, medium strength, highly weathered, highly fractured						B		2.2		
											2.4		
			2.5-3.0m: blue grey, high strength, moderately weathered, fractured						D		2.8		
		3.0	Test pit discontinued at 3.00m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 2.4m

OPERATOR: JCF

LOGGED: JBO

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Refer to explanatory notes for symbol and abbreviation definitions

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749439 **N:** 6154814
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 210
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-rounded to rounded; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL; dark grey; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; with rootlets		COL	MD	D to M						
	0.5	(CI-CH) Silty CLAY; medium to high plasticity; trace rootlets		COL	ST	<PL to =PL		E		0.5		
								D		0.6	PP	250
	0.7	(CH) CLAY; red mottled yellow; high plasticity; trace rock fragments			VST							
	1			COL becoming RES	(VST)	<PL		E		1.0		
								D		1.1	PP	>400
										1.5		
								B				
	1.7	SILTSTONE: fine grained, red, dry, low strength, highly weathered, highly fractured								1.7		
	2							D		2.0		
		2.5-3.0m: iron staining, medium strength, highly to moderately weathered, fractured						D		2.8		
	3.0	Test pit discontinued at 3.00m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 2.3m

OPERATOR: JCF

LOGGED: TBO

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Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749397 **N:** 6154903
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 211
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-rounded to rounded; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
	0.1	(SC) Clayey SAND; brown; fine to medium; trace rootlets			MD			E		0.5		
	1			RES	MD TO D	M		D E		1.0		
								D		1.8		
	2									2		
	2.1	Test pit discontinued at 2.10m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

EXPORTED 22/06/22 11:39. TEMPLATE ID: DP_101.02.00_SOILLOG

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS:

OPERATOR: JCF

LOGGED: TBO

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749485 **N:** 6154886
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 212
PROJECT No: 212367.02
DATE: 16/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
16/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine to medium, sub-rounded to rounded; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine, sub-rounded to rounded; sand fraction fine to coarse; trace rootlets		COL	L TO MD	W		E		0.5		
	0.6	(CL) Silty CLAY, with gravel, trace sand; orange yellow; clay fraction medium plasticity; gravel fraction fine to medium; sand fraction fine to medium; trace rootlets		COL	VST	>PL		D		0.7	PP	<100
	0.8	(CH) CLAY; yellow orange; high plasticity; trace rock fragments										25
	1							E		1.0		
								B		1.2		
				COL becoming RES	(VST TO H)	<PL to =PL		D		1.3	PP	320
	1.7	MONZODIORITE: fine to coarse grained, orange, dry, low strength, highly weathered, highly fractured										
	2									2		
								D		2.4		
										2.6		
								B		2.8		
		2.6-3.0m: with iron staining, medium strength, highly weathered, fractured										
	3.0	Test pit discontinued at 3.00m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 2.5m

OPERATOR: JCF

LOGGED: TBO

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Refer to explanatory notes for symbol and abbreviation definitions

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE **E:**749468 **N:** 6154532
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 301
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
17/06/22, No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, trace sand; dark brown; clay fraction low plasticity; sand fraction fine to medium; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
		0.2	(CL-CI) Silty CLAY, trace gravel; red orange; clay fraction low to medium plasticity; gravel fraction coarse, sub-angular and rounded; trace rootlets		COL	ST	=PL to >PL		D E		0.5	PP 160	
		0.8	(CH) CLAY, trace sand; yellow; clay fraction high plasticity; sand fraction fine to medium; trace boulders up to 250mm in size		RES	(ST)	=PL to >PL		E		1.0		
		1							B D		1.1	PP 200	
		1.2	MONZODIORITE: fine to medium grained, orange brown, dry, very low to low strength, highly weathered, highly fractured								1.2		
		2	1.8-2.2m: medium strength, fractured						B D		2.0 2.1 2.2		
		2.8	2.2-2.8m: blue grey, high strength, slightly weathered, slightly fractured										
			Test pit discontinued at 2.80m depth Ripper refusal										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 1.8m

OPERATOR: JCF

LOGGED: TBO

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749598 **N:** 6154506
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 302
PROJECT No: 212367.02
DATE: 12/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand; dark brown; clay fraction low plasticity; sand fraction fine to medium; with rootlets		TOP	NA	>PL		E		0.1	DCP/150	5 10 15
	0.2	(ML) Gravelly Sandy SILT; grey; silt fraction low plasticity; gravel fraction fine, sub-rounded; sand fraction fine to medium; trace rootlets		COL	L TO MD	W						
	0.4	(CH) CLAY; yellow orange; high plasticity; trace ironstone nodules		RES	ST	=PL		E		0.5		
								D		0.7	PP	150
					(ST TO VST)	<PL		B		0.8		
	1							D		1.0		
								E				
	1.2	MONZODIORITE: fine to medium grained, orange brown, trace boulders up to 300mm in size , very low strength, highly weathered, highly fractured										
	1.7	Test pit discontinued at 1.70m depth Limit of investigation										
	2									2		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS:

OPERATOR: JCF

LOGGED: TBO

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749557 **N:** 6154549
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 303
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
17/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine, sub-rounded; with rootlets		TOP	NA	=LL		E		0.1	DCP/150	5 10 15
	0.3	(CH) CLAY; yellow orange; high plasticity; trace rootlets		COL becoming RES	ST TO VST	=PL to <PL		E		0.5		
								D		0.6	PP	240
	1							E		1.0		
	1.1	(SC) Clayey SAND; grey; fine to medium		XWM	VD	D to M		D		1.2		
	1.5	MONZODIORITE: fine to medium grained, orange brown, with iron staining, dry, very low to low strength, highly weathered, highly fractured						D		1.7		
	1.8	1.7-1.8m: medium to high strength, moderately to slightly weathered, fractured Test pit discontinued at 1.80m depth Bucket refusal										
	2									2		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS:

OPERATOR: JCF

LOGGED: TBO

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749571 **N:** 6154627
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 304
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE				TESTING AND REMARKS	
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
17/06/22, No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
		0.3	(CI-CH) Silty CLAY; orange pale brown; medium to high plasticity; trace rootlets trace ironstone nodules		COL	ST	=PL		D E		0.5	PP	210
		0.6	(CI-CH) Silty CLAY, trace sand; yellow brown; clay fraction medium to high plasticity; sand fraction fine		RES	ST	<PL to =PL		B		0.8		
		1							D E		1.0	PP	180
		1.1	MONODIORITE: fine to medium grained, orange yellow, dry, very low strength, highly weathered, highly fractured										
		2	1.9-2.2m: yellow orange, with iron staining, low strength						D		2.0		
		2.2	Test pit discontinued at 2.20m depth Limit of investigation										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS:

OPERATOR: JCF

LOGGED: TBO

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749577 **N:** 6154722
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 305
PROJECT No: 212367.02
DATE: 12/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
12/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty Gravelly CLAY, trace sand; dark brown; clay fraction low plasticity; gravel fraction fine to medium, sub-rounded; sand fraction fine to medium; with rootlets		TOP	NA	<PL to =PL		E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL, trace clay; dark grey; gravel fraction fine to coarse, sub-angular; sand fraction fine to coarse; trace rootlets		COL	MD	M to D		E		0.5		
	0.7	(CL-CI) Silty CLAY; red mottled orange; low to medium plasticity; trace rock fragments		COL	ST	<PL to =PL		D E		1.0	PP	250
	1				(ST)							
	1.5	(ML) Clayey SILT, trace sand; yellow mottled red; silt fraction low plasticity; sand fraction fine; with rook fragments		RES	(ST)	<PL		D B		1.6 1.8	PP	110
	1.9	SANDSTONE: fine grained, yellow, dry, low strength, highly weathered, highly fractured										
	2							D		2.3		
		2.6-3.0m: blue grey, medium to high strength, moderately weathered, fractured										
	3.0	Test pit discontinued at 3.00m depth Slow ripper progress						D		2.7		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 2.4m

OPERATOR: JCF

LOGGED: TBO

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749489 **N:** 6154733
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 306
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
17/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, with gravel, trace sand; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine to medium, sub-angular to sub-rounded; with rootlets		TOP	NA	<PL to =PL		E		0.1	DCP/150	5 10 15 25
	0.2	(GW) Silty Sandy GRAVEL, trace clay, trace gravel; dark grey; gravel fraction fine to coarse, sub-angular to sub-rounded; sand fraction fine to coarse; gravel fraction coarse; trace rootlets		COL	MD	D to M						
	0.3	SILTSTONE: fine grained, orange brown, dry, with pockets of medium plasticity clay, medium strength, highly weathered, highly fractured						E		0.5		
								D		0.6		
		0.8m: blue grey, high strength, moderately weathered, fractured										
	1							E		1.0		
										1.8		
								B		1.9		
								D				
	2									2.0		
	2.1	Test pit discontinued at 2.10m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 0.6m

OPERATOR: JCF

LOGGED: TBO

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749500 **N:** 6154813
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 307
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*)	DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
17/06/22, No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to coarse; gravel fraction fine, sub-angular to sub-rounded; with rootlets		TOP	NA		=PL to >PL		E		0.1	DCP/150	5 10 15
		0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine to medium, sub-angular to rounded; sand fraction fine to coarse; trace rootlets		COL		D	W		D		0.4		
		0.5	(CH) Silty CLAY; red mottled orange and grey; high plasticity; with rock fragments		RES		ST	=PL to >PL		E		0.5		
										D		0.7	PP	180
										B		0.8		
		1								E		1.0		
		1.1	SILTSTONE: fine grained, yellow orange mottled red, dry, low to medium strength, highly weathered, highly fractured											
										D		1.8		
		2	1.8-2.2m: blue grey, medium to high strength, moderately weathered, fractured									2		
		2.2	Test pit discontinued at 2.20m depth Slow ripper progress											

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 1.8m

OPERATOR: JCF

LOGGED: TBO

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TEST PIT LOG

Appendix 9

CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749583 **N:** 6154813
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 308
PROJECT No: 212367.02
DATE: 12/06/22
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	RESULTS AND REMARKS
12/06/22, No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark black; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine to medium, sub-angular to sub-rounded; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
		0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine to medium, sub-angular to sub-rounded; sand fraction fine to coarse; trace rootlets		COL	MD	M to W						
		0.5	(CH) Silty CLAY; red mottled orange and grey; high plasticity; with rock fragments			ST			E		0.5		
									D		0.8	PP	280
		1			COL becoming RES	(VST)	<PL to =PL		E		1.0		
											1.2	PP	350
									B		1.4		
		1.5	SILTSTONE: fine grained, yellow orange, dry, low to medium strength, highly weathered, highly fractured										
			1.7-2.0m: blue grey, medium to high strength, moderately weathered, fractured								1.8		
									B		1.9		
									D				
		2.0	Test pit discontinued at 2.00m depth Slow ripper progress								2.0		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

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PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 1.6m

OPERATOR: JCF

LOGGED: TBO

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TEST PIT LOG

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749559 **N:** 6154872
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 309
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

CONDITIONS ENCOUNTERED								SAMPLE			TESTING AND REMARKS	
GROUNDWATER	RL (m) / DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) DENSITY.(*)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
17/06/22, No free groundwater observed	0.0	TOPSOIL/ (CL) Silty CLAY, trace sand, trace gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine; with rootlets		TOP	NA	=PL		E		0.1	DCP/150	5 10 15
	0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; with rootlets		COL	MD	W						
	0.5	(CL-CI) Silty CLAY, trace sand, trace gravel; red orange; clay fraction low to medium plasticity; sand fraction fine to coarse; gravel fraction fine, sub-rounded; trace rootlets		COL		=PL		E		0.5		
								D		0.6	PP	200
	0.7	(CH) CLAY; yellow mottled red; high plasticity; with rook fragments			ST					0.8		
				RES		=PL		B				
	1				(ST)			D		1.0	PP	150
								E				
	1.2	SILTSTONE: fine grained, orange mottled red, dry, low to medium strength, highly weathered, highly fractured										
	2	1.8-2.1m: blue grey, medium to high strength, moderately weathered, fractured						D		2.0		
	2.1	Test pit discontinued at 2.10m depth Slow ripper progress										

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used from 1.6m

OPERATOR: JCF

LOGGED: TBO

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CLIENT: Goulburn Estates No 1 Pty Ltd
PROJECT: Proposed Residential Subdivision
LOCATION: Stages 2 & 3, 129 Marys Mount Road, Goulburn

SURFACE LEVEL:
COORDINATE E:749628 **N:** 6154859
DATUM/GRID: MGA94 Zone 55

LOCATION ID: 310
PROJECT No: 212367.02
DATE: 17/06/22
SHEET: 1 of 1

GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS.(*) / DENSITY.(*)	MOISTURE	REMARKS	SAMPLE TYPE	SAMPLE INTERVAL	DEPTH (m)	TESTING AND REMARKS: TEST TYPE	TESTING AND REMARKS: RESULTS AND REMARKS
17/06/22, No free groundwater observed		0.0	TOPSOIL/ (CL) Silty CLAY, with sand, with gravel; dark brown; clay fraction low plasticity; sand fraction fine to medium; gravel fraction fine to medium, sub-angular to sub-rounded; with rootlets		TOP	NA	>PL		E		0.1	DCP/150	5 10 15
		0.2	(GW) Silty Sandy GRAVEL, trace clay; grey; gravel fraction fine to medium, sub-rounded to rounded; sand fraction fine to coarse; trace rootlets		COL	(MD TO D)	W						
		0.5	(CH) Silty CLAY, trace gravel; red mottled orange; clay fraction high plasticity; gravel fraction fine, sub-rounded		COL	ST	<PL to =PL		E		0.5		
									D		0.8	PP	250
		0.9	(CH) CLAY; yellow orange mottled grey; high plasticity; with rock fragments		RES	(VST)	<PL		E		1.0		
		1							D		1.1	PP	310
		1.3	SILTSTONE BRECCIA: fine grained, yellow orange with parts of breccia white, dry, low to medium strength, highly weathered, highly fractured										
			1.8-2.0m: blue grey, medium to high strength, moderately weathered, fractured										
		2.0	Test pit discontinued at 2.00m depth Slow ripper progress								2		

NOTES: (#)Soil origin is "probable" unless otherwise stated. (*)Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.

PLANT: KOBELCO SK210CC
METHOD: 1400mm wide bucket
REMARKS: Ripper used form 1.7m

OPERATOR: JCF

LOGGED: TBO

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Appendix K

Laboratory Certificates of Analysis and Chain of Custody Documentation

Appendix 9

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	212367.01	**Suburb:**	Goulburn	**To:**	*Envirolab Services*
Project Manager:	Peter Storey	**Order Number:** CA155347	**Sampler:** SDG/TBO		*12 Ashley St, Chatswood NSW 2067*
Email:	peter.storey@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: Comb. 6a	Clay Content	pH	CEC	Hold							Notes/ Preservation/ Additional Requirements
1	Pit 101	0.1	0.1	16/06/22	S	G	X											
2	Pit 102	0.5	0.5	16/06/22	S	G	X											
3	Pit 103	1	1	16/06/22	S	G	X											
4	Pit 104	0.5	0.5	16/06/22	S	G	X											
5	Pit 105	0.1	0.1	16/06/22	S	G	X											
6	Pit 106	1	1	16/06/22	S	G	X											
7	Pit 107	0.1	0.1	16/06/22	S	G	X											
8	Pit 108	0.5	0.5	16/06/22	S	G	X											
9	Pit 109	0.1	0.1	16/06/22	S	G	X											
10	Pit 110	0.1	0.1	16/06/22	S	G	X											
11	Pit 111	0.5	0.5	17/06/22	S	G	X											
12	Pit 112	1	1	16/06/22	S	G	X											
13	Pit 113	0.35	0.35	17/06/22	S	G	X											
14	Pit 114	0.1	0.1	16/06/22	S	G	X											

ENVIROLAB
Envirolab Serv... 12 Ashley ... Chatswood ... Ph: (02) 9910 6200
Job No: 298547
Date Received: 22/06/22
Time Received: 1030
Received by: CR
Temp: Cool/Ambient 03°C
Cooling: Ice/Icepack
...Intact/Broken

Metals to analyse:			**LAB RECEIPT**
Number of samples in container:		**Transported to laboratory by:**	**Lab Ref. No:** 298547
Send results to:	Douglas Partners Pty Ltd		**Received by:** cleseman
Address:	Unit 2, 73 Sheppard Street, Hume ACT 2620	**Phone:** (02) 6260 2788	**Date & Time:** 22/06/22 1030
Relinquished by:	SDG	**Date:** 21.06.22 **Signed:** SDG	**Signed:**
Project Manager:	Peter Storey	**Order Number:** CA155347 **Dispatch date:** 21.06.22	*12 Ashley St, Chatswood NSW 2067*

Douglas Partners
Geotechnics | Environment | Groundwater

298547 OR 22/06/22

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	212367.01	Suburb:	Goulburn	To:	Envirolab Services

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Comb. 6a	Clay Content	pH	CEC	Hold							Notes/ Preservation/ Additional Requirements
15	Pit 115	0.1	0.1	16/06/22	S	G	X											
16	NR Pit 116	0.5	0.5	16/06/22	S	G	X											
17	16 Pit 117	1	1	16/06/22	S	G	X											
18	17 Pit 118	0.1	0.1	16/06/22	S	G	X											
19	18 Pit 119	0.1	0.1	16/06/22	S	G	X											
20	19 Pit 120	1	1	16/06/22	S	G	X											
21	20 Pit 121	0.1	0.1	17/06/2022	S	G	X											
22	21 Pit 122	0.1	0.1	17/06/2022	S	G	X											
23	22 Pit 123	0.1	0.1	17/06/2022	S	G	X											
23	Pit 123	0.5	0.5	17/06/2022	S	G					X							
24	Pit 123	1	1	17/06/2022	S	G					X							
25	Pit 124	0.2	0.2	17/06/2022	S	G					X							
26	Pit 124	0.5	0.5	17/06/2022	S	G	X											
27	Pit 124	1	1	17/06/2022	S	G					X							
28	Pit 202	0.1	0.1	17/06/2022	S	G	X											
29	Pit 203	0.5	0.5	16/06/22	S	G	X											
30	Pit 205	0.1	0.1	16/06/22	S	G	X											
31	Pit 207	0.1	0.1	16/06/22	S	G	X											

Project Manager:	Unit 2, 73 Sheppard Street, Hume ACT	Dispatch date:

Appendix 9

298547 22/06/22 CR

Douglas Partners
Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 212367.01 **Suburb:** Goulburn **To:** *Envirolab Services*

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water	Container Type: G - glass P - plastic	Analytes: Comb. 6a	Analytes: Clay Content	Analytes: pH	Analytes: CEC	Analytes: Hold	Analytes	Analytes	Analytes	Analytes	Analytes	Analytes	Notes/ Preservation/ Additional Requirements
32	Pit 209	1	1	16/06/22	S	G	X											
33	Pity 210	0.5	0.5	16/06/22	S	G	X											
34	Pit 211	0.1	0.1	16/06/22	S	G	X											
35	Pit 301	0.1	0.1	17/06/2022	S	G	X											
36	Pit 302	0.5	0.5	17/06/2022	S	G	X											
37	Pit 304	0.1	0.1	17/06/2022	S	G	X											
38	Pit 305	0.1	0.1	17/06/2022	S	G	X											
39	Pit 306	1	1	17/06/2022	S	G	X											
~~40~~	Pit 307	0.5	0.5	17/06/2022	S	G	X											
41	Pit 308	0.1	0.1	17/06/2022	S	G	X											
42	Pit 309	0.1	0.1	17/06/2022	S	G	X											
43	Pit 106	0.1	0.1	16/06/22	S	G		X	X	X								
NR	Pit 205	0.5	0.5	17/06/2022	S	G		X	X	X								
44	Pit 310	1	1	16/06/22	S	G		X	X	X								
45	R101	0	0	16/06/22	S	G	X											
46	R102	0	0	16/06/22	S	G	X											
47	R103	0	0	16/06/22	S	G	X											
48	R104	0	0	16/06/22	S	G	X											
49	R108	0	0	17/06/2022	S	G	X											

Project Manager: **Dispatch date:**

Appendix 9

Appendix 9

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

SAMPLE RECEIPT ADVICE

Client Details	
Client	Douglas Partners Canberra
Attention	Peter Storey

Sample Login Details	
Your reference	212367.01, Goulburn
Envirolab Reference	298547
Date Sample Received	22/06/2022
Date Instructions Received	22/06/2022
Date Results Expected to be Reported	29/06/2022

Sample Condition	
Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	49 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments
Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils	Misc Inorg - Soil	CEC	Clay 50-120g	On Hold
Pit 101-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 102-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 103-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 104-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 105-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 106-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 107-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 108-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 109-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 110-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 111-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 112-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 113-0.35	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 114-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 115-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 117-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 118-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 119-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 120-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 121-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 122-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 123-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 123-0.5												✓
Pit 123-0.1												✓
Pit 124-0.2												✓
Pit 124-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 124-1												✓
Pit 202-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 203-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 205-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 207-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 209-0.5	✓	✓	✓	✓	✓	✓	✓	✓				

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils	Misc Inorg - Soil	CEC	Clay 50-120g	On Hold
Pit 210-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 211-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 301-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 302-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 304-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 305-1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 306-0.5	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 307-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 308-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 309-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
Pit 106-0.5									✓	✓	✓	
Pit 310-1									✓	✓	✓	
R101-0	✓	✓	✓	✓	✓	✓	✓	✓				
R102-0	✓	✓	✓	✓	✓	✓	✓	✓				
R103-0	✓	✓	✓	✓	✓	✓	✓	✓				
R104-0	✓	✓	✓	✓	✓	✓	✓	✓				
R108-0	✓	✓	✓	✓	✓	✓	✓	✓				

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 298547

Client Details

Client	Douglas Partners Canberra
Attention	Peter Storey
Address	Unit 2, 73 Sheppard St,, HUME, ACT, 2620

Sample Details

Your Reference	**212367.01, Goulburn**
Number of Samples	51 Soil
Date samples received	22/06/2022
Date completed instructions received	22/06/2022

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	30/06/2022
Date of Issue	30/06/2022

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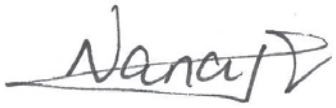
Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Diego Bigolin, Inorganics Supervisor
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Josh Williams, Organics and LC Supervisor
Liam Timmins, Organic Instruments Team Leader
Lucy Zhu, Asbestos Supervisor
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Appendix 9

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	82	107	116	116	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	99	102	99	101	92

Appendix 9

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	110	98	106	108

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	97	108	83	97

Appendix 9

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	113	112	83	100	77

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	90	89	91	110

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	83	107	105	105	96

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	106	109	97	113	103

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vTRH(C6-C10)/BTEXN in Soil					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	28/06/2022
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	112	97	101	95

svTRH (C10-C40) in Soil						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	26/06/2022	26/06/2022	26/06/2022	26/06/2022	26/06/2022
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	%	91	91	93	91	91

svTRH (C10-C40) in Soil						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	26/06/2022	26/06/2022	26/06/2022	26/06/2022	26/06/2022
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	%	91	88	91	89	91

svTRH (C10-C40) in Soil						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	26/06/2022	26/06/2022	26/06/2022	26/06/2022	26/06/2022
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	%	91	92	95	94	92

svTRH (C10-C40) in Soil						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	26/06/2022	26/06/2022	26/06/2022	26/06/2022	26/06/2022
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	%	92	92	96	90	93

svTRH (C10-C40) in Soil						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	26/06/2022	26/06/2022	26/06/2022	26/06/2022	26/06/2022
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	%	91	90	91	90	92

svTRH (C10-C40) in Soil						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	26/06/2022	26/06/2022	26/06/2022	26/06/2022	26/06/2022
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	%	90	91	93	91	90

svTRH (C10-C40) in Soil						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	26/06/2022	26/06/2022	26/06/2022	26/06/2022	26/06/2022
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	%	90	94	89	89	89

svTRH (C10-C40) in Soil						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	26/06/2022	26/06/2022	27/06/2022	27/06/2022
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	%	87	89	91	92	92

Appendix 9

svTRH (C10-C40) in Soil					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50
Surrogate o-Terphenyl	%	91	90	88	79

Appendix 9

PAHs in Soil						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<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	%	97	106	104	111	114

Appendix 9

PAHs in Soil						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<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	%	103	100	104	113	117

Appendix 9

PAHs in Soil						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<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	%	110	104	112	98	99

Appendix 9

PAHs in Soil						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<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	%	104	102	101	103	104

Appendix 9

PAHs in Soil						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	0.4	0.4	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.4	0.4	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.3	0.2	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.4	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.2	0.2	<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	<0.05	2.3	1.9	<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	%	121	102	102	104	102

PAHs in Soil						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	28/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<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	%	112	98	84	109	124

Appendix 9

PAHs in Soil						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	24/06/2022	24/06/2022
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	0.2	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	0.2	<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	%	126	119	110	91	85

Appendix 9

PAHs in Soil						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	<0.05	<0.05	<0.05	<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	%	85	77	78	91	109

Appendix 9

PAHs in Soil					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	27/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	27/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	98	94	71	89

Organochlorine Pesticides in soil						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	97	107	92	98	101

Appendix 9

Organochlorine Pesticides in soil						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	94	94	94	100	106

Appendix 9

Organochlorine Pesticides in soil						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	102	100	106	93	93

Organochlorine Pesticides in soil						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	99	96	102	99	96

Organochlorine Pesticides in soil						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	107	101	91	95	99

Appendix 9

Organochlorine Pesticides in soil						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	28/06/2022
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	%	104	93	91	102	120

Organochlorine Pesticides in soil						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	24/06/2022	24/06/2022
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	%	124	111	106	80	81

Organochlorine Pesticides in soil						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	74	77	83	80	92

Appendix 9

Organochlorine Pesticides in soil					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	27/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	27/06/2022
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	%	83	86	72	85

Organophosphorus Pesticides in Soil						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	97	107	92	98	101

Appendix 9

Organophosphorus Pesticides in Soil						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	94	94	94	100	106

Appendix 9

Organophosphorus Pesticides in Soil						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	102	100	106	93	93

Appendix 9

Organophosphorus Pesticides in Soil						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	99	96	102	99	96

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Organophosphorus Pesticides in Soil						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	107	101	91	95	99

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Organophosphorus Pesticides in Soil						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	28/06/2022
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	%	104	93	91	102	120

Appendix 9

Organophosphorus Pesticides in Soil						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	24/06/2022	24/06/2022
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	%	124	111	106	80	81

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Organophosphorus Pesticides in Soil						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	74	77	83	80	92

Appendix 9

Organophosphorus Pesticides in Soil					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	27/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	27/06/2022
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	86	72	85

PCBs in Soil						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	97	107	92	98	101

PCBs in Soil						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	94	94	94	100	106

PCBs in Soil						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	102	100	106	93	93

PCBs in Soil						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	99	96	102	99	96

PCBs in Soil						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	107	101	91	95	99

PCBs in Soil						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	28/06/2022
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	%	104	93	91	102	120

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PCBs in Soil						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	24/06/2022	24/06/2022
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	%	124	111	106	80	81

PCBs in Soil						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
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	%	74	77	83	80	92

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PCBs in Soil					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	23/06/2022	23/06/2022	23/06/2022	27/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	27/06/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	86	72	85

Acid Extractable metals in soil						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	59	60	68	110	44
Copper	mg/kg	12	22	19	29	8
Lead	mg/kg	17	15	16	19	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	11	27	22	32	7
Zinc	mg/kg	12	22	20	28	10

Acid Extractable metals in soil						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	<4	<4	<4	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	120	110	78	100	86
Copper	mg/kg	36	10	30	14	24
Lead	mg/kg	25	27	10	19	22
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	30	12	29	10	26
Zinc	mg/kg	21	14	21	8	39

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Acid Extractable metals in soil						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	140	82	62	81	110
Copper	mg/kg	16	40	18	16	12
Lead	mg/kg	23	21	15	16	17
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	24	51	17	10	10
Zinc	mg/kg	15	32	39	28	12

Acid Extractable metals in soil						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	110	57	80	140	54
Copper	mg/kg	49	14	23	72	19
Lead	mg/kg	13	25	15	19	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	45	10	18	55	19
Zinc	mg/kg	30	25	36	50	27

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Acid Extractable metals in soil						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	6	<4	13	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	63	20	25	77	61
Copper	mg/kg	6	24	29	7	20
Lead	mg/kg	30	850	240	21	23
Mercury	mg/kg	<0.1	1.1	0.7	<0.1	<0.1
Nickel	mg/kg	7	8	10	6	16
Zinc	mg/kg	9	130	270	6	22

Acid Extractable metals in soil						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	<4	<4	<4	6	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	57	110	58	81	62
Copper	mg/kg	5	9	22	23	20
Lead	mg/kg	45	21	24	82	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	10	16	19	16
Zinc	mg/kg	11	8	14	36	24

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Acid Extractable metals in soil						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	<4	<4	<4	<4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	39	79	52	32	20
Copper	mg/kg	11	25	14	9	15
Lead	mg/kg	21	17	19	25	100
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	15	30	25	10	5
Zinc	mg/kg	17	24	24	24	39

Acid Extractable metals in soil						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	27/06/2022	27/06/2022
Arsenic	mg/kg	6	<4	7	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	34	25	59	79	79
Copper	mg/kg	18	8	5	21	22
Lead	mg/kg	83	71	110	12	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	6	10	30	23
Zinc	mg/kg	79	26	52	22	33

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Acid Extractable metals in soil					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	28/06/2022
Date analysed	-	27/06/2022	27/06/2022	27/06/2022	29/06/2022
Arsenic	mg/kg	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	120	120	35	100
Copper	mg/kg	59	15	11	43
Lead	mg/kg	16	23	21	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	48	12	16	33
Zinc	mg/kg	36	12	17	25

Moisture						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	23	25	19	16	25

Moisture						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	14	21	22	21	26

Moisture						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	19	19	45	23	24

Moisture						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	22	22	17	14	18

Moisture						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	14	14	17	17	19

Moisture						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	20	14	21	22	14

Moisture						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	15	23	23	10	9.8

Moisture						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	25	10	14	19	24

Moisture					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	23/06/2022	23/06/2022	23/06/2022	23/06/2022
Date analysed	-	24/06/2022	24/06/2022	24/06/2022	24/06/2022
Moisture	%	18	22	14	22

Asbestos ID - soils						
Our Reference		298547-1	298547-2	298547-3	298547-4	298547-5
Your Reference	UNITS	Pit 101	Pit 102	Pit 103	Pit 104	Pit 105
Depth		0.1	0.5	1	0.5	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 25g	Approx. 35g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

Asbestos ID - soils						
Our Reference		298547-6	298547-7	298547-8	298547-9	298547-10
Your Reference	UNITS	Pit 106	Pit 107	Pit 108	Pit 109	Pit 110
Depth		1	0.1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 35g	Approx. 25g	Approx. 25g	Approx. 30g	Approx. 30g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

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Asbestos ID - soils						
Our Reference		298547-11	298547-12	298547-13	298547-14	298547-15
Your Reference	UNITS	Pit 111	Pit 112	Pit 113	Pit 114	Pit 115
Depth		0.5	1	0.35	0.1	1
Date Sampled		17/06/2022	16/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 15g	Approx. 30g	Approx. 25g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

Asbestos ID - soils						
Our Reference		298547-16	298547-17	298547-18	298547-19	298547-20
Your Reference	UNITS	Pit 117	Pit 118	Pit 119	Pit 120	Pit 121
Depth		1	0.1	0.1	1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 30g	Approx. 25g	Approx. 35g	Approx. 35g	Approx. 25g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

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Asbestos ID - soils						
Our Reference		298547-21	298547-22	298547-26	298547-28	298547-29
Your Reference	UNITS	Pit 122	Pit 123	Pit 124	Pit 202	Pit 203
Depth		0.1	0.1	0.5	0.1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 30g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

Asbestos ID - soils						
Our Reference		298547-30	298547-31	298547-32	298547-33	298547-34
Your Reference	UNITS	Pit 205	Pit 207	Pit 209	Pit 210	Pit 211
Depth		0.1	1	0.5	0.1	0.1
Date Sampled		16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 30g	Approx. 40g	Approx. 25g	Approx. 25g	Approx. 45g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Red fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

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Asbestos ID - soils						
Our Reference		298547-35	298547-36	298547-37	298547-38	298547-39
Your Reference	UNITS	Pit 301	Pit 302	Pit 304	Pit 305	Pit 306
Depth		0.5	0.1	0.1	1	0.5
Date Sampled		17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 30g	Approx. 25g	Approx. 25g	Approx. 35g	Approx. 35g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

Asbestos ID - soils						
Our Reference		298547-40	298547-41	298547-42	298547-45	298547-46
Your Reference	UNITS	Pit 307	Pit 308	Pit 309	R101	R102
Depth		0.1	0.1	0.1	0	0
Date Sampled		17/06/2022	17/06/2022	17/06/2022	16/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	28/06/2022	28/06/2022
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 30g	Approx. 30g	Approx. 25g
Sample Description	-	Red fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	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

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Asbestos ID - soils					
Our Reference		298547-47	298547-48	298547-49	298547-50
Your Reference	UNITS	R103	R104	R108	Pit 116
Depth		0	0	0	0.5
Date Sampled		16/06/2022	16/06/2022	17/06/2022	16/06/2022
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	28/06/2022	28/06/2022	28/06/2022	29/06/2022
Sample mass tested	g	Approx. 25g	Approx. 30g	Approx. 35g	Approx. 30g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	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

Misc Inorg - Soil				
Our Reference		298547-43	298547-44	298547-51
Your Reference	UNITS	Pit 106	Pit 310	Pit 205
Depth		0.5	1	0.5
Date Sampled		16/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil
Date prepared	-	29/06/2022	29/06/2022	29/06/2022
Date analysed	-	29/06/2022	29/06/2022	29/06/2022
pH 1:5 soil:water	pH Units	5.6	5.2	6.8

CEC				
Our Reference		298547-43	298547-44	298547-51
Your Reference	UNITS	Pit 106	Pit 310	Pit 205
Depth		0.5	1	0.5
Date Sampled		16/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil
Date prepared	-	29/06/2022	29/06/2022	30/06/2022
Date analysed	-	29/06/2022	29/06/2022	30/06/2022
Exchangeable Ca	meq/100g	1.6	0.3	2.4
Exchangeable K	meq/100g	0.5	0.2	0.5
Exchangeable Mg	meq/100g	0.6	8.2	2.6
Exchangeable Na	meq/100g	<0.1	1.2	0.1
Cation Exchange Capacity	meq/100g	2.8	9.9	5.6

Clay 50-120g				
Our Reference		298547-43	298547-44	298547-51
Your Reference	UNITS	Pit 106	Pit 310	Pit 205
Depth		0.5	1	0.5
Date Sampled		16/06/2022	17/06/2022	17/06/2022
Type of sample		Soil	Soil	Soil
Date prepared	-	27/06/2022	27/06/2022	27/06/2022
Date analysed	-	28/06/2022	28/06/2022	28/06/2022
Clay in soils <2µm	% (w/w)	16	29	36

Appendix 9

Method ID	Methodology Summary
AS1289.3.6.3	Particle Size Distribution using in house method INORG-107 by way of sieving and/or hydrometer sedimentation testing. Clay fraction at <2µm reported.
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.
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-OES 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.
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.

Method ID	Methodology Summary
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	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.

Appendix 9

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	298547-2
Date extracted	-			23/06/2022	1	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			28/06/2022	1	24/06/2022	24/06/2022		28/06/2022	24/06/2022
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	77	93
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	77	93
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	76	115
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	82	89
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	73	87
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	78	88
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	78	106
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	107	1	82	92	11	86	91

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	298547-22
Date extracted	-			[NT]	11	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	11	24/06/2022	24/06/2022		24/06/2022	24/06/2022
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	11	<25	<25	0	85	94
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	11	<25	<25	0	85	94
Benzene	mg/kg	0.2	Org-023	[NT]	11	<0.2	<0.2	0	92	111
Toluene	mg/kg	0.5	Org-023	[NT]	11	<0.5	<0.5	0	89	92
Ethylbenzene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	81	89
m+p-xylene	mg/kg	2	Org-023	[NT]	11	<2	<2	0	81	89
o-Xylene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	97	107
Naphthalene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	11	103	102	1	124	103

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	298547-42
Date extracted	-			[NT]	21	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	21	24/06/2022	24/06/2022		24/06/2022	24/06/2022
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	21	<25	<25	0	104	96
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	21	<25	<25	0	104	96
Benzene	mg/kg	0.2	Org-023	[NT]	21	<0.2	<0.2	0	119	104
Toluene	mg/kg	0.5	Org-023	[NT]	21	<0.5	<0.5	0	107	109
Ethylbenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	99	90
m+p-xylene	mg/kg	2	Org-023	[NT]	21	<2	<2	0	97	89
o-Xylene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	118	109
Naphthalene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	21	113	95	17	115	117

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	31	24/06/2022	24/06/2022		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	31	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	31	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	31	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	31	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	31	90	104	14	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	41	24/06/2022	24/06/2022		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	41	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	41	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	41	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	41	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	41	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	41	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	41	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	41	109	109	0	[NT]	[NT]

Appendix 9

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	298547-2
Date extracted	-			23/06/2022	1	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			26/06/2022	1	26/06/2022	26/06/2022		26/06/2022	26/06/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	119	121
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	107	108
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	113	99
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	119	121
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	107	108
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	113	99
Surrogate o-Terphenyl	%		Org-020	93	1	91	93	2	118	115

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	298547-22
Date extracted	-			[NT]	11	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	11	26/06/2022	26/06/2022		26/06/2022	26/06/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	127	117
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	126	120
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	116	98
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	127	117
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	126	120
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	116	98
Surrogate o-Terphenyl	%		Org-020	[NT]	11	91	92	1	121	116

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	298547-42
Date extracted	-			[NT]	21	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	21	26/06/2022	26/06/2022		26/06/2022	26/06/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	21	<50	<50	0	129	117
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	116	121
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	109	95
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	21	<50	<50	0	129	117
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	116	121
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	109	95
Surrogate o-Terphenyl	%		Org-020	[NT]	21	91	93	2	105	114

Appendix 9

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	31	26/06/2022	26/06/2022		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	31	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	31	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	31	91	89	2	[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]	41	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	41	26/06/2022	26/06/2022		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	41	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	41	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	41	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	41	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	41	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	41	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	41	89	91	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	298547-2
Date extracted	-			23/06/2022	1	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			24/06/2022	1	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	95
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	87	97
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	95
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	106
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	100
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	105
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	83	87
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	82	92
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	108	1	97	108	11	91	98

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	298547-22
Date extracted	-			[NT]	11	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	11	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	88	107
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	89	103
Fluorene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	88	101
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	94	126
Anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	94	126
Pyrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	95	125
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	83	120
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	11	<0.05	<0.05	0	84	116
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	11	110	101	9	86	105

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	298547-42
Date extracted	-			[NT]	21	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	21	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	82	88
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	83	85
Fluorene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	84	90
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	86	94
Anthracene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	94	92
Pyrene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	95	95
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	83	83
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	21	<0.05	<0.05	0	84	86
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	21	121	105	14	88	89

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	31	24/06/2022	24/06/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	31	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	31	98	89	10	[NT]	[NT]

Appendix 9

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	41	24/06/2022	24/06/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	41	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	41	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	41	77	82	6	[NT]	[NT]

Appendix 9

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	298547-2
Date extracted	-			23/06/2022	1	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			24/06/2022	1	24/06/2022	24/06/2022		24/06/2022	24/06/2022
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	100
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	103
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	91	101
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	91	103
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	92
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	98
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	116
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	100
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	92
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	90
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	104	1	97	99	2	84	93

Appendix 9

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	298547-22
Date extracted	-			[NT]	11	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	11	24/06/2022	24/06/2022		24/06/2022	24/06/2022
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	88	104
HCB	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	89	103
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	87	105
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	89	107
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	80	98
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	84	103
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	106	122
Endrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	84	102
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	78	104
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	86	97
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	102	96	6	83	98

Appendix 9

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	298547-42
Date extracted	-			[NT]	21	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	21	24/06/2022	24/06/2022		24/06/2022	24/06/2022
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	88	94
HCB	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	103	96
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	83	87
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	85	85
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	80	80
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	86	86
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	106	108
Endrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	84	86
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	86	80
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	86	84
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	21	107	95	12	80	87

Appendix 9

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	31	24/06/2022	24/06/2022		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	31	93	87	7	[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]	41	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	41	24/06/2022	24/06/2022		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	41	77	75	3	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	298547-2
Date extracted	-			23/06/2022	1	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			24/06/2022	1	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	96
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	83	89
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	89	85
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	89	91
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	100
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	82
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	82
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	104	1	97	99	2	84	93

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	298547-22
Date extracted	-			[NT]	11	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	11	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	96	117
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	79	95
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	73	91
Malathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	91	107
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	88	108
Parathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	74	87
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	82	125
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	102	96	6	83	98

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	298547-42
Date extracted	-			[NT]	21	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	21	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	101	104
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	85	79
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	85	94
Malathion	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	108	97
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	90	90
Parathion	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	72	74
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	80	81
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	21	107	95	12	80	87

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	31	24/06/2022	24/06/2022		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	31	93	87	7	[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]	41	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	41	24/06/2022	24/06/2022		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	41	77	75	3	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	298547-2
Date extracted	-			23/06/2022	1	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			24/06/2022	1	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	127	100
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	104	1	97	99	2	84	93

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	298547-22
Date extracted	-			[NT]	11	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	11	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	116	140
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	11	102	96	6	83	98

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	298547-42
Date extracted	-			[NT]	21	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	21	24/06/2022	24/06/2022		24/06/2022	24/06/2022
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	119	100
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	21	107	95	12	80	87

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	31	24/06/2022	24/06/2022		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	31	93	87	7	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	41	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	41	24/06/2022	24/06/2022		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	41	77	75	3	[NT]	[NT]

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QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	298547-2
Date prepared	-			23/06/2022	1	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			27/06/2022	1	27/06/2022	27/06/2022		27/06/2022	27/06/2022
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	110	72
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	112	79
Chromium	mg/kg	1	Metals-020	<1	1	59	66	11	117	94
Copper	mg/kg	1	Metals-020	<1	1	12	12	0	107	98
Lead	mg/kg	1	Metals-020	<1	1	17	16	6	117	79
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	126	103
Nickel	mg/kg	1	Metals-020	<1	1	11	12	9	111	86
Zinc	mg/kg	1	Metals-020	<1	1	12	13	8	113	90

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	298547-22
Date prepared	-			[NT]	11	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	11	27/06/2022	27/06/2022		27/06/2022	27/06/2022
Arsenic	mg/kg	4	Metals-020	[NT]	11	4	<4	0	111	103
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	110	92
Chromium	mg/kg	1	Metals-020	[NT]	11	140	140	0	110	96
Copper	mg/kg	1	Metals-020	[NT]	11	16	15	6	105	115
Lead	mg/kg	1	Metals-020	[NT]	11	23	33	36	112	#
Mercury	mg/kg	0.1	Metals-021	[NT]	11	<0.1	<0.1	0	108	#
Nickel	mg/kg	1	Metals-020	[NT]	11	24	24	0	109	98
Zinc	mg/kg	1	Metals-020	[NT]	11	15	13	14	115	#

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	298547-42
Date prepared	-			[NT]	21	23/06/2022	23/06/2022		23/06/2022	23/06/2022
Date analysed	-			[NT]	21	27/06/2022	27/06/2022		27/06/2022	27/06/2022
Arsenic	mg/kg	4	Metals-020	[NT]	21	6	7	15	107	96
Cadmium	mg/kg	0.4	Metals-020	[NT]	21	<0.4	<0.4	0	107	89
Chromium	mg/kg	1	Metals-020	[NT]	21	63	68	8	109	84
Copper	mg/kg	1	Metals-020	[NT]	21	6	8	29	104	101
Lead	mg/kg	1	Metals-020	[NT]	21	30	37	21	110	120
Mercury	mg/kg	0.1	Metals-021	[NT]	21	<0.1	<0.1	0	109	112
Nickel	mg/kg	1	Metals-020	[NT]	21	7	9	25	107	91
Zinc	mg/kg	1	Metals-020	[NT]	21	9	10	11	108	99

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	31	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	31	27/06/2022	27/06/2022		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	31	<4	4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	31	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	31	110	84	27	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	31	9	8	12	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	31	21	22	5	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	31	10	9	11	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	31	8	8	0	[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]	41	23/06/2022	23/06/2022		[NT]	[NT]
Date analysed	-			[NT]	41	27/06/2022	27/06/2022		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	41	<4	4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	41	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	41	25	31	21	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	41	8	8	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	41	71	76	7	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	41	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	41	6	6	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	41	26	27	4	[NT]	[NT]

Appendix 9

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date prepared	-			29/06/2022	44	29/06/2022	29/06/2022		29/06/2022	[NT]
Date analysed	-			29/06/2022	44	29/06/2022	29/06/2022		29/06/2022	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	44	5.2	5.2	0	101	[NT]

Appendix 9

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			29/06/2022	[NT]	[NT]	[NT]	[NT]	29/06/2022	[NT]
Date analysed	-			29/06/2022	[NT]	[NT]	[NT]	[NT]	29/06/2022	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	123	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			[NT]	[NT]	[NT]	[NT]	[NT]	30/06/2022	[NT]
Date analysed	-			[NT]	[NT]	[NT]	[NT]	[NT]	30/06/2022	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	112	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	112	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	109	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	[NT]	[NT]	[NT]	[NT]	[NT]	115	[NT]

Appendix 9

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

Appendix 9

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.

Appendix 9

Report Comments

Acid Extractable Metals in Soil:
Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.
Note: Samples were sub-sampled from jars provided by the client.

Appendix L

Data Quality Assessment

Appendix L
Data Quality Assessment
129 Marys Mount Road, Goulburn

L1.0 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 1. 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 at the end of this appendix.

Table 1: Field and Laboratory Quality Control

Item	Evaluation / Acceptance Criteria	Compliance
Analytical laboratories used	NATA accreditation	C
Holding times	Various based on type of analysis	C
Intra-laboratory replicates	10% of primary samples; <30% RPD	PC
Laboratory / Reagent Blanks	1 per batch; <PQL	C
Laboratory Duplicate	1 per lab batch; As laboratory certificate	C
Matrix Spikes	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Surrogate Spikes	All organics analysis; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
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

The RPD results were all within the acceptable range, with the exception of those indicated in Table QA1. The exceedances are not, however, considered to be of concern given that:

- The typically low actual differences in the concentrations of the replicate pairs where some RPD exceedances occurred;
- The number of replicate pairs being collected from fill soils which by its nature is heterogeneous;

- Replicates, rather than homogenised duplicates, were used to minimise risk of volatile loss, hence greater variability can be expected;
- Most of the recorded concentrations being relatively close to the PQL;
- The majority of RPDs within a replicate pair being within the acceptable limits;and
- All other QA/QC parameters met the DQIs.

In summary, the QC data is determined to be of sufficient quality to be considered acceptable for the assessment.

L2.0 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	Systematic and selected target locations sampled.
	Preparation of borehole logs, sample location plan and chain of custody records.
	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.
	Sample numbers recovered and analysed are considered to be representative of the target media and complying with DQOs.
	Samples were extracted and analysed within holding times.
	Samples were analysed in accordance with the COC.
Precision	Field staff followed standard operating procedures.
	Acceptable RPD between original samples and replicates.
	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.

L3.0 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.

L4.0 References

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

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Appendix 9

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Table QA1: Relative Percentage Difference Results – Intra-laboratory Replicates

			Metals								TRH						BTEX				PAH			
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc	TRH C6 - C10	TRH >C10-C16	F1 (>C6-C10 less 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
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
R101	0 m	16/08/2022	<4	<0.4	79	21	12	<0.1	30	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
R9 104	0.5 m	16/08/2022	<4	<0.4	110	29	19	<0.1	32	28	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
		Difference	0	0	31	8	7	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	**33%**	**32%**	**45%**	0%	6%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
R102	0 m	16/08/2022	<4	<0.4	79	22	19	<0.1	23	22	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
R9 110	0.1 m	16/08/2022	<4	<0.4	86	24	22	<0.1	26	28	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
		Difference	0	0	7	2	3	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	8%	9%	15%	0%	12%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
R104	0 m	16/08/2022	<4	<0.4	120	15	23	<0.1	12	12	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
R9 115	0.1 m	16/08/2022	<4	<0.4	110	12	17	<0.1	10	12	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
		Difference	0	0	10	3	6	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	9%	22%	30%	0%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
R103	0 m	16/08/2022	<4	<0.4	120	59	16	<0.1	48	36	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
R9 120	1 m	16/08/2022	<4	<0.4	140	72	19	<0.1	56	50	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05
		Difference	0	0	20	13	3	0	7	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	15%	20%	17%	0%	14%	**33%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

			OCP											OPP	PCB							Asbestos		
			DDD	DDT+DDE+DDD [c]	DDE	DDT	Aldrin & Dieldrin	Total Chlordane	Endrin	Total Endosulfan	Heptachlor	Hexachlorobenzene	Methoxychlor	Chlorpyrifos	Aroclor 1016	Total PCB	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Asbestos ID in soil >0.1g/g	Trace Analysis	Asbestos ID/g
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	-	-	-
R101	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
R9 104	0.5 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
		Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NaN	NaN	NaN
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	NaN%	NaN%	NaN%
R102	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
R9 110	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
		Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NaN	NaN	NaN
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	NaN%	NaN%	NaN%
R104	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
R9 115	0.1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
		Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NaN	NaN	NaN
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	NaN%	NaN%	NaN%
R103	0 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
R9 120	1 m	16/08/2022	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	AD	AD
		Difference	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NaN	NaN	NaN
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	NaN%	NaN%	NaN%