
**Report on Preliminary Site Investigation
(Contamination)**

Vacy Village South Residential Subdivision

598 Gresford Road, Vacy NSW

Prepared for Cornish Group No. Six Pty Ltd

Project 91432.06

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

Signature

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18 September 2024

Reviewer

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Executive Summary

Douglas Partners Pty Ltd (Douglas) has undertaken a preliminary site investigation (PSI) (contamination) and preliminary contamination testing for the proposed Vacy Village South residential subdivision at 598 Gresford Road, Vacy (the site).

The current concept subdivision layout indicates that the proposed residential subdivision would comprise 18 residential lots and internal access roads. The extent of cut/fill earthworks for the proposed development is unknown at this stage.

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 PSI included limited intrusive investigation to provide a preliminary assessment of potential areas of environmental concern (PAEC) and contaminant concentrations at the site.

The investigation included a desktop / site history review, site inspection, subsurface investigation at 33 test pit locations, laboratory testing and preparation of this report.

Potential on-site contaminant sources / activities include former agricultural activities and chemical / pesticide application and possible localised imported filling. The adjacent off-site effluent disposal area was also identified as a potential off-site source. Subject to further assessment, the potential for gross impacts from the identified contaminant sources was considered to be low.

Subsurface investigation was conducted across the site to provide preliminary assessment of subsurface conditions and to facilitate soil sampling for contamination testing.

Laboratory testing was undertaken for a range of potential contaminants for selected soil samples from the test pits. The results indicated that contaminant concentrations were within the adopted human health and ecological investigation / screening levels for residential land use.

The site inspection, subsurface investigation and laboratory testing generally indicated the absence of gross chemical contamination at the test locations and depths investigated (i.e. absence of obvious staining / odour in soil and absence of elevated contaminant concentrations in soil).

On the basis of the assessment of site history, site condition and soil contamination testing, the site is considered to be generally suitable for the proposed residential development with respect to contamination.

It is recommended that measures are implemented to minimise the potential impacts from the adjacent possible effluent disposal area in the northern portion of the site.

As a precautionary measure, it is recommended that the contractor implements an unexpected finds protocol (UFP) for earthworks for the site. The UFP should outline the appropriate action should suspected contamination be observed during clearing or earthworks, such as potential asbestos containing materials.

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Report on Preliminary Site Investigation (Contamination)

Vacy Village South Residential Subdivision

598 Gresford Road, Vacy NSW

1. Introduction

Douglas Partners Pty Ltd (Douglas) has been engaged by Cornish Group No. Six Pty Ltd to prepare this Preliminary Site Investigation (Contamination)(PSI) undertaken for the Vacy Village South Residential Subdivision at 598 Gresford Road, Vacy NSW (the site). The site is shown on Drawing 1, Appendix A.

The investigation was undertaken with reference to Douglas' proposal 91432.06.P.001.Rev0 dated 15 April 2024 and signed services order from David Bobyreff of Cornish Group dated 5 July 2024.

The objective of the PSI is 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. Preliminary contamination testing has also been conducted at the site to provide a preliminary assessment of the suitability of the site for the proposed residential development. It is understood that the report will be used to support a development application for the proposed development.

The PSI was undertaken in conjunction with a geotechnical investigation and effluent disposal assessment which has been reported separately (Douglas, 2024). Pertinent data obtained during the geotechnical investigation has been included in this report for completeness.

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:

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

2. Proposed Development

The current concept subdivision layout indicates that the proposed residential subdivision would comprise 18 residential lots and internal access roads. The extent of cut/fill earthworks for the proposed development is unknown at this stage. The proposed layout is shown in Premise drawing (Premise Ref P000385_02B Drawing TP01 Rev B dated 4 April 2024) in Appendix A.

3. Scope of Work

The scope of work for the PSI comprised the following:

- Preparation of relevant safety documentation and BYDA enquiries;

- Review of available published information on the site including geological, topographical and acid sulfate maps;
- Brief site history review to assess the potential for contamination at the site comprising a review of:
 - o Historical aerial photographs;
 - o Historical title deed search;
 - o NSW EPA online records and notices;
 - o Council records and Section 10.7 (Part 2 and 5) planning certificates; and
 - o Registered groundwater bores in the area.
- Site inspection/walkover to identify areas of potential contamination and assess current site condition;
- Brief discussions with site personnel familiar with current and previous site activities;
- Preparation of a preliminary Conceptual Site Model (CSM);
- Test location set out and underground services clearance at proposed test locations by a professional service locator;
- Excavation of 33 test pits (Pits 1 to 33) to depths of about 2.5 m to 3 m depth or prior refusal/collapse, excavated in conjunction with the geotechnical investigation (Douglas, 2024);
- Collection of two surface samples (M1 and M2) across the site using hand tools;
- Dynamic penetrometer testing to 1.2 m or prior refusal at each test location;
- Collection of soil samples from test locations at regular depth intervals and changes in soil strata. There were no signs of potential contamination (e.g. odours and staining) for targeted sampling at the test locations;
- Screening of all samples collected to assess the potential for volatile organic compound (VOC) impacts, using a photo-ionisation detector (PID);
- Laboratory analysis for contaminants of potential concern (CoPC) on selected soil samples retrieved from test locations;
- Collection of field quality control (QC) samples for data quality assurance and quality control (QA/QC) purposes;
- Measurement of in-situ parameters from surface water locations (Dams 1 to 9) using a calibrated meter;
- Measurement of surface levels and coordinates of test locations using a differential GPS, with an accuracy in the order of ± 0.1 m; and
- Preparation of this report presenting the findings of the investigation including comments on the objectives provided in Section 1 above.

4. Site Information

Site address	598 Gresford Road, Vacy NSW
Legal description	Part Lot 123 Deposited Plan 1063557
Approximate area	21 ha
Zoning	Zone R5 Large Lot Residential Zone C3 Environmental Management
Local council area	Dungog Shire Council
Current use	Vacant / grazing land
Surrounding uses	North – Rural / residential East – Rural / residential/ agricultural South – Vacant land West – Residential



Figure 1: Site investigation extent (shown in red) – Near Map aerial image dated 20 June 2023

5. Environmental Setting

Regional Topography (NSW 10m Contours)	The general topography of the surrounding area typically comprises low undulating hills towards Paterson River. The site lies on the eastern extent of Mt Johnstone.
Site Topography (NSW 10m Contours)	The site generally falls to the north-east towards the Paterson River. Based on Premise Drawing TP01 Rev B dated 4 April 2024, site levels range from about RL 18 (Australian Height Datum (AHD)) in the south western corner to about RL 50 (AHD) along the north eastern site boundary
Soil Landscape – (Newcastle Soil Landscape Sheet)	The site is located within the Vacy transferral soil landscape, characterised by gentle footslopes, undulating low hills on Carboniferous sediments in the Paterson Mountains region. Slopes are 2 - 10%, local relief is up to 40m and elevation to 100m. Limitations include high run-on, high water erosion hazard, localised seasonal waterlogging, foundation hazard, localised rock outcrop hazard, localised salinity hazard and localised poor drainage. The soil landscape mapping for the site is shown in Figure 2 below.
Geology (NSW Seamless Geology)	Reference to the NSW Geological Survey 1:250,000 map indicates that the site is underlain by Carboniferous aged Mount Johnstone Formation which typically comprises boulder conglomerate, lithic arenites with interbeds of laminated sandstone, shales, carbonaceous shales, poor coal, tuffs and minor cherts. It is noted that the map shows that Quaternary aged alluvium is located approximately 45 m to the east of the site.
Acid Sulfate Soils (ASS) (NSW ASS Risk Map)	The site is not mapped within an area of acid sulfate soil risk.
Surface Water	There are numerous unnamed dams spread out across the site as well as several gullies running through the centre of the site to the north east. These gullies act as drainage lines during periods of rainfall with the surface water then discharging into the Paterson River (approximately 620 m north-east).
Groundwater	A search of the publicly available registered groundwater bore database indicated that there were no registered groundwater bores within 1 km of the site. Based on the regional topography and the inferred flow direction of nearby water courses, the anticipated flow direction of groundwater beneath the site is to the north-east, towards Paterson River, the likely receiving surface water body for the groundwater flow path.

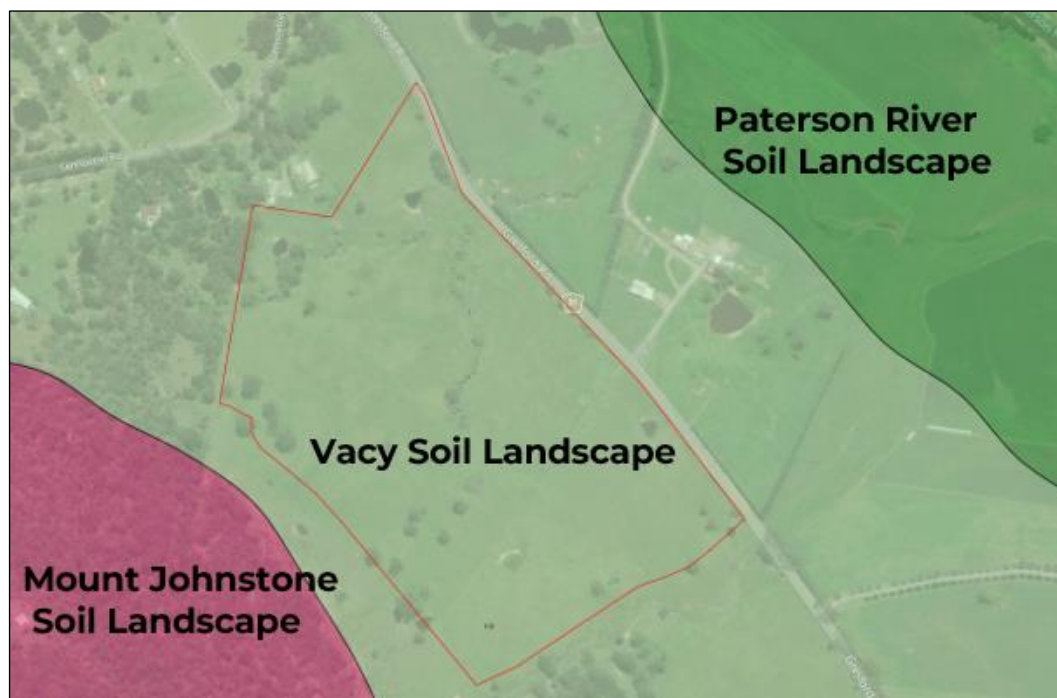


Figure 2: Soil Landscape Mapping

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 C. A summary of key features observed for the site and surrounding land is presented in Table 1.

Table 1: Summary of Historical Aerial Photographs

Year	Site	Surrounding Land Use
1954 (black and white)	- Site appeared to be mostly vacant land with mature age trees scattered across site. - A watercourse was observed to dissect at the northern boundary of site and have a north-south orientation (current gully). - Dam observed in the south of site. - Some possible disturbance observed in the centre of site adjacent to watercourse.	- Surrounding area to the south and west appeared to be vacant bushland. - Several possible residential structures and access tracks observed to the north opposite Gresford Road. - Grazing and agricultural land observed further to the north and east.

Year	Site	Surrounding Land Use
1976 (colour)	- Possible cropping/fields observed in southern portion of site. - Some clearing of trees has occurred across the site since the previous aerial.	- Further development of grazing/agricultural land observed to the north and east. - Several smaller rectangular structures to the north, opposite Gresford Road, possibly sheds.
1984 (black and white)	- Similar to 1976 photograph. - Some trees in southern section of site observed to be removed. - Possible disturbance in far north region of site, exposed soils observed near dam Possibly dam widening.	- Similar to 1976 Photograph. - Possible disturbance to the south, within lot boundary.
1993 (colour)	- Access road observed near northern boundary of site. - Additional dam has been excavated in the north western corner of the site near the access road. - Clearing of more mature trees observed across site.	Several residential structures and driveways observed to be constructed off Lennoxton Road adjacent to the north-western site boundary corner. Multiple regions of exposed soil, indicating constructions of dam.
1998	- Additional dam excavated in the central western portion of the site since the previous aerial image. - Internal access track now observed through the north western portion of the site.	- Rectangular structure observed to be constructed near northern boundary of site. - Further residential development to the north along Gresford Road.
2001	Excavated materials observed directly adjacent dams in the north western and north eastern portions of the site (likely materials excavated during dam construction).	- Similar to 1998 aerial photograph. - Some disturbance and stockpiled materials observed to the north of site opposite Gresford Road. - Disturbance observed to the southwest of site within lot boundary, square region of possibly stockpiled soils observed.

Year	Site	Surrounding Land Use
2006	- Excavated materials adjacent dam in the north eastern portion of the site no longer observed at this time. - The rest of the site appears similar to previous aerial imagery.	- Further residential/agricultural development observed on site to the north. Some structures possibly removed and/or replaced. - Some disturbance around dam to the north of site, some exposed soils observed.
2011	- Possible additional disturbance observed around dam in northern corner of site. - The site otherwise appears to be generally similar to the previous aerial image.	Similar to previous aerial.
2016	- The site generally appears similar to the previous aerial image. - Excavation of an additional dam in the central area of the site.	The surrounding area generally appears similar to the previous aerial image.
2020	- Brown surface soils observed in the western portion of the site at this time. - The rest of the site generally appears similar to the previous aerial image.	- The surrounding area generally appears similar to the previous aerial image. - Localised demolition of a structure immediately east of the site between 2016 and 2020.
2022	- The site generally appears similar to the previous aerial image. - Possible disturbed area / stockpiled materials of approximate dimensions 30 m x 15 m is observed along the north eastern boundary at this time.	The surrounding area generally appears similar to the previous aerial image.
2023	The site generally appears similar to the previous aerial image.	- The surrounding area generally appears similar to the previous aerial image. - An area of lush, green grass associated with the adjacent dwelling to the north is observed at this time (possible effluent disposal area).

6.2 Title Deeds

A historical title deeds search was used to obtain ownership and occupancy information including company names and the occupations of individuals. The title information can assist in the identification of previous land uses by the company names or the site owners and can, therefore, assist in establishing whether there were potentially contaminating activities occurring at the site. The results of the title deed search are provided in Appendix C. A summary of the title deeds and possible land uses (with reference to the aerial photographs and other historical searches) is presented in Table 2.

Table 2: Historical Title Deeds

Date of acquisition and term held	Registered proprietor(s) / occupations	Inferred land use
30.10.1924 (1924 to 1929)	William John Abraham Nivison (Grazier) William Nivison Kelman (Bank Official)	Agricultural
09.09.1929 (1929 to 1937)	William Thomas Hinton (Farmer)	Agricultural
11.01.1937 (1937 to 1960)	George Amos Horn (Storekeeper)	Agricultural
25.01.1960 (1960 to 2024)	J.A. and R.G. Horn Pty Limited	Agricultural

6.3 Public Registers and Planning Records

EPA Notices available under Section 58 of the Contaminated Land Management Act (CLM Act) Database searched 20/08/2024	There were no records of notices for the site or adjacent sites.
Sites notified to EPA under Section 60 of the CLM Act Database searched 20/08/2024	The site and adjacent sites were not listed as a notified contaminated site.
Licences listed under Section 308 of the Protection of the Environment Operations Act 1997 (POEO Act) Database searched 20/08/2024	There were no records issued to the site. However, there were 17 records issued to Station Street, Martins Creek approximately 2.2 km east of the site.

PFAS Investigation Sites listed on the EPA website	The site was not listed or adjacent to a site listed under: • NSW EPA PFAS Investigation Program; • Defence PFAS Investigation Program; • Defence PFAS Management Program; • Airservices Australia National PFAS Management Program
Planning Certificate(s) Dated 22/07/2024	The Council Section 10.7 Planning Certificate indicates that the land: a) Is not within a proclaimed mine subsidence district; b) Is subject to flood related development controls as the land is wholly or partially flood prone land; c) Is not identified as bush fire prone land d) Is not located within a Heritage Conservation area; e) Has no prescribed matters under section 59 (2) of the Contaminated Land management Act 1997; f) No residential premises are listed on the loose-fill asbestos insulation register.
Council Records Database searched 20/08/2024	No relevant records were obtained from a search of the Dungog Shire Council online database.
SafeWork NSW Hazardous Chemicals on Premises Search	Due to the general absence of former significant activities (i.e. commercial use), a SafeWork NSW search was not considered to be warranted for the site and therefore not completed for the PSI.

6.4 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.

6.5 Summary of Site History

The site history information suggests that the site was acquired by the current owner(s) in 1960 and has historically been used as grazing land and possible agricultural purposes. Some historic clearing of trees has occurred across the site and internal access tracks were observed in aerial photography during the review.

7. Site Walkover

7.1 Observations

A site walkover was undertaken by an environmental engineer on 19 July 2024. The general site topography was consistent with that described in Section 5. The site layout appears to have remained unchanged from the June 2023 aerial photograph. The following key site features pertinent to the PSI were observed (refer to photographs in Appendix D).

- The site presented as vacant grassland at the time of the inspection. Mature trees were located sporadically across the site (Photos 1 to 18);
- Boggy / saturated ground conditions were observed predominantly in the eastern portion of the site, particularly within gullies / lower lying areas (Photos 1 and 10);
- Several dams were observed across the site. The dams are likely associated with historic agricultural / livestock use at the site. All dams contained surface water with algae and reeds/vegetation being observed in most dams. Localised soil stockpiles were observed directly adjacent some dams (likely excavated materials from dam construction). Stockpiled materials were consistent with natural soils observed at the site. There were no observations of gross contamination (i.e. odours/slicks) in surface water at the time of the inspection (Photos 6, 7, 13 and 14);
- Several minor gullies and one large gully were observed across the western and central portions of the site. The gullies sloped to the north-northeast with ponded surface water observed in some areas (Photos 8, 10 and 11);
- Sandstone outcropping was observed at the surface in the western and southern portions of the site (Photo 9); and
- A bright green grassed area (possible effluent disposal area) was observed in the backyard of the residential property located directly adjacent the northern boundary of the site (Photos 15 and 16).

7.2 Interview with Site Personnel

Douglas interviewed Rob Fletcher (Cornish Group) and an adjacent neighbour on 25 July 2024. The following was identified during the interviews:

- The site has historically been used as grazing farmland and is still being utilised for this purpose;
- No pesticides / herbicides are currently used at the site;
- There has been no historic importation of fill materials / biosolids at the site; and
- The neighbour has lived adjacent the site since the 1980s. The neighbour indicated that there have been no dwellings / structures present at the site in that time.

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).

Based on the current investigation, the following potential sources of contamination and associated contaminants of potential concern (CoPC) have been identified and summarised in Table 3.

Table 3: Summary of Potential Sources

Potential sources and associated CoPC
On-site sources S1: Current / former agricultural activities - Potential fertiliser and pesticide application for cropping, weed control, disease control - Possible burial of deceased livestock; CoPC include metals, organochlorine pesticides (OCP), organophosphate pesticides (OPP), nutrients, microbiological contaminants (E.coli, faecal coliforms, salmonella) S2: Possible imported fill materials CoPC include metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), OCP, OPP, polychlorinated biphenyls (PCB) and asbestos
Off-site sources S3: Possible effluent disposal area for adjacent site CoPC include metals, TRH, nutrients and microbiological contaminants

The following potential human and environmental receptors, along with relevant potential pathways, have been identified and summarised in Table 4.

Table 4: Summary of Potential Receptors and Pathways

Potential human receptors
HR1: Current users [farmers] HR2: Construction and maintenance workers HR3: End users [residential land users] HR4: Adjacent site users [residential/ rural residential land users]
Potential environmental receptors
ER1: Surface water [Paterson River] ER2: Groundwater ER3: Terrestrial ecosystems
Potential pathways to human receptors
HP1: Ingestion and dermal contact HP2: Inhalation of dust and/or vapours
Potential pathways to environmental receptors
EP1: Surface water run-off EP2: Leaching of contaminants and vertical migration into groundwater EP3: Lateral migration of groundwater providing base flow to water bodies EP4: 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 to S3) and receptors are provided in Table 5 below.

Table 5: Summary of Potentially Complete Exposure Pathways

Source and CoPC	Exposure pathway	Receptor	Risk management action
On-site sources			
S1: Current/former agricultural activities: metals, OCP, OPP, nutrients and microbiological contaminants S2: Possible imported fill materials: metals, TRH, BTEX, PAH, OCP, OPP, PCB, asbestos	HP1: Ingestion and dermal contact HP2: Inhalation of dust and/or vapours	HR1: Current users [farmers] HR2: Construction and maintenance workers HR3: End users [residential land users]	An intrusive investigation is recommended to assess possible contamination including testing of the soils.
	HP2: Inhalation of dust and/or vapours	HR4: Adjacent site users [residential/ rural residential land users]	
	EP1: Surface water run-off EP3: Lateral migration of groundwater providing base flow to water bodies	ER1: Surface water	
	EP2: Leaching of contaminants and vertical migration into groundwater	ER2: Groundwater	
	EP4: Inhalation, ingestion and absorption	ER3: Terrestrial ecosystems	
Off-site sources			
S3: Adjacent effluent disposal area: metals, TRH, nutrients, microbiological (E.Coli, faecal coliforms,)	HP1: Ingestion and dermal contact HP2: Inhalation of dust and/or vapours	HR1: Current users [farmers] HR2: Construction and maintenance workers HR3: End users [residential land users]	An intrusive investigation is recommended to assess possible contamination including testing of the soils.
	EP1: Surface water run-on EP3: Lateral migration of groundwater providing base flow to water bodies	ER1: Surface water	
	EP2: Leaching of contaminants and vertical migration into groundwater	ER2: Groundwater	
	EP4: Inhalation, ingestion and absorption	ER3: Terrestrial ecosystems	

9. Sampling and Analysis Quality Plan

9.1 Data Quality Objectives

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

9.2 Soil Sampling Rationale

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

A judgemental and systematic sampling strategy was adopted to determine test locations at the main identified areas of potential contamination for the preliminary assessment within the site. Locations were based on site history information, the CSM as well as the requirements for the geotechnical investigation being undertaken in conjunction with the PSI. The rationale including contaminant source provided below. Test locations are shown on Drawing 1 in Appendix A.

Test Pits 1 to 33	General site coverage, possible pesticide / fertiliser application across the surface of the site (S1) and general assessment of the potential for imported fill across the site (S2)
Test Pits 6, 11 and 30	Possible fill for internal access tracks and possible stockpile/disturbed area - S2)
Near Surface Samples M1 and M2	Directly adjacent the possible off-site effluent disposal area within the site (S3) (M1 is background sample)

Table 2 of NSW EPA (2022) recommends a minimum of 241 sampling points for a site of 21 ha for site characterisation based on the detection of circular hot spots using a systemic grid sampling pattern. The sampling density conducted is less than that recommended in (NSW EPA, 2022), however, is considered appropriate for a preliminary assessment of soil contamination at the site.

It is noted that positioning of some test locations was limited due to close proximity of known underground services (i.e. fibre optic cable within the site along the eastern boundary).

Soil samples were collected from each test location at depths of approximately 0-0.1 m 0.25 m, 0.5 m, 1.0 m and every 0.5 m thereafter, and in changes in lithology. No obvious signs of contamination were noted at the locations and depths assessed.

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

Samples were selected for analysis based upon field observations, and to provide lateral and vertical coverage of the site. The selected samples were analysed for the CoPC in the CSM and for physical parameters, cation exchange capacity (CEC) and pH.

10. Site Assessment Criteria

The site assessment criteria (SAC) applied in the current investigation are informed by the CSM (Section 8) which identified human and environmental receptors to potential contamination on the site. Analytical results are assessed (as a Tier 1 assessment) against the SAC comprising primarily the investigation and screening levels of Schedule B1 of (NEPC, 2013)

The investigation and screening levels applied in the current investigation comprise levels adopted for a generic residential land use scenario with accessible soils. The derivation of the SAC is included in Appendix G and the adopted SAC are listed on the summary analytical results tables in Appendix H.

In addition to above, a preliminary microbiological screening level of 10,000 MPN/100g for E.Coli and 100,000 MPN/100g for faecal coliforms has been adopted for the assessment of microbiological contamination in soils. This limit is based on the allowable limit for microbiological contaminants in unrestricted biosolids use, as provided in NSW EPA (1997).

11. Results

11.1 Subsurface Conditions

The test pit logs for this assessment are included in Appendix F. The logs recorded the following general sub-surface profile:

TOPSOIL: Silty Sand / Silty Sandy Clay	Found in all pits to depths of 0.1 m to 0.2 m bgl.
RESIDUAL SOILS: Sandy Clay / Silty Clay / Sandy Gravelly Clay / Clayey Sand / Clay (including weathered sandstone)	Found in all pits. Test pits generally terminated in this material between depths of 0.7 m and 2.0 m.

No free groundwater was observed at test locations while they remained open. Seepage was observed whilst excavating Pit 22 at 0.6 m bgl. It should be noted that groundwater levels are affected by climatic conditions and soil permeability and will therefore vary with time.

11.2 Surface Water Conditions

Surface water parameters were collected during the site walkover on the existing dams on the site. The field parameters are summarised in Table 6 and surface water screening locations are shown on Drawing 1 in Appendix A.

Table 6: Summary of Surface Water Screening (25 July 2024)

Location	pH	EC (ms/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Temp (°C)	Comments
Dam 1	6.6	0.134	115	4.31	164	11.94	Brown, algae
Dam 2	6.1	0.128	69	4.50	67	13.09	Brown, algae, reeds present
Dam 3	6.0	0.122	82	1.63	119	11.66	Brown, algae, reeds present
Dam 4	6.2	0.129	84	4.83	89.6	12.37	Grey-brown, algae, vegetation
Dam 5	6.3	0.137	96	5.27	60.9	11.78	Brown, algae, reeds present
Dam 6	6.5	0.172	97	4.77	>1000	11.75	Grey-brown, reeds present
Dam 7	6.0	0.144	81	1.89	>1000	13.54	Grey, algae, vegetation
Dam 8	6.2	0.111	99	3.43	151	12.94	Grey, some algae
Dam 9	6.2	0.118	90	5.58	273	12.72	Grey, some algae

The results of surface water screening indicated generally freshwater conditions. The pH measurements indicated slightly acidic surface water. There were no observations of gross contamination (slicks, odours etc) in the surface water at the time of the assessment.

11.3 Contamination Observations

There were no visual or olfactory observations (e.g. staining, odours, free phase product) to suggest the presence of gross contamination within the soils at the test locations.

The results of PID screening on soil samples are shown on the test pit logs in Appendix F. PID screening generally suggested the absence of gross volatile hydrocarbon impact in all the samples tested (i.e. <1 ppm).

12. Laboratory Testing

12.1 Program

Laboratory testing for selected soil samples was undertaken by Envirolab Services Pty Limited for the main potential contaminants of concern outlined in the CSM in Section 8 and sampling and analysis plan in section. Analytical methods used are shown in the laboratory certificates in Appendix H.

The analytical program for the assessment is summarised in Table 7.

Table 7: Summary of Analytical Program

Sample Type	Analytes Tested	No. Primary Samples Tested	No. Replicate Samples Tested
Soil	Metals (15), OCP, OPP	31	1
	TRH, BTEX, PAH, PCB	11	2
	pH	4	-
	CEC	2	-
	Asbestos ID (500mL)	1	-
	E. coli, Faecal Coliforms, Total Nitrogen, Total Phosphorus	2	-

Notes to Table 7:

Metals (15) - arsenic (As), beryllium (Be), boron (B), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), mercury (Hg), molybdenum (Mo), nickel (Ni), selenium (Se), silver (Ag), zinc (Zn)

OCP - Organochlorine pesticides

OPP - organophosphorus pesticides

TRH - Total recoverable hydrocarbons

BTEX - Benzene, toluene, ethyl-benzene and xylenes

PAH - Polycyclic aromatic hydrocarbons

PCB- Polychlorinated biphenylsCEC- Cation exchange capacity

It is noted that sample 11/0-0.1 m was tested for asbestos identification in soil (NEPM 500mL testing) due to possible stockpiled materials located at the area in the 2022 aerial.

12.2 Analytical Results

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

- Table H1: Summary of Soil Laboratory Results (Land Use Comparison);
- Table H2: Summary of Soil Laboratory Results (Preliminary Waste Classification); and
- Table H3: Summary of Soil Laboratory Results (Microbiological Contaminants).

The laboratory certificate of analysis is provided in Appendix H. The chain of custody and sample receipt information is provided in Appendix I.

13. Discussion

13.1 Soils

The results of laboratory testing on soils from the current investigation indicated the following for the samples tested:

- TRH, BTEX, PAH, OPP, OCP, and PCB were not detected above the laboratory detection limits;
- Heavy metal concentrations were within the adopted SAC;
- Asbestos identification testing (500 mL soil sample) was undertaken on one soil sample. Asbestos was not identified in the tested soil at the laboratory detection limit;
- Elevated E.Coli and faecal coliforms concentrations were identified in one of the two samples tested (Samples M2/0-0.05 m), collected from the area downgradient of the possible off-site effluent disposal area for the adjacent residential property;
- The tested soils were within the adopted human health and ecological guidelines for standard residential land use as provided in the SAC in Appendix G.

Comparison of the microbiological and nutrient testing at M1/0-0.05 m (background sample) and M2/0.05 m indicated potential impact to surface soils from the adjacent off-site effluent disposal area. Total nitrogen concentrations in sample M2/0-0.05 m were comparable to the background sample however total phosphorus was significantly higher than those identified in the background sample. Detectable concentrations of E.Coli and faecal coliforms were noted in sample M2/0-0.05 m, however, were below the biosolids assessment criteria outlined in the Biosolids Guidelines (NSW EPA, 1997). Based on the results in the collected sample, the microbiological impacts identified are unlikely to pose an unacceptable health risk. It is noted, however, that the results suggest that possible migration of impacted effluent is occurring. It is recommended that amelioration measures are implemented on the adjacent site to minimise potential human health and ecological impacts as a result of impacted runoff from the adjacent site. Such measures could include soil bunds to contain runoff to the adjacent site and to minimise run-on from the effluent disposal area.

13.2 Preliminary Waste Classification

Based on the limited total contamination testing, the soils tested would be classified as 'General Solid Waste (non-putrescible)' (CTI) (NSW EPA, 2014). The soils would be suitable for disposal at a facility licensed to accept these waste categories, if required. The handling, transport and disposal / re-use of the materials should be conducted in accordance with regulatory and statutory requirements.

It is noted that the testing conducted for this assessment is preliminary only and a specific waste classification with reference to NSW EPA (2014) and NSW EPA (2022) would be required for any in-situ materials proposed to be disposed off-site.

Based on the results of subsurface investigation and contamination testing, the tested soils could also possibly be classified for off-site reuse as Virgin Excavated Natural Materials subject to appropriate segregation from non-VENM, inspections and possible confirmatory testing.

13.3 Data Quality Assurance and Quality Control

The data quality assurance and quality control (QA/QC) results are included in Appendix I. 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 usable for this assessment.

14. Revised Conceptual Site Model

The data collected for this assessment has generally confirmed that certain potential contaminant sources outlined in the CSM outlined in Section 8 pose a potentially complete pathway to the identified receptor(s) whilst others do not. No other sources of contamination have been identified as a result of the testing results. This is summarised in Table 8.

Table 8: Updated Summary of Potentially Complete Exposure Pathways

Source and CoPC	Exposure pathway	Receptor	Risk management action
On-site sources			
S1: Current/former agricultural activities: metals, OCP, OPP, nutrients and microbiological contaminants S2: Possible imported fill materials: metals, TRH, BTEX, PAH, OCP, OPP, PCB, asbestos	HP1: Ingestion and dermal contact HP2: Inhalation of dust and/or vapours	HR1: Current users [farmers] HR2: Construction and maintenance workers HR3: End users [residential land users]	Testing of soil indicates that contaminants associated with former and current land uses do not appear to be significantly impacting the site.
	HP2: Inhalation of dust and/or vapours	HR4: Adjacent site users [residential/ rural residential land users]	
	EP1: Surface water run-off EP3: Lateral migration of groundwater providing base flow to water bodies	ER1: Surface water	
	EP2: Leaching of contaminants and vertical migration into groundwater	ER2: Groundwater	
	EP4: Inhalation, ingestion and absorption	ER3: Terrestrial ecosystems	
Off-site sources			
S3: Adjacent effluent disposal area: metals, TRH, nutrients, microbiological (E.Coli, faecal coliforms,)	HP1: Ingestion and dermal contact HP2: Inhalation of dust and/or vapours	HR1: Current users [farmers] HR2: Construction and maintenance workers HR3: End users [residential land users]	Testing of soil indicates that contaminants associated with the adjacent possible effluent disposal area do not appear to be significantly impacting the site. Some impact, however, was noted in tested soils. It is recommended that amelioration measures are implemented to minimise the potential for ongoing impacts to the subject site
	EP1: Surface water run-on EP3: Lateral migration of groundwater providing base flow to water bodies	ER1: Surface water	
	EP2: Leaching of contaminants and vertical migration into groundwater	ER2: Groundwater	
	EP4: Inhalation, ingestion and absorption	ER3: Terrestrial ecosystems	

15. Conclusions and Recommendations

The PSI and preliminary contamination testing was undertaken to assess the identified potential sources of contamination and assess the suitability of the site for the proposed residential subdivision. The results of the assessment indicate the following:

- Site history assessment indicated that historical and current site use has likely been limited to grazing and agricultural activities on the site;
- Preliminary subsurface investigation across the site suggests the general absence of gross contamination at the test locations and depths assessed, based on field observations and laboratory testing of selected samples; and
- Contamination concentrations in the soil samples at the tested locations and depths were within the adopted human health and ecological site assessment criteria for residential land use.

On the basis of the above, the site is considered to be suitable for the proposed residential subdivision with respect to contamination.

As stated above, it is recommended that measures are implemented to minimise the potential impacts from the adjacent possible effluent disposal area in the northern portion of the site.

As a precautionary measure, it is also recommended that the contractor implements an unexpected finds protocol (UFP) for earthworks for the site. The UFP should outline the appropriate action should suspected contamination be observed during clearing or earthworks.

16. References

Douglas. (2024). *Report on Geotechnical Investigation and Effluent Disposal Assessment, Vacy Village South Residential Subdivision, 598 Gresford Road, Vacy*. Document No. 91432.06.R.002.Rev0: Douglas Partners Pty Ltd.

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. (1997). *Environmental Guidelines - Use and Disposal of Biosolid Products*. NSW Environmental Protection Authority.

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

NSW EPA. (2022). *Sampling Design, Part 1: Application; Part 2: Interpretation*. NSW Environment Protection Authority.

17. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this report for this project at 598 Gresford Road, Vacy NSW in line with Douglas' proposal 91432.06.P.001.Rev0 dated 27 June 2024 and acceptance received from David Bobyreff of Cornish Group No. Six Pty Ltd dated 5 July 2024. The work was carried out under Douglas' Engagement Terms. This report is provided for the exclusive use of Cornish Group No. Six 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 Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas 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 Douglas' field testing has been completed.

Douglas' advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by Douglas 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. Douglas 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 Douglas. This is because this report has been written as advice and opinion rather than instructions for construction.

17. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this report for this project at 598 Gresford Road, Vacy NSW in line with Douglas' proposal 91432.06.P.001.Rev0 dated 15 April 2024 and acceptance received from David Bobyreff of Cornish Group No. Six Pty Ltd dated 5 July 2024. The work was carried out under Douglas' Engagement Terms. This report is provided for the exclusive use of Cornish Group No. Six 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 Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas 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 Douglas' field testing has been completed.

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

Appendix A

Drawing 1 - Site Features and Test Location Plan
Plan of Proposed Subdivision of Lot 123 DP 1063557,
Vacy (Premise Drawing TP01)



Site Location

- Legend
- Approximate Photo Locations and Orientation
 - Approximate Surface Sample Locations
 - Approximate Test Pit Locations
 - Approximate Site Area

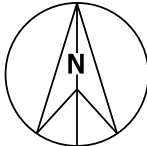
NOTE:

- Drawing adapted from aerial imagery from SixMaps dated 01.03.2015
- Test locations are approximate only and were located using differential GPS typically accurate to ± 0.1 m depending on satellite coverage

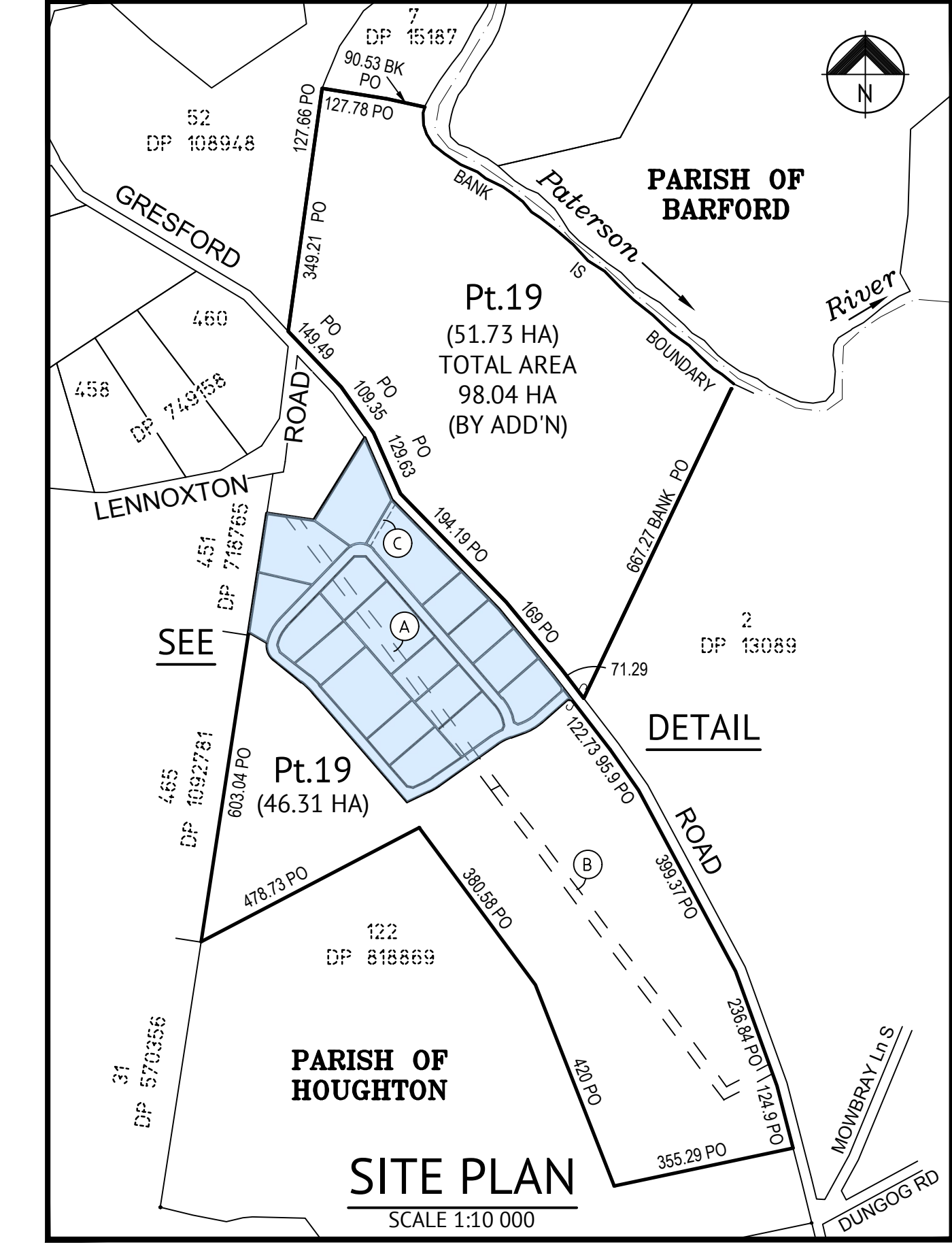
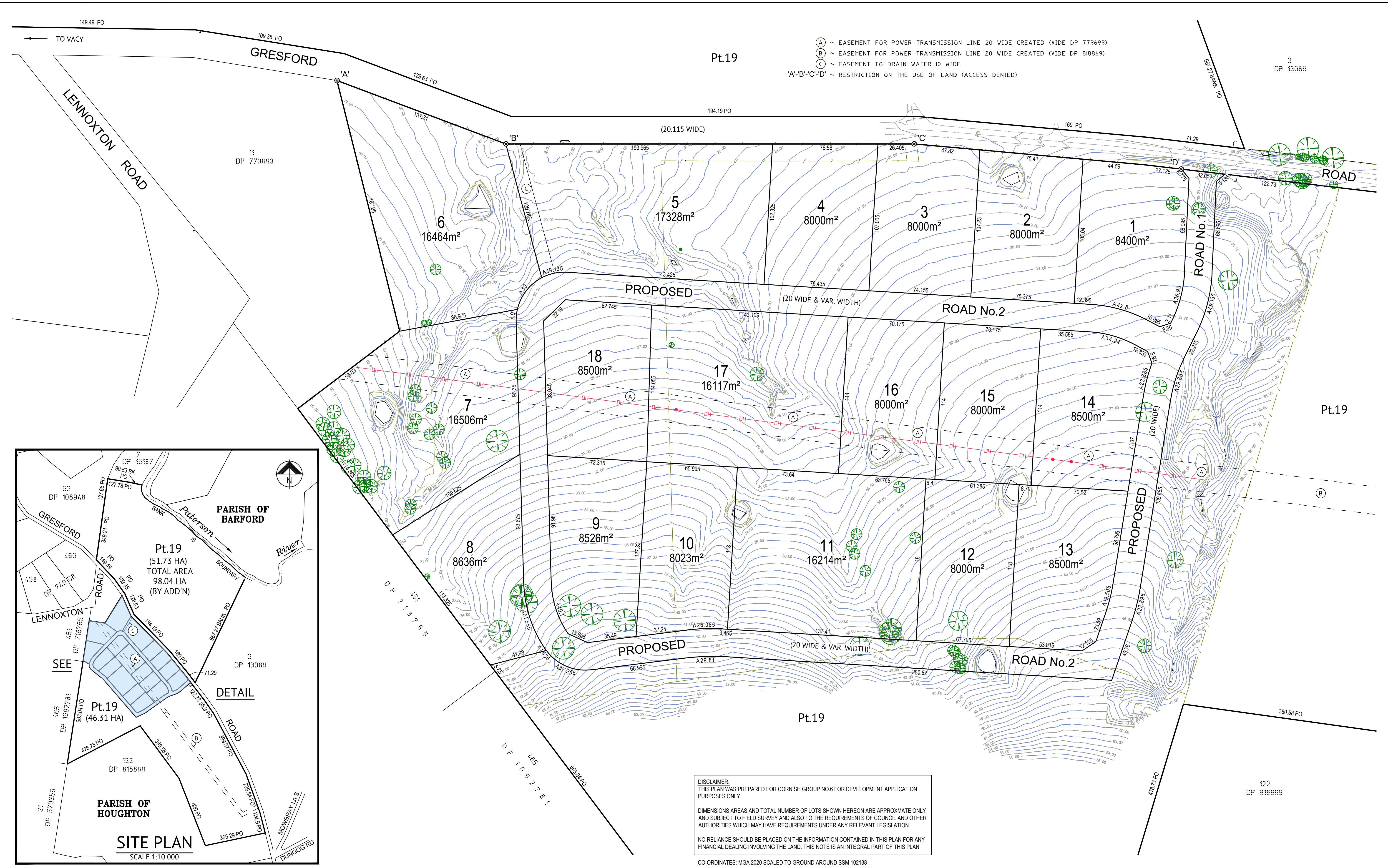


CLIENT:	Cornish Group No. Six Pty Ltd	
OFFICE:	Newcastle	DRAWN BY: JRK
SCALE:	1:3500 @ A3	DATE: 17 September 2024

TITLE: **Site Features and Test Location Plan**
Proposed Residential Subdivision
598 Gresford Road, Vacy, NSW



Project:	91432.06
DRAWING No:	1
REVISION:	0



Pt.19

(A) ~ EASEMENT FOR POWER TRANSMISSION LINE 20 WIDE CREATED (VIDE DP 773693)
(B) ~ EASEMENT FOR POWER TRANSMISSION LINE 20 WIDE CREATED (VIDE DP 818869)
(C) ~ EASEMENT TO DRAIN WATER 10 WIDE
'A'-'B'-'C'-'D' ~ RESTRICTION ON THE USE OF LAND (ACCESS DENIED)

DISCLAIMER:
THIS PLAN WAS PREPARED FOR CORNISH GROUP NO.6 FOR DEVELOPMENT APPLICATION PURPOSES ONLY.

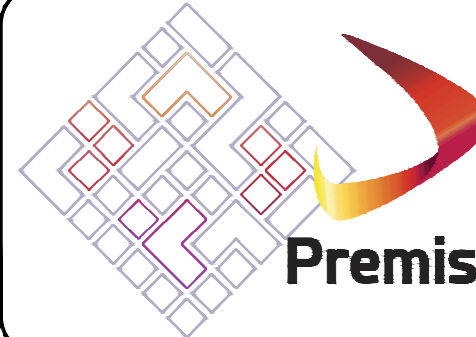
DIMENSIONS AREAS AND TOTAL NUMBER OF LOTS SHOWN HEREON ARE APPROXIMATE ONLY AND SUBJECT TO FIELD SURVEY AND ALSO TO THE REQUIREMENTS OF COUNCIL AND OTHER AUTHORITIES WHICH MAY HAVE REQUIREMENTS UNDER ANY RELEVANT LEGISLATION.

NO RELIANCE SHOULD BE PLACED ON THE INFORMATION CONTAINED IN THIS PLAN FOR ANY FINANCIAL DEALING INVOLVING THE LAND. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN

CO-ORDINATES: MGA 2020 SCALED TO GROUND AROUND SSM 102138

REV.	DATE	DFTD.	APPD.	NOTATION / AMENDMENT
A	02/04/24	PS	WRS	ISSUED FOR REVIEW
B	04/04/24	PS	WRS	ISSUED FOR APPROVAL - REVISED LOTS 1 - 5 AND EASEMENT ADDED

FILE / REFERENCE	INITIALS	DATE
SURVEYED P00385 240315 PLAN MGA2020	MP	26/03/24
DESIGNED P000385_C3D PARCEL_OPTION 10	PS	02/04/24
CHECKED -	-	-
PROJECT MANAGER -	-	-
REGISTERED SURVEYOR	WRS	02/04/24



ORAN PARK OFFICE
SUITE 301, LEVEL 3 ORAN PARK PODIUM
351 ORAN PARK DRIVE
ORAN PARK, NSW 2570
Ph. (02) 4632 6500
www.premise.com.au



Premise

NORTH



SCALE



SCALE 1:1250 (A1)
ORIGINAL SHEET SIZE A1

APPROVAL AUTHORITY	DUNGOG SHIRE
CLIENT	CORNISH GROUP No.6 P/L
PROJECT	598 GRESFORD ROAD, VACY LOT 123 DP 1063557

SHEET TITLE PLAN OF PROPOSED SUBDIVISION OF LOT 123 DP 1063557, VACY			
DRAWING FILE	P000385_02B_TP01	JOB CODE	P000385_02B
SURVEY MARK	SSM 102138	R.L.	22.019
IMAGE SOURCE	-	DATUM	A.H.D.
STATUS	FOR REVIEW	SHEET NUMBER	TP01
		REV	B

Appendix B

About This Report

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.

continued next page

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.

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Appendix C

Historical Aerial Photographs

Historical Title Deeds

Section 10.7 Planning Certificate



Figure 1. Historical Aerial Photograph 1944 (site boundary in red)



Figure 2. Historical Aerial Photograph 1976 (site boundary in red)



Figure 3. Historical Aerial Photograph 1984 (site boundary in red)



Figure 4. Historical Aerial Photograph 1993 (site boundary in red)



Figure 5. Historical Aerial Photograph 1998 (site boundary in red)

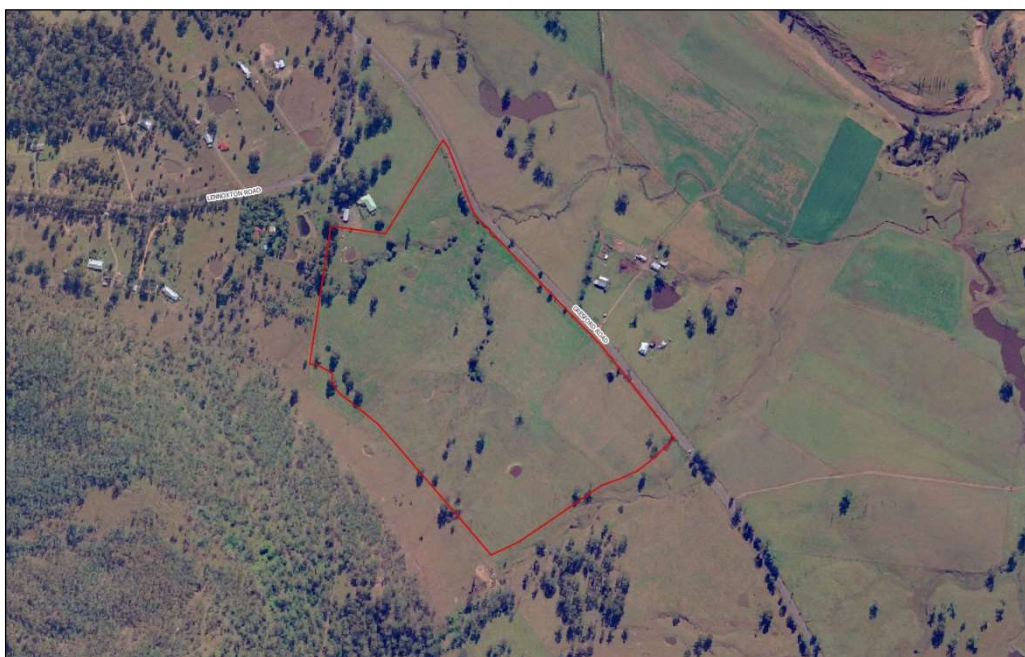


Figure 6. Historical Aerial Photograph 2001 (site boundary in red)



Figure 7. Historical Aerial Photograph 2006 (site boundary in red)



Figure 8. Historical Aerial Photograph 2011 (site boundary in red)



Figure 9. Historical Aerial Photograph 2014 (site boundary in red)



Figure 10. Historical Aerial Photograph 2016 (site boundary in red)



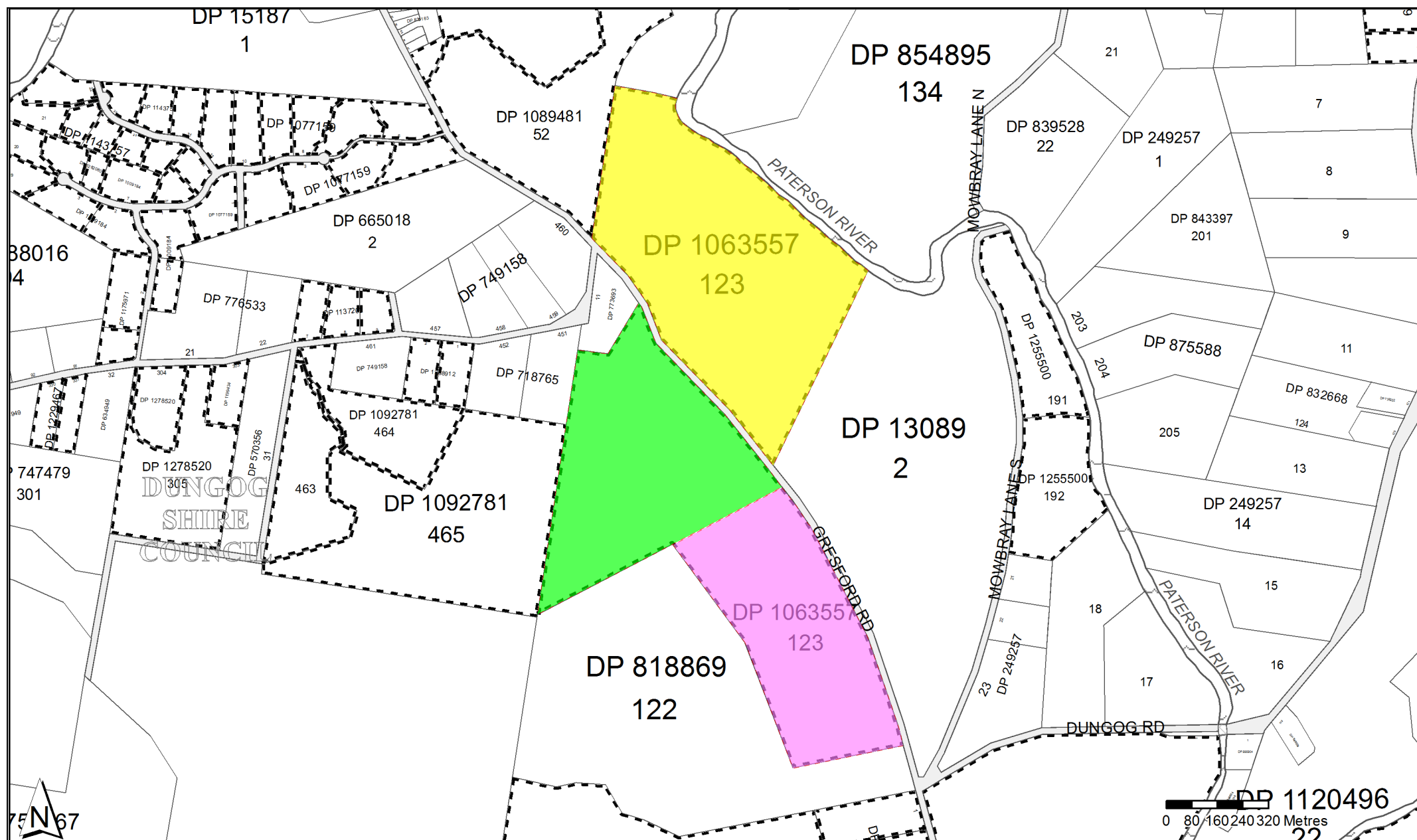
Figure 11. Historical Aerial Photograph 2020 (site boundary in red)



Figure 12. Historical Aerial Photograph 2022 (site boundary in red)



Figure 13. Historical Aerial Photograph 2023 (site boundary in red)



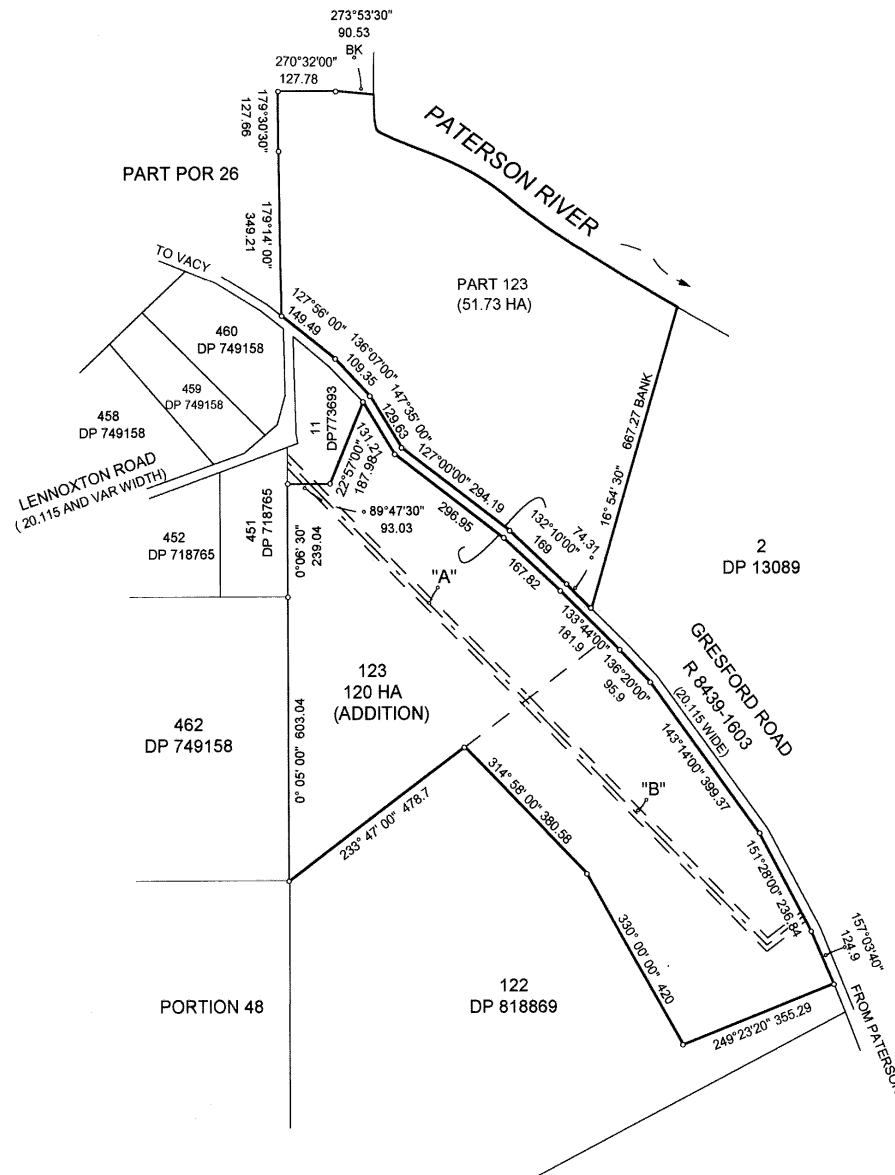
SIGNATURE AND SEALS ONLY.

InfoTrack



Ross H. (912)
R.H. (sec)
M.H.

"A" EASEMENT FOR POWER TRANSMISSION LINE 20 WIDE CREATED VIDE DP 773693
 "B" EASEMENT FOR POWER TRANSMISSION LINE 20 WIDE CREATED VIDE DP 818869



DP1063557

Registered 2-2-2004

Title System: TORRENS

Purpose: CONSOLIDATION

Ref Map: PARISH

Last PLAN: (DP13089#), DP773693, DP818869

PLAN CONSOLIDATION OF LOT 121 DP 818869 AND LOT 13 DP 773693

Lengths are in metres. Reduction Ratio 1: 8000

L G A: DUNGOG

Suburb/Locality: VACY

Parish: HOUGHTON

County: DURHAM

This is sheet 1 of my plan in sheets.
(Delete if inapplicable)

Surveyors (Practice) Regulation 2001

L. GRAEME RODERICK FERGUSON
 of "YATTA" TORREYBURN ROAD VIA PATERSON 2421
 a surveyor registered under the Surveyors Act, 2002, certify
 that the survey represented in this plan is accurate, has
 been made in accordance with the Surveyors (Practice)
 Regulation 2001 and was completed on 16 TH NOVEMBER 2003

The survey relates to HAS BEEN COMPILED

(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)

Datum Line:

Type: Suburban Country

(Signature)

Surveyor registered under
the Surveyors Act 2002

Plans used in preparation of survey/compilation.

DP 773693 R 8439-1603
 DP 818869
 DP13089
 DP 718765
 DP 749158

PANEL FOR USE ONLY for statements of intention
 to dedicate public roads, to create public reserves,
 drainage reserves, easements, restrictions on the
 use of land or positive covenants.

*OFFICE USE ONLY

Crown Lands Office Approval

PLAN APPROVED
 Authorised Officer
 Land District
 Paper No.
 Field Book pages

Subdivision Certificate

I hereby certify that the provisions of s.109J of the Environmental Planning
 and Assessment Act 1979 have been satisfied in relation to the
 proposed

Consolidation set out herein
 (Insert "dedicated" or "new road")

Lee Stiff
 Authorised Person (General Manager) Accredited Certifier

Consent Authority: *Houghton Shire Council*

Date of endorsement: *12th December 2003*

Accreditation no.

Subdivision Certificate no.: *12/03*

File no.: *TPA 2439/01*

Note:
 When the plan is to be lodged electronically in the Land Titles Office
 it should include a signature in an electronic or digital format
 approved by the Registrar-General.

* Delete whichever is inapplicable

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

SURVEYOR'S REFERENCE: HORN FILE 2003 M7100(1210)COMP



PLAN FORM 2

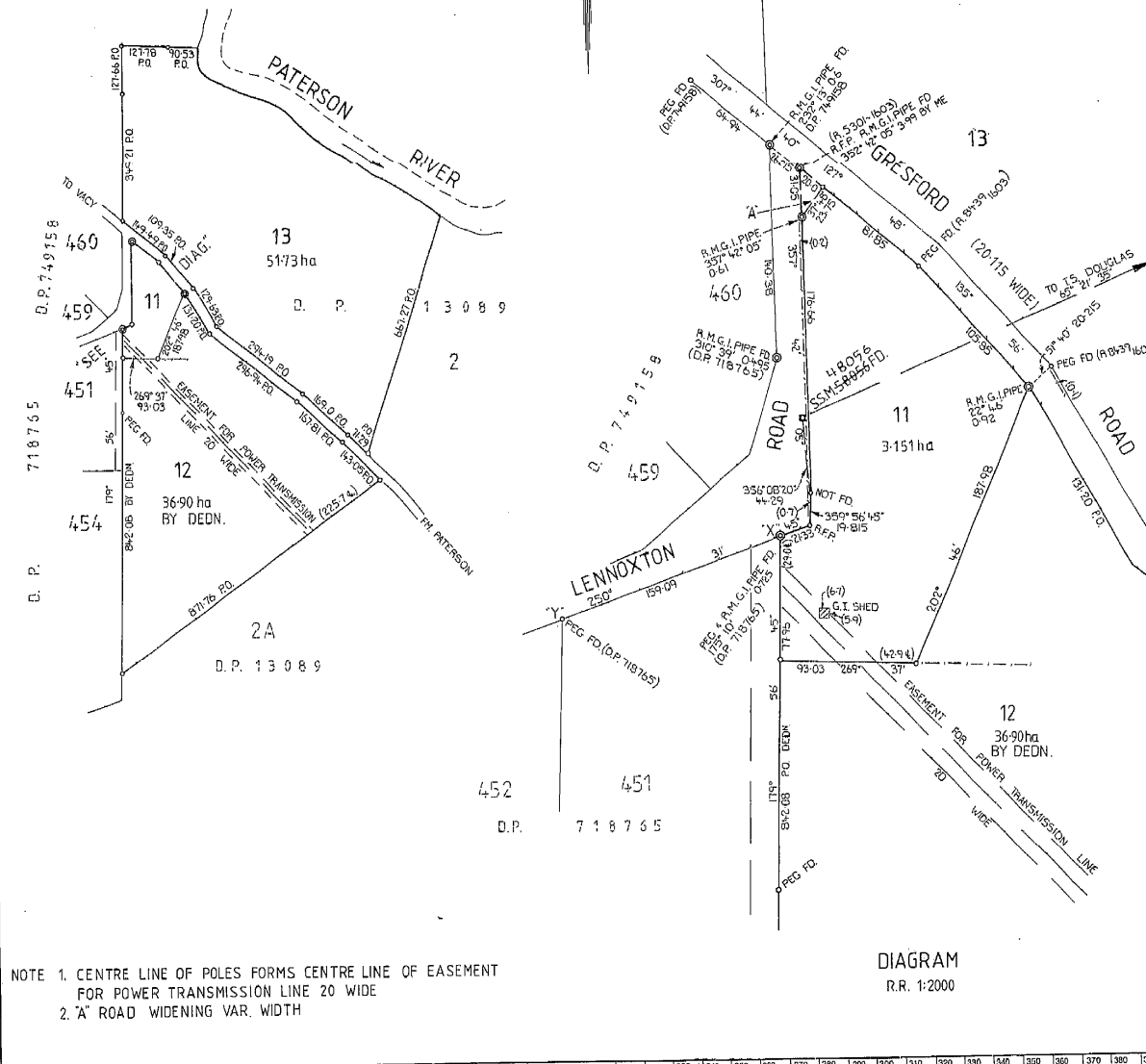
SIGNATURE AND SEALS ONLY.

Russell Horn
B. Horn

Crown Lands Office Approval
PLAN APPROVED
Land District
Paper No.
Field Book pages

Council Clerk's Certificate
I hereby certify that -
(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and
(b) the requirements of section 243 of the Metropolitan Water, Sewerage and Drainage Act 1924 as amended and the Hunter District Water Sewerage and Drainage Act 1920 as amended have been complied with by the applicant in relation to the proposed
Subdivision No.
Date
(Signature)
Council File No.

SURVEYOR'S REFERENCE: 52739 HO/2



NOTE 1. CENTRE LINE OF POLES FORMS CENTRE LINE OF EASEMENT FOR POWER TRANSMISSION LINE 20 WIDE
2. 'A' ROAD WIDENING VAR. WIDTH

M. P. D.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day.

22nd February, 1988

OFFICE USE ONLY

DP 773693

Registered 11/12/1988
CA: 2741 OF 02/12/1987
Title System: TORRENS
Purpose: SUBDIVISION
Ref. Map: PARISH
Last Plan: D. P. 13089

PLAN OF SUBDIVISION OF LAND
IN C.T. VOLUME 4323
FOLIO 152 BEING LOTS
1 & 1A DP13089

Lengths are in metres. Reduction Ratio 1:8000

Mun./Shire: DUNGOG
Locality: VACY
Parish: HOUGHTON
County: DURHAM

This is sheet 1 of my plan in sheets.
(Delete if inapplicable)

I, ANDREW CLARK
of SCOTT CRISP, CASHMERE, MOUNTAIN, N.S.W.,
a surveyor registered under the Surveyors Act, 1929, as
amended, hereby certify that the survey represented in this
plan is accurate and has been made in accordance with the Survey
Practical Regulations, 1923 and any special requirements of the
Department of Lands, and was completed on
17th OCTOBER, 1981
Signature: *Andrew Clark*
Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Survey: 1:8000
Resurvey date of survey:

Plans used in preparation of survey/compilation:
D.P. 13089 D.P. 718765 D.P. 749158
R. 24391603 R. 5301603

PANEL FOR USE ONLY for statements of
intention to dedicate public roads or to create
public reserves, drainage reserves, easements or
restrictions as to use

IT IS INTENDED TO DEDICATE
THE ROAD WIDENING VARIABLE
WIDTH TO THE PUBLIC AS
PUBLIC ROAD

PURSUANT TO SEC. 88 B OF THE
CONV. ACT 1919-64 AS AMENDED
IT IS INTENDED TO CREATE:

1. EASEMENT FOR POWER
TRANSMISSION LINE 20 WIDE



SEARCH DATE

7/8/2024 4:09PM

FOLIO: 13/773693

First Title(s): OLD SYSTEM

Prior Title(s): VOL 4323 FOL 152

Recorded	Number	Type of Instrument	C.T. Issue
23/2/1988	DP773693	DEPOSITED PLAN	FOLIO CREATED EDITION 1
2/2/2004	DP1063557	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***



SEARCH DATE

7/8/2024 4:10PM

FOLIO: 12/773693

First Title(s): OLD SYSTEM

Prior Title(s): VOL 4323 FOL 152

Recorded	Number	Type of Instrument	C.T. Issue
23/2/1988	DP773693	DEPOSITED PLAN	FOLIO CREATED EDITION 1
6/8/1992	DP818869	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***



SEARCH DATE

7/8/2024 4:11PM

FOLIO: 2A/13089

First Title(s): SEE PRIOR TITLE(S)

Prior Title(s): VOL 5996 FOL 84

Recorded	Number	Type of Instrument	C.T. Issue
2/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
21/11/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
6/8/1992	DP818869	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***



SEARCH DATE

7/8/2024 4:10PM

FOLIO: 121/818869

First Title(s): OLD SYSTEM

Prior Title(s): 2A/13089 12/773693

Recorded	Number	Type of Instrument	C.T. Issue
6/8/1992	DP818869	DEPOSITED PLAN	FOLIO CREATED EDITION 1
10/8/1992	E606236	TRANSFER	EDITION 2
2/2/2004	DP1063557	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

RP13

TRANSFER

Real Property Act, 1900

E
606236 P



Office of State Revenue use only

B

OFFICE OF STATE REVENUE N9
STAMP DUTY 1992/93
DUTY \$ 2-00
1ST REG. 800222992

(A) **LAND TRANSFERRED**

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

VOLUME: 5996 FOLIO: 84, part being part Lot 121
in DP ~~800222992~~

*now 2A/13089

NOW BEING 121/818869

(B) **LODGED BY**

L.T.O. Box

32K

Name, Address or DX and Telephone

C. Kenyon & Sons

REFERENCE (max. 15 characters): 32 HORN

(C) **TRANSFEROR**

...ROSS, GEORGE, HORN...

(D) acknowledges receipt of the consideration of EIGHTY THOUSAND DOLLARS (\$80,000.00)

and as regards the land specified above transfers to the transferee an estate in fee simple

(E) subject to the following **ENCUMBRANCES** 1. 2. 3.

(F) **TRANSFEE**

G.A. & R.G. HORN PTY LIMITED ACN 000268691

as joint tenants/tenants in common

(G)



(H) We certify this dealing correct for the purposes of the Real Property Act, 1900.

DATE OF EXECUTION 29th JUNE 1992

Signed in my presence by the transferor who is personally known to me.

[Signature]

ROBERT HENRY FAULKNER

Name of Witness (BLOCK LETTERS)

11, BOURKE STREET MAITLAND

Address of Witness

[Signature]

Signature of Transferor

Signed in my presence by the transferee who is personally known to me.

THE COMMON SEAL of G.A. & R.G. HORN

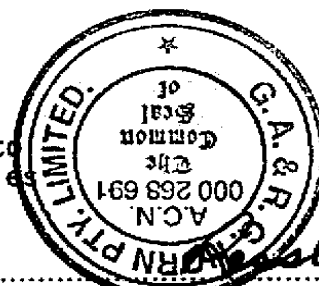
Signature of Witness

PTY LIMITED ACN 000268691 was hereunto
affixed in accordance with the articles

of association of the Company in the
Name of Witness (BLOCK LETTERS) presence of:

Address of Witness

[Signature]
Secretary



[Signature]
Signature of Transferee Director

[Signature]



SEARCH DATE

7/8/2024 4:09PM

FOLIO: 123/1063557

First Title(s): OLD SYSTEM

Prior Title(s): 13/773693 121/818869

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
2/2/2004	DP1063557	DEPOSITED PLAN	FOLIO CREATED EDITION 1
14/10/2019	AP602927	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 2
21/8/2020	AQ333445	CAVEAT	
31/8/2023	AT403348	WITHDRAWAL OF CAVEAT	EDITION 3
13/10/2023	AT516408	CAVEAT	EDITION 4
11/1/2024	AT751158	WITHDRAWAL OF CAVEAT	
11/1/2024	AT751159	TRANSFER	EDITION 5

*** END OF SEARCH ***



FOLIO: 123/1063557

SEARCH DATE	TIME	EDITION NO	DATE
7/8/2024	4:08 PM	5	11/1/2024

LAND

LOT 123 IN DEPOSITED PLAN 1063557
AT VACY
LOCAL GOVERNMENT AREA DUNGOG
PARISH OF HOUGHTON COUNTY OF DURHAM
TITLE DIAGRAM DP1063557

FIRST SCHEDULE

CORNISH GROUP NO. SIX PTY LTD (T AT751159)

SECOND SCHEDULE (3 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 DP773693 EASEMENT FOR POWER TRANSMISSION LINE 20 WIDE
AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN
IN THE TITLE DIAGRAM
- 3 DP818869 EASEMENT FOR POWER TRANSMISSION LINE 20 WIDE
AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN
IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***



Dungog Shire Council
PO Box 95
DUNGOG NSW 2420
T: (02) 4995 7777 F: (02) 4995 7750
E: shirecouncil@dungog.nsw.gov.au
W: dungog.nsw.gov.au
ABN 62 610 350 056

S10.7(2 & 5) PLANNING CERTIFICATE

Environmental Planning & Assessment Act, 1979 (as amended)

Date: 22 July 2024

Certificate : 2024264 **Fee:** \$69.00 **Receipt :** 874094 **Your Ref:**

DESCRIPTION OF LAND

User Assessment: 024390112100 **Parish:** Houghton **County:** Durham

Assessment: 80457

Address: LOT: 123 DP: 1063557 No 598 Gresford Road VACY 2421

Owner: Cornish Group No. Six Pty Ltd

This certificate provides information on how the relevant parcel of land may be developed, including the planning restrictions that apply to development of the land, as at the date the certificate is issued. The certificate contains information Council is aware of through its records and environmental plans, along with data supplied by the State Government. The details contained in this certificate are limited to that required by Section 10.7(2) & (5) of the Environmental Planning and Assessment Act, 1979 and clause 284 and Schedule 2 of the *Environment Planning and Assessment Regulation 2021*.

ITEM 1 NAMES OF RELEVANT PLANNING INSTRUMENTS AND DEVELOPMENT CONTROL PLANS

- (1) The name of each environmental planning instrument and development control plan that applies to the carrying out of development on the land.**

State Environmental Planning Policies

Refer to Attachment 1

Local Environmental Plans

Dungog Local Environmental Plan 2014 – Operational 1 June 2014

Development Control Plans

Dungog Shire Wide Development Control Plan No. 1 - Refer to Attachment 2

- (2) The name of each proposed environmental planning instrument and draft development control plan, which is or has been subject to community consultation or public exhibition under the Act, that will apply to the carrying out of development on the land.**

Draft State Environmental Planning Policies

Refer to Attachment 3

Draft Local Environmental Plans

Nil

Draft Development Control Plans

Nil

- (3) Subsection (2) does not apply in relation to a proposed environmental planning instrument or draft development control plan if—**
- (a) it has been more than 3 years since the end of the public exhibition period for the proposed instrument or draft plan, or**
 - (b) for a proposed environmental planning instrument—the Planning Secretary has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved.**
- (4) In this section—
proposed environmental planning instrument means a draft environmental planning instrument and includes a planning proposal for a local environmental plan.**

ITEM 2 ZONING AND LAND USE UNDER RELEVANT PLANNING INSTRUMENTS

For each environmental planning instrument or draft environmental planning instrument

(a) What is the identity of the zoning for the land?

Under the Dungog Local Environmental Plan 2014 the zoning is: RU1 Primary Production, R5 Large Lot Residential, C3 Environmental Management

(b) (i) For what purposes may development be carried out within the zone without the need for development consent?

Refer to Attachment 4

(b) (ii) For what purposes may development not be carried out within the zone except with development consent?

Refer to Attachment 4

(b) (iii) For what purposes is development prohibited within the zone?

Refer to Attachment 4

(c) Do any additional permitted uses apply to the land?

No

(d) Are there any development standards applying to the land that fix minimum land dimensions for the erection of a dwelling house on the land and, if so, the fixed minimum land dimensions?

Yes for RU1 & C3 zones – Refer to Attachment 5

No For Zone R5

(e) Is the land in an area of outstanding biodiversity value under the Biodiversity Conservation Act 2016?

No

(f) Is the land in a conservation area?

No

(g) Is an item of environmental heritage located on the land.

No

ITEM 3 CONTRIBUTIONS PLANS

- (1) **Which contributions plan/s under Division 7 of the Act apply to the land, including draft contributions plans.**

Dungog Local Infrastructure Contributions Plan, 2019

Contributions Plan for Heavy Haulage Generated by Extractive Industries, 2017

- (2) **Is the land in a special contributions area under Division 7.1 of the Act?**

No

ITEM 4 COMPLYING DEVELOPMENT

- (1) **Whether or not the land is land on which complying development may be carried out under each of the complying development codes under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, because of that Policy, clause 1.17A(1)(c)–(e), (2), (3) or (4), 1.18(1)(c3) or 1.19.**
- (2) **Whether complying development may not be carried out on the land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1)(c3) and 1.19 of the SEPP and the reasons why it may not be carried out under those clauses.**

HOUSING CODE

As of 1 January 2021, the Housing Code no longer applies to land within the Dungog Local Government Area. Refer to the provisions of the Inland Code.

RURAL HOUSING CODE

As of 1 January 2021, the Rural Housing Code no longer applies to land within the Dungog Local Government Area. Refer to the provisions of the Inland Code.

LOW RISE HOUSING DIVERSITY CODE

Complying Development under the Low Rise Housing Diversity Code may not be carried out on the land as the land is not within an applicable zone.

GREENFIELD HOUSING CODE

Complying Development under the Greenfield Housing Code may not be carried out on the land as the land is not within an applicable area.

INLAND CODE

For Zones R5 & RU1

Complying Development may be carried out on the land under the Inland Code, subject to the development complying with the general and specific standards for the Code.

For Zone C3

Complying Development under the Inland Code may not be carried out on the land as the land is not within an applicable zone.

AGRITOURISM AND FARM STAY ACCOMMODATION CODE

For Zones R5 & C3

Complying Development under the Agritourism and Farm Stay Accommodation Code may not be carried out on the land as the land is not within an applicable zone.

For Zone RU1

Complying Development may be carried out on the land under the Agritourism and Farm Stay Accommodation Code, subject to the development complying with the general and specific standards for the Code.

HOUSING ALTERATIONS CODE

For All Zones

Complying Development may be carried out on the land under the Housing Alteration Code, subject to the development complying with the general and specific standards of the Code.

GENERAL DEVELOPMENT CODE

For All Zones

Complying Development may be carried out on the land under the General Development Code, subject to complying with the general and specific standards of the Code.

COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS & ADDITIONS) CODE

For All Zones

Complying Development under the Commercial and Industrial (New Buildings & Additions) Code may not be carried out on the land as the land is not within an applicable zone.

CONTAINER RECYCLING FACILITIES CODE

For All Zones

Complying Development under the Container Recycling Facilities Code may not be carried out on the land as the land is not within an applicable zone.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

For All Zones

Complying Development may be carried out on the land under the Commercial and Industrial Alterations Code, subject to complying with the general and specific standards of the Code.

SUBDIVISIONS CODE

For All Zones

Complying Development may be carried out on the land under the Subdivision Code, subject to complying with the general and specific standards of the Code.

DEMOLITION CODE

For All Zones

Complying Development may be carried out on the land under the Demolition Code, subject to complying with the general and specific standards of the Code.

FIRE SAFETY CODE

For All Zones

Complying Development may be carried out on the land under the Fire Safety Code, subject to complying with the general and specific standards of the Code.

- (3) Council may not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land. In this regard:**

- (a) If a restriction applies to the land, it may not apply to all of the land,**
(b) the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

- (4) Whether the complying development codes are varied, under clause 1.12 of the Policy, in relation to the land.**

No

ITEM 5 EXEMPT DEVELOPMENT

- (1) If the land is land on which exempt development may be carried out under each of the exempt development codes under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, because of that Policy, clause 1.16(1)(b1)–(d) or 1.16A.**
- (2) If exempt development may not be carried out on the land because of those clauses, the reasons why it may not be carried out under the clause.**

For All Zones

Exempt Development may be carried out on the land under the Exempt Development Code, including:

- Division 1 General Code
- Division 2 Advertising and Signage Code
- Division 3 Temporary Uses and Structures Code,

subject to complying with the general and specific standards set out in the Codes.

- (3) If the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land, a statement that—**
- (a) a restriction applies to the land, but it may not apply to all of the land,**
(b) the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land.
- (4) Whether the exempt development codes are varied, under that Policy, clause 1.12, in relation to the land.**

No

ITEM 6 AFFECTED BUILDING NOTICES AND BUILDING PRODUCT RECTIFICATION ORDERS

(1) Is the council is aware that—

(a) an affected building notice is in force in relation to the land?

No

(b) a building product rectification order is in force in relation to the land that has not been fully complied with?

No

(c) a notice of intention to make a building product rectification order given in relation to the land is outstanding?

No

(2) In this section—

affected building notice has the same meaning as in the Building Products (Safety) Act 2017, Part 4.

building product rectification order has the same meaning as in the Building Products (Safety) Act 2017.

ITEM 7 LAND RESERVED FOR ACQUISITION

Does an environmental planning instrument or proposed environmental planning instrument referred to in section 1 make provision in relation to the acquisition of the land by an authority of the State, as referred to in the Act, section 3.15.

No

ITEM 8 ROAD WIDENING AND ROAD REALIGNMENT

Is the land affected by road widening or road realignment under—

- (a) the Roads Act 1993, Part 3, Division 2, or
- (b) an environmental planning instrument, or
- (c) a resolution of the council.

No

ITEM 9 FLOOD RELATED DEVELOPMENT CONTROLS

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

Yes – Council's records indicate that the land is wholly or partially flood prone land. Development on flood prone land is subject to flood related development controls. Information on the extent of flooding and development controls on land is available from Council's Planning Department and you are advised to make further enquiries.

(2) Is 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?

Yes – Council’s records indicate that the land is wholly or partially flood prone land. Development on flood prone land is subject to flood related development controls. Information on the extent of flooding and development controls on land is available from Council’s Planning Department and you are advised to make further enquiries.

(3) In this section—

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.

ITEM 10 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(1) Whether any of the land is affected by an adopted policy that restricts the development of the land because of the likelihood of land slip, bush fire, tidal inundation, subsidence, acid sulfate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk, other than flooding.

(2) In this section—

adopted policy means a policy adopted—

(a) by the council, or

(b) by another public authority, if the public authority has notified the council that the policy will be included in a planning certificate issued by the council.

Land Slip

No

Bush Fire

No

Tidal Inundation

No

Subsidence

No

Acid Sulfate Soils

No

Contamination

Council adopted a Contaminated Land Policy on 30 October 2018. The Policy applies to all land within the Dungog Local Government Area.

Aircraft Noise

No

Salinity

No

Coastal Hazards

No

Sea Level Rise

No

Any Other Risk (other than Flooding)

No

ITEM 11 BUSH FIRE PRONE LAND

Is any of the land bush fire prone land, as designated by the Commissioner of the NSW Rural Fire Service under the Act, section 10.3?

No

Note: Council's current mapping for bushfire prone land within the Dungog Local Government Area, as certified by the Commissioner of NSW Rural Fire Service, **does not** include land identified as predominantly grasslands. Planning for Bushfire Protection 2019 (PBP 2019) and the Australian Standard 3959-2018 (AS3959 – 2018) "*Construction of buildings in bush-fire prone areas*" includes "grasslands" as a vegetation classification which applies to land within bushfire prone areas and specifies construction standards applicable to buildings within those areas. Advice should be sought as to whether the land is likely to be affected by PBP 2019 and AS 3959-2018.

ITEM 12 LOOSE-FILL ASBESTOS INSULATION

Does the land include any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that are listed on the register that is required to be maintained under that Division?

No

ITEM 13 MINE SUBSIDENCE

Is the land is declared to be a mine subsidence district, within the meaning of the Coal Mine Subsidence Compensation Act 2017.

No

ITEM 14 PAPER SUBDIVISION INFORMATION

(1) Is there a development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot?

No

(2) Is there a subdivision order that applies to the land?

No

(3) Words and expressions used in this section have the same meaning as in this Regulation, Part 10 and the Act, Schedule 7.

ITEM 15 PROPERTY VEGETATION PLANS

Is a property vegetation plan approved and in force under the Native Vegetation Act 2003, Part 4, 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

ITEM 16 BIODIVERSITY STEWARDSHIP SITES

Is the land a biodiversity stewardship site under a biodiversity stewardship agreement under the Biodiversity Conservation Act 2016, Part 5, but only if the council has been notified of the existence of the agreement by the Biodiversity Conservation Trust?

Note—

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

No

ITEM 17 BIODIVERSITY CERTIFIED LAND

Is the land biodiversity certified land under the Biodiversity Conservation Act 2016, Part 8?

Note—

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

No

ITEM 18 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

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

No

ITEM 19 ANNUAL CHARGES UNDER LOCAL GOVERNMENT ACT 1993 FOR COASTAL PROTECTION SERVICES THAT RELATE TO EXISTING COASTAL PROTECTION WORKS

This clause is not applicable to the Dungog Local Government Area because Dungog Shire Council is not a "coastal council".

ITEM 20 WESTERN SYDNEY AEROTROPOLIS

The State Environmental Planning Policy (Precincts—Western Parkland City) 2021 does not apply to land within the Dungog local government area

ITEM 21 DEVELOPMENT CONSENT CONDITIONS FOR SENIORS HOUSING

If State Environmental Planning Policy (Housing) 2021, Chapter 3, Part 5 applies to the land, have any conditions been imposed on a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2)?

No

ITEM 22 SITE COMPATIBILITY CERTIFICATES AND DEVELOPMENT CONSENT CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(1) Is there a current site compatibility certificate under State Environmental Planning Policy (Housing) 2021, or a former site compatibility certificate, of which the council is aware, in relation to proposed development on the land and, if there is a certificate—

- (a) the period for which the certificate is current, and**
- (b) that a copy may be obtained from the Department.**

No

(2) If State Environmental Planning Policy (Housing) 2021, Chapter 2, Part 2, Division 1 or 5 applies to the land, have any conditions been imposed on a development consent in relation to the land that are of a kind referred to in that Policy, section 21(1) or 40(1)?

No

(3) Have any conditions been imposed on a development consent in relation to land that are of a kind referred to in State Environmental Planning Policy (Affordable Rental Housing) 2009, clause 17(1) or 38(1)?

No

(4) In this section—
former site compatibility certificate means a site compatibility certificate issued under State Environmental Planning Policy (Affordable Rental Housing) 2009.

ITEM 23 ADDITIONAL INFORMATION PURSUANT TO SECTION 10.7(5) OF THE ACT

(a) Is there a Tree Preservation Order affecting the land?

No

(b) Are there any developments approved on this property within the past five (5) years?

No

- (c) Due to the State Government Payment package of Local Government reforms and guidelines to enable more effective supervision of septic tanks and other small sewerage management facilities, it is now a legal requirement under the Local Government (Approvals) Amendment (Sewerage Management) Regulation 1998 that all systems of sewerage management are the subject of approval to operate. These facilities include septic tanks, septic closets, composting toilets and grey water treatment devices. Applications for such facilities are to be submitted to Council when required to do so by either written notification or at the time of lodging a development application for a new dwelling. In the event of a property being sold, the purchaser of the land should be aware there is a two month period in which to apply for the necessary approval.

NOTE: MATTERS PRESCRIBED BY SECTION 59(2) OF THE CONTAMINATED LAND MANAGEMENT ACT 1997 (CLM Act)

- (a) Is the land significantly contaminated land within the meaning of the CLM Act at the date of this certificate?
No
- (b) Is the land subject to a management order within the meaning of the CLM Act at the date of this certificate?
No
- (c) Is the land the subject of an approved voluntary management proposed within the meaning of the CLM Act at the date of this certificate?
No
- (d) Is the land the subject to an ongoing maintenance order within the meaning of the CLM Act at the date of this certificate?
No
- (e) Is the land the subject of a site audit statement within the meaning of the CLM Act (such a statement having been provided to Council at any time)?
No



Jenny Webb
SECTION MANAGER DEVELOPMENT SERVICES

Date: 2 August 2024

Applicant: Douglas Partners Pty Ltd
Box 324
HRMC NSW 2310

Access to this land is by a Public Maintained Road. Council's maintained roads vary from time to time and there is no guarantee that this road will remain on the maintained list indefinitely.

STATE ENVIRONMENTAL PLANNING POLICIES

State Environmental Planning Policy (Biodiversity and Conservation) 2021

- Chapter 2 – Vegetation in non-rural areas of the SEPP applies to Dungog LGA.
- Chapter 3 – Koala habitat protection 2020 of the SEPP applies to Dungog LGA.
- Chapter 4 – Koala habitat protection 2021 of the SEPP applies to Dungog LGA.
- Chapter 7 – Canal Estate Development of the SEPP applies to Dungog LGA.

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

State Environmental Planning Policy (Housing) 2021

- Chapter 2 – Affordable Housing of the SEPP applies to Dungog LGA.
- Chapter 3 – Diverse Housing of the SEPP applies to Dungog LGA.

State Environmental Planning Policy (Industry and Employment) 2021

- Chapter 3 – Advertising and Signage of the SEPP applies to Dungog LGA.
-

State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development

State Environmental Planning Policy (Planning Systems) 2021

- Chapter 2 – State and regional development of the SEPP applies to Dungog LGA.
- Chapter 4 – Concurrences and consents of the SEPP applies to Dungog LGA.

State Environmental Planning Policy (Precincts—Regional) 2021

- Chapter 2 – State Significant precincts of the SEPP applies to Dungog LGA.

State Environmental Planning Policy (Primary Production) 2021

- Chapter 2 – Primary production and rural development of the SEPP applies to Dungog LGA.

State Environmental Planning Policy (Resilience and Hazards) 2021

- Chapter 3 – Hazardous and offensive development of the SEPP applies to Dungog LGA.
- Chapter 4 – Remediation of Land of the SEPP applies to Dungog LGA.

State Environmental Planning Policy (Resources and Energy) 2021

- Chapter 2 – Mining, petroleum production and extractive industries of the SEPP applies to Dungog LGA.

State Environmental Planning Policy (Sustainable Buildings) 2022

State Environmental Planning Policy (Transport and Infrastructure) 2021

- Chapter 2 – Infrastructure of the SEPP applies to Dungog LGA.
- Chapter 3 – Educational establishments and child care facilities of the SEPP applies to Dungog LGA.

SHIRE WIDE DEVELOPMENT CONTROL PLAN No.1

Shire Wide Development Plan No. 1 affects all land in the Shire. The document compliments Councils Planning Instruments and presents a package of design controls and guidelines intended to assist in the achievement of the Councils Aims and Objectives with regard to development in the Shire

Dungog Shire has become one of the most desirable locations in the Hunter Valley, as much for it's unique natural environment as for its lifestyle and climate attractions.

This Development Control Plan represents the policies of the Dungog Shire Council with regard to certain types of development within the Shire, together with guidelines designed to assist developers in achieving the adopted aims and objectives. It should be read in conjunction with the Dungog Local Environmental Plan 2014.

The Shire Wide Development Control Plan 1 contains the following parts:

Chapter	Adoption Date
PART A	
1. Administration	20/6/2018
PART B	
1. Complying Development	20/6/2018
2. Exempt Development	20/6/2018
PART C	
1. Residential Development	18/5/2004
2. Development in Rural Residential Zones	18/5/2004
3. Building Line Setbacks	19/6/2019
4. Erection of Farm Buildings and outbuildings - sheds	20/6/2018
5. Bushfire	20/6/2018
7. Buffer Zones	16/8/2005
8. Managing Our Floodplains	15/8/2018
9. Employment Development	18/5/2004
11. Tourist Development	18/5/2004
12. Keeping of Dogs for Commercial Purposes	19/2/2002
14. Building Over or Near Sewer	20/3/2001
15. Contaminated Land	29/10/2018
16. Biodiversity	20/5/2003
17. Heritage	21/10/2003
18. Water Efficiency	17/2/2004
19. Wind Energy Generation Facilities	15/8/2006
20. Off Street Parking	9/7/2005
22. Signage	20/5/2008
23. On Site Sewage Management	20/6/2018
24. Site Waste Minimisation and Management	20/6/2018
PART D	
1. South Vacy Village	18/2/2003
2. Clarence Town Local Area Plan	17/5/2005
3. Vacy Local Area Plan	16/8/2005
4. Draft Martins Creek Local Area Plan	
5. Paterson Local Area Plan	15/11/2005
6. Gresford Local Area Plan	16/5/2006
7. Boulton Drive Paterson	20/6/2018
8. Boatfalls Rural Residential Estate	20/6/2018
9. Cangon Park Rural Residential Estate	18/3/2020

DRAFT STATE ENVIRONMENTAL PLANNING POLICIES

- State Environmental Planning Policy (Exempt and complying Development Codes) 2008 - Proposed changes to complying development for farm buildings, rural sheds and earthworks.
- State Environmental Planning Policy (Housing) 2021 - Manufactured Home Estates, Caravan Parks, Camping Grounds and Movable Dwellings Exhibition From: 17/11/2023 To: 19/1/2024
- State Environmental Planning Policy (Transport & Infrastructure) 2021 - Exempt and complying development within existing cemeteries Exhibition From: 23/10/2023 To: 19/11/2023
- Housing SEPP EIE Exhibition From 22/11/2022 To: 13/01/2023
- Transport and Infrastructure SEPP amendment (Chapter 4 Major Infrastructure Corridors) Exhibition From: 22/08/2022 To: 19/09/2022
- Draft local character clause Exhibition From: 12/11/2020 To: 29/01/2021
- ISEPP amendment – health infrastructure Exhibition From: 20/11/2020 To: 17/12/2020
- State and Regional Development SEPP - Water Treatment Plants Exhibition From: 02/03/2020 To: 16/03/2020

Information on draft State Environmental Planning Policies is available on the NSW Planning Portal. <https://www.planningportal.nsw.gov.au/have-your-say->

DUNGOG LOCAL ENVIRONMENTAL PLAN 2014

PART 2

Zone R5 Large Lot Residential

1 Objectives of zone

- To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.
- To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.
- To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To isolate housing from existing intensive agriculture or future intensive agricultural areas.

2 Permitted without consent

Extensive agriculture; Home occupations; Markets; Roads; Roadside stalls

3 Permitted with consent

Agritourism; Bed and breakfast accommodation; Boarding houses; Boat launching ramps; Car parks; Cellar door premises; Centre-based child care facilities; Community facilities; Dual occupancies; Dwelling houses; Emergency services facilities; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Farm buildings; Farm stay accommodation; Flood mitigation works; Function centres; Home-based child care; Home businesses; Information and education facilities; Jetties; Kiosks; Neighbourhood shops; Oyster aquaculture; Places of public worship; Plant nurseries; Pond-based aquaculture; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Respite day care centres; Rural supplies; Sewerage systems; Signage; Tank-based aquaculture; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Water recreation structures; Water supply systems

4 Prohibited

Any development not specified in item 2 or 3

DUNGOG LOCAL ENVIRONMENTAL PLAN 2014

PART 2

Zone C3 Environmental Management

1 Objectives of zone

- To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values.
- To provide for a limited range of development that does not have an adverse effect on those values.
- To promote the rural amenity and scenic landscape values of the area and prevent the silhouetting of unsympathetic development on ridgelines.

2 Permitted without consent

Bee keeping; Home occupations

3 Permitted with consent

Agritourism; Bed and breakfast accommodation; Boat launching ramps; Camping grounds; Caravan parks; Dwelling houses; Eco-tourist facilities; Emergency services facilities; Environmental facilities; Environmental protection works; Extensive agriculture; Farm buildings; Farm stay accommodation; Home-based childcare; Information and education facilities; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Public administration buildings; Recreation areas; Research stations; Roads; Sewerage systems; Tank-based aquaculture; Water recreation structures; Water supply systems

4 Prohibited

Industries; Local distribution premises; Multi dwelling housing; Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

DUNGOG LOCAL ENVIRONMENTAL PLAN 2014

PART 2

Zone RU1 Primary Production

1 Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To provide for recreational and tourist activities that are compatible with the agricultural, environmental and conservation value of the land.
- To promote the rural amenity and scenic landscape values of the area and prevent the silhouetting of unsympathetic development on ridgelines.

2 Permitted without consent

Environmental protection works; Extensive agriculture; Home occupations; Horticulture; Markets; Roads; Roadside stalls

3 Permitted with consent

Agritourism; Airstrips; Animal boarding or training establishments; Aquaculture; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cellar door premises; Cemeteries; Charter and tourism boating facilities; Community facilities; Correctional centres; Crematoria; Dual occupancies; Dwelling houses; Eco-tourist facilities; Educational establishments; Environmental facilities; Extractive industries; Farm buildings; Flood mitigation works; Forestry; Freight transport facilities; Function centres; Group homes; Health services facilities; Helipads; Heliports; Highway service centres; Home-based child care; Home businesses; Home industries; Industrial training facilities; Information and education facilities; Intensive livestock agriculture; Intensive plant agriculture; Jetties; Kiosks; Landscaping material supplies; Marinas; Moorings; Open cut mining; Places of public worship; Plant nurseries; Recreation areas; Recreation facilities (outdoor); Restaurants or cafes; Rural industries; Rural supplies; Rural workers' dwellings; Signage; Timber yards; Tourist and visitor accommodation; Transport depots; Truck depots; Veterinary hospitals; Water recreation structures

4 Prohibited

Any development not specified in item 2 or 3

DUNGOG LOCAL ENVIRONMENTAL PLAN 2014

PART 4.2A

4.2A Erection of dwelling houses and dual occupancies on land in certain rural and environment protection zones

- (1) The objectives of this clause are as follows:
 - (a) to minimise unplanned rural residential development,
 - (b) to enable the replacement of lawfully erected dwelling houses and dual occupancies in rural and environment protection zones.

- (2) This clause applies to land in the following zones:
 - (a) Zone RU1 Primary Production,
 - (b) Zone C3 Environmental Management,
 - (c) Zone C4 Environmental Living.

- (3) Development consent must not be granted for the erection of a dwelling house or a dual occupancy on land to which this clause applies, and on which no dwelling house or dual occupancy has been erected, unless the lot on which the dwelling is to be erected:
 - (a) is a lot that is at least the minimum lot size shown on the Lot Size Map in relation to that land on which the dwelling house or dual occupancy is proposed, or
 - (b) is a lot created under this Plan (other than under clause 4.1B or clause 4.2 (3)), or
 - (c) is a lot created before this Plan commenced and:
 - (i) the erection of a dwelling house was permissible on that lot, and
 - (ii) no development standards limiting the power to grant development consent for the erection of a dwelling house applied to that lot, before that commencement, or
 - (d) is a lot resulting from a subdivision for which development consent (or equivalent) was granted before this Plan commenced and on which the erection of a dwelling house or a dual occupancy would have been permissible if the plan of subdivision had been registered before that commencement, or
 - (e) is an existing holding, or
 - (f) would have been a lot or a holding referred to in paragraph (a), (b), (c), (d) or (e) had it not been affected by:
 - (i) a minor realignment of its boundaries that did not create an additional lot, or
 - (ii) a subdivision creating or widening a public road or public reserve or for another public purpose, or
 - (iii) a consolidation with an adjoining public road or public reserve or for another public purpose.
 - (g) is Lot 1, DP 867951, 1177 Fosterton Road, Fosterton.

Note. A dwelling cannot be erected on a lot created under clause 9 of State Environmental Planning Policy (Rural Lands) 2008 or clause 4.2.

- (4) Development consent may be granted for the erection of a dwelling house or a dual occupancy on land to which this clause applies if there is a lawfully erected dwelling house or dual occupancy on the land and the dwelling house or dual occupancy to be erected is intended only to replace the existing dwelling house or dual occupancy.
- (5) In this clause:
existing holding means land that:
- (a) was a holding on 1 July 2003, and
 - (b) is the same holding at the time of lodging a development application under this clause,

whether or not there has been a change in the ownership of the holding since 1 July 2003.

holding means all adjoining land, even if separated by a road, river or railway, held by the same person or persons.

Note. The owner in whose ownership all the land is at the time the application is lodged need not be the same person as the owner in whose ownership all the land was on the stated date.

NOTICE TO PURCHASERS OF LAND IN RURAL AREAS IN DUNGOG SHIRE

Dungog Shire Council supports the right of persons in rural areas to carry out agricultural production using reasonable and practicable measures to avoid environmental harm.

Intending purchasers are advised that agricultural production practised may include some of the following activities and some activities may have implications for occupiers of adjacent land:-

- Logging and milling of timber
- Dairies
- Intensive livestock production (feedlots, piggeries and poultry farms)
- Intensive Agriculture
- Vegetation clearing
- Cultivation and harvesting
- Bush fire hazard reduction burning
- Construction of firebreaks
- Construction of dams, drains and contour banks
- Fencing
- Use of agricultural machinery (tractors, chainsaws, motor bikes etc)
- Pumping and irrigation
- Pesticide spraying
- Aerial spraying
- Animal husbandry practices
- Droving livestock on roads
- Silage production
- Construction of access roads and tracks
- Slashing and mowing vegetation
- Planting of wood lots.

Intending purchasers of land in rural areas may have difficulty with some of these activities or the impact of these activities when they are being carried out on land near their proposed purchase. If so, they should seek independent advice and consider their position.

This notice is not intended to affect the rights of individuals to take action under the common law or legislation.

THIS NOTICE IS PROVIDED FOR INFORMATION PURPOSES ONLY

Appendix D

Site Photographs (Photos 1 to 18)



Photo 1: Looking north west along the eastern boundary of the site.



Photo 2: Looking south west across the site from the eastern boundary.

 GROUND EXPERTISE		Site Photographs – 19 July 2024		PROJECT:	91432.06
		Proposed Residential Subdivision		PLATE No:	1
		598 Gresford Road, Vacy		REV:	0
		CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24



Photo 3: Looking west across the central portion of the site.

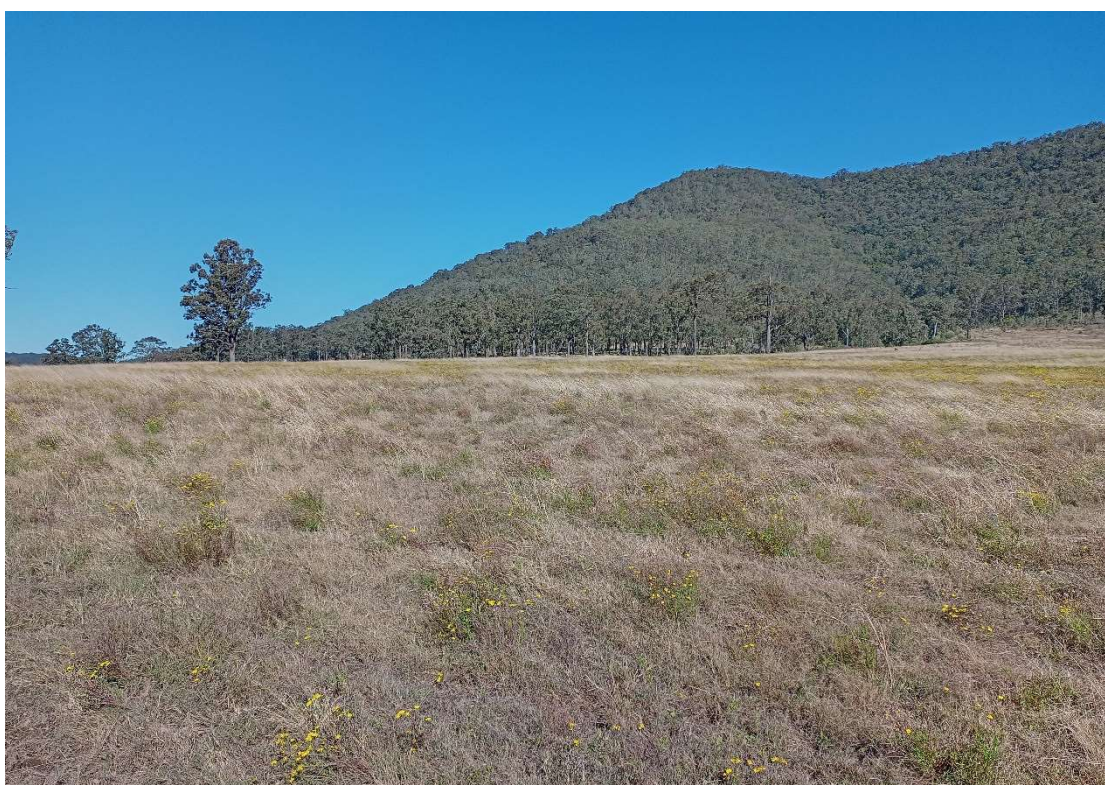


Photo 4: Looking south west across the site from the eastern boundary.

 GROUNDED EXPERTISE		Site Photographs – 19 July 2024		PROJECT:	91432.06
		Proposed Residential Subdivision		PLATE No:	2
		598 Gresford Road, Vacy		REV:	0
		CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24



Photo 5: Looking north west across the western boundary. Remnant fence posts observed



Photo 6: Looking at Dam 3 along the western boundary of the site.

 DOUGLAS PARTNERS GROUND EXPERTISE		Site Photographs – 19 July 2024		PROJECT:	91432.06
		Proposed Residential Subdivision		PLATE No:	3
		598 Gresford Road, Vacy		REV:	0
		CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24



Photo 7: Looking north at Dam 5.



Photo 8: Minor gully observed in the western portion of the site.

 DOUGLAS PARTNERS GROUND EXPERTISE		Site Photographs – 19 July 2024		PROJECT:	91432.06
		Proposed Residential Subdivision		PLATE No:	4
		598 Gresford Road, Vacy		REV:	0
		CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24



Photo 9: Sandstone observed at the surface along the western portion of the site.



Photo 10: Major gully observed through the central portion of the site. Ponded surface water observed

 GROUND ED EXPERTISE	Site Photographs – 19 July 2024	PROJECT:	91432.06
		Proposed Residential Subdivision	PLATE No: 5
		598 Gresford Road, Vacy	REV: 0
	CLIENT	Cornish Group No. Six Pty Ltd	DATE 16/09/24



Photo 11: Poned surface water observed in the central portion of the site.



Photo 12: Looking west across the site from the north eastern portion of the site.

 GROUND ED EXPERTISE	Site Photographs – 19 July 2024		PROJECT:	91432.06
	Proposed Residential Subdivision		PLATE No:	6
	598 Gresford Road, Vacy		REV:	0
	CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24



Photo 13: Stockpiled materials located directly adjacent Dam 9.



Photo 14: Dam 9 located in the north western corner of the site,

 GROUND ED EXPERTISE	Site Photographs – 19 July 2024		PROJECT:	91432.06
	Proposed Residential Subdivision		PLATE No:	7
	598 Gresford Road, Vacy		REV:	0
	CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24



Photo 15: Possible effluent disposal area located directly adjacent the northern boundary.



Photo 16: Bright green grass located adjacent the northern boundary.

 DOUGLAS PARTNERS GROUND EXPERTISE		Site Photographs – 19 July 2024		PROJECT:	91432.06
		Proposed Residential Subdivision		PLATE No:	8
		598 Gresford Road, Vacy		REV:	0
		CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24



Photo 17: Looking east across the site from the western boundary.



Photo 18: Looking east across the central portion of the site.

 Douglas PARTNERS GROUND EXPERTISE	Site Photographs – 19 July 2024		PROJECT:	91432.06
	Proposed Residential Subdivision		PLATE No:	9
	598 Gresford Road, Vacy		REV:	0
	CLIENT	Cornish Group No. Six Pty Ltd	DATE	16/09/24

Appendix E

Data Quality Objectives

1. Data Quality Objectives

The PSI has been devised broadly in accordance with the seven-step data quality objectives (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).

Table 1: Data quality objectives

Step	Summary
1: State the problem	The objective of the investigation is to assess the contamination status of the site with respect to the proposed land use. The report is being undertaken as the site is to be redeveloped. The requirements of the regulator, Dungog Shire 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 and 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). 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 G. The decision is to establish whether or not the results fall 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 will be the analytical results for the CoPC (identified in the CSM, Section 8) from NATA accredited laboratories and methods, where possible. The SAC for each of the CoPC are detailed in Appendix G. A photoionisation detector (PID) will be used on-site to screen soils for VOC. PID readings will be used to inform sample selection for laboratory analysis.
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 works were 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 the SAC (Appendix G, 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, RPD values 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 I.
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 the human health and environmental SAC and pose a potentially unacceptable risk to receptors (null hypothesis). Alternative condition: Contaminants at the site and statistical analysis of data (in line with NEPC (2013)) comply with the human health and environmental SAC and as such, do not pose a potentially unacceptable risk to receptors (alternative hypothesis). Unless conclusive information from the collected data is sufficient to reject the null hypothesis, it is assumed that the baseline condition is true. 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 investigation is to assess the contamination status of 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 9.

2. 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.

Appendix F

Terminology, Symbols and Abbreviations

Soil Descriptions

Sampling, Testing and Excavation Methodology

Test Pit Logs (Pits 1 to 33, M1 and M2)

Field Work Methodology

Introduction to Terminology, Symbols and Abbreviations

Douglas Partners' reports, investigation logs, and other correspondence may use terminology which has quantitative or qualitative connotations. To remove ambiguity or uncertainty surrounding the use of such terms, the following sets of notes pages may be attached Douglas Partners' reports, depending on the work performed and conditions encountered:

- Soil Descriptions;
- Rock Descriptions; and
- Sampling, insitu testing, and drilling methodologies

In addition to these pages, the following notes generally apply to most documents.

Abbreviation Codes

Site conditions may also be presented in a number of different formats, such as investigation logs, field mapping, or as a written summary. In some of these formats textual or symbolic terminology may be presented using textual abbreviation codes or graphic symbols, and, where commonly used, these are listed alongside the terminology definition. For ease of identification in these note pages, textual codes are presented in these notes in the following style **XW**. Code usage conforms with the following guidelines:

- Textual codes are case insensitive, although herein they are generally presented in upper case; and
- Textual codes are contextual (i.e. the same or similar combinations of characters may be used in different contexts with different meanings (for example `PL` is used for plastic limit in the context of soil moisture condition, as well as in `PL(A)` for point load test result in the testing results column)).

Data Integrity Codes

Subsurface investigation data recorded by Douglas Partners is generally managed in a highly structured database environment, where records "span" between a top and bottom depth interval. Depth interval "gaps" between records are considered to introduce ambiguity, and, where appropriate, our practice guidelines may require contiguous data sets. Recording meaningful data is not always appropriate (for example assigning a "strength" to a concrete pavement) and the following codes may be used to maintain contiguity in such circumstances.

Term	Description	Abbreviation Code
Core loss	No core recovery	KL
Unknown	Information was not available to allow classification of the property. For example, when auguring in loose, saturated sand auger cuttings may not be returned.	UK
No data	Information required to allow classification of the property was not available. For example, if drilling is commenced from the base of a hole predrilled by others	ND
Not Applicable	Derivation of the properties not appropriate or beyond the scope of the investigation. For example, providing a description of the strength of a concrete pavement	NA

Graphic Symbols

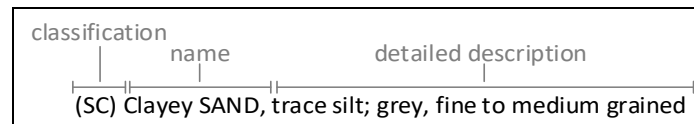
Douglas Partners' logs contain a "graphic" column which provides a pictorial representation of the basic composition of the material. The symbols used are directly representing the material name stated in the adjacent "Description of Strata" column, and as such no specific graphic symbology legend has been provided in these notes.

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Introduction

All materials which are not considered to be “in-situ rock” are described in general accordance with the soil description model of AS 1726-2017 Part 6.1.3, and can be broken down into the following description structure:



The “classification” comprises a two character “group symbol” providing a general summary of dominant soil characteristics. The “name” summarises the particle sizes within the soil which most influence its behaviour. The detailed description presents more information about composition, condition, structure, and origin of the soil.

Classification, naming and description of soils require the relative proportion of particles of different sizes within the whole soil mixture to be considered.

Particle size designation and Behaviour Model

Solid particles within a soil are differentiated on the basis of size.

The engineering behaviour properties of a soil can subsequently be modelled to be either “fine grained” (also known as “cohesive” behaviour) or “coarse grained” (“non cohesive” behaviour), depending on the relative proportion of fine or coarse fractions in the soil mixture.

Particle Size Designation	Particle Size (mm)	Behaviour Model	
		Behaviour	Approximate Dry Mass
Boulder	>200	Excluded from particle behaviour model as “oversize”	
Cobble	63 - 200		
Gravel ¹	2.36 - 63	Coarse	>65%
Sand ¹	0.075 - 2.36		
Silt	0.002 - 0.075	Fine	>35%
Clay	<0.002		

¹ – refer grain size subdivision descriptions below

The behaviour model boundaries defined above are not precise, and the material behaviour should be assumed from the name given to the material (which considers the particle fraction which dominates the behaviour, refer “component proportions” below), rather than strict observance of the proportions of particle sizes. For example, if a material is named a “Sandy CLAY”, this is indicative that the material exhibits fine grained behaviour, even if the dry mass of coarse grained material may exceed 65%.

Component proportions

The relative proportion of the dry mass of each particle size fraction is assessed to be a “primary”, “secondary”, or “minor” component of the soil mixture, depending on its influence over the soil behaviour.

Component Proportion Designation	Definition ¹	Relative Proportion	
		In Fine Grained Soil	In Coarse Grained Soil
Primary	The component (particle size designation, refer above) which dominates the engineering behaviour of the soil	The clay/silt component with the greater proportion	The sand/gravel component with the greater proportion
Secondary	Any component which is not the primary, but is significant to the engineering properties of the soil	Any component with greater than 30% proportion	Any granular component with greater than 30%; or Any fine component with greater than 12%
Minor ²	Present in the soil, but not significant to its engineering properties	All other components	All other components

¹ As defined in AS1726-2017 6.1.4.4

² In the detailed material description, minor components are split into two further sub-categories. Refer “identification of minor components” below.

Composite Materials

In certain situations, a lithology description may describe more than one material, for example, collectively describing a layer of interbedded sand and clay. In such a scenario, the two materials would be described independently, with the names preceded or followed by a statement describing the arrangement by which the materials co-exist. For example, “INTERBEDDED Silty CLAY AND SAND”.

Classification

The soil classification comprises a two character group symbol. The first character identifies the primary component. The second character identifies either the grading or presence of fines in a coarse grained soil, or the plasticity in a fine grained soil. Refer AS1726-2017 6.1.6 for further clarification.

Soil Name

For most soils, the name is derived with the primary component included as the noun (in upper case), preceded by any secondary components stated in an adjective form. In this way, the soil name also describes the general composition and indicates the dominant behaviour of the material.

Component ¹	Prominence in Soil Name
Primary	Noun (eg "CLAY")
Secondary	Adjective modifier (eg "Sandy")
Minor	No influence

¹ – for determination of component proportions, refer component proportions on previous page

For materials which cannot be disaggregated, or which are not comprised of rock or mineral fragments, the names "ORGANIC MATTER" or "ARTIFICIAL MATERIAL" may be used, in accordance with AS1726-2017 Table 14.

Commercial or colloquial names are not used for the soil name where a component derived name is possible (for example "Gravelly SAND" rather than "CRACKER DUST").

Materials of "fill" or "topsoil" origin are generally assigned a name derived from the primary/secondary component (where appropriate). In log descriptions this is preceded by uppercase "FILL" or "TOPSOIL". Origin uncertainty is indicated in the description by the characters (?), with the degree of uncertainty described (using the terms "probably" or "possibly" in the origin column, or at the end of the description).

Identification of minor components

Minor components are identified in the soil description immediately following the soil name. The minor component fraction is usually preceded with a term indicating the relative proportion of the component.

Minor Component Proportion Term	Relative Proportion	
	In Fine Grained Soil	In Coarse Grained Soil
With	All fractions: 15-30%	Clay/silt: 5-12% sand/gravel: 15-30%
Trace	All fractions: 0-15%	Clay/silt: 0-5% sand/gravel: 0-15%

The terms "with" and "trace" generally apply only to gravel or fine particle fractions. Where cobbles/boulders are encountered in minor proportions (generally less than about 12%) the term "occasional" may be used. This term describes the sporadic distribution of the material within the confines of the investigation excavation only, and there may be considerable variation in proportion over a wider area which is difficult to factually characterise due to the relative size of the particles and the investigation methods.

Soil Composition

Plasticity

Descriptive Term	Laboratory liquid limit range	
	Silt	Clay
Non-plastic materials	Not applicable	Not applicable
Low plasticity	≤50	≤35
Medium plasticity	Not applicable	>35 and ≤50
High plasticity	>50	>50

Note, Plasticity descriptions generally describe the plasticity behaviour of the whole of the fine grained soil, not individual fine grained fractions.

Grain Size

Type	Particle size (mm)	
	Coarse	Fine
Gravel	19 - 63	6.7 - 19
	Medium	2.36 - 6.7
Sand	0.6 - 2.36	0.21 - 0.6
	Medium	0.075 - 0.21
	Fine	

Grading

Grading Term	Particle size (mm)
Well	A good representation of all particle sizes
Poorly	An excess or deficiency of particular sizes within the specified range
Uniformly	Essentially of one size
Gap	A deficiency of a particular size or size range within the total range

Note, AS1726-2017 provides terminology for additional attributes not listed here.

Soil Condition

Moisture

The moisture condition of soils is assessed relative to the plastic limit for fine grained soils, while for coarse grained soils it is assessed based on the appearance and feel of the material. The moisture condition of a material is considered to be independent of stratigraphy (although commonly these are related), and this data is presented in its own column on logs.

Applicability	Term	Tactile Assessment	Abbreviation code
Fine	Dry of plastic limit	Hard and friable or powdery	w<PL
	Near plastic limit	Can be moulded	w=PL
	Wet of plastic limit	Water residue remains on hands when handling	w>PL
	Near liquid limit	"oozes" when agitated	w=LL
	Wet of liquid limit	"oozes"	w>LL
Coarse	Dry	Non-cohesive and free running	D
	Moist	Feels cool, darkened in colour, particles may stick together	M
	Wet	Feels cool, darkened in colour, particles may stick together, free water forms when handling	W

The abbreviation code **NDF**, meaning "not-assessable due to drilling fluid use" may also be used.

Note, observations relating to free ground water or drilling fluids are provided independent of soil moisture condition.

Consistency/Density/Compaction/Cementation/Extremely Weathered Material

These concepts give an indication of how the material may respond to applied forces (when considered in conjunction with other attributes of the soil). This behaviour can vary independent of the composition of the material, and on logs these are described in an independent column and are generally mutually exclusive (i.e it is inappropriate to describe both consistency and compaction at the same time). The method by which the behaviour is described depends on the behaviour model and other characteristics of the soil as follows:

- In fine grained soils, the "consistency" describes the ease with which the soil can be remoulded, and is generally correlated against the materials undrained shear strength;
- In granular materials, the relative density describes how tightly packed the particles are, and is generally correlated against the density index;
- In anthropogenically modified materials, the compaction of the material is described qualitatively;
- In cemented soils (both natural and anthropogenic), the cemented "strength" is described qualitatively, relative to the difficulty with which the material is disaggregated; and
- In soils of extremely weathered material origin, the engineering behaviour may be governed by relic rock features, and expected behaviour needs to be assessed based the overall material description.

Quantitative engineering performance of these materials may be determined by laboratory testing or estimated by correlated field tests (for example penetration or shear vane testing). In some cases, performance may be assessed by tactile or other subjective methods, in which case investigation logs will show the estimated value enclosed in round brackets, for example **(VS)**.

Consistency (fine grained soils)

Consistency Term	Tactile Assessment	Undrained Shear Strength (kPa)	Abbreviation Code
Very soft	Extrudes between fingers when squeezed	<12	VS
Soft	Mouldable with light finger pressure	>12 - ≤25	S
Firm	Mouldable with strong finger pressure	>25 - ≤50	F
Stiff	Cannot be moulded by fingers	>50 - ≤100	St
Very stiff	Indented by thumbnail	>100 - ≤200	VSt
Hard	Indented by thumbnail with difficulty	>200	H
Friable	Easily crumbled or broken into small pieces by hand	-	Fr

Relative Density (coarse grained soils)

Relative Density Term	Density Index	Abbreviation Code
Very loose	<15	VL
Loose	>15 - ≤35	L
Medium dense	>35 - ≤65	MD
Dense	>65 - ≤85	D
Very dense	>85	VD

Note, tactile assessment of relative density is difficult, and generally requires penetration testing, hence a tactile assessment guide is not provided.

Soil Descriptions

Terminology
Symbols
Abbreviations

Compaction (anthropogenically modified soil)

Compaction Term	Abbreviation Code
Well compacted	WC
Poorly compacted	PC
Moderately compacted	MC
Variably compacted	VC

Cementation (natural and anthropogenic)

Cementation Term	Abbreviation Code
Moderately cemented	MOD
Weakly cemented	WEK

Extremely Weathered Material

AS1726-2017 considers weathered material to be soil if the unconfined compressive strength is less than 0.6 MPa (i.e. less than very low strength rock). These materials may be identified as “extremely weathered material” in reports and by the abbreviation code **XWM** on log sheets. This identification is not correlated to any specific qualitative or quantitative behaviour, and the engineering properties of this material must therefore be assessed according to engineering principles with reference to any relic rock structure, fabric, or texture described in the description.

Soil Origin

Term	Description	Abbreviation Code
Residual	Derived from in-situ weathering of the underlying rock	RS
Extremely weathered material	Formed from in-situ weathering of geological formations. Has strength of less than ‘very low’ as per as1726 but retains the structure or fabric of the parent rock.	XWM
Alluvial	Deposited by streams and rivers	ALV
Estuarine	Deposited in coastal estuaries	EST
Marine	Deposited in a marine environment	MAR
Lacustrine	Deposited in freshwater lakes	LAC
Aeolian	Carried and deposited by wind	AEO
Colluvial	Soil and rock debris transported down slopes by gravity	COL
Slopewash	Thin layers of soil and rock debris gradually and slowly deposited by gravity and possibly water	SW
Topsoil	Mantle of surface soil, often with high levels of organic material	TOP
Fill	Any material which has been moved by man	FILL
Littoral	Deposited on the lake or seashore	LIT
Unidentifiable	Not able to be identified	UID

Cobbles and Boulders

The presence of particles considered to be “oversize” may be described using one of the following strategies:

- Oversize encountered in a minor proportion (when considered relative to the wider area) are noted in the soil description; or
- Where a significant proportion of oversize is encountered, the cobbles/boulders are described independent of the soil description, in a similar manner to composite soils (described above) but qualified with “MIXTURE OF”.

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Sampling and Testing

A record of samples retained, and field testing performed is usually shown on a Douglas Partners' log with samples appearing to the left of a depth scale, and selected field and laboratory testing (including results, where relevant) appearing to the right of the scale, as illustrated below:

SAMPLE			DEPTH (m)	TESTING	
SAMPLE REMARKS	TYPE	INTERVAL		TEST TYPE	RESULTS AND REMARKS
	SPT		1.0 1.45	SPT	4,9,11 N=20

Sampling

The type or intended purpose for which a sample was taken is indicated by the following abbreviation codes.

Sample Type	Code
Auger sample	A
Bulk sample	B
Core sample	C
Disturbed sample	D
Sample from SPT test	SPT
Environmental sample	ES
Gas sample	G
Undisturbed tube sample	U ¹
Water sample	W
Piston sample	P
Core sample for unconfined compressive strength testing	UCS
Material Sample	MT

¹ – numeric suffixes indicate tube diameter/width in mm

The above codes only indicate that a sample was retained, and not that testing was scheduled or performed.

Field and Laboratory Testing

A record that field and laboratory testing was performed is indicated by the following abbreviation codes.

Test Type	Code
Pocket penetrometer (kPa)	PP
Photo ionisation detector (ppm)	PID
Standard Penetration Test x/y = x blows for y mm penetration HB = hammer bouncing HW = fell under weight of hammer	SPT
Shear vane (kPa)	V
Unconfined compressive strength, (MPa)	UCS

Field and laboratory testing (continued)

Test Type	Code
Point load test, (MPa), axial (A), diametric (D), irregular (I)	PLT(L)
Dynamic cone penetrometer, followed by blow count penetration increment in mm (cone tip, generally in accordance with AS1289.6.3.2)	DCP/150
Perth sand penetrometer, followed by blow count penetration increment in mm (flat tip, generally in accordance with AS1289.6.3.3)	PSP/150

Groundwater Observations

▷	seepage/inflow
▽	standing or observed water level
NFGWO	no free groundwater observed
OBS	observations obscured by drilling fluids

Drilling or Excavation Methods/Tools

The drilling/excavation methods used to perform the investigation may be shown either in a dedicated column down the left-hand edge of the log, or stated in the log footer. In some circumstances abbreviation codes may be used.

Method	Abbreviation Code
Toothed bucket	TB ¹
Mud/blade bucket	MB ¹
Ripping tyne/ripper	R
Rock breaker/hydraulic hammer	RB
Hand auger	HA ¹
NMLC series coring	NMLC
HMLC series coring	HMLC
NQ coring	NQ3
HQ coring	HQ3
PQ coring	PQ3
Push tube	PT ¹
Rock roller	RR ¹
Solid flight auger. Suffixes: /T = tungsten carbide tip, /V = v-shaped tip	AD ¹
Sonic drilling	SON ¹
Vibrocore	VC ¹
Wash bore (unspecified bit type)	WB ¹
Existing exposure	X
Hand tools (unspecified)	HAND
Predrilled	PD
Diatube	DT ¹
Hollow flight auger	HSA ¹
Vacuum excavation	VE

¹ – numeric suffixes indicate tool diameter/width in mm

TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	27.5 AHD	LOCATION ID:	1
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367518.7, N:6397020.4	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	25/07/24
		DIP/AZIMUTH:	90°/---°	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							
25/07/24 No free groundwater observed	27	0.10	TOPSOIL / Silty SAND (SM): dark brown; fine to medium; with organics, rootlets.		TOP	NA	M			D/ES		0.10	PID		5	10	15				
		Sandy CLAY (CH): brown; high plasticity; fine to medium sand.	RS		St	w<PL	D/ES				0.30	PP									
		0.40	Sandy CLAY (Cl): orange brown; medium plasticity; trace sandstone/conglomerate rock cobbles.		RS	VSt	w<PL			D/ES		0.50	PID								
												0.70	PP								
												0.98	PID				25/90				
Test Pit discontinued at 1.10m depth. Refusal on rock.																					
	26																				
		2																			
	25																				

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

PLANT:	5T Excavator	OPERATOR:	Lawcon (Tim)	LOGGED:	Krebs/Date
METHOD:	450mm blade bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 44.3 AHD
COORDINATE: E:367297.5, N:6396797.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 2
PROJECT No: 91432.06
DATE: 25/07/24
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									
25/07/24 No free groundwater observed	44	0.15	TOPSOIL / Silty Sandy CLAY (CL): brown; low plasticity; with rootlets.		TOP	NA	w>PL					PID	<1ppm	5	10	15						
		0.30	Silty CLAY (CL), with sand: brown; low plasticity.		RS	St	w>PL		D/ES		0.15	PP	110-140kPa									
			Sandy CLAY (Cl): orange brown; medium plasticity; fine to medium sand.		RS	VSt	w<PL		D/ES		0.25	PID	<1ppm									
															0.50	PID	<1ppm					
												PP	250-280kPa			24						
																25/105						
		1	Test Pit discontinued at 0.85m depth. Refusal on rock.																			
	43																					
		2																				
	42																					



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: 5T Excavator **OPERATOR:** L
METHOD: 450mm blade bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	42.7 AHD	LOCATION ID:	3
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367384.2, N:6396783.0	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	25/07/24
		DIP/AZIMUTH:	90°/---°	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							
25/07/24 No free groundwater observed	42	0.15	TOPSOIL / Silty CLAY (CL), trace sand: brown; low plasticity; with rootlets.		TOP	NA		w>PL		D/ES		0.10	PID								
											0.15	PP									
												0.25	PID								
												0.35	PP								
												0.50	PP								
Test Pit discontinued at 0.70m depth. Refusal on rock.																					

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:	5T Excavator	OPERATOR:	Lawcon (Tim)	LOGGED:	Krebs/Date
METHOD:	450mm blade bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	44.9 AHD	LOCATION ID:	4
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367423.6, N:6396775.5	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	25/07/24
		DIP/AZIMUTH:	90°/---°	SHEET:	1 of 1

CONDITIONS ENCOUNTERED														SAMPLE				TESTING AND REMARKS			
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS								
25/07/24 No free groundwater observed	44	0.15	TOPSOIL / Silty CLAY (CI), with sand: brown; medium plasticity; with organics, rootlets.		TOP	NA	w<PL		D/ES		0.10	PID	<1ppm	5	10	15					
			Sandy CLAY (CI): brown; medium plasticity; fine to medium sand.		RS	S	w<PL		D/ES		0.25	PID	<1ppm	25/80							
		0.35	Sandy Gravelly CLAY (CL): orange brown; low plasticity; fine to medium sand; fine to coarse, sub-angular to sub-rounded gravel; conglomerate rock cobbles.		RS to XWM	F to St	w<PL		D/ES		0.50	PID	<1ppm								
												PP	60-90kPa								
		1	Test Pit discontinued at 0.90m depth. Refusal on rock.																		
		2																			
	43																				



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:	5T Excavator	OPERATOR:	Lawcon (Tim)	LOGGED:	Krebs/Date
METHOD:	450mm blade bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 40.9 AHD
COORDINATE: E:367449.4, N:6396862.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 5
PROJECT No: 91432.06
DATE: 25/07/24
SHEET: 1 of 1

GROUNDWATER		CONDITIONS ENCOUNTERED					SAMPLE			TESTING AND REMARKS			
RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. (%) DENSITY (%)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	
25/07/24 No free groundwater lbserved	0.15	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics , rootlets.		TOP	NA	M	50	D/ES	0.10	PID	<1ppm		
	0.35	Sandy CLAY (CI): brown; medium plasticity; fine to medium sand.		RS	St	w<PL		D/ES	0.25	PID	<1ppm		
		Clayey SAND (SC), trace gravel: brown; fine to medium; fine to medium gravel; rock like structure.		RS to XWM	MD to D	M		U	0.35	PID	<1ppm		
			D/ES					0.50					
								0.65					
			B					0.80					
								D/ES	1.00	PID	<1ppm		
39	2	Test Pit discontinued at 1.20m depth. Refusal on rock.											



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

PLANT: 5T Excavator **OPERATOR:** L
METHOD: 450mm blade bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	34.5 AHD	LOCATION ID:	6
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367521.6, N:6396867.6	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	25/07/24
		DIP/AZIMUTH:	90°/---°	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				
25/07/24 No free groundwater observed	34	0.10	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA		M					PID					
			Sandy CLAY (CH): brown; high plasticity; fine to medium sand.		RS		St	w<PL		D/ES		0.10	PID					
												0.25						
												0.40	PP					
											B		0.50	PID				
													0.60					
											D/ES		0.70	PID				
											D/ES			PP				
		Test Pit discontinued at 0.80m depth. Refusal on rock.																
		1																
		33																
		2																
25/50																		

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.



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:	5T Excavator	OPERATOR:	Lawcon (Tim)	LOGGED:	Krebs/Date
METHOD:	450mm blade bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	30.8 AHD	LOCATION ID:	7
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367596.3, N:6396906.6	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	25/07/24
		DIP/AZIMUTH:	90°/---°	SHEET:	1 of 1

CONDITIONS ENCOUNTERED										SAMPLE			TESTING AND REMARKS												
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS												
25/07/24 No free groundwater observed	30	0.15	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA	M		D/ES		0.10	PID													
			Sandy CLAY (CI): brown; medium plasticity; fine to medium sand.		RS	St	w<PL		D/ES		0.25	PID													
		0.50	Sandy CLAY (CH): dark brown; high plasticity; fine to medium sand.		RS	VSt to H	w<PL		B		0.40	PP													
											0.50	PID													
											0.60														
											0.70														
	30	1	Test Pit discontinued at 0.75m depth. Refusal on rock.						D/ES				PP												
29	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:	5T Excavator	OPERATOR:	Lawcon (Tim)	LOGGED:	Krebs/Date
METHOD:	450mm blade bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 37.6 AHD
COORDINATE: E:367526.9, N:6396910.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 8
PROJECT No: 91432.06
DATE: 25/07/24
SHEET: 1 of 1

GROUNDWATER		CONDITIONS ENCOUNTERED					SAMPLE			TESTING AND REMARKS						
RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ^(%) DENSITY. ^(%)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS				
25/07/24 No free groundwater observed	0.15	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA	M		D/ES		0.10	PID	<1ppm	5	10	15	
		Sandy CLAY (CI): medium plasticity; fine to medium sand.			St	w<PL		D/ES		0.25	PID	<1ppm	140-170kPa			
											PP					
								D/ES		0.50	PID	<1ppm				
															25/30	
1		Test Pit discontinued at 0.85m depth. Refusal on rock.														
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.

Generated with CORE-GS by Geroc - Soil Log with Photo

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

PLANT: 5T Excavator **OPERATOR:** L
METHOD: 450mm blade bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 31.3 AHD
COORDINATE: E:367438.6, N:6396994.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 9
PROJECT No: 91432.06
DATE: 25/07/24
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
25/07/24 No free groundwater observed	31	0.10	TOPSOIL / Clayey Silty SAND (SC): brown; fine to medium; with organics, rootlets.		TOP	NA	M		D/ES		0.10	PID	<1ppm
			Sandy CLAY (CI): brown; medium plasticity.		RS	St	w<PL		D/ES		0.25	PP	130-160kPa
		0.30	CLAY (CI), with sand: grey mottled orange brown; medium plasticity.		RS	VSt	w<PL w=PL						
									D/ES		0.50	PID	<1ppm
	1						D/ES		1.00	PID	<1ppm		
	30	Test Pit discontinued at 1.25m depth. Refusal on rock.											



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: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 450mm blade bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

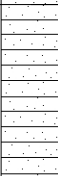
Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 35.2 AHD
COORDINATE: E:367348.2, N:6396898.2
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 10
PROJECT No: 91432.06
DATE: 25/07/24
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			
25/07/24 No free groundwater observed	35	0.20	TOPSOIL / Silty CLAY (Cl), with sand: brown; medium plasticity; fine to medium sand; with organics, rootlets.		TOP	NA	w<PL		D/ES		0.10	PID	<1ppm	5	10	15
		0.35	Sandy CLAY (CI): brown; medium plasticity.		RS	St	w<PL		D/ES		0.25	PID PP DCP	<1ppm 100-150kPa			
			Sandy CLAY (CL), trace gravel: orange brown; low plasticity; fine to coarse, sub-angular to sub-rounded gravel.		RS	St	w<PL		D/ES U50		0.50 0.69	PID PP	<1ppm 150-180kPa			23
		Test Pit discontinued at 0.80m depth. Refusal on rock.														
		1														
	34															
		2														
	33															



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

PLANT: 5T Excavator **OPERATOR:** L
METHOD: 450mm blade bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 28.0 AHD
COORDINATE: E:367460.6, N:6397055.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 11
PROJECT No: 91432.06
DATE: 25/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS						
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN (#)	CONSIS. (°)	DENSITY. (°)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS			
25/07/24 No free groundwater observed	0.15	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA		M		D/ES		0.10	PID	<1ppm	5	10	15
	0.35	Sandy CLAY (CI), with silt: brown; medium plasticity.		RS	St		w<PL		D/ES		0.25	PID PP	<1ppm 150-170kPa			
	1.00	Sandy CLAY (CL): orange brown; low plasticity.		RS	St to VSt		w<PL		D/ES		0.50	PID PP	<1ppm 180-210kPa			
	1.15	Test Pit discontinued at 1.15m depth. Refusal on rock.							D/ES		1.00	PID	<1ppm	22		



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: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 450mm blade bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	26.0 AHD	LOCATION ID:	12
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367450.4, N:6397100.8	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	25/07/24
		DIP/AZIMUTH:	90°/---°	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							
25/07/24 No free groundwater observed		0.10	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA		M	D2/SBK	D/ES		0.10	PID								
			Sandy CLAY (CI): brown; medium plasticity; fine to medium sand.		RS	F to St		w>PL w=PL		D/ES		0.25	PID								
		0.35	Sandy CLAY (CL): orange brown; low plasticity.		RS	St		w<PL		D/ES		0.50	PID								
													PP								
Test Pit discontinued at 0.80m depth. Refusal on rock.																					
	25	1																			
	24	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:	5T Excavator	OPERATOR:	Lawcon (Tim)	LOGGED:	Krebs/Date
METHOD:	450mm blade bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 25.2 AHD
COORDINATE: E:367387.5, N:6397123.0
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 13
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS			
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. (%)	DENSITY. (%)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
26/07/24 No free groundwater observed	0.10	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA		M					PID	<1ppm
	0.25	Silty Sandy CLAY (CL): grey; low plasticity; fine to medium sand.		RS	St		w<PL w=PL		D/ES			PID	<1ppm
	0.40	Sandy CLAY (CL): orange brown; low plasticity; fine to medium sand; with sandstone rock cobbles.										PP	120-160kPa
				XWM	H		w<PL		U50			PID	<1ppm
									D/ES			PP	>400kPa
	1	Test Pit discontinued at 0.90m depth. Refusal on rock.											
	2												
	23												
	24												
	25												



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: 5T Excavator

OPERATOR: Lawcon (Phil)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 28.3 AHD
COORDINATE: E:367368.6, N:6397050.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 14
PROJECT No: 91432.06
DATE: 26/07/24
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							
26/07/24 No free groundwater observed	28	0.10	TOPSOIL / Silty SAND (SM): brown; fine to medium.		TOP	NA		M					PID								
			Sandy CLAY (CL): brown; low plasticity.		RS	St				D/ES		0.10	PP								
										D/ES		0.25	PID								
		0.35	Sandy CLAY (CL): orange brown; low plasticity.		RS	VSt			w<PL w=PL					PID							
										D/ES		0.50	PP								
						H			w<PL												
					Test Pit discontinued at 0.70m depth. Refusal on rock.																
		1																			
		27																			
		2																			

TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	31.7 AHD	LOCATION ID:	15
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367343.5, N:6396975.5	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	26/07/24
		DIP/AZIMUTH:	90°/---°	SHEET:	1 of 1

CONDITIONS ENCOUNTERED														SAMPLE				TESTING AND REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
26/07/24 No free groundwater observed	31	0.15	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA	M	D3/SBK	D/ES		0.10	PID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
			Sandy CLAY (CH): brown; high plasticity.		RS	St	w>PL		D/ES		0.25	PID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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			0.45	Sandy CLAY (CL): orange brown; low plasticity.		XWM	VSt to H		w<PL	U50		0.50	PID																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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NOTES: ^(*) Soil origin is "probable" unless otherwise stated. ^(C) Consistency/Relative density shading is for visual reference only - no correlation between cohesive and granular materials is implied.												

PLANT:	5T Excavator	OPERATOR:	Lawcon (Phil)	LOGGED:	Krebs/Date
METHOD:	300mm toothed bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 25.3 AHD
COORDINATE: E:367339.0, N:6397086.4
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 16
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

[illegible]

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

PLANT: 5T Excavator	OPERATOR: L
METHOD: 300mm toothed bucket	
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m	

OPERATOR: Lawcon (Phil)

LOGGED: Krebs/Date

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 22.9 AHD
COORDINATE: E:367367.6, N:6397177.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 17
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS			
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ^(%) DENSITY. ^(%)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	
RL (m)													
26/07/24 No free groundwater observed	0.15	TOPSOIL / Silty CLAY (CH), with sand: brown; high plasticity; with organics, rootlets.		TOP	NA	w>PL		D/ES		0.10	PID	<1ppm	
		Sandy CLAY (CI), trace silt: pale brown; medium plasticity.		RS	St	w<PL w=PL		D/ES		0.25	PID	<1ppm	
	0.45	Sandy CLAY (CL): orange brown; low plasticity.		RS	H	w<PL		U50		0.35			
									0.50	PID	<1ppm		
									0.64	PP	>400kPa		
	21	Test Pit discontinued at 1.50m depth. Refusal on rock.		RS	H	w<PL		D/ES		1.00	PP	>400kPa	



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

PLANT: 5T Excavator

OPERATOR: Lawcon (Phil)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd	SURFACE LEVEL: 31.0 AHD	LOCATION ID: 18
PROJECT: Vacy Village South Residential Subdivision	COORDINATE: E:367251.2, N:6397026.3	PROJECT No: 91432.06
LOCATION: 598 Gresford Road, Vacy, NSW	DATUM/GRID: MGA2020 Zone 56	DATE: 30/07/24
	DIP/AZIMUTH: 90°/---°	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																														
30/07/24 No free groundwater observed	30	0.15	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA		M	no recovery	D/ES		0.10	PID																															
			Sandy CLAY (Cl), with gravel: brown; medium plasticity; fine to medium sand; fine to medium, sub-angular to sub-rounded gravel.		RS	St		w<PL		D/ES		0.25	PID																															
			Sandy CLAY (Cl), with gravel: orange brown; medium plasticity; fine to medium, sub-angular to sub-rounded gravel; and cobbles.		RS	VSt		w<PL		U50		0.40																																
				D/ES							0.50	PID																																
Test Pit discontinued at 1.20m depth. Refusal on rock.																																												
		</																																										



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: 5T Excavator	OPERATOR: Lawcon (Phil)	LOGGED: Krebs/Date
METHOD: 300mm toothed bucket		
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m		

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 42.5 AHD
COORDINATE: E:367149.0, N:6396935.8
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 19
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS			
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS. (°) DENSITY. (°)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	
26/07/24 No free groundwater observed	0.10	TOPSOIL / Silty CLAY (Cl), trace sand, trace gravel: brown; medium plasticity; fine to medium sand; fine to medium, sub-angular to sub-rounded gravel.		TOP	NA	w<PL		D/ES		0.05	PP	<50kPa	
											PID	<1ppm	
	0.55	Sandy CLAY (Cl), trace gravel: brown; medium plasticity; fine to coarse, sub-angular to sub-rounded gravel.		RS	St	w<PL w=PL					PP	110-130kPa	
												PID	<1ppm
1		CLAY (CL): orange brown; low plasticity.		RS to XWM	VSt	w<PL		D/ES		0.50	PP	<1ppm	
											PP	220-240kPa	
											PID	<1ppm	
Test Pit discontinued at 1.00m depth. Refusal on rock.													



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: 5T Excavator

OPERATOR: Lawcon (Phil)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 38.5 AHD
COORDINATE: E:367219.2, N:6396876.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 20
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED														SAMPLE				TESTING AND REMARKS			
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS								
26/07/24 No free groundwater observed	38	0.10	TOPSOIL / Clayey Silty SAND (SC): brown; fine to medium; with organics, rootlets.		TOP	NA	M					PID	<1ppm								
			Sandy CLAY (Cl), with silt, trace gravel: brown; medium plasticity; fine to medium sand; fine to medium, sub-angular to sub-rounded gravel; trace organics, tree roots.		RS	St	w<PL		D/ES		0.10										
								B		0.20											
										0.25											
		0.40	Sandy CLAY (CL): orange brown; low plasticity.		RS	VSt	w<PL		D/ES		0.50	PID	<1ppm								

Test Pit discontinued at 1.10m depth.
Refusal on rock.



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

PLANT: 5T Excavator
METHOD: 300mm toothed bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Phil)
LOGGED: Krebs/Date

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 34.1 AHD
COORDINATE: E:367248.3, N:6396922.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 21
PROJECT No: 91432.06
DATE: 26/07/24
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							
26/07/24 No free groundwater observed	34		TOPSOIL / Silty SAND (SM): brown; fine to medium.		TOP	NA		M					PID		5	10	15				
		0.15	Sandy CLAY (CI): pale brown; medium plasticity; fine to medium sand.		RS	F		w<PL		D/ES		0.10	PID								
										D/ES		0.25	PP								
		0.45	Sandy CLAY (CL): orange brown; low plasticity; fine to medium sand.		RS	VSt to H		w<PL		D/ES		0.50	PID								
													PP								
		1								D/ES		1.00	PID				25/100				
													PP								
Test Pit discontinued at 1.20m depth. Refusal on rock.																					
		2																			
	32																				

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.



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

PLANT: 5T Excavator
METHOD: 300mm toothed bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Phil)
LOGGED: Krebs/Date

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 21.2 AHD
COORDINATE: E:367317.3, N:6397175.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 22
PROJECT No: 91432.06
DATE: 26/07/24
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							
26/07/24 No free groundwater observed 26/07/24	21	0.10	TOPSOIL / Silty CLAY (CH), with sand: brown; high plasticity; with organics, rootlets.	X Y	TOP	NA	w<PL	D4/SBK	D/ES		0.10	PID PP	<1ppm 40-60kPa	5	10	15				
		0.70	Sandy CLAY (CI): brown; medium plasticity; fine to medium sand.	RS	F to St	w>PL w=PL	D/ES			0.50	PID PP	<1ppm 90-100kPa	DCP9/15	1.00	PID PP	<1ppm 110-130kPa	1.50	PID	<1ppm	
							B			0.80										
							D/ES			1.00										
		1.80	Sandy CLAY (CL): orange brown; low plasticity; fine to medium sand.	RS	H	w<PL	D/ES			1.90	PID PP	<1ppm >400kPa								
2	Test Pit discontinued at 2.00m depth. Refusal on rock.																			
19																				



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: 5T Excavator
METHOD: 300mm toothed bucket
REMARKS: Seepage at 0.6m. Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Phil)
LOGGED: Krebs/Date

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 25.7 AHD
COORDINATE: E:367277.0, N:6397132.9
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 23
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED						SAMPLE			TESTING AND REMARKS				
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ^(%) DENSITY, (°)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	
26/07/24 No free groundwater observed	0.15	TOPSOIL / Silty CLAY (CI), with sand: brown; medium plasticity; with organics, rootlets.		TOP	NA	w<PL w=PL		D/ES		0.10	PID	<1ppm	
		Sandy CLAY (CI): pale brown; medium plasticity; fine to medium sand.			F	w<PL					PP	60-80kPa	
				RS	St to VSt	w<PL		D/ES		0.50	PID	<1ppm	
											PP	100-120kPa	
25	1												
1.30		Sandy CLAY (CL): orange brown; low plasticity; fine to medium sand.		RS to XWM	VSt	w<PL		D/ES		1.00	PID	<1ppm	
24	2	Test Pit discontinued at 1.50m depth. Refusal on rock.								1.40	PID PP	<1ppm 200-220kPa	



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: 5T Excavator

OPERATOR: Lawcon (Phil)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 34.3 AHD
COORDINATE: E:367176.0, N:6397042.7
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 24
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS				
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. (%)	DENSITY (%)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	
26/07/24 No free groundwater observed	0.10	TOPSOIL / Clayey SAND (SC), with silt: brown; fine to medium; with organics, rootlets.		TOP	NA		M		D/ES		0.05	PID	<1ppm	5
		Sandy CLAY (CL): grey brown; low plasticity; trace organics, rootlets.		RS	F		w<PL		D/ES		0.25	PP	70-95kPa	10
	0.30	Sandy CLAY (CI): orange brown; medium plasticity.		RS	VSt to H		w<PL							
									D/ES		0.50	PID	<1ppm	15
	1								D/ES		1.00	PP	>400kPa	25/120
	33								D/ES		1.50	PID	<1ppm	
Test Pit discontinued at 1.60m depth. Refusal on rock.														
	2													
	32													



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: 5T Excavator
METHOD: 300mm toothed bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Phil)

LOGGED: Krebs/Date

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 33.7 AHD
COORDINATE: E:367182.6, N:6397114.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 25
PROJECT No: 91432.06
DATE: 26/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS			
GROUNDWATER	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. (%)	DENSITY. (%)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS
26/07/24 No free groundwater observed	0.10	TOPSOIL / Clayey SAND, with silt: brown; fine to medium; with organics, rootlets. Sandy CLAY (Cl): grey brown; medium plasticity.		TOP	NA	M			D/ES		0.10	PID	<1ppm
				RS	St	w<PL					0.40	PP	110-140kPa
	0.55	Sandy CLAY (Cl): orange brown; medium plasticity.							U50		0.50	PID	<1ppm
					VSt						0.71	PP	250-270kPa
	1			RS		w<PL			D/ES		1.00	PID	<1ppm
					H								
									D/ES		1.50	PID	<1ppm
	2	Test Pit discontinued at 2.00m depth. Refusal on rock.											



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: 5T Excavator
METHOD: 300mm toothed bucket
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR: Lawcon (Phil)

LOGGED: Krebs/Date

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd

PROJECT: Vacy Village South Residential Subdivision

LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 38.9 AHD

COORDINATE: E:367063.4, N:6397037.8

DATUM/GRID: MGA2020 Zone 56

DIP/AZIMUTH: 90°/---°

LOCATION ID: 26

PROJECT No: 91432.06

DATE: 29/07/24

SHEET: 1 of 1

CONDITIONS ENCOUNTERED															SAMPLE			TESTING AND REMARKS				
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS									
29/07/24 No free groundwater observed	38.9	0.15	TOPSOIL / Clayey SAND (SC), with silt: brown; fine to medium; with organics, rootlets.		TOP	NA	M		D/ES		0.10	PID	<1ppm	5	10	15						
			Sandy CLAY (CI): brown; medium plasticity; fine to medium sand.		RS	St	w<PL		B		0.20	PID<100 PP240-280kPa	<1ppm									
										0.25												
		0.45	Sandy CLAY (CI): orange brown; medium plasticity; fine to medium sand.		RS	VSt	w<PL		D/ES		0.40											
									D/ES		0.50	PID	<1ppm									
												PP	240-280kPa			25/130						
Test Pit discontinued at 0.60m depth. Refusal on rock.																						
	38	1																				
	37	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: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

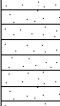
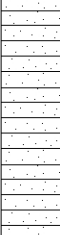


TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 30.3 AHD
COORDINATE: E:367070.8, N:6397147.5
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 27
PROJECT No: 91432.06
DATE: 29/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS					
GROUNDWATER	FL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(#)	CONSIS. (°) DENSITY, (°)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS		
29/07/24 No free groundwater observed	30	0.10	TOPSOIL / Silty SAND (SM), trace gravel: brown; fine to medium; fine to medium, sub-angular to sub-rounded gravel; with organics, rootlets.		TOP	NA	M	D5/SBK	D/ES		0.10	PID	<1ppm		
		0.40	Sandy CLAY (CI), trace gravel: pale brown; medium plasticity; fine to medium sand; fine to medium, sub-angular to sub-rounded gravel.		RS	St	w<PL		D/ES		0.25	PID	<1ppm		
									PP			110-140kPa			
		1	Sandy CLAY (CI), with gravel: grey mottled brown; medium plasticity; fine to medium sand; fine to medium, sub-angular to sub-rounded gravel; trace sandstone cobbles.		RS	VSt	w<PL		D/ES		0.50	PID	<1ppm		
									U50		0.60	PP	250-270kPa		
														0.76	24
									D/ES		1.00	PID	<1ppm		
									PP			260-280kPa	28/140		
									↓						
		Test Pit discontinued at 1.30m depth. Refusal on rock.													



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: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 27.3 AHD
COORDINATE: E:367145.0, N:6397174.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 28
PROJECT No: 91432.06
DATE: 29/07/24
SHEET: 1 of 1

[illegible]

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

PLANT: 5T Excavator	OPERATOR: L
METHOD: 300mm toothed bucket	
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m	

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd

PROJECT: Vacy Village South Residential Subdivision

LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 22.7 AHD

COORDINATE: E:367227.4, N:6397210.1

DATUM/GRID: MGA2020 Zone 56

DIP/AZIMUTH: 90°/---°

LOCATION ID: 29

PROJECT No: 91432.06

DATE: 29/07/24

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					
													5	10	15			
29/07/24 No free groundwater observed	22	0.10	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA	M					PID	<1ppm					
			Sandy CLAY (Cl): pale brown; medium plasticity.		RS	St	w<PL w=PL		D/ES		0.10							
		0.40	Sandy CLAY (Cl): orange brown; medium plasticity; fine to medium sand.		RS	VSt	w<PL											
									D/ES		0.25							
	1																	
			Test Pit discontinued at 1.00m depth. Refusal on rock.															



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: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT:	Cornish Group No. Six Pty Ltd	SURFACE LEVEL:	22.2 AHD	LOCATION ID:	30
PROJECT:	Vacy Village South Residential Subdivision	COORDINATE:	E:367296.6, N:6397235.3	PROJECT No:	91432.06
LOCATION:	598 Gresford Road, Vacy, NSW	DATUM/GRID:	MGA2020 Zone 56	DATE:	29/07/24
		DIP/AZIMUTH:	90°/---°	SHEET:	1 of 1

CONDITIONS ENCOUNTERED							SAMPLE			TESTING AND REMARKS				
GROUNDWATER	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS	
29/07/24 No free groundwater observed	22	0.10	TOPSOIL / Silty SAND (SM): brown; fine to medium; with organics, rootlets.		TOP	NA	M					PID		
			Sandy CLAY (CL-CI): pale brown; low to medium plasticity.		RS	St	w<PL							
		0.50	Sandy CLAY (CI): orange brown; medium plasticity.		RS	VSt	w<PL							
		1												
	21		Test Pit discontinued at 1.10m depth. Refusal on rock.											
	20													



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:	5T Excavator	OPERATOR:	Lawcon (Tim)	LOGGED:	Krebs/Date
METHOD:	300mm toothed bucket				
REMARKS:	Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m				

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 26.6 AHD
COORDINATE: E:367239.5, N:6397342.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 31
PROJECT No: 91432.06
DATE: 29/07/24
SHEET: 1 of 1

CONDITIONS ENCOUNTERED														SAMPLE				TESTING AND REMARKS			
GROUNDWATER	FL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ^(%)	DENSITY, (°)	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS							
29/07/24 No free groundwater observed	26	0.10	TOPSOIL / Silty Sandy CLAY (CL): brown; low plasticity; fine to medium sand; with organics, rootlets.		TOP	NA		w<PL w=PL		D/ES		0.10	PID	<1ppm	5	10	15				
			Sandy CLAY (Cl): pale brown; medium plasticity; fine to medium sand.		RS	F to St		w<PL		D/ES		0.25	PID PP	<1ppm 90-120kPa							
		0.35	Sandy CLAY (Cl): brown; medium plasticity; fine to medium sand.		RS	VSt to H		w<PL		D/ES	U50	0.50	PID	<1ppm							
												0.65	PP	>400kPa							
		0.65	Sandy CLAY (CL): orange dark grey; low plasticity; fine to medium sand; sandstone fragments.		XWM	VSt to H		w<PL													
		1	Test Pit discontinued at 0.85m depth. Refusal on rock.																		
		25																			
		2																			
																				25/90	



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: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 28.7 AHD
COORDINATE: E:367179.4, N:6397289.6
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 32
PROJECT No: 91432.06
DATE: 29/07/24
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							
29/07/24 No free groundwater observed	28	0.10	TOPSOIL / Silty Sandy CLAY (CL): brown; low plasticity; fine to medium sand; with organics, rootlets.		TOP	NA		w<PL	D6/SBK	D/ES		0.10	PID	<1ppm	5	10	15				
			Sandy CLAY (Cl): pale brown grey; medium plasticity; fine to medium sand.		RS	St		w<PL w=PL													
		0.40	Sandy CLAY (Cl), trace gravel: brown mottled orange; medium plasticity; fine to medium sand; fine to medium, sub-angular to sub-rounded gravel.		RS	St to VSt		w<PL		D/ES		0.50	PP	170-200kPa							
						VSt to H		w<PL													
		1								D/ES		1.10	PID	<1ppm			25/145				
Test Pit discontinued at 1.10m depth. Refusal on rock.																					
	27																				
	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: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

Refer to explanatory notes for symbol and abbreviation definitions

TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL: 33.2 AHD
COORDINATE: E:367092.0, N:6397259.1
DATUM/GRID: MGA2020 Zone 56
DIP/AZIMUTH: 90°/---°

LOCATION ID: 33
PROJECT No: 91432.06
DATE: 29/07/24
SHEET: 1 of 1

GROUNDWATER	CONDITIONS ENCOUNTERED					SAMPLE			TESTING AND REMARKS						
	RL (m)	DEPTH (m)	DESCRIPTION OF STRATA	GRAPHIC	ORIGIN(%)	CONSIS. ⁽¹⁾ DENSITY. ⁽²⁾	MOISTURE	REMARKS	TYPE	INTERVAL	DEPTH (m)	TEST TYPE	RESULTS AND REMARKS		
29/07/24 No free groundwater observed	33	0.15	TOPSOIL / Silty Sandy CLAY (CL): brown; low plasticity; fine to medium sand; with organics, rootlets.		TOP	NA	w<PL		D/ES		0.10	PID	<1ppm		
			Sandy CLAY (Cl): grey brown; medium plasticity; fine to medium sand.		RS	St	w<PL		D/ES		0.25	PID	<1ppm		
		0.45	Sandy CLAY (CL), trace gravel: orange brown; low plasticity; fine to medium sand; fine to medium, sub-angular to sub-rounded gravel.		RS	VSt	w<PL				0.50	PID	<1ppm		
1								D/ES		1.00	PID	<1ppm			
32		Test Pit discontinued at 1.20m depth. Refusal on rock.													
31															



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

PLANT: 5T Excavator

OPERATOR: Lawcon (Tim)

LOGGED: Krebs/Date

METHOD: 300mm toothed bucket

REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

TEST PIT LOG

CLIENT:

PROJECT:

LOCATION:

Cornish Group No. Six Pty Ltd
Vacy Village South Residential Subdivision
598 Gresford Road, Vacy, NSW

SURFACE LEVEL:

COORDINATE:

DATUM/GRID:

DIP/AZIMUTH:

M1
91432.06
25/07/24
90°/---°

LOCATION ID:

PROJECT No:

DATE:

SHEET:

M1
91432.06
25/07/24
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					
															D/ES				
25/07/24 No free groundwater observed			TOPSOIL / Silty SAND (SP), trace gravel: grey brown; fine to medium; fine to medium, sub-angular to sub-rounded gravel; trace rootlets.		TOP	NA		M				0.05							
			Test Pit discontinued at 0.15m 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:

METHOD:

REMARKS:

Hand Tools

Hand Auger to 0.15m

Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR:

LOGGED:

Kramer

Refer to explanatory notes for symbol and abbreviation definitions



TEST PIT LOG

CLIENT: Cornish Group No. Six Pty Ltd
PROJECT: Vacy Village South Residential Subdivision
LOCATION: 598 Gresford Road, Vacy, NSW

SURFACE LEVEL:
COORDINATE:
DATUM/GRID:
DIP/AZIMUTH: 90°/---°

LOCATION ID: M2
PROJECT No: 91432.06
DATE: 25/07/24 - 05/07/24
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						
															D/ES					
25/07/24 No free groundwater observed			TOPSOIL / Silty SAND (SP), trace gravel: grey brown; fine to medium; fine to medium, sub-angular to sub-rounded gravel; trace rootlets.		TOP	NA	W			D/ES		0.05								
Test Pit discontinued at 0.10m 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.

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

PLANT: Hand Tools
METHOD: Hand Auger to 0.10m
REMARKS: Coordinates and elevations measured by dGPS with typical accuracy of +/- 0.1 m

OPERATOR:
LOGGED: Kramer

Refer to explanatory notes for symbol and abbreviation definitions



Appendix F

Field Work Methodology

1. 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).

2. Soil sampling

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

- Collect soil samples directly from the excavator bucket at the nominated sample depth or excavated spoil;
- Collect near surface samples at selected locations using hand tools;
- Place samples into laboratory-prepared glass jars with Teflon lined lids, capping immediately and minimising headspace within the sample jar;
- Collect replicate samples in zip-lock bags for photoionisation detector (PID) screening;
- Collect ~500 ml samples in zip-lock bags for fibrous asbestos and asbestos fines (FA and AF) analysis;
- Wear a new disposable nitrile glove for each sample point thereby minimising potential for cross-contamination;
- Collect 10% replicate samples for quality control (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;
- Use chain of custody documentation.

2.1 Field testing

Field testing is carried out in accordance with Douglas' 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.

3. 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.

Appendix G

Site Assessment Criteria

1. Introduction

1.1 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); and
- CRC CARE *Health screening levels for petroleum hydrocarbons in soil and groundwater* (CRC CARE, 2011).

1.2 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
 - o 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: clay.

2. Soils

2.1 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
Beryllium	60
Boron	4500
Cadmium	20
Chromium (VI)	100
Cobalt	100
Copper	6000
Lead	300
Manganese	3800
Mercury (inorganic)	40
Methyl mercury	10
Nickel	400
Selenium	200
Zinc	7400
PAH	
B(a)P TEQ	3
Total PAH	300
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
CLAY	0 m to <1 m	1 m to <2 m	2 m to <4 m	4 m+
Benzene	0.7	1	2	3
Toluene	480	NL	NL	NL
Ethylbenzene	NL	NL	NL	NL
Xylenes	110	310	NL	NL
Naphthalene	5	NL	NL	NL
TRH F1	50	90	150	290
TRH F2	280	NL	NL	NL

Notes: TRH F1 is TRH C₆-C₁₀ minus BTEX

TRH F2 is TRH >C₁₀-C₁₆ minus naphthalene

The soil saturation concentration (C_{sat}) 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 C_{sat}, a soil vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'

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 C₆-C₁₀ minus BTEX

TRH F2 is TRH >C₁₀-C₁₆ minus naphthalene

IMW intrusive maintenance worker

2.2 Asbestos in soil

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

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

The HSL are in Table 4.

Table 4: Health screening levels for asbestos

Form of Asbestos	HSL-A
ACM	0.01%
FA and AF	0.001%
FA and AF and ACM	No visible asbestos for surface soil *

Notes: Surface soils defined as top 10 cm.

* Based on site observations at the sampling points and the analytical results of surface samples.

2.3 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 6, with inputs into their derivation shown in Table 5.

Table 5: Inputs to the derivation of the ecological investigation levels

Variable	Input	Rationale
Age of contaminants	"Aged" (>2 years)	Historical site contamination if present
pH	4.0	Conservative value based on chemical testing
CEC	4.5 cmol _e /kg	Conservative value based on chemical testing
Clay content	1%	Conservative value
Traffic volumes	High	Rural paddock area
State / Territory	NSW	Vacy, NSW

Table 6: Ecological investigation levels (mg/kg)

Contaminant	EIL-A-B-C
Metals	
Arsenic	100
Copper	55
Nickel	30
Chromium III	190
Lead	1100
Zinc	140
PAH	
Naphthalene	170
OCP	
DDT	180

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

2.4 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 7.

Table 7: Ecological screening levels (mg/kg)

Contaminant	Soil Type	ESL-A-B-C
Benzene	Fine	65
Toluene	Fine	105
Ethylbenzene	Fine	125
Xylenes	Fine	45
TRH F1	Coarse/ Fine	180*
TRH F2	Coarse/ Fine	120*
TRH F3	Fine	1300
TRH F4	Fine	5600
B(a)P	Fine	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 C₆-C₁₀ minus BTEX
 TRH F2 is TRH >C₁₀-C₁₆ including naphthalene
 ESL-A-B-C urban residential and public open space

2.5 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; and
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services.

The adopted management limits are in Table 8.

Table 8: Management limits (mg/kg)

Contaminant	Soil type	ML-A-B-C
TRH F1	Fine	800
TRH F2	Fine	1000
TRH F3	Fine	3500
TRH F4	Fine	10 000

Notes: TRH F1 is TRH C₆-C₁₀ including BTEX
 TRH F2 is TRH >C₁₀-C₁₆ including naphthalene
 ML-A-B-C residential, parkland and public open space

3. 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.

Appendix H

Table H1: Summary of Soil Laboratory Results (Land Use Comparison)

Table H2: Summary of Soil Laboratory Results (Preliminary Waste Classification)

Table H3: Summary of Soil Laboratory Results (Microbiological Contaminants)

Laboratory Reports (Reports 357556 and 358212)

Table H1: Summary of Soil Laboratory Results (Land Use Comparison)

					Metals														Priority PAH				Priority TPH						BTEx				
					Total Arsenic	Beryllium	Boron	Calcium	Total Chromium	Cobalt	Copper	Lead	Magnesium	Mercury (inorganic)	Molybdenum	Nickel	Silver	Selenium (Total)	Zinc	Naphthalene	Benzo(a)pyrene (BaP)	Benzo(a)anthracene (BaA)	Total PAH	Total GH - C10	TriH-C10-C14	Fluor-C10-BTEX	Fluor-C10-C14 (see Naphthalene)	Fluor-C10-C14	Fluor-C10-C14	Benzene	Toluene	Ethylbenzene	Total Aromatics
Sample ID	Depth	Strata	Sample Date	PQL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1	0 - 0.1 m	Natural	25/07/2024	<4	<1	<10	<0.4	3	<1	2	9	12	<0.1	<1	<1	<1	<2	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	0 - 0.15 m	Natural	25/07/2024	<4	<1	<10	<0.4	4	3	4	16	120	<0.1	<1	<1	<1	<2	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	0 - 0.1 m	Natural	25/07/2024	<4	<1	<10	<0.4	3	1	1	10	37	<0.1	<1	<1	<1	<2	10	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
5	0.25 m	Natural	25/07/2024	<4	<1	<10	<0.4	4	1	<1	8	14	<0.1	<1	<1	<1	<2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	0 - 0.3 m	Natural	25/07/2024	<4	<1	<10	<0.4	3	<1	<1	10	23	<0.1	<1	<1	<1	<2	9	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
6	0.25 m	Natural	25/07/2024	<4	<1	<10	<0.4	7	1	<1	9	13	<0.1	<1	<1	<1	<2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	0 - 0.1 m	Natural	25/07/2024	<4	<1	<10	<0.4	3	<1	<1	9	16	<0.1	<1	<1	<1	<2	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	0 - 0.1 m	Natural	25/07/2024	<4	<1	<10	<0.4	4	2	4	9	69	<0.1	<1	<1	<1	<2	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	0 - 0.1 m	Natural	25/07/2024	<4	<1	<10	<0.4	3	2	6	9	40	<0.1	<1	1	<1	<2	17	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
11	0 - 0.1 m	Natural	25/07/2024	<4	<1	<10	<0.4	3	1	2	9	21	<0.1	<1	<1	<1	<2	12	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
11	0.25 m	Natural	25/07/2024	<4	<1	<10	<0.4	5	2	2	7	17	<0.1	<1	1	<1	<2	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	0 - 0.1 m	Natural	26/07/2024	<4	<1	<10	<0.4	4	1	<1	11	13	<0.1	<1	<1	<1	<2	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	0.25 m	Natural	26/07/2024	<4	<1	<10	<0.4	5	2	<1	6	11	<0.1	<1	<1	<1	<2	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	0 - 0.1 m	Natural	26/07/2024	14	<1	<10	<0.4	4	1	4	11	28	<0.1	<1	1	<1	<2	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0 - 0.05 m	Natural	26/07/2024	8	<1	<10	<0.4	6	2	<1	10	63	<0.1	<1	<1	<1	<2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	0 - 0.1 m	Natural	26/07/2024	<4	<1	<10	<0.4	3	1	4	8	14	<0.1	<1	1	<1	<2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	0 - 0.05 m	Natural	26/07/2024	13	1	4	<0.4	8	1	4	29	330	<0.1	<1	3	<1	<2	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	0.5 m	Natural	26/07/2024	5	<1	<10	<0.4	8	3	4	9	31	<0.1	<1	2	<1	<2	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	0.25 m	Natural	26/07/2024	9	<1	<10	<0.4	6	2	3	11	28	<0.1	<1	2	<1	<2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	0 - 0.1 m	Natural	26/07/2024	4	<1	<10	<0.4	6	5	6	14	20	<0.1	<1	2	<1	<2	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	0.5 m	Natural	26/07/2024	4	<1	<10	<0.4	4	2	2	7	22	<0.1	<1	2	<1	<2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DA/SBK	0 m	Natural	26/07/2024	10	<1	<10	<0.4	7	2	<1	5	23	<0.1	<1	2	<1	<2	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	0 - 0.1 m	Natural	26/07/2024	<4	<1	<10	<0.4	4	2	6	11	88	<0.1	<1	1	<1	<2	22	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
24	0 - 0.05 m	Natural	26/07/2024	5	<1	<10	<0.4	4	3	10	29	106	<0.1	<1	1	<1	<2	19	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
24	0.25 m	Natural	26/07/2024	<4	<1	<10	<0.4	6	3	1	8	18	<0.1	<1	2	<1	<2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	0 - 0.1 m	Natural	29/07/2024	14	<1	<10	<0.4	5	2	3	12	32	<0.1	<1	1	<1	<2	11	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
DS/SBK	0 m	Natural	29/07/2024	35	2	4	<0.4	9	2	1	18	55	<0.1	<1	1	<1	<2	11	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
29	0 - 0.1 m	Natural	29/07/2024	24	<1	<10	<0.4	7	2	2	19	52	<0.1	1	1	<1	<2	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	0 - 0.1 m	Natural	29/07/2024	10	<1	<10	<0.4	3	1	2	5	18	<0.1	<1	1	<1	<2	13	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
31	0 - 0.1 m	Natural	29/07/2024	4	<1	<10	<0.4	3	2	4	9	67	<0.1	<1	<1	<1	<2	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0 - 0.1 m	Natural	29/07/2024	<4	<1	<10	<0.4	2	<1	<1	3	6	<0.1	<1	<1	<1	<2	20	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
32	0.5 m	Natural	29/07/2024	<4	<1	<10	<0.4	4	<1	<1	6	5	<0.1	<1	<1	<1	<2	3	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
DS/SBK	0 m	Natural	29/07/2024	11	<1	<10	<0.4	5	<1	<1	9	7	<0.1	<1	<1	<1	<2	4	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	
33	0 - 0.1 m	Natural	29/07/2024	<4	<1	<10	<0.4	5	3	10	12	86	<0.1	<1	2	<1	<2	38	<1	<0.05	<0.5	<0.05	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	

Lab result
HSL value EU/ESL/ECV value

■ HSL/HL exceedance ■ EU/ESL exceedance ■ HSL/HL and EU/ESL exceedance ■ ML exceedance ■ ML and HSL/HL or EU/ESL exceedance

■ Indicates that asbestos has been detected by the lab, refer to the lab report ■ Blue = DC exceedance ■ Red = ECV/indirect exceedance ■ Blue 0-1 Exceedance

BLD = Lab detections - = Not tested or No HSL/HL/ESL (as applicable) or Not applicable NL = Not limiting NAD = No Asbestos detected

Notes: HSL = Health investigation level HSL = Health screening level (including DC) EIL = Ecological investigation level ESL = Ecological screening level ECV = Environmental Guideline Value ML = Management Limit DC = Direct Contact HSL

- Notes:
- a QAC/QC replicate of sample listed directly below the primary sample
 - b Naphthalene reported as highest detection from the BTExN or PAH suite, or if both results <PQL lowest PQL
 - c EIL criteria applies to DOT only

Site Assessment Officer's SAC:

SAC based on generic land use thresholds for Residential A with garden/accessible soil

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

HL	HL/A (NEPC, 2013) or HEPA, 2020 (PFAS only)	ECV	ECV all land uses, direct exposure (HEPA, 2020)
HSL/A/B (vapour intrusion)	HSL/A/B (NEPC, 2013)	ESL	Urban Residential and Public Open Space (NEPC, 2013)
DC	Direct contact HSL A Residential (Low density) (CRC CARE, 2011)	ML	Residential, Parkland and Public Open Space (NEPC, 2013)



Table H1: Summary of Soil Laboratory Results (Land Use Comparison)

					Priority OCP										Priority OPP		PCB	Asbestos (FAAF)					Asbestos, Other					pH	Cation Exchange Capacity					
					DDT+DDE+DDD c	Adren + Androsten	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Heptachlorobenzene	Methoxychlor	O1	Mirex	Chlorpyrifos	Total PCB		Asb. Sample Area	ACM + 7mm Emission	FA and AF Emission	FA and AF Emission	Asbestos ID in soil <0.15µg	Asbestos ID in soil <0.15µg	Trace Analysis (NDEC)	Total Asbestos†	Asbestos Summary	g/kg		cmol/kg	cmol/kg	cmol/kg	cmol/kg		
Sample ID	Depth	Strata	Sample Date	PQL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	g	g	g	g	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	g/kg	
1	0 - 0.15 m	Natural	25/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	0 - 0.15 m	Natural	25/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
3	0 - 0.1 m	Natural	25/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	0.25 m	Natural	25/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
6	0 - 0.1 m	Natural	25/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	0.25 m	Natural	25/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
7	0 - 0.1 m	Natural	25/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	0 - 0.1 m	Natural	25/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
10	0 - 0.1 m	Natural	25/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	0 - 0.1 m	Natural	25/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
11	0.25 m	Natural	25/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	0 - 0.1 m	Natural	26/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
13	0.25 m	Natural	26/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	0 - 0.1 m	Natural	26/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
16	0 - 0.05 m	Natural	26/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	0 - 0.1 m	Natural	26/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
19	0 - 0.05 m	Natural	26/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	0.5 m	Natural	26/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
20	0.25 m	Natural	26/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	0 - 0.1 m	Natural	26/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
22	0.5 m	Natural	26/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
DA/5BK	0 m	Natural	26/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
23	0 - 0.1 m	Natural	26/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	0 - 0.05 m	Natural	26/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
24	0.25 m	Natural	26/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	0 - 0.1 m	Natural	29/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
DS/5BK	0 m	Natural	29/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	0 - 0.1 m	Natural	29/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
30	0 - 0.1 m	Natural	29/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	0 - 0.1 m	Natural	29/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
32	0 - 0.1 m	Natural	29/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	0.5 m	Natural	29/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-
DS/5BK	0 m	Natural	29/07/2024		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	0 - 0.1 m	Natural	29/07/2024		240	180	6	-	50	-	270	-	10	-	6	-	10	-	300	-	10	-	60	-	-	-	-	-	-	-	-	-	-	-

Lab result

HU/SL value

EU/ESL/ECV value

HU/SL exceedance

EU/ESL exceedance

HU/MSL and EU/ESL exceedance

ML exceedance

ML and HU/MSL or EU/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report

Blue = DC exceedance

Red = ECV/indirect exceedance

Light Blue = HSL 0-1 Exceedance

Bold = Lab detections

- = Not tested or No HU/MSL/ESL (as applicable) or Not applicable

NL = Not limiting

NAD = No Asbestos detected

HU = Health investigation level

HSL = Health screening level (including DC)

EL = Ecological investigation level

ESL = Ecological screening level

ECV = Environmental Guideline Value

ML = Management Limit

DC = Direct Contact HSL

Notes:

- a QA/QC replicate of sample listed directly below the primary sample
- b Naphthalene reported as highest detection from the BTEXN or PAH suite, or if both results <PQL, as lowest PQL
- c EL criteria applies to DDT only

Site Assessment Criteria SACs			
SAC based on generic land use thresholds for Residential A with garden/accessible soil			
Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:			
HU	HU-A (NEPC, 2013 or HEPA, 2020 (PFAS only))	ECV	ECV, all land uses, direct exposure (HEPA, 2020)
HSL A/B (vapour intrusion)	HSL A/B (NEPC, 2013)	ESL	Urban Residential and Public Open Space (NEPC, 2013)
DC	Direct contact HSL A Residential (Low density) (CRC CARE, 2011)	ML	Residential, Parkland and Public Open Space (NEPC, 2013)

CT1 exceedance
 TCLP1 and/or SCC1 exceedance
 CT2 exceedance
 TCLP2 and/or SCC2 exceedance
 Asbestos detection

- = Not tested, no criteria or not applicable NAD = no asbestos detected

a	QA/QC replicate of sample listed directly below the primary sample
b	Total chromium used as initial screen for chromium(VI).
c	Total recoverable hydrocarbons (TRH) used as an initial screen for total petroleum hydrocarbons (TPH)
d	Criteria for scheduled chemicals used as an initial screen
e	Criteria for Chlorpyrifos used as initial screen
f	NSW EPA, 2014, Waste Classification Guidelines Part 1; Classifying Waste
PQL	Practical quantitation limit
CT1	Maximum values of specific contaminant concentration (SCC) for classification without TCLP: General solid waste
SCC1	Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
TCLP1	Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: General solid waste
CT2	Maximum values of specific contaminant concentration (SCC) for classification without TCLP: Restricted solid waste
SCC2	Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid waste
TCLP2	Maximum values for leachable concentration (TCLP) and specific contaminant concentration (SCC) when used together: Restricted solid waste
95% UCL	95% upper confidence limit of the mean concentration calculated using ProUCL v5.1 and the 95% Student's-t UCL method



Table H3: Summary of Laboratory Results (Microbiological Contaminants)

				Nutrients and Microbiological			
				E.Coli	Faecal Coliforms	Phosphorus	Total Nitrogen
			PQL	180	180	10	10
Sample ID	Depth	Strata	Sample Date	MPN/100g	MPN/100g	mg/kg	mg/kg
M1	0 - 0.05	Natural	25/07/2024	<180	<180	130	1600
M2	0 - 0.05	Natural	25/07/2024	9200	9200	710	2000
Site Assessment Criteria ^a							
NSW EPA Biosolids Guidelines				10000	100000	-	-

■ Criteria exceedance

Notes:

a Criteria for Initial Process Verification and Stabilisation Grade A Microbiological Standards

CERTIFICATE OF ANALYSIS 357556

Client Details

Client	Douglas Partners Newcastle
Attention	Joshua Kramer
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	<u>91432.06 - Vacy</u>
Number of Samples	2 Soil
Date samples received	26/07/2024
Date completed instructions received	26/07/2024

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	02/08/2024
Date of Issue	01/08/2024
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Giovanni Agosti, Group Technical Manager
 Priya Samarawickrama, Senior Chemist
 Stuart Chen, Asbestos Approved Identifier/Report coordinator
 Timothy Toll, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Acid Extractable metals in soil			
Our Reference		357556-1	357556-2
Your Reference	UNITS	M1	M2
Depth		0-0.05	0-0.05
Date Sampled		25/07/2024	25/07/2024
Type of sample		Soil	Soil
Date prepared	-	29/07/2024	29/07/2024
Date analysed	-	30/07/2024	30/07/2024
Phosphorus	mg/kg	130	710

Moisture			
Our Reference	UNITS	357556-1	357556-2
Your Reference		M1	M2
Depth		0-0.05	0-0.05
Date Sampled		25/07/2024	25/07/2024
Type of sample		Soil	Soil
Date prepared	-	29/07/2024	29/07/2024
Date analysed	-	30/07/2024	30/07/2024
Moisture	%	22	40

Misc Inorg - Soil			
Our Reference		357556-1	357556-2
Your Reference	UNITS	M1	M2
Depth		0-0.05	0-0.05
Date Sampled		25/07/2024	25/07/2024
Type of sample		Soil	Soil
Date prepared	-	30/07/2024	30/07/2024
Date analysed	-	30/07/2024	30/07/2024
Total Nitrogen in soil/solids	mg/kg	1,600	2,000

Micro testing in soil			
Our Reference		357556-1	357556-2
Your Reference	UNITS	M1	M2
Depth		0-0.05	0-0.05
Date Sampled		25/07/2024	25/07/2024
Type of sample		Soil	Soil
Date of testing	-	27/07/2024	27/07/2024
E Coli in soil	MPN/100g	<180	9,200
Faecal Coliforms in soil	MPN/100g	<180	9,200

Method ID	Methodology Summary
Ext-008	Subcontracted to Sonic Food & Water Testing. NATA Accreditation No. 4034.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
INORG-137	Total Carbon Nitrogen Sulfur by high temperature catalytic combustion with IR detection.
Metals-020	Determination of various metals by ICP-AES.

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	[NT]
Date prepared	-			29/07/2024	[NT]	[NT]	[NT]	[NT]	29/07/2024	[NT]
Date analysed	-			30/07/2024	[NT]	[NT]	[NT]	[NT]	30/07/2024	[NT]
Phosphorus	mg/kg	10	Metals-020	<10	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			30/07/2024	[NT]	[NT]	[NT]	[NT]	30/07/2024	[NT]
Date analysed	-			30/07/2024	[NT]	[NT]	[NT]	[NT]	30/07/2024	[NT]
Total Nitrogen in soil/solids	mg/kg	10	INORG-137	<10	[NT]	[NT]	[NT]	[NT]	114	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Microbiology analysed by Sonic Food & Water Testing. Report no. W2417906.

The time between collection and the commencement of testing should not exceed 24 hours. Samples tested outside this time may have their results compromised.

CERTIFICATE OF ANALYSIS 358212

Client Details

Client	Douglas Partners Newcastle
Attention	Joshua Kramer
Address	Box 324 Hunter Region Mail Centre, Newcastle, NSW, 2310

Sample Details

Your Reference	91432.06 Vacy
Number of Samples	34 Soil
Date samples received	02/08/2024
Date completed instructions received	02/08/2024

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	09/08/2024
Date of Issue	09/08/2024
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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
 Lucy Zhu, Asbestos Supervisor
 Timothy Toll, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil

Our Reference		358212-3	358212-5	358212-9	358212-10	358212-22
Your Reference	UNITS	3	6	10	11	23
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTRH 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	%	97	100	89	99	94

vTRH(C6-C10)/BTEXN in Soil

Our Reference		358212-23	358212-25	358212-27	358212-29	358212-30
Your Reference	UNITS	24	27	30	32	32
Depth		0-0.05	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		26/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTRH 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	%	97	93	100	93	97

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		358212-31	358212-33	358212-34
Your Reference	UNITS	33	D5/SBK	D6/SBK
Depth		0-0.1	-	-
Date Sampled		29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024
TRH C ₆ - C ₉	mg/kg	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25
vTRH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	90	93	97

svTRH (C10-C40) in Soil

Our Reference		358212-3	358212-5	358212-9	358212-10	358212-22
Your Reference	UNITS	3	6	10	11	23
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
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	%	98	94	99	94	96

svTRH (C10-C40) in Soil

Our Reference		358212-23	358212-25	358212-27	358212-29	358212-30
Your Reference	UNITS	24	27	30	32	32
Depth		0-0.05	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		26/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
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	%	97	91	92	96	95

svTRH (C10-C40) in Soil				
Our Reference		358212-31	358212-33	358212-34
Your Reference	UNITS	33	D5/SBK	D6/SBK
Depth		0-0.1	-	-
Date Sampled		29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	93	92	93

PAHs in Soil						
Our Reference		358212-3	358212-5	358212-9	358212-10	358212-22
Your Reference	UNITS	3	6	10	11	23
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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 <i>p</i> -Terphenyl-d14	%	86	92	96	94	96

PAHs in Soil						
Our Reference		358212-23	358212-25	358212-27	358212-29	358212-30
Your Reference	UNITS	24	27	30	32	32
Depth		0-0.05	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		26/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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 <i>p</i> -Terphenyl-d14	%	97	90	98	91	101

PAHs in Soil				
Our Reference		358212-31	358212-33	358212-34
Your Reference	UNITS	33	D5/SBK	D6/SBK
Depth		0-0.1	-	-
Date Sampled		29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate <i>p</i> -Terphenyl-d14	%	95	90	88

Organochlorine Pesticides in soil						
Our Reference		358212-1	358212-2	358212-3	358212-4	358212-5
Your Reference	UNITS	1	2	3	5	6
Depth		0-0.1	0-0.15	0-0.1	0.25-0.25	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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
Mirex	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 4-Chloro-3-NBTF	%	97	101	100	96	89
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil

Our Reference		358212-6	358212-7	358212-8	358212-9	358212-10
Your Reference	UNITS	6	7	9	10	11
Depth		0.25-0.25	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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
Mirex	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 4-Chloro-3-NBTF	%	94	100	100	100	94
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358212-11	358212-12	358212-13	358212-14	358212-15
Your Reference	UNITS	11	13	13	15	16
Depth		0.25-0.25	0-0.1	0.25-0.25	0-0.1	0-0.05
Date Sampled		25/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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
Mirex	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 4-Chloro-3-NBTF	%	92	97	93	99	99
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358212-16	358212-17	358212-18	358212-19	358212-20
Your Reference	UNITS	18	19	19	20	22
Depth		0-0.1	0-0.05	0.5-0.5	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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
Mirex	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 4-Chloro-3-NBTF	%	99	96	97	97	103
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358212-21	358212-22	358212-23	358212-24	358212-25
Your Reference	UNITS	22	23	24	24	27
Depth		0.5-0.5	0-0.1	0-0.05	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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
Mirex	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 4-Chloro-3-NBTF	%	100	103	104	100	100
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil						
Our Reference		358212-26	358212-27	358212-28	358212-29	358212-30
Your Reference	UNITS	29	30	31	32	32
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		29/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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
Mirex	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 4-Chloro-3-NBTF	%	90	90	103	102	104
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1

Organochlorine Pesticides in soil					
Our Reference		358212-31	358212-32	358212-33	358212-34
Your Reference	UNITS	33	D4/SBK	D5/SBK	D6/SBK
Depth		0-0.1	-	-	-
Date Sampled		29/07/2024	26/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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
Mirex	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 4-Chloro-3-NBTF	%	93	96	95	92
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1

Organophosphorus Pesticides in Soil						
Our Reference		358212-1	358212-2	358212-3	358212-4	358212-5
Your Reference	UNITS	1	2	3	5	6
Depth		0-0.1	0-0.15	0-0.1	0.25-0.25	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	97	101	100	96	89

Organophosphorus Pesticides in Soil						
Our Reference	UNITS	358212-6	358212-7	358212-8	358212-9	358212-10
Your Reference		6	7	9	10	11
Depth		0.25-0.25	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	94	100	100	100	94

Organophosphorus Pesticides in Soil

Our Reference		358212-11	358212-12	358212-13	358212-14	358212-15
Your Reference	UNITS	11	13	13	15	16
Depth		0.25-0.25	0-0.1	0.25-0.25	0-0.1	0-0.05
Date Sampled		25/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	92	97	93	99	99

Organophosphorus Pesticides in Soil						
Our Reference	UNITS	358212-16	358212-17	358212-18	358212-19	358212-20
Your Reference		18	19	19	20	22
Depth		0-0.1	0-0.05	0.5-0.5	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	99	96	97	97	103

Organophosphorus Pesticides in Soil						
Our Reference	UNITS	358212-21	358212-22	358212-23	358212-24	358212-25
Your Reference		22	23	24	24	27
Depth		0.5-0.5	0-0.1	0-0.05	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	100	103	104	100	100

Organophosphorus Pesticides in Soil						
Our Reference	UNITS	358212-26	358212-27	358212-28	358212-29	358212-30
Your Reference		29	30	31	32	32
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		29/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	90	90	103	102	104

Organophosphorus Pesticides in Soil					
Our Reference		358212-31	358212-32	358212-33	358212-34
Your Reference	UNITS	33	D4/SBK	D5/SBK	D6/SBK
Depth		0-0.1	-	-	-
Date Sampled		29/07/2024	26/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	93	96	95	92

PCBs in Soil						
Our Reference	UNITS	358212-3	358212-5	358212-9	358212-10	358212-22
Your Reference		3	6	10	11	23
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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 2-Fluorobiphenyl	%	93	89	92	86	93

PCBs in Soil						
Our Reference	UNITS	358212-23	358212-25	358212-27	358212-29	358212-30
Your Reference		24	27	30	32	32
Depth		0-0.05	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		26/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
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 2-Fluorobiphenyl	%	91	92	87	96	91

PCBs in Soil				
Our Reference		358212-31	358212-33	358212-34
Your Reference	UNITS	33	D5/SBK	D6/SBK
Depth		0-0.1	-	-
Date Sampled		29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	05/08/2024	05/08/2024	05/08/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	92	87	92

Acid Extractable metals in soil

Our Reference		358212-1	358212-2	358212-3	358212-4	358212-5
Your Reference	UNITS	1	2	3	5	6
Depth		0-0.1	0-0.15	0-0.1	0.25-0.25	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	<4	<4	4	6
Beryllium	mg/kg	<1	<1	<1	<1	<1
Boron	mg/kg	<10	<10	<10	<10	<20
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	4	3	4	3
Cobalt	mg/kg	<1	3	1	1	<1
Copper	mg/kg	2	4	1	<1	<1
Lead	mg/kg	9	16	10	8	10
Manganese	mg/kg	12	120	27	14	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	<1	<1	<1
Nickel	mg/kg	<1	1	1	<1	<1
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	8	28	10	6	9

Acid Extractable metals in soil						
Our Reference		358212-6	358212-7	358212-8	358212-9	358212-10
Your Reference	UNITS	6	7	9	10	11
Depth		0.25-0.25	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	<4	<4	<4	<4
Beryllium	mg/kg	<1	<1	<1	<1	<1
Boron	mg/kg	<10	<10	<10	<10	<10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	3	4	3	3
Cobalt	mg/kg	1	<1	2	2	1
Copper	mg/kg	<1	<1	4	6	2
Lead	mg/kg	9	9	9	9	9
Manganese	mg/kg	13	16	69	40	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	<1	<1	<1
Nickel	mg/kg	1	<1	1	1	<1
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	7	9	20	17	12

Acid Extractable metals in soil						
Our Reference		358212-11	358212-12	358212-13	358212-14	358212-15
Your Reference	UNITS	11	13	13	15	16
Depth		0.25-0.25	0-0.1	0.25-0.25	0-0.1	0-0.05
Date Sampled		25/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	6	<4	14	8
Beryllium	mg/kg	<1	<1	<1	<1	<1
Boron	mg/kg	<10	<10	<10	<10	<10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	4	5	4	6
Cobalt	mg/kg	2	1	2	1	2
Copper	mg/kg	2	2	<1	4	3
Lead	mg/kg	7	11	8	11	15
Manganese	mg/kg	17	13	11	28	63
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	<1	<1	<1
Nickel	mg/kg	1	1	1	1	1
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	15	9	7	17	19

Acid Extractable metals in soil						
Our Reference		358212-16	358212-17	358212-18	358212-19	358212-20
Your Reference	UNITS	18	19	19	20	22
Depth		0-0.1	0-0.05	0.5-0.5	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	13	5	9	4
Beryllium	mg/kg	<1	1	<1	<1	<1
Boron	mg/kg	<10	<10	<10	<10	<10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	8	8	6	6
Cobalt	mg/kg	1	11	3	2	6
Copper	mg/kg	4	5	4	3	6
Lead	mg/kg	8	29	9	11	14
Manganese	mg/kg	14	320	31	28	210
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	<1	<1	<1
Nickel	mg/kg	1	3	2	2	2
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	12	31	16	13	38

Acid Extractable metals in soil						
Our Reference		358212-21	358212-22	358212-23	358212-24	358212-25
Your Reference	UNITS	22	23	24	24	27
Depth		0.5-0.5	0-0.1	0-0.05	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	4	<4	5	<4	14
Beryllium	mg/kg	<1	<1	<1	<1	<1
Boron	mg/kg	<10	<10	<20	<10	<10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	4	4	6	5
Cobalt	mg/kg	2	2	3	3	2
Copper	mg/kg	2	6	6	1	3
Lead	mg/kg	7	11	10	8	12
Manganese	mg/kg	22	88	86	18	32
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	<1	<1	<1
Nickel	mg/kg	2	1	1	2	1
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	10	22	19	13	11

Acid Extractable metals in soil						
Our Reference		358212-26	358212-27	358212-28	358212-29	358212-30
Your Reference	UNITS	29	30	31	32	32
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		29/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	24	5	4	<4	<4
Beryllium	mg/kg	<1	<1	<1	<1	<1
Boron	mg/kg	<10	<10	<10	<10	<10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	3	3	2	4
Cobalt	mg/kg	2	1	2	<1	<1
Copper	mg/kg	2	2	4	3	<1
Lead	mg/kg	19	8	9	8	6
Manganese	mg/kg	52	58	67	60	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	1	<1	<1	<1	<1
Nickel	mg/kg	1	<1	1	<1	<1
Selenium	mg/kg	<2	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	12	9	19	20	3

Acid Extractable metals in soil					
Our Reference		358212-31	358212-32	358212-33	358212-34
Your Reference	UNITS	33	D4/SBK	D5/SBK	D6/SBK
Depth		0-0.1	-	-	-
Date Sampled		29/07/2024	26/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	07/08/2024	07/08/2024	07/08/2024	07/08/2024
Arsenic	mg/kg	<4	7	35	11
Beryllium	mg/kg	<1	<1	<1	<1
Boron	mg/kg	<10	<10	<10	<10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	4	9	5
Cobalt	mg/kg	3	2	2	<1
Copper	mg/kg	10	2	1	<1
Lead	mg/kg	12	9	18	9
Manganese	mg/kg	86	23	55	7
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<1	<1	1	<1
Nickel	mg/kg	2	2	1	<1
Selenium	mg/kg	<2	<2	<2	<2
Silver	mg/kg	<1	<1	<1	<1
Zinc	mg/kg	35	11	11	4

Moisture						
Our Reference	UNITS	358212-1	358212-2	358212-3	358212-4	358212-5
Your Reference		1	2	3	5	6
Depth		0-0.1	0-0.15	0-0.1	0.25-0.25	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	19	29	24	15	16

Moisture						
Our Reference	UNITS	358212-6	358212-7	358212-8	358212-9	358212-10
Your Reference		6	7	9	10	11
Depth		0.25-0.25	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		25/07/2024	25/07/2024	25/07/2024	25/07/2024	25/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	17	20	23	27	18

Moisture						
Our Reference	UNITS	358212-11	358212-12	358212-13	358212-14	358212-15
Your Reference		11	13	13	15	16
Depth		0.25-0.25	0-0.1	0.25-0.25	0-0.1	0-0.05
Date Sampled		25/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	19	17	17	23	25

Moisture						
Our Reference	UNITS	358212-16	358212-17	358212-18	358212-19	358212-20
Your Reference		18	19	19	20	22
Depth		0-0.1	0-0.05	0.5-0.5	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	23	27	19	16	33

Moisture						
Our Reference	UNITS	358212-21	358212-22	358212-23	358212-24	358212-25
Your Reference		22	23	24	24	27
Depth		0.5-0.5	0-0.1	0-0.05	0.25-0.25	0-0.1
Date Sampled		26/07/2024	26/07/2024	26/07/2024	26/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	15	28	28	17	20

Moisture						
Our Reference	UNITS	358212-26	358212-27	358212-28	358212-29	358212-30
Your Reference		29	30	31	32	32
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0.5-0.5
Date Sampled		29/07/2024	29/07/2024	29/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	20	16	33	29	17

Moisture					
Our Reference	UNITS	358212-31	358212-32	358212-33	358212-34
Your Reference		33	D4/SBK	D5/SBK	D6/SBK
Depth		0-0.1	-	-	-
Date Sampled		29/07/2024	26/07/2024	29/07/2024	29/07/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	05/08/2024	05/08/2024	05/08/2024	05/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Moisture	%	29	14	18	17

Misc Inorg - Soil					
Our Reference		358212-6	358212-8	358212-12	358212-18
Your Reference	UNITS	6	9	13	19
Depth		0.25-0.25	0-0.1	0-0.1	0.5-0.5
Date Sampled		25/07/2024	25/07/2024	26/07/2024	26/07/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024
Date analysed	-	06/08/2024	06/08/2024	06/08/2024	06/08/2024
pH 1:5 soil:CaCl ₂	pH Units	5.4	4.3	4.1	5.0

CEC			
Our Reference		358212-8	358212-18
Your Reference	UNITS	9	19
Depth		0-0.1	0.5-0.5
Date Sampled		25/07/2024	26/07/2024
Type of sample		Soil	Soil
Date prepared	-	07/08/2024	07/08/2024
Date analysed	-	07/08/2024	07/08/2024
Exchangeable Ca	meq/100g	2.4	4.1
Exchangeable K	meq/100g	0.4	0.2
Exchangeable Mg	meq/100g	1.5	4.7
Exchangeable Na	meq/100g	<0.1	0.7
Cation Exchange Capacity	meq/100g	4.5	9.6

Asbestos ID - soils NEPM		
Our Reference		358212-10
Your Reference	UNITS	11
Depth		0-0.1
Date Sampled		25/07/2024
Type of sample		Soil
Date analysed	-	06/08/2024
Sample mass tested	g	876.84
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	—
FA and AF Estimation*	g	—
FA and AF Estimation*#2	%(w/w)	<0.001
Asbestos comments	-	Nil

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-001	pH - Measured using pH meter and electrode. 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.

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

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	358212-5
Date extracted	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			06/08/2024	3	06/08/2024	06/08/2024		06/08/2024	06/08/2024
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	3	<25	<25	0	108	107
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	3	<25	<25	0	108	107
Benzene	mg/kg	0.2	Org-023	<0.2	3	<0.2	<0.2	0	114	113
Toluene	mg/kg	0.5	Org-023	<0.5	3	<0.5	<0.5	0	116	114
Ethylbenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	100	99
m+p-xylene	mg/kg	2	Org-023	<2	3	<2	<2	0	105	105
o-Xylene	mg/kg	1	Org-023	<1	3	<1	<1	0	101	100
Naphthalene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	105	3	97	96	1	105	99

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]	29	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	29	06/08/2024	06/08/2024		[NT]	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	[NT]	29	<25	<25	0	[NT]	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	[NT]	29	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	29	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	29	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	29	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	29	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	29	93	93	0	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	358212-5
Date extracted	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			06/08/2024	3	06/08/2024	06/08/2024		06/08/2024	06/08/2024
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	3	<50	<50	0	98	94
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	3	<100	<100	0	88	92
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	3	<100	<100	0	86	92
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	3	<50	<50	0	98	94
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	3	<100	<100	0	88	92
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	3	<100	<100	0	86	92
Surrogate o-Terphenyl	%		Org-020	96	3	98	97	1	101	94

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	29	06/08/2024	06/08/2024		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	29	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	29	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	29	96	99	3	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	358212-5
Date extracted	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	78	78
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	84	80
Fluorene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	78	76
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	74	78
Anthracene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	84	78
Pyrene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	86	78
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	64	64
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	3	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	3	<0.05	<0.05	0	78	72
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	89	3	86	92	7	85	83

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	358212-23
Date extracted	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	78	76
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	80	82
Fluorene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	80	74
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	82	76
Anthracene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	84	84
Pyrene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	84	82
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	66	64
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	10	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	10	<0.05	<0.05	0	74	72
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	10	94	91	3	85	83

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	22	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	22	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	22	96	87	10	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	29	05/08/2024	05/08/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	29	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	29	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	29	91	94	3	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	358212-5
Date extracted	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	86	82
HCB	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	84	78
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	86	78
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	88	82
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	90	86
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	80	78
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	106	86
Endrin	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	106	82
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	88	84
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	86	80
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	97	3	100	96	4	93	87

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	358212-23
Date extracted	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	86	80
HCB	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	84	86
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	76	72
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	84	86
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	92	92
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	84	80
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	100	100
Endrin	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	102	75
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	90	90
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	68	68
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	10	94	97	3	98	94

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	22	103	100	3	[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]	29	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	29	05/08/2024	05/08/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	29	102	96	6	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	358212-5
Date extracted	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	88	80
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	80	70
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	82	76
Malathion	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	90	84
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	80	78
Fenthion	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	76	68
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	88	86
Phosalone	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	97	3	100	96	4	93	87

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	358212-23
Date extracted	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	84	84
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	78	74
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	80	80
Malathion	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	92	86
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	84	74
Fenthion	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	74	74
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	86	86
Phosalone	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	10	94	97	3	98	94

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	22	103	100	3	[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]	29	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	29	05/08/2024	05/08/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	29	102	96	6	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	358212-5
Date extracted	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	3	<0.1	<0.1	0	92	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	95	3	93	95	2	91	89

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	358212-23
Date extracted	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	10	<0.1	<0.1	0	99	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	10	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	10	86	88	2	91	88

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	22	93	90	3	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	29	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	29	05/08/2024	05/08/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	29	96	94	2	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	358212-5
Date prepared	-			05/08/2024	3	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			07/08/2024	3	07/08/2024	07/08/2024		07/08/2024	07/08/2024
Arsenic	mg/kg	4	Metals-020	<4	3	<4	<4	0	117	110
Beryllium	mg/kg	1	Metals-020	<1	3	<1	<1	0	117	115
Boron	mg/kg	10	Metals-020	<10	3	<10	<10	0	115	#
Cadmium	mg/kg	0.4	Metals-020	<0.4	3	<0.4	<0.4	0	113	107
Chromium	mg/kg	1	Metals-020	<1	3	3	3	0	112	110
Cobalt	mg/kg	1	Metals-020	<1	3	1	1	0	112	110
Copper	mg/kg	1	Metals-020	<1	3	1	6	143	111	116
Lead	mg/kg	1	Metals-020	<1	3	10	10	0	113	107
Manganese	mg/kg	1	Metals-020	<1	3	27	20	30	118	106
Mercury	mg/kg	0.1	Metals-021	<0.1	3	<0.1	<0.1	0	97	97
Molybdenum	mg/kg	1	Metals-020	<1	3	<1	<1	0	111	106
Nickel	mg/kg	1	Metals-020	<1	3	1	1	0	113	110
Selenium	mg/kg	2	Metals-020	<2	3	<2	<2	0	108	107
Silver	mg/kg	1	Metals-020	<1	3	<1	<1	0	111	122
Zinc	mg/kg	1	Metals-020	<1	3	10	10	0	115	109

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	358212-23
Date prepared	-			[NT]	10	05/08/2024	05/08/2024		05/08/2024	05/08/2024
Date analysed	-			[NT]	10	07/08/2024	07/08/2024		07/08/2024	07/08/2024
Arsenic	mg/kg	4	Metals-020	[NT]	10	<4	6	40	110	106
Beryllium	mg/kg	1	Metals-020	[NT]	10	<1	<1	0	110	107
Boron	mg/kg	10	Metals-020	[NT]	10	<10	<10	0	107	#
Cadmium	mg/kg	0.4	Metals-020	[NT]	10	<0.4	<0.4	0	106	97
Chromium	mg/kg	1	Metals-020	[NT]	10	3	5	50	104	103
Cobalt	mg/kg	1	Metals-020	[NT]	10	1	2	67	105	102
Copper	mg/kg	1	Metals-020	[NT]	10	2	2	0	104	108
Lead	mg/kg	1	Metals-020	[NT]	10	9	11	20	106	100
Manganese	mg/kg	1	Metals-020	[NT]	10	21	23	9	110	90
Mercury	mg/kg	0.1	Metals-021	[NT]	10	<0.1	<0.1	0	95	98
Molybdenum	mg/kg	1	Metals-020	[NT]	10	<1	<1	0	104	100
Nickel	mg/kg	1	Metals-020	[NT]	10	<1	1	0	106	102
Selenium	mg/kg	2	Metals-020	[NT]	10	<2	<2	0	102	101
Silver	mg/kg	1	Metals-020	[NT]	10	<1	<1	0	128	130
Zinc	mg/kg	1	Metals-020	[NT]	10	12	14	15	107	98

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	22	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	22	07/08/2024	07/08/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	22	<4	6	40	[NT]	[NT]
Beryllium	mg/kg	1	Metals-020	[NT]	22	<1	<1	0	[NT]	[NT]
Boron	mg/kg	10	Metals-020	[NT]	22	<10	<10	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	22	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	22	4	4	0	[NT]	[NT]
Cobalt	mg/kg	1	Metals-020	[NT]	22	2	2	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	22	6	4	40	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	22	11	10	10	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	22	88	60	38	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	22	<0.1	<0.1	0	[NT]	[NT]
Molybdenum	mg/kg	1	Metals-020	[NT]	22	<1	<1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	22	1	1	0	[NT]	[NT]
Selenium	mg/kg	2	Metals-020	[NT]	22	<2	<2	0	[NT]	[NT]
Silver	mg/kg	1	Metals-020	[NT]	22	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	22	22	16	32	[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]	29	05/08/2024	05/08/2024		[NT]	[NT]
Date analysed	-			[NT]	29	07/08/2024	07/08/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	29	<4	<4	0	[NT]	[NT]
Beryllium	mg/kg	1	Metals-020	[NT]	29	<1	<1	0	[NT]	[NT]
Boron	mg/kg	10	Metals-020	[NT]	29	<10	<10	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	29	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	29	2	2	0	[NT]	[NT]
Cobalt	mg/kg	1	Metals-020	[NT]	29	<1	<1	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	29	3	3	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	29	8	8	0	[NT]	[NT]
Manganese	mg/kg	1	Metals-020	[NT]	29	60	51	16	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	29	<0.1	<0.1	0	[NT]	[NT]
Molybdenum	mg/kg	1	Metals-020	[NT]	29	<1	<1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	29	<1	<1	0	[NT]	[NT]
Selenium	mg/kg	2	Metals-020	[NT]	29	<2	<2	0	[NT]	[NT]
Silver	mg/kg	1	Metals-020	[NT]	29	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	29	20	19	5	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			06/08/2024	6	06/08/2024	06/08/2024		06/08/2024	[NT]
Date analysed	-			06/08/2024	6	06/08/2024	06/08/2024		06/08/2024	[NT]
pH 1:5 soil:CaCl ₂	pH Units		Inorg-001	[NT]	6	5.4	5.4	0	98	[NT]

QUALITY CONTROL: CEC					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			07/08/2024	[NT]	[NT]	[NT]	[NT]	07/08/2024	[NT]
Date analysed	-			07/08/2024	[NT]	[NT]	[NT]	[NT]	07/08/2024	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	76.55	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	72.9	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	99.25	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

MISC_INORG_DRY: Samples were out of the recommended holding time for pH /Conductivity analysis.

Asbestos-ID in soil: NEPM

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

8 metals in soil:

- # Poor spike recovery was obtained for this sample. Sample matrix interference is suspected. However, an acceptable recovery was obtained for the LCS.
- The PQL(s) for #5 & #23 has been raised for B due to the poor spike recovery/recoveries. This may reflect other samples where similar in matrix and similar analytical interferences occur.

Appendix I

Data Quality Assurance and Quality Control

Chain of Custody (Field and Despatch)

Sample Receipts

1. 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 included in the summary results tables.

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

1.1 Intra-laboratory Replicate Analysis

The RPD results were all within the acceptable range, with the exception of those indicated in Table 2 (results in bold). The exceedances are not, however, considered to be of concern given that:

- The actual differences in the concentrations of the replicate pairs where RPD exceedances occurred were typically low;
- Replicates, rather than homogenised duplicates, were used to minimise risk of volatile loss, hence greater analytical variability between replicate pairs can be expected;

- Most of the recorded concentrations were relatively close to the PQL;
- The majority of RPD results from a replicate pair were within the acceptable limits; and
- All other QA/QC parameters met the data quality indicators.

Table 2: Relative Percentage Difference Results

Sample ID	Sample Date	Units	Metals													PAH															TRH						BTEX									
			Total Arsenic	Beryllium	Boron	Cadmium	Total Chromium	Cobalt	Copper	Lead	Manganese	Mercury (inorganic)	Molybdenum	Nickel	Selenium (Total)	Silver	Zinc	b Naphthalene	Benzo(a)pyrene (B(a)P)	Benzo(a)pyrene TEQ (B(a)P TEQ)	Total PAH	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(g,h,i)perylene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	TRH C6 - C10	TRH >C10-C16	F1 (C6-C10+BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	TRH C6 - C9	TRH C10-C36	Benzene	Toluene	Ethylbenzene	Total Xylenes	
22/0.05 m	26/07/2024	mg/kg	4	<1	<10	<0.4	4	2	2	7	22	<0.1	<1	2	<2	<1	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D4/SBK	26/07/2024	mg/kg	7	<1	<10	<0.4	4	2	2	9	23	<0.1	<1	2	<2	<1	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Difference	mg/kg	3	0	0	0	0	0	0	2	1	0	0	0	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	RPD	%	55%	0%	0%	0%	0%	0%	0%	25%	4%	0%	0%	0%	0%	0%	10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27/0-0.1 m	29/07/2024	mg/kg	14	<1	<10	<0.4	5	2	3	12	32	<0.1	<1	1	<2	<1	11	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<25	<50	<100	<100	<25	<50	<0.2	<0.5	<1	<1		
D5/SBK	29/07/2024	mg/kg	35	<1	<10	<0.4	9	2	1	18	55	<0.1	1	1	<2	<1	11	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<25	<50	<100	<100	<25	<50	<0.2	<0.5	<1	<1			
	Difference	mg/kg	21	0	0	0	4	0	2	6	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RPD	%	86%	0%	0%	0%	57%	0%	100%	40%	53%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
32/0.5 m	29/07/2024	mg/kg	<4	<1	<10	<0.4	4	<1	<1	6	5	<0.1	<1	<1	<2	<1	3	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<25	<50	<100	<100	<25	<50	<0.2	<0.5	<1	<1			
D6/SBK	29/07/2024	mg/kg	11	<1	<10	<0.4	5	<1	<1	9	7	<0.1	<1	<1	<2	<1	4	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<25	<50	<100	<100	<25	<50	<0.2	<0.5	<1	<1			
	Difference	mg/kg	7	0	0	0	1	0	0	3	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RPD	%	93%	0%	0%	0%	22%	0%	0%	40%	33%	0%	0%	0%	0%	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Sample ID	Sample Date	Units	OCP															OPP															PCB													
			DDT+DDE+DDD ^c	Aldrin + Dieldrin	Total Chlordane	Total Endosulfan	Endrin	Heptachlor	Hexachlorobenzene	Methoxychlor	Mirex	Heptachlor Epoxide	Endrin Aldehyde	alpha-BHC	beta-BHC	delta-BHC	Lindane	Chlorpyrifos	Azinphos methyl (Guthion)	Bromophos-ethyl	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Ronnel (fenchlorphos)	Fenitrothion	Fenthion	Malathion	Parathion	Parathion-methyl	Methidathion	Fenamiphos	Total PCB												
22/0.05 m	26/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-										
D4/SBK	26/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-										
	Difference	mg/kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-										
	RPD	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-										
27/0-0.1 m	29/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
D5/SBK	29/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
	Difference	mg/kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	RPD	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
32/0.5 m	29/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
D6/SBK	29/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
	Difference	mg/kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	RPD	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

22/0.05 m	26/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
D4/SBK	26/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Difference	mg/kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RPD	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
27/0-0.1 m	29/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
D5/SBK	29/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
	Difference	mg/kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	RPD	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
32/0.5 m	29/07/2024	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
D6																																														

1.2 Additional Laboratory Comments

A summary of pertinent comments related to QA made in the laboratory reports is summarised in Table 3.

Table 3: Summary of Laboratory QA Comments

Laboratory Report	Laboratory Comment
358212	8 metals in soil- # Poor spike recovery was obtained for this sample. Sample matrix interference is suspected. However, an acceptable recovery was obtained for the LCS. - The PQL(s) for #5 & #23 has been raised for B due to the poor spike recovery/recoveries. This may reflect other samples where similar in matrix and similar analytical interferences occur.

The above comments are not considered to be significant due to all tested samples being well below the SAC and all other QAQC requirements being met. Based on this the above QA exceedance is not considered to preclude use of the data for this assessment.

Overall, the number of anomalies noted by the laboratory are relatively small compared to the number of samples analysed. The QC data is determined to be of sufficient quality to be considered acceptable for the assessment.

2. Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following data quality indicators (DQI) 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 4: 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 DQO.
	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 DQI have been generally complied with.

3. Conclusion

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

4. 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.

Project No: 91432.06	Client Project Name: Vacy Village South Residential Subdivision
Client: Cornish Group No. Six Pty Ltd	Location:
Project Manager: Joshua Kramer	DP Lab Received By: <u>SBK</u> Date: <u>29/7/24</u>
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	EnviroLab	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
1	0-0.1		S	G, P		SBK/NTJ	25/7/24	9:30	Fridge	1/8/24			
↓	0.3		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
↓	1.0		↓	↓		↓	↓	↓	↓				
2	0-0.15									1/8/24			
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
3	0-0.1									1/8/24			
↓	0.25	DI/SBK	↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
4	0-0.1												
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
5	0-0.1												
↓	0.25		↓	↓		↓	↓	↓	↓	1/8/24			
↓	0.5		↓	↓		↓	↓	↓	↓				
↓	1.0		↓	↓		↓	↓	16:00	↓				

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1

B Provide name of Lab 2

C Provide name of Lab 3

Project No: 91432.06	Client Project Name: Vacy Village South Residential Subdivision
Client: Cornish Group No. Six Pty Ltd	Location:
Project Manager: Joshua Kramer	DP Lab Received By: SBK Date: 29/7/24
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	EnviroLab	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
6	0-0.1		S	G, P		SGK/MS	25/7/24	9:30	Indoor	1/8/24			
↓	0.25									1/8/24			
↓	0.5												
↓	0.7												
7	0-0.1									1/8/24			
↓	0.25												
↓	0.5												
8	0-0.1												
↓	0.25												
↓	0.5												
9	0-0.1									1/8/24			
↓	0.25												
↓	0.5												
↓	1.0												
10	0-0.1									1/8/24			
↓	0.25												
↓	0.5							16:00					

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1

B Provide name of Lab 2

C Provide name of Lab 3

Project No: 91432.06	Client Project Name: Vacy Village South Residential Subdivision
Client: Cornish Group No. Six Pty Ltd	Location:
Project Manager: Joshua Kramer	DP Lab Received By: SBK Date: 29/7/24
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	EnviroLab	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
11	0-0.1		S	G, P		SBK	25/7/24	9:30	Indo	1/8/24			
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
↓	1.0		↓	↓		↓	↓	↓	↓				
12	0-0.1	D2/SBK	↓	↓		↓	↓	↓	↓				
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	16:00	↓				
13	0-0.1		↓	↓		↓	26/7/24	8:30	↓	1/8/24			
↓	0.25		↓	↓		↓	↓	↓	↓	1/8/24			
↓	0.5		↓	↓		↓	↓	↓	↓				
14	0-0.1		↓	↓		↓	↓	↓	↓				
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
15	0-0.4		↓	↓		↓	↓	↓	↓	1/8/24			
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5	D3/SBK	↓	↓		↓	↓	↓	↓				T1/SBK
16	0-0.05		↓	↓		↓	↓	14:00	↓	1/8/24			

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1

B Provide name of Lab 2

C Provide name of Lab 3

Project No: 91432.06	Client Project Name: Vacy Village South Residential Subdivision
Client: Cornish Group No. Six Pty Ltd	Location:
Project Manager: Joshua Kramer	DP Lab Received By: SBK Date: 21/7/24
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	EnviroLab	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
16	0-25		S	G, P		SBK	26/7/24	8:30	fridge				
↓	0.5												
↓	1.0												
↓	1.1												
17	0-0.1												
↓	0.25												
↓	0.5												
↓	1.0												
↓	1.5												
18	0-0.1									1/8/24			
↓	0.25												
↓	0.5												
↓	1.0												
19	0-0.05									1/8/24			
↓	0.5									1/8/24			
↓	0.9												
20	0-0.1							14:00					

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1

B Provide name of Lab 2

C Provide name of Lab 3

Project No: 91432.06	Client Project Name: Vacy Village South Residential Subdivision
Client: Cornish Group No. Six Pty Ltd	Location:
Project Manager: Joshua Kramer	DP Lab Received By: SBK Date: 29/7/24
Do samples contain 'potential' HBM? Yes ☐ No ☐ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	EnviroLab	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
20	0.25		S	G.P		SBK	26/7/24	8:30	field	1/8/24			
↓	0.5												
↓	1.0												
21	0-0.1												
↓	0.25												
↓	0.5												
↓	1.0												
22	0-0.1									1/8/24			
↓	0.5	D4/SAX											
↓	1.0												
↓	1.5												
↓	1.9												
23	0-0.1									1/8/24			
↓	0.5												
↓	1.0												
↓	1.4												
24	0-0.05							14:00		1/8/24			

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1

B Provide name of Lab 2

C Provide name of Lab 3

Project No: 91432.06	Client Project Name: Vacy Village South Residential Subdivision
Client: Cornish Group No. Six Pty Ltd	Location:
Project Manager: Joshua Kramer	DP Lab Received By: SBK Date: 29/7/24
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	Envirolab	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
24	0.25		S	G, P		SBK	29/7/24	8:30	Endeavour	1/8/24			
↓	0.5		↓	↓		↓	↓	↓	↓				
↓	1.0		↓	↓		↓	↓	↓	↓				
↓	1.5		↓	↓		↓	↓	↓	↓				
25	0-0.1		↓	↓		↓	↓	↓	↓	1/8/24			
↓	0.5		↓	↓		↓	↓	↓	↓				
↓	1.0		↓	↓		↓	↓	↓	↓				
↓	1.5		↓	↓		↓	↓	14:00	↓				
26	0-0.1		↓	↓		↓	29/7/24	9:30	↓				
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
27	0-0.1	DS/SS/PL	↓	↓		↓	↓	↓	↓	1/8/24			
↓	0.25		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	↓	↓				
↓	1.0		↓	↓		↓	↓	↓	↓				
28	0-0.1		↓	↓		↓	↓	↓	↓				
↓	0.5		↓	↓		↓	↓	15:00	↓				

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1

B Provide name of Lab 2

C Provide name of Lab 3

Project No: 91432.06	Client Project Name: Vacy Village South Residential Subdivision
Client: Cornish Group No. Six Pty Ltd	Location:
Project Manager: Joshua Kramer	DP Lab Received By: <u>SBK</u> Date: <u>29/7/24</u>
Do samples contain 'potential' HBM? Yes ☐ No ☒ (If YES, then handle, transport and store in accordance with FPM HAZID)	

Field									DP Lab	For Despatch to			Notes
Sample ID	Depth (m)	Duplicate Sample	Sample Type	Container Type	ASS Samples	Sampling			Storage Locn *	Envirolab	Lab 2 ^B	Lab 3 ^C	
			S - soil W - water	G - glass P - plastic		By	Date	Time		Date	Date	Date	
28	1.0		S	G.P		SOCKMTP	29/7/24	0:30	Greasy				
29	0-0.1		↓	↓		↓	↓	↓	↓	1/8/24			
↓	0.25												
↓	0.7												
30	0-0.1									1/8/24			
↓	0.25												
↓	0.7												
31	0-0.1									1/8/24			
↓	0.25												
↓	0.5												
32	0-0.1									1/8/24			
↓	0.5	DX/SDIC								1/8/24			
↓	1.0												
33	0-0.1									1/8/24			
↓	0.25												
↓	0.5												
↓	1.0		↓	↓		↓	↓	15:00	↓				

* Default storage: glass containers in fridge, plastic containers shelved, ASS in freezer, water samples in fridge

A Provide name of Lab 1

B Provide name of Lab 2

C Provide name of Lab 3

[illegible]

Project No: 91432.06		Suburb: Vacy		To: Envirolab Services	
Project Manager: Joshua Kramer		Order Number: NC232998		Sampler: SBK/MJD	
Email: Joshua.Kramer/Sarah.Krebs/Mitchell.Date@douglaspartners.com.au				Attn: Sample Receipt	
Turnaround time: ☒ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day				(02) 9910 6200 samplereceipt@envirolab.com.au	
Prior Storage: ☒ Fridge ☐ Freezer ☐ Esky ☐ Shelf		Do samples contain 'potential' HBM? ☒ No ☐ Yes ☐ If YES, then handle, transport and store in accordance with FPM HAZID)			

Lab ID	Sample ID			Date Sampled	Sample Type S - soil W - water M - Material	Container Type G - glass P - plastic	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To				Metals (15), TRH, BTEX, PAH, OCP, OPP, PCB	Metals (15), OCP, OPP	pH (CaCl2)	CEC	Asbestos 500mL						
1	1	0	0.1	25/07/24	S	G		x									
2	2	0	0.15	25/07/24	S	G		x									
3	3	0	0.1	25/07/24	S	G	x										Combo 6
4	5	0.25	0.25	25/07/24	S	G		x									
5	6	0	0.1	25/07/24	S	G	x										Combo 6
6	6	0.25	0.25	25/07/24	S	G		x	x								
7	7	0	0.1	25/07/24	S	G		x									
8	9	0	0.1	25/07/24	S	G		x	x	x							
9	10	0	0.1	25/07/24	S	G	x										Combo 6
10	11	0	0.1	25/07/24	S	G	x					x					Combo 6
11	11	0.25	0.25	25/07/24	S	G		x									
12	13	0	0.1	26/07/24	S	G		x	x								
13	13	0.25	0.25	26/07/24	S	G		x									
14	15	0	0.1	26/07/24	S	G		x									

Metals to analyse: As, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Zn

Number of samples in container: **Transported to laboratory by:** TNT Overnight Express

Send results to: Douglas Partners Pty Ltd

Address: 15 Callistemon Close, Warabrook NSW 2323 **Phone:** (02) 4960 9600

Relinquished by: MJD **Date:** 1/08/2024 **Signed:**

LAB RECEIPT

Lab Ref. No:

Received by:

Date & Time: 2.08.24 1005

Signed:

#358212

T Trunk 2-08-24

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 91432.06		Suburb: Vacy		To: Envirolab Services													
Project Manager: Joshua Kramer				Dispatch date: 1/08/2024													
Lab ID	Sample ID			Date Sampled	Sample Type S - soil W - water M - Material	Container Type G - glass P - plastic	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To				Metals (15), TRH, BTEX, PAH, OCP, OPP, PCB	Metals (15), OCP, OPP	pH (CaCl2)	CEC	Asbestos 500mL						
15	16	0	0.05	26/07/24	S	G		x									
16	18	0	0.1	26/07/24	S	G		x									
17	19	0	0.05	26/07/24	S	G		x									
18	19	0.5	0.5	26/07/24	S	G		x	x	x							
19	20	0.25	0.25	26/07/24	S	G		x									
20	22	0	0.1	26/07/24	S	G		x									
21	22	0.5	0.5	26/07/24	S	G		x									
22	23	0	0.1	26/07/24	S	G	x										
23	24	0	0.05	26/07/24	S	G	x									Combo 6	
24	24	0.25	0.25	26/07/24	S	G		x								Combo 6	
25	27	0	0.1	29/07/24	S	G	x									Combo 6	
26	29	0	0.1	29/07/24	S	G		x									
27	30	0	0.1	29/07/24	S	G	x									Combo 6	
28	31	0	0.1	29/07/24	S	G		x									
29	32	0	0.1	29/07/24	S	G	x									Combo 6	
30	32	0.5	0.5	29/07/24	S	G	x									Combo 6	
31	33	0	0.1	29/07/24	S	G	x									Combo 6	
32	D4/SBK	-	-	26/07/24	S	G		x									

#358212
T. Trish 2-08-24

CHAIN OF CUSTODY DESPATCH SHEET

[illegible]

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Joshua Kramer

Sample Login Details

Your reference	91432.06 - Vacy
Envirolab Reference	357556
Date Sample Received	26/07/2024
Date Instructions Received	26/07/2024
Date Results Expected to be Reported	02/08/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:

**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 ID	Acid Extractable metals in soil	Misc Inorg - Soil	Micro testing in soil
M1-0-0.05	✓	✓	✓
M2-0-0.05	✓	✓	✓

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.

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Newcastle
Attention	Joshua Kramer

Sample Login Details

Your reference	91432.06 Vacy
Envirolab Reference	358212
Date Sample Received	02/08/2024
Date Instructions Received	02/08/2024
Date Results Expected to be Reported	09/08/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	34 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6
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:



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 ID	VTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metals in soil	Misc Inorg - Soil	CEC	Asbestos ID - soils NEPM
1-0-0.1				✓	✓		✓			
2-0-0.15				✓	✓		✓			
3-0-0.1	✓	✓	✓	✓	✓	✓	✓			
5-0.25-0.25				✓	✓		✓			
6-0-0.1	✓	✓	✓	✓	✓	✓	✓			
6-0.25-0.25				✓	✓		✓	✓		
7-0-0.1				✓	✓		✓			
9-0-0.1				✓	✓		✓	✓	✓	
10-0-0.1	✓	✓	✓	✓	✓	✓	✓			
11-0-0.1	✓	✓	✓	✓	✓	✓	✓			✓
11-0.25-0.25				✓	✓		✓			
13-0-0.1				✓	✓		✓	✓		
13-0.25-0.25				✓	✓		✓			
15-0-0.1				✓	✓		✓			
16-0-0.05				✓	✓		✓			
18-0-0.1				✓	✓		✓			
19-0-0.05				✓	✓		✓			
19-0.5-0.5				✓	✓		✓	✓	✓	
20-0.25-0.25				✓	✓		✓			
22-0-0.1				✓	✓		✓			
22-0.5-0.5				✓	✓		✓			
23-0-0.1	✓	✓	✓	✓	✓	✓	✓			
24-0-0.05	✓	✓	✓	✓	✓	✓	✓			
24-0.25-0.25				✓	✓		✓			
27-0-0.1	✓	✓	✓	✓	✓	✓	✓			
29-0-0.1				✓	✓		✓			
30-0-0.1	✓	✓	✓	✓	✓	✓	✓			
31-0-0.1				✓	✓		✓			
32-0-0.1	✓	✓	✓	✓	✓	✓	✓			
32-0.5-0.5	✓	✓	✓	✓	✓	✓	✓			
33-0-0.1	✓	✓	✓	✓	✓	✓	✓			
D4/SBK				✓	✓		✓			



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 ID	VTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metals in soil	Misc Inorg - Soil	CEC	Asbestos ID - soils NEPM
D5/SBK	✓	✓	✓	✓	✓	✓	✓			
D6/SBK	✓	✓	✓	✓	✓	✓	✓			

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.

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