REPORT TO

HEALTH INFRASTRUCTURE

ON

PRELIMINARY (STAGE 1) SITE INVESTIGATION

FOR

PROPOSED ALTERATIONS AND ADDITIONS

AT

FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Date: 21 June 2023
Ref: E35821PRrpt

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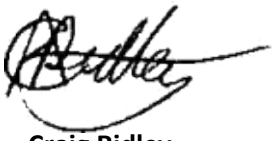

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Executive Summary

Health Infrastructure ('the client') commissioned JK Environments (JKE) to undertake a Preliminary (Stage 1) Site Investigation (PSI) for the proposed alterations and additions at Finley Hospital, 24 Dawe Ave, Finley, NSW ('the site'). The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was generally confined to the site boundaries and adjacent road shoulders as shown on Figure 2 attached in the appendices.

This report has been prepared to inform the masterplan and design stage of the proposed hospital redevelopment. JKE note that a PSI is the first step in the contaminated land assessment process for planning approval with regards to Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021.

JKE understands that the proposed development is currently in the master planning and early design phase of the project. The proposed development will likely include additions to the existing buildings and/or new buildings constructed on the site. The development may also include refurbishment of the existing buildings. Conceptual drawings were not provided to JKE.

The primary aims of the investigation were to identify any past or present potentially contaminating activities at the site, identify the potential for site contamination, and make a preliminary assessment of the soil contamination conditions. The scope of the investigation included a review of historical information, a site walkover inspection and soil sampling from 12 locations. The site was historically used for public recreation until circa 1960, and has been used for a hospital since.

Potential contamination sources identified at the site included:

- Historic filling activities;
- Underground storage tanks (USTs) present within the site;
- Use of pesticides;
- Hazardous building materials present within existing and/or former structures;
- On-site generator and associated fuel storage; and
- Maintenance workshop/gardeners shed and associated flammable good store.

The investigation typically encountered fill soils to depths of approximately 0.2m to 0.8m, underlain by sandy, silty and clayey alluvial soils. Groundwater seepage was encountered in boreholes BH2 to BH5 inclusive at depths of approximately 3.5m to 4.5m. On completion of auger drilling, the standing water level (SWL) in the boreholes were measured to range from approximately 3.8m to 4.8m. The fill typically comprised silty sand, sandy and/or clayey silt and silty clay with inclusions of ash, gravel and root fibres. No stained or odorous fill soils were encountered.

The investigation identified fill soils at one location impacted by TRHs at concentrations that were marginally above the adopted site assessment criteria (SAC). Based on the currently available information, the potential risks posed by TRH in fill soils were considered to be low.

Based on the available results, and at the time of reporting, the fill material is assigned a preliminary classification of **General Solid Waste (non-putrescible)**. JKE is of the opinion that the natural soil will likely meet the definition of **Virgin Excavated Natural Material (VENM)** for off-site disposal or re-use purposes. Further assessment including additional testing is required to confirm the final classifications prior to waste being disposed off-site.

The investigation has not identified contamination that would preclude the proposed development and a trigger for remediation was not identified. However, a detailed site investigation (DSI) is required to better assess the areas of environmental concern (AEC)/potential contamination sources. The following is recommended:

- Undertake a DSI to better assess the risks associated with the AEC/potential sources of contamination and to assess whether remediation is required. The DSI should address the data gaps identified in Section 10.4 of this report. A sampling, analysis and quality plan (SAQP) should be prepared for the DSI prior to commencement of the investigation; and
- If required (based on the findings of the DSI), a remediation action plan (RAP) is to be prepared. Any requirements documented in a RAP are to be implemented and the site is to be remediated and validated.

The SAQP for the DSI should be prepared once the development details have been confirmed.

The conclusions and recommendations should be read in conjunction with the limitations presented in the body of this report.

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Attachments

Abbreviations

Asbestos Fines/Fibrous Asbestos	**AF/FA**
Ambient Background Concentrations	**ABC**
Asphaltic Concrete	**AC**
Added Contaminant Limits	**ACL**
Asbestos Containing Material	**ACM**
Area of Environmental Concern	**AEC**
Australian Height Datum	**AHD**
Aboriginal Heritage Information Management System	**AHIMS**
Asbestos Management Plan	**AMP**
Acid Sulfate Soil	**ASS**
Above-Ground Storage Tank	**AST**
Below Ground Level	**BGL**
Benzo(a)pyrene Toxicity Equivalent Factor	**BaP TEQ**
Bureau of Meteorology	**BOM**
Benzene, Toluene, Ethylbenzene, Xylene	**BTEX**
Before You Dig Australia	**BYDA**
Cation Exchange Capacity	**CEC**
Contaminated Land Management	**CLM**
Carbon Dioxide	**CO_2**
Contaminant(s) of Potential Concern	**CoPC**
Chain of Custody	**COC**
Conceptual Site Model	**CSM**
Contaminant Threshold	**CT**
Development Application	**DA**
Design Guidance Note	**DGN**
Data Quality Indicator	**DQI**
Data Quality Objective	**DQO**
Detailed Site Investigation	**DSI**
Ecological Investigation Level	**EIL**
Ecological Screening Level	**ESL**
Environmental Management Plan	**EMP**
Environment Protection Authority	**EPA**
Environmental Site Assessment	**ESA**
Environmental & Safety Professionals	**ESP**
Fibre Cement Fragment(s)	**FCF**
Hazardous Building Materials	**HAZMAT**
Health Investigation Level	**HILs**
Health Screening Level	**HSL**
International Organisation of Standardisation	**ISO**
JK Environments	**JKE**
JK Geotechnics	**JKG**
Lab Control Spike	**LCS**
Liquified Petroleum Gas	**LPG**
Map Grid of Australia	**MGA**
National Association of Testing Authorities	**NATA**
National Environmental Protection Measure	**NEPM**
No Set Limit	**NSL**
Organochlorine Pesticides	**OCP**
Organophosphate Pesticides	**OPP**
Polycyclic Aromatic Hydrocarbons	**PAH**
Polychlorinated Biphenyls	**PCBs**
Per-and Polyfluoroalkyl Substances	**PFAS**
Photo-ionisation Detector	**PID**

Protection of the Environment Operations	**POEO**
Practical Quantitation Limit	**PQL**
Preliminary Site Investigation	**PSI**
Quality Assurance	**QA**
Quality Control	**QC**
Remediation Action Plan	**RAP**
Relative Percentage Difference	**RPD**
Site Assessment Criteria	**SAC**
Sampling, Analysis and Quality Plan	**SAQP**
State Environmental Planning Policy	**SEPP**
Synthetic Mineral Fibres	**SMF**
Site Specific Assessment	**SSA**
Source, Pathway, Receptor	**SPR**
Specific Contamination Concentration	**SCC**
Standard Penetration Test	**SPT**
Standing Water Level	**SWL**
Trip Blank	**TB**
Toxicity Characteristic Leaching Procedure	**TCLP**
Total Recoverable Hydrocarbons	**TRH**
Trip Spike	**TS**
Upper Confidence Limit	**UCL**
Urban Residential and Public Open Space	**URPOS**
Virgin Excavated Natural Material	**VENM**
Volatile Organic Compounds	**VOC**

Units

Kilometres	**km**
Litres	**L**
Metres BGL	**mBGL**
Metres	**m**
Millivolts	**mV**
Millilitres	**ml or mL**
Micrograms per Litre	**µg/L**
Milligrams per Kilogram	**mg/kg**
Milligrams per Litre	**mg/L**
Parts Per Million	**ppm**
Percentage	**%**
Percentage weight for weight	**%w/w**
Percentage weight for weight	**%w/w**

1 INTRODUCTION

Health Infrastructure ('the client') commissioned JK Environments (JKE) to undertake a Preliminary (Stage 1) Site Investigation (PSI) for the proposed alterations and additions at Finley Hospital, 24 Dawe Ave, Finley, NSW ('the site'). The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was generally confined to the site boundaries and adjacent road shoulders as shown on Figure 2.

This report has been prepared to inform the masterplan and design stage of the proposed hospital redevelopment. JKE note that a PSI is the first step in the contaminated land assessment process for planning approval with regards to Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021[1].

A geotechnical investigation and a visual hazardous building materials (HAZMAT) survey was undertaken in conjunction with this PSI by JK Geotechnics (JKG) and JKE respectively. The results of the geotechnical investigation and HAZMAT survey are presented in separate reports (Ref: 35821YFrpt[2] and Ref: E35821HLrpt-HAZ[3]). This report should be read in conjunction with the JKG and JKE HAZMAT reports.

1.1 Proposed Development Details

JKE understands that the proposed development is currently in the master planning and early design phase of the project. The proposed development will likely include additions to the existing buildings and/or new buildings constructed on the site. The development may also include refurbishment of the existing buildings.

Conceptual drawings were not provided to JKE. However, we anticipate that the proposed development will likely be constructed consistent with the existing levels and expect that only minor earthworks (cut/fill) would be required to accommodate the proposed development.

1.2 Aims and Objectives

The primary aims of the investigation were to identify any past or present potentially contaminating activities at the site, identify the potential for site contamination, and make a preliminary assessment of the soil contamination conditions. The objectives were to:

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
- Assess the soil contamination conditions via implementation of a preliminary sampling and analysis program;
- Prepare a conceptual site model (CSM);

[1] *State Environmental Planning Policy (Resilience and Hazards) 2021* (NSW) (referred to as SEPP Resilience and Hazards 2021)

[2] JKG (2023). *Report to Health Infrastructure on Geotechnical Investigation for Proposed Alterations and Additions at Finley Hospital, 24 Dawe Avenue, Finley, NSW.* (Ref: 35821YFrpt) (referred to as JKG report)

[3] JKE, (2023). *Report to Health Infrastructure on Hazardous Building Materials Survey for Proposed Alterations and Additions at Finley Hospital, 24 Dawe Avenue, Finley, NSW.* (Ref: E35821PLrpt-HAZ) (referred to as JKE HAZMAT report)

- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed development (from a contamination viewpoint);
- Assess whether further intrusive investigation and/or remediation is required; and
- Provide high-level commentary on possible remediation approaches, if required.

1.3 Scope of Work

The investigation was undertaken generally in accordance with a JKE proposal (Ref: P57854BF) of 9 December 2022 and commissioned by a signed Consultancy Agreement (HI22656). The scope of work included the following:

- Review of site information, including background and site history information from various sources outlined in the report;
- Preparation of a CSM;
- Design and implementation of a sampling, analysis and quality plan (SAQP);
- Interpretation of the analytical results against the adopted Site Assessment Criteria (SAC);
- Data Quality Assessment; and
- Preparation of a report including a Tier 1 risk assessment.

The scope of work was undertaken with reference to the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)[4], other guidelines made under or with regards to the Contaminated Land Management Act (1997)[5], SEPP Resilience and Hazards 2021, Design Guidance Note No. 030 (2021)[6] and Design Guidance Note No. 060 (2020)[7]. A list of reference documents/guidelines is included in the appendices.

[4] National Environment Protection Council (NEPC), (2013). *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013).* (referred to as NEPM 2013)

[5] Contaminated Land Management Act 1997 (NSW) (referred to as CLM Act 1997)

[6] Health Infrastructure, (2021). *Design Guidance Note No. 030. Site Investigations: Project Opportunities and Constraints.* (referred to as DGN 030)

[7] Health Infrastructure, (2020). *Design Guidance Note No. 060. Contaminated Land Management Framework*. (referred to as DGN 060)

2 SITE INFORMATION

2.1 Background

2.1.1 Hazardous Materials Survey

A hazardous building materials survey was undertaken at the site by Environmental and Safety Professionals (ESP) in 2015[8]. The purpose of the survey was to update an existing HAZMAT (which was not sighted by JKE). The scope of work included a visual inspection of asbestos containing material (ACM), synthetic mineral fibres (SMF), polychlorinated biphenyls (PCBs), lead-based paint, and ozone depleting substances within the buildings. Sampling of suspected materials was undertaken where practicable.

The survey recorded the following:

- Friable asbestos (FA) materials were identified in the main hospital building;
- Bonded/non-friable asbestos materials (i.e. ACM) were identified in the main hospital, mortuary, nurses' accommodation, community health buildings;
- SMF were identified in all buildings;
- Lead-based paint was not identified at the time of the inspection; and
- Potential PCBs were identified within the new lift shaft of the main building.

JKE note the version of the report supplied only included odd-numbered pages and was therefore incomplete.

2.1.2 Due Diligence Report

A due diligence report was prepared for the site by Northrop Consulting Engineers in 2022[9] to inform the master planning for the hospital redevelopment. The contamination-related information was reviewed and is summarised below.

The due diligence report included a review of the ESP Hazmat Survey Update prepared in 2020. JKE was not provided with a copy of the ESP Hazmat Survey Update report. The due diligence report identified the following:

- Friable asbestos was identified in the boiler room and was considered to be 'medium' risk. ESP recommended the asbestos was managed under an asbestos management plan (AMP) and should be removed as soon as practicable; and
- Bonded/non-friable asbestos was identified in the health services, community health, staff accommodation, gardener's shed and mortuary buildings and was generally considered to be 'low' risk. ESP recommended management of the asbestos under a suitable AMP.

The due diligence report did not include information relating to potential soil and/or groundwater contamination.

[8] Environmental and Safety Professionals, (2015). *Report for Murrumbidgee LHD Asset Services. Hazardous Materials Survey: Finley Hospital, 23 Dawe Street, Finley NSW 2713*. (Ref: J30414)

[9] Northrop Consulting Engineers, (2022). *Finley Hospital – Site Due Diligence Report* (Ref: SU221522-01-MD-1, Revision 2)

2.1.3 Aboriginal Heritage Due Diligence Assessment

An Aboriginal heritage due diligence assessment was undertaken by NGH in 2023[10]. The assessment included a desktop review of the Aboriginal Heritage Information Management System (AHIMS) database and a site walkover inspection.

The desktop review identified 73 Aboriginal sites registered within the local area. However, the nearest was located approximately 5.3km from the site. The site inspection did not identify any Aboriginal sites, objects, places or areas of potential Aboriginal archaeological sensitivity. The site was considered to have been highly disturbed by vegetation clearing, historical use of the site as a racecourse, and the construction of the hospital and associated buildings.

NGH considered it unlikely that Aboriginal heritage objects or areas of archaeological potential were present within the site. NGH recommended the development could proceed with caution.

2.2 Site Identification

Table 2-1: Site Identification

Current Site Owner (Certificate of Title):	Health Administration Corporation
Site Address:	24 Dawe Avenue, Finley, NSW
Lot & Deposited Plan:	Lot 246 in DP1016411
Current Land Use:	Hospital
Proposed Land Use:	Hospital
Local Government Authority (LGA):	Berrigan Shire Council
Current Zoning:	RU5: Village
Site Area (m^2) (approx.):	20,000
RL (AHD in m) (approx.):	108-109
Geographical Location (approx. centre of site) (decimal degrees) (approx.):	Latitude: -35.641713 Longitude: 145.568239
Site Location Plan:	Figure 1
Sample Location Plan:	Figure 2

[10] NGH Pty Ltd, (2023). *Aboriginal Heritage Due Diligence Assessment; Finley Hospital Redevelopment*. (Ref: 22-611, draft issued 31 January 2023)

2.3 Site Location and Regional Setting

The site is located in a predominantly residential area of Finley and is bound by Dawe Avenue to the North and Scoullar Street to the south. The site is located approximately 1km to the south-west of Finley Lake (a man-made lake).

2.4 Topography

The site is located within the southern Riverina Plain that is characterised by a typical flood plain with near level topography. The site itself has similar topography as the surrounds, with near level terrain.

2.5 Site Inspection

A walkover inspection of the site was undertaken by JKE on 11 May 2023. The inspection was limited to accessible areas of the site and immediate surrounds. With the exception of the chemical storage and maintenance areas, an internal inspection of buildings was not undertaken. Selected site photographs obtained during the inspection and over the course of the PSI are attached in the appendices.

A summary of the inspection findings is outlined in the following subsections.

2.5.1 Current Site Use and/or Indicators of Former Site Use

At the time of the inspection, the majority of the site was occupied by Finley Hospital. The northern portion of the site included a crescent-shaped, asphaltic concrete (AC) driveway which was used for vehicle access to the hospital. The main hospital buildings were located within the central portion of the site. Former uses could not be discerned.

2.5.2 Buildings, Structures and Roads

Several single-storey buildings of brick and fibre cement construction with metal roofing were observed across the site. The main hospital building occupied the central portion of the site, with a maintenance building to the south-east, and the staff accommodation building to the south-west. A small mortuary building was located in the southern portion of the site, with a metal carport structure attached to the west of the mortuary building. A stand-alone garage/shed structure of metal sheet construction was located to the east of the community health building. The buildings appeared to generally be in good condition based on a cursory inspection.

Two stand-alone metal carport structures were located to the north of the main hospital building. The western carport was associated with ambulance parking and entrance, and the eastern carport was reserved for evening shift staff parking. A metal awning structure was also observed to the east of the plant room area of the main hospital building. This structure was constructed over the self-contained back-up generator, which was located on a concrete pad. The carports and awning structure appeared to be in good condition based on a cursory inspection.

The staff accommodation building was connected to the main hospital building and community health building via covered walkways. Concrete footpaths were also observed across the site. The pathways appeared to generally be in good condition based on a cursory inspection. The covered walkways appeared to be in moderate condition, based on a cursory inspection.

A crescent-shaped AC driveway extended to the main hospital entrance from Dawe Avenue in the north of the site, with on-grade parking on the northern side of the driveway. A second AC driveway extended in a southerly direction along the western site boundary from Dawe Avenue which provided vehicular access to the neighbouring property. AC pavement connected these two driveways and was used for ambulance transfers. The pavements appeared to be generally in good condition based on a cursory inspection.

A gravel driveway was located in the south of the site, extending north-westerly from the south-eastern corner of the site. A gravel carpark was also located in the south of the site.

2.5.3 Boundary Conditions, Soil Stability and Erosion

The southern boundary was partially fenced by post and wire fencing. The eastern boundary was defined by non-continuous low timber rail and bollard fencing. The northern and western boundaries were not fenced. No visible evidence of erosion was observed at the site boundaries.

2.5.4 Presence of Drums/Chemical Storage and Waste

Several carbon dioxide (CO_2) and dry powder type fire extinguishers were observed within the boiler room (part of the main hospital building). Fire extinguishers were also observed throughout the buildings and in external storage boxes across the hospital grounds, though the external boxes were not inspected. No visible evidence or available records of discharge/use of the fire extinguishers at the site was observed.

Minor quantities of paints, fuel, solvents (mineral turpentine), lubricants and grease stored in 5-20L containers and pressurised cannisters were observed within the maintenance areas. Several oxygen (O_2) cylinders were stored in cages within the storage/plant areas in the south of the main building. Large dumpster-style bins for general waste were observed to the south of the maintenance building and several 240L bins were observed across the site.

Two underground storage tanks (USTs) were observed to the west of the maintenance shed. The USTs appeared to be concrete lined pits with metal-plate lids. JKE were informed by the maintenance manager (David McIlwain) that the tanks were no longer in use, though were previously used to store fuel oil for the boilers. No information on whether the tanks were drained and/or decommissioned was available. JKE consider the USTs represent a potential point-source of contamination.

Based on the above, JKE considered the USTs and the use of fuels, oils and lubricants associated with the maintenance workshop, may represent potential sources of contamination, though any impacts would likely be localised.

Due to the relatively small quantities and/or domestic-grade constituents of the remaining identified chemicals/wastes, these were not considered to represent a potential source of contamination that would pose an unacceptable risk.

2.5.5 Evidence of Cut and Fill

Exposed fill soils were observed in the formed garden areas and within the unsealed areas of the site.

2.5.6 Visible or Olfactory Indicators of Contamination (odours, spills etc)

Visible (e.g. staining, fibre cement at the ground surface etc) or olfactory (i.e. odours) indicators of contamination were not observed during the inspection.

2.5.7 Drainage and Services

Downpipes were observed connected to guttering on the buildings/structures and generally appeared to terminate beneath the ground level, presumably connected to local underground stormwater infrastructure. Surface water runoff was expected to generally flow towards the north in the northern portions of the site, and to the south in the southern portions of the site in sympathy with the minor topographical changes across the site. Infiltration of rainwater was also expected to occur within the landscaped and unsealed areas on-site.

A fire hydrant and booster were observed in the north-eastern portion of the site. Several local underground services (gas, water, electricity) access pits/hatches were observed across the site.

2.5.8 Sensitive Environments

Sensitive environments such as wetlands, ponds, creeks or extensive areas of natural vegetation were not identified on site or in the immediate surrounds.

2.5.9 Landscaped Areas and Visible Signs of Plant Stress

Landscaping across the site included grassed lawns, with mature native trees (approximately 5m in height) in the north, east and south-east of the site. Flowering plants in formed gardens and shrubbery were observed in the north of the site near the main hospital entrance, and within the west of the site. The vegetation across the site appeared healthy based on a cursory inspection with no obvious indications of stress or dieback.

2.6 Surrounding Land Use

During the site inspection, JKE observed the following land uses in the immediate surrounds:

- North – Dawe Avenue, with low-density residential and agricultural land use beyond;
- South – Scoullar Street, with low density residential and retirement living (Alumuna) beyond;
- East – Diggers Park (recreational space) with Donaldson Street and low-density residential beyond; and

- West – residential care facility and medical centre (Finley Regional Care), with Hamilton Street and agricultural land use beyond.

JKE did not observe any land uses in the immediate surrounds that were identified as potential contamination sources for the site.

2.7 Underground Services

The 'Before You Dig Australia' (BYDA) plans were reviewed for the investigation in order to establish whether any major underground services exist at the site or in the immediate vicinity that could act as a preferential pathway for contamination migration. Major services were not identified that would be expected to act as preferential pathways for contamination migration.

2.8 Local Meteorology

Key meteorological data for the Deniliquin Visitor Centre weather station (approximately 55km to the west of the site) available on the Bureau of Meteorology (BOM)[11] website has been reviewed and JKE note the following:

- The highest mean rainfall occurs in June, with a total of 39.4mm;
- The lowest mean rainfall occurs in February, with a total of 27.5mm; and
- In the week leading up to the JKE site inspection, a total of 5mm of rainfall was recorded.

2.9 Section 10.7 Planning Certificate

The section 10.7 (2 and 5) planning certificates were reviewed for the investigation. Copies of the certificates are attached in the appendices. A summary of the relevant information is outlined below:

- Council has not adopted a policy that restricts the development of the land due to the likelihood of acid sulfate soils (ASS), contamination or salinity;
- The land is not located in a conservation area;
- The land does not contain an item of environmental heritage; and
- A development consent has not been granted with respect to the land within the previous five years.

[11] http://www.bom.gov.au/climate/averages/tables/cw_074128.shtml visited on 6 June 2023

3 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology

Regional geological information was reviewed for the investigation. The information was sourced from the Lotsearch report attached in the appendices. The report indicates that the site is underlain by alluvial floodplain deposits, which typically consists of silt, very fine to medium-grained lithic to quartz rich sand and clay.

3.2 Acid Sulfate Soil (ASS) Risk and Planning

The site is not located in an ASS risk area according to the risk maps prepared by the Department of Land and Water Conservation. ASS information presented in the Lotsearch report indicated the site is within an area of low probability of occurrence.

3.3 Dryland Salinity Risk Mapping

The site is located in region of high salinity potential. The high classification is attributed to areas of scalding, salt efflorescence on structures, and indicator vegetation. These conditions are most common in lower slopes and drainage areas where water accumulation is high.

3.4 Hydrogeology

Hydrogeological information presented in the Lotsearch report indicated that the regional aquifer on-site and in the areas immediately surrounding the site includes porous, extensive aquifers of low to moderate productivity. There was a total of 42 registered bores within the report buffer of 2,000m. In summary:

- The nearest registered bore was located approximately 110m to the south of the site. However, this bore had been decommissioned;
- The nearest functioning borehole was located approximately 160m to the east of the site. JKE note this bore is located within a residential property and is assumed to be used for irrigation purposes;
- The drillers log information from the closest registered bores typically identified fill, sand and clay soils with some silt and gravel to terminal depths of approximately 7.3m below ground level (BGL) to 75mBGL. Standing water levels (SWLs) were not recorded in the nearest bores, though ranged from approximately 5.6mBGL to 8.8mBGL in the bores located approximately 600m to 800m to the south-east of the site; and
- The nearest bore to encounter bedrock was approximately 1.2km to the north-east of the site and encountered granite bedrock at a depth of approximately 180mBGL.

The information reviewed for the PSI indicates that the subsurface conditions at the site are expected to consist of moderate to high permeability (alluvial) soils overlying relatively deep bedrock. Abstraction and use of groundwater at the site or in the immediate surrounds may be viable under these conditions, however the use of groundwater is not proposed as part of the development as far as we are aware. There is a reticulated water supply in the area and consumption of groundwater is not expected to occur. JKE note that groundwater may be used in the vicinity of the site for irrigation purposes.

Considering the local topography, surrounding land features, and the SWLs recorded by JKG in the monitoring wells installed for the concurrent geotechnical investigation (refer to the JKG report), we anticipate groundwater to generally flow towards the south.

3.5 Receiving Water Bodies

Surface water bodies were not identified in the immediate vicinity of the site. The closest surface water body is Finley Lake, located approximately 1km to the north-east and inferred up-gradient of the site. This water body is man-made and it is unknown whether there is any hydraulic connectivity between the lake and the aquifer.

The nearest natural surface water body is the Tuppal Creek, located approximately 12km to the south-west of the site. Due to the distance from the site, this water body is not considered to be a receptor.

4 SITE HISTORY INFORMATION

4.1 Review of Historical Aerial Photographs

Historical aerial photographs were reviewed for the investigation. The information was sourced from the Lotsearch report. JKE has reviewed the photographs, and summarised relevant information in the following table:

Table 4-1: Summary of Historical Aerial Photographs

Year	Details
1945	**On-site:** The site appeared to be vacant and grassed. A few trees were visible, sparsely spread across the site. **Off-site:** The surrounds appeared generally similar to the site. A few farmhouses were visible in the wider surrounds and it was considered possible that some of the land was used for grazing purposes.
1960	**On-site:** The site appeared generally similar to previous photograph. An unsealed access track was visible entering the site centrally along the northern boundary. **Off-site:** Roadways and access tracks were visible adjacent to the south of the site, and within the wider surrounds. Some possible crop fields were visible approximately 200m to the north-west of the site. Cattle saleyards were visible approximately 250m to the south and south-west of the site. The remaining surrounds appeared generally similar to the previous photograph.
1968	**On-site:** Several inter-connected buildings were visible in the central portion of the site. A crescent-shaped driveway was visible in the north of the site and a second driveway extended to the east from the southern portion of the buildings. Another driveway was visible to the west of the buildings, entering the site from the north and extending to the south-west of the site. The layout of the buildings and driveways appeared broadly consistent with the current hospital and we consider it likely that use of the site as a hospital commenced around this time. **Off-site:** Dawe Avenue had been extended westerly to Hamilton Street adjacent to the northern site boundary. Another road had been constructed adjacent to the east of the site trending in a generally north-south direction. The wider surrounds appeared generally similar to the previous photograph.
1976	**On-site:** The site appeared generally similar to the previous photograph. A relatively small structure was visible in the southern area of the site (consistent with the mortuary building). The line of trees along the eastern and southern perimeters and vegetation within the north-west corner appeared denser. **Off-site:** A low-density residential subdivision had bene constructed to the east/south-east of the site, beyond Donaldson Street. A bowling club (lawn bowls) was visible approximately 150m to the east/north-east of the site.
1985	**On-site:** A rectangular building (trending east-west) was visible in the south-western corner of the site. An extension (trending north-south) had been constructed at the western end of the northernmost building. Pathways were visible between the buildings the new and existing buildings. **Off-site:** The surrounds appeared generally similar to the previous photograph. A few houses had been constructed to the north-east of the site, beyond Dawe Avenue.

Year	Details
1996	**On-site:** The site appeared generally similar to previous photograph. The southern driveway had been realigned to connect to Scoullar Street. **Off-site:** The road adjacent to the east of the site had been closed. Three L-shaped buildings and associated footpaths and driveways were visible adjacent to the west of the site (part of the Finley Regional Care property). The wider surrounds appeared generally similar to the previous photograph.
2012 2015	**On-site:** Site appeared generally similar to previous photograph**.** **Off-site:** By the 2012 photograph, additional buildings had been constructed on the Finley Regional Care property and appeared to be generally consistent with the current (2021 photograph) configuration. By the 2015 photograph, earthworks (clearing, levelling/filling) were undertaken on the large property to the south of the site (beyond Scoullar Street). The wider surrounds appeared generally similar to the previous photographs.
2019 2021	**On-site:** The driveway along the western boundary (servicing the adjacent property) had been re-sealed. A small building extension (possible portico) was visible extending to the north from the north-western corner of the main hospital building. A new driveway was visible connecting the existing 'U' shaped driveway and the driveway in the west of the site. **Off-site:** A retirement village (Alumuna) was under construction to the south-east of the site. Several houses with associated yards, and roadways were visible within the village. A few houses and a large shed-type structure were visible to the south and south-west of the site.

4.2 Review of Historical Land Title Records

Historical land title records were reviewed for the investigation. The record search was undertaken by InfoTrack. Copies of the title records are attached in the appendices. The title records indicate the following:

- Prior to 1897, the site was reserved for public recreation;
- Between 1897 and 1955, the site was dedicated for a race course;
- From 1960, the site was dedicated for a hospital;
- The site was subdivided in 2000; and
- The site was compulsorily acquired by the Health Administration Corporation in 2015.

4.3 Review of Council Records

Council records were sourced under an informal access to information request and were reviewed for the investigation. The council records indicate the following:

- A Development Application (DA) was lodged in 1991 for additions to the kitchen (203/91);
- A DA was lodged in 1992 for an extension to the storeroom (192/92);
- A DA was lodged in 1993 for additions and internal alterations to rehabilitation and assessment unit (120/93); and
- A DA (113/05/DA/D2) was lodged and construction certificate (94/05/CC/C1) was issued for change of use/internal refurbishment in 2005.

4.4 SafeWork NSW Records

SafeWork NSW records in relation to the registered storage of dangerous goods were reviewed for the investigation. Copies of relevant documents are attached in the appendices. A summary of the relevant information is provided in the following table:

Table 4-2: Summary of SafeWork NSW Records

Date	Record Number	License Details
16/05/1991	35/001419	A licence for the keeping of Dangerous Goods was issued to The Finley/Tocumwal Health Service. The licence related to a 7,500L above-ground storage tank (AST) located within the south-east corner of the site. The AST was used for storing liquified petroleum gas (LPG).
28/08/1995	35/001419	A licence application was lodged for a second depot of dangerous goods at the site. Depot 2 related to a 20m^3 flammable liquids store within the gardeners shed to the south of the main hospital building. JKE note Depot 2 was proposed to store Class 8 dangerous goods, which includes corrosives, such as acids.
29/06/2000	35/001419	The name of the licensed premised was changed to Greater Murray Area Health Service.
17/03/2003	35/001419	The licence for the 7,500L AST was cancelled. Workcover NSW (now SafeWork NSW) was advised that the tank had been removed and replaced with natural gas.

Based on the provided information, JKE is of the opinion that the flammable good store (Depot 2) within the maintenance workshop/gardeners shed may represent a potential point-source of site contamination.

4.5 NSW EPA and Department of Defence Records

A review of the NSW EPA and Department of Defence databases was undertaken for the PSI. Information from the following databases were sourced from the Lotsearch report:

- Records maintained in relation to contaminated land under Section 58 of the CLM Act 1997;
- Records of sites notified in accordance with the Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[12];
- Licensed activities under the Protection of the Environment Operations Act (1997)[13];

[12] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997.* (referred to as Duty to Report Contamination)

[13] Protection of the Environment Operations Act 1997 (NSW) (referred to as POEO Act 1997)

- Sites being investigated under the NSW EPA per-and polyfluoroalkyl substances (PFAS) investigation program;
- Sites being investigated by the Department of Defence for PFAS contamination; and
- Sites being managed by the Department of Defence for PFAS contamination.

The search included the site and surrounding areas in the report buffer. A summary of the information is provided below:

Table 4-3: NSW EPA and Department of Defence Records

Records	On-site	Off-site
Records under Section 58 of the CLM Act 1997	None	None
Records under the Duty to Report Contamination under Section 60 of the CLM Act 1997	None	None
Licences under the POEO Act 1997	A current licence was issued to Murray Irrigation Limited for irrigated agriculture. JKE note that the licence applied to their operations within the Berrigan, Murrumbidgee, Murray River, Edward River and Federation local government areas (LGAs). Considering multiple lines of evidence, JKE is of the opinion that there is very low potential for the site to be used for irrigated agriculture, and unlikely to be a potential source of contamination to the site.	Current licences were identified for the operation of rail systems approximately 800m to the east of the site and irrigated agriculture within the LGA and several adjoining LGAs. Several historical licences were also identified for the application of herbicides along waterways within the report buffer. However, these activities are considered unlikely to pose a contamination risk to the site or represent an off-site source of contamination.
Records relating to the NSW EPA PFAS Investigation Program	None	None
Records relating to the Department of Defence PFAS management and investigation programs	None	None

4.6 Historical Business Directory and Additional Lotsearch Information

Historical business records and other relevant information were reviewed for the investigation. The information was sourced from the Lotsearch report and summarised in the following table:

Table 4-4: Historical Business Directory and other Records

Records	On-site	Off-site
Historical dry cleaners, motor garages and service stations	None	None
Other historical businesses that could represent potential sources of contamination	None	An auto-electric business was identified within the report buffer. The business was mapped to the road corridor of Osbourne Street (now referred to as Scoullar Street). Review of this historical aerial photographs indicated the business was likely located at least 200m to the south-east of the site and cross-gradient of the site. On this basis, the business is not considered to represent an off-site source of contamination.
National waste management site database	None	None
National liquid fuel facilities	None	There were two national liquid fuel facilities located within the report buffer. The facilities were operational service stations located approximately 620m and 750m to the south-east and cross/down-gradient of the site. Due to their distances from site, these businesses are not considered to represent an off-site source of contamination.
Mapped heritage items	None	Several local and state heritage items were identified in the report buffer. The heritage items were located at least 600m to the east of the site and are not considered to have any relevance in the context of the PSI objectives.
Mapped ecological constraints	None	Various ecological items were mapped in the report buffer. These are not considered to have any relevance in the context of the PSI objectives.
Mapped naturally occurring asbestos	None	None

4.7 Summary of Site History Information

A time line summary of the historical land uses and activities is presented in the following table. The information presented in the table is based on a weight of evidence assessment of the site history documentation and observations made by JKE.

Table 4-5: Summary of Historical Land Uses / Activities

Year(s)	On-site - Potential Land Use / Activities	Off-site - Potential Land Use / Activities
Prior to 1897	Public recreation (vacant land).	Agricultural (crops and grazing), public recreation and low-density residential.
1897 – c1960	Land dedicated for public recreation (race course). The aerial historical photographs indicate that land clearing/construction of a dedicated race course did not occur within the site.	

Year(s)	On-site - Potential Land Use / Activities	Off-site - Potential Land Use / Activities
	1955: The dedication of land for a race course was revoked.	
c1960 to date	Hospital and associated activities. Possible filling/importation of materials.	

4.8 Integrity of Site History Information

The majority of the site history information was obtained from government organisations as outlined in the relevant sections of this report. The veracity of the information from these sources is considered to be relatively high. A certain degree of information loss can be expected given the lack of specific land use details over time. JKE has relied upon the Lotsearch report and have not independently verified any information contained within. However, it is noted that the Lotsearch report is generated based on databases maintained by various government agencies and is expected to be reliable.

5 CONCEPTUAL SITE MODEL

NEPM (2013) defines a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM for the site is presented in the following sub-sections and is based on the site information (including the site inspection information) and the review of site history information. Reference should also be made to the figures attached in the appendices.

A review of the CSM in relation to source, pathway and receptor (SPR) linkages has been undertaken as part of the Tier 1 risk assessment process, as outlined in Section 10.

5.1 Potential Contamination Sources/AEC and CoPC

The potential contamination sources/AEC and CoPC are presented in the following table:

Table 5-1: Potential (and/or known) Contamination Sources/AEC and Contaminants of Potential Concern

Source / AEC	CoPC
Fill material – The aerial photographs and site inspection did not identify any obvious filling activities. However, it is possible that the site has been historically filled to achieve the existing levels. The fill may have been imported from various sources and could be contaminated, or the material could have been 'site won' and placed during minor earthworks required for regrading paved areas or prior to construction of buildings.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos.
Fuel storage – Two USTs were identified at the site (see Figure 2). The USTs were historically used to store fuel oil for the boilers at the site.	TRH, BTEX and PAHs
Maintenance Workshop/Gardeners Shed – The site includes a maintenance workshop/gardeners shed and a flammable goods store (see Figure 2). It is possible that leaks/spills and/or releases of oils, solvents and fluids (e.g. turpentine/mineral spirits associated with typical painting activities, rather than chlorinated compounds) may have occurred.	Heavy metals, TRHs and PAHs.
On-site Generator – A back-up generator was observed to the east of the plant room of the main hospital building (see Figure 2). The generator appeared to be self-contained. Minor leaks and/or spills of fuel/oils may have occurred during maintenance and/or use.	TRH, BTEX and PAHs.
Use of pesticides – Pesticides may have been used beneath the buildings and/or around the site.	Heavy metals and OCPs.
Hazardous Building Material – Hazardous building materials may be present as a result of former building and demolition (renovation) activities. These materials have previously been identified in the existing buildings/ structures on site.	Asbestos, lead and PCBs.

5.2 Mechanism for Contamination, Affected Media, Receptors and Exposure Pathways

The mechanisms for contamination, affected media, receptors and exposure pathways relevant to the potential contamination sources/AEC are outlined in the following CSM table:

Table 5-2: CSM

Potential mechanism for contamination	The potential mechanisms for contamination are most likely to include 'top-down' impacts, spills and subsurface release. Subsurface release relates to the USTs.
Affected media	Soil and groundwater have been identified as the potentially affected media. The need to assess soil vapour will depend on the initial assessment of the soil and groundwater conditions.
Receptor identification	Human receptors include site occupants/users (including adults and children) in a healthcare setting, construction workers and intrusive maintenance workers. Off-site human receptors include adjacent land users (in residential and retirement living setting) and groundwater users (recreation/irrigation use). Ecological receptors include terrestrial organisms and plants within unpaved and landscaped areas.
Potential exposure pathways	Potential exposure pathways relevant to the human receptors include ingestion, dermal absorption and inhalation of dust (all contaminants) and vapours (volatile TRH, naphthalene and BTEX), and primary/secondary contract with groundwater for irrigation. The potential for exposure would typically be associated with the construction and excavation works, future use of the site, or groundwater use associated with the use of bore water. Potential exposure pathways for ecological receptors include primary/direct contact and ingestion. Exposure during future site use could occur via direct contact with soil in unpaved areas such as gardens, inhalation of airborne asbestos fibres during soil disturbance, or inhalation of vapours within enclosed spaces such as buildings.
Potential exposure mechanisms	The following have been identified as potential exposure mechanisms for site contamination: • Vapour intrusion into the buildings (from soil or groundwater contamination); • Contact (dermal, ingestion or inhalation) with exposed soils in landscaped areas and/or unpaved areas; and • Migration of groundwater off-site into areas where groundwater is being utilised as a resource (i.e. for irrigation).
Presence of preferential pathways for contaminant movement	Major services (i.e. on the BYDA plans) were not identified that would be expected to act as preferential pathways for contamination migration. However, it is noted that localised services are likely to exist that are not shown on those plans and the details of such services must be reviewed/considered in further detail in the event mobile contamination is identified.

6 SAMPLING, ANALYSIS AND QUALITY PLAN

6.1 Data Quality Objectives (DQO)

Data Quality Objectives (DQOs) were developed to define the type and quality of data required to achieve the project objectives outlined in Section 1.2. The DQOs were prepared with reference to the process outlined in Schedule B2 of NEPM (2013). The seven-step DQO approach for this project is outlined in the following sub-sections.

The DQO process is validated in part by the Data Quality Assurance/Quality Control (QA/QC) Evaluation. The Data (QA/QC) Evaluation is summarised in Section 8.1 and the detailed evaluation is provided in the appendices.

6.1.1 Step 1 - State the Problem

The CSM identified potential sources of contamination/AEC at the site that may pose a risk to human health and the environment. Investigation data is required to assess the contamination status of the site, assess the risks posed by the contaminants in the context of the proposed development/intended land use, and assess whether remediation is required.

6.1.2 Step 2 - Identify the Decisions of the Study

The objectives of the investigation are outlined in Section 1.2. The decisions to be made reflect these objectives and are as follows:

- Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?
- Are any results above the SAC?
- Do potential risks associated with contamination exist, and if so, what are they?
- Is remediation required?
- Is the site characterisation sufficient to provide adequate confidence in the above decisions?
- Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?

6.1.3 Step 3 - Identify Information Inputs

The primary information inputs required to address the decisions outlined in Step 2 include the following:

- Site information, including site observations and site history documentation;
- Sampling of soil and fibre cement fragments (FCF) (if FCF was visible on the ground surface or in fill);
- Observations of sub-surface variables such as soil type, photo-ionisation detector (PID) concentrations, odours and staining;
- Laboratory analysis of soils for the CoPC identified in the CSM; and
- Field and laboratory QA/QC data.

6.1.4 Step 4 - Define the Study Boundary

The sampling was generally confined to the site boundaries as shown in Figure 2 and was limited vertically to a depth of approximately 3.5mBGL (spatial boundary). JKE note that BH6 was located within the road shoulder of Scoullar Street adjacent to the south of the site, and BH9 was located within the road shoulder of Dawe Avenue, adjacent to the north of the site.

The sampling was completed between 8 May 2023 and 11 May 2023 (temporal boundary). The assessment of potential risk to adjacent land users has been made based on data collected within the site boundary.

Sampling was not undertaken within the existing building footprint due to access constraints.

6.1.5 Step 5 - Develop an Analytical Approach (or Decision Rule)

6.1.5.1 Tier 1 Screening Criteria

The laboratory data will be assessed against relevant Tier 1 screening criteria (referred to as SAC), as outlined in Section 7. Exceedances of the SAC do not necessarily indicate a requirement for remediation or a risk to human health and/or the environment. Exceedances are considered in the context of the CSM and valid SPR-linkages.

For this investigation, the individual results have been assessed as either above or below the SAC. Statistical evaluation of the dataset via calculation of mean values and/or 95% upper confidence limit (UCL) values has not been undertaken due to the spatial distribution of the data and the number of samples submitted for analysis.

6.1.5.2 Field and Laboratory QA/QC

Field QA/QC included analysis of inter-laboratory duplicates, intra-laboratory duplicates, trip spike, trip blank and rinsate samples. Further details regarding the sampling and analysis undertaken, and the acceptable limits adopted, is provided in the Data Quality (QA/QC) Evaluation in the appendices.

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the attached laboratory reports. These criteria were developed and implemented in accordance with the laboratory's National Association of Testing Authorities, Australia (NATA) accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

In the event that acceptable limits are not met by the laboratory analysis, other lines of evidence are reviewed (e.g. field observations of samples, preservation, handling etc) and, where required, consultation with the laboratory is undertaken in an effort to establish the cause of the non-conformance. Where uncertainty exists, JKE typically adopt the most conservative concentration reported (or in some cases, consider the data from the affected sample as an estimate).

6.1.5.3 Appropriateness of Practical Quantitation Limits (PQLs)

The PQLs of the analytical methods are considered in relation to the SAC to confirm that the PQLs are less than the SAC. In cases where the PQLs are greater than the SAC, a discussion of this is provided.

6.1.6 Step 6 – Specify Limits on Decision Errors

To limit the potential for decision errors, a range of quality assurance processes are adopted. A quantitative assessment of the potential for false positives and false negatives in the analytical results is undertaken with reference to Schedule B(3) of NEPM (2013) using the data quality assurance information collected.

Decision errors can be controlled through the use of hypothesis testing. The test can be used to show either that the baseline condition is false or that there is insufficient evidence to indicate that the baseline condition is false. The null hypothesis is an assumption that is assumed to be true in the absence of contrary evidence. For this investigation, the null hypothesis has been adopted which is that, there is considered to be a complete SPR linkage for the CoPC identified in the CSM unless this linkage can be proven not to (or unlikely to) exist. The null hypothesis has been adopted for this investigation.

Quantitative limits on decision errors were not established as the sample plan was not probabilistic.

Data Quality Indicators (DQI) for field and laboratory QA/QC samples are defined in the QA/QC Data Evaluation in the appendices. An assessment of the DQI's was made in relation to precision, accuracy, representativeness, completeness and comparability.

6.1.7 Step 7 - Optimise the Design for Obtaining Data

The most resource-effective design will be used in an optimum manner to achieve the investigation objectives. Adjustment of the investigation design can occur following consultation or feedback from project stakeholders. For this investigation, the design was optimised via consideration of the various lines of evidence used to select the sample locations, the media being sampled, and also by the way in which the data were collected concurrently with the geotechnical drilling.

The sampling plan and methodology are outlined in the following sub-sections.

6.2 Soil Sampling Plan and Methodology

The soil sampling plan and methodology adopted for this investigation is outlined in the table below:

Table 6-1: Soil Sampling Plan and Methodology

Aspect	Input
Sampling Density	Samples were collected from 12 locations (BH1 to BH9 and TP10 to TP12 inclusive) as shown on the attached Figure 2. Based on the site area (20,000m^2), this number of locations corresponded to a sampling density of approximately one sample per 2,000m^2, noting that two locations (BH6 and BH9) were located outside of the site boundaries.

Aspect	Input
	The sampling plan was for a preliminary intrusive investigation not designed to meet the minimum sampling density for hotspot identification, as outlined in the NSW EPA Sampling Design Part 1 – Application (2022)[14] contaminated land guidelines, nor the minimum frequency of one sample location per 500m^2 outlined in DGN 030. The sampling plan was designed in accordance with the project brief outlined in the tender documentation.
Sampling Plan	The sampling locations were placed on a judgemental sampling plan targeting the proposed locations outlined in the tender documentation. JKE consider the locations were broadly positioned for site coverage. The final locations were determined onsite based on access constraints. This sampling plan was considered suitable to make a preliminary assessment of potential risks associated with the AEC and CoPC identified in the CSM, and assess whether further investigation is warranted.
Set-out and Sampling Equipment	Sampling locations were set out using a tape measure from existing site features. In-situ sampling locations were checked for underground services by an external contractor prior to sampling. Samples were collected using a combination of a drill rig equipped with spiral flight augers (150mm diameter) and an excavator. Soil samples collected from boreholes obtained directly from the auger. Soil samples collected from test pits were obtained from the test pit walls or directly from the bucket by hand. Where sampling occurred from the bucket, JKE collected samples from the central portion of large soil clods, or from material that was unlikely to have come into contact with the bucket.
Sample Collection and Field QA/QC	Soil samples were obtained between 8 and 11 May 2023 in accordance with our standard field procedures. Soil samples were collected from the fill and natural profiles based on field observations. The sample depths are shown on the logs attached in the appendices. Samples were placed in glass jars with plastic caps and Teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags. During sampling, soil at selected depths was split into primary and duplicate samples for field QA/QC analysis. The field splitting procedure included alternately filling the sampling containers to obtain a representative split sample.
Field Screening	A portable Photo-ionisation Detector (PID) fitted with a 10.6mV lamp was used to screen the samples for the presence of volatile organic compounds (VOCs). PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases. PID calibration records are maintained on file by JKE.

[14] NSW EPA, (2022). *Sampling design part 1 - application.* (referred to as EPA Sampling Design Guidelines 2022)

Aspect	Input
	The sensitivity of the PID is dependent on the organic compound and varies for different mixtures of hydrocarbons. Some compounds give relatively high readings and some can be undetectable even though present in identical concentrations. The portable PID is best used semi-quantitatively to compare samples contaminated by the same hydrocarbon source. The PID is calibrated before use by measurement of an isobutylene standard gas. All the PID measurements are quoted as parts per million (ppm) isobutylene equivalents. The field screening for asbestos quantification included the following: • A representative bulk sample was collected from fill at 1m intervals, or from each distinct fill profile (though we note that a limited number of natural soils were also screened due to uncertainty in the field regarding the depth of fill). The quantity of material for each sample varied based on whatever return could be achieved using the auger. The bulk sample intervals are shown on the attached borehole and test pit logs; • Each sample was weighed using an electronic scale; • Each bulk sample was passed through a sieve with a 7.1mm aperture and inspected for the presence of fibre cement. Any soil clumps/nodules were disaggregated; • The condition of fibre cement or any other suspected asbestos materials was noted on the field records; and • If observed, any fragments of fibre cement in the bulk sample were collected, placed in a zip-lock bag and assigned a unique identifier. Calculations for asbestos content were undertaken based on the requirements outlined in Schedule B1 of NEPM (2013), as summarised in Section 7.1. The scale used to weigh the 10L samples was not calibrated, however this is not considered significant as this method of providing a weight for the bulk sample is considered to be considerably more accurate than applying a nominal soil density conversion.
Decontami-nation and Sample Preservation	Sampling personnel used disposable nitrile gloves during sampling activities. Re-usable sampling equipment was decontaminated using Decon and potable water. Soil samples were preserved by immediate storage in an insulated sample container with ice. On completion of the fieldwork, the samples were stored temporarily in fridges in the JKE warehouse before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard chain of custody (COC) procedures.

6.3 Analytical Schedule

The soils analysis typically targeted the fill soils and upper natural soils with samples from each location analysed for the CoPC relevant for fill soils. Deeper fill and natural soil samples were selected for heavy metals, BTEX/TRH and PAH, and asbestos in some instances, based on the encountered site conditions and to provide spatial coverage of the site.

6.3.1 Laboratory Analysis

Samples were analysed by an appropriate, NATA Accredited laboratory using the analytical methods detailed in Schedule B(3) of NEPM 2013. Reference should be made to the laboratory reports attached in the appendices for further details.

Table 6-2: Laboratory Details

Samples	Laboratory	Report Reference
All primary samples and field QA/QC samples including (intra-laboratory duplicates, trip blanks, trip spikes and field rinsate samples)	Envirolab Services Pty Ltd NSW, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	323127
Inter-laboratory duplicates	Envirolab Services Pty Ltd VIC, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	37376

7 SITE ASSESSMENT CRITERIA (SAC)

The SAC were derived from the NEPM 2013 and other guidelines as discussed in the following sub-sections. The guideline values for individual contaminants are presented in the attached report tables and further explanation of the various criteria adopted is provided in the appendices.

7.1 Soil

Soil data were compared to relevant Tier 1 screening criteria in accordance with NEPM (2013) as outlined below.

7.1.1 Human Health

- Health Investigation Levels (HILs) for a 'residential with accessible soils' exposure scenario (HIL-A). HIL-A were selected as a conservative measure due to the extent of landscaping/unpaved areas and the limited information regarding potential development details;
- Health Screening Levels (HSLs) for a 'low-high density residential' exposure scenario (HSL-A & HSL-B). HSLs were calculated based on conservative assumptions including a 'sand' type and a depth interval of 0m to 1m;
- HSLs for direct contact presented in the CRC Care Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document (2011)[15]; and
- Asbestos was assessed against the HSL-A criteria and as present or absent in FCF. A summary of the asbestos criteria is provided in the table below:

Table 7-1: Details for Asbestos SAC

Guideline	Applicability
Asbestos in Soil	The HSL-A criteria were adopted for the assessment of asbestos in soil. The SAC adopted for asbestos were derived from the NEPM 2013 and are based on the Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2021)[16]. The SAC include the following: • No visible asbestos at the surface/in the top 10cm of soil; • <0.01% w/w bonded asbestos containing material (ACM) in soil; and • <0.001% w/w asbestos fines/fibrous asbestos (AF/FA) in soil. Concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013): $$\text{\% w/w asbestos in soil} = \frac{\text{\% asbestos content x bonded ACM (kg)}}{\text{Soil volume (L) x soil density (kg/L)}}$$ However, we are of the opinion that the actual soil volume in a 10L bucket varies considerably due to the presence of voids, particularly when assessing cohesive soils. Therefore, each bucket sample was weighed using electronic scales and the above equation was adjusted as follows (we note that the units have also converted to grams):

[15] Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC Care), (2011). Technical Report No. 10 - *Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document*

[16] Western Australian (WA) Department of Health (DoH), (2021). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. (referred to as WA DoH 2021)

Guideline	Applicability
	% w/w asbestos in soil = $\frac{\textbf{\% asbestos content x bonded ACM (g)}}{\text{Soil weight (g)}}$

7.1.2 Environment (Ecological – terrestrial ecosystems)

- Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for an 'urban residential and public open space' (URPOS) exposure scenario. These have only been applied to the top 2m of soil as outlined in NEPM (2013). The criterion for benzo(a)pyrene has been increased from the value presented in NEPM (2013) based on the Canadian Soil Quality Guidelines[17];
- ESLs were adopted based on the soil type; and
- EILs for selected metals were calculated based on the most conservative added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013) and published ambient background concentration (ABC) values presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)[18]. This method is considered to be adequate for the Tier 1 screening.

7.1.3 Management Limits for Petroleum Hydrocarbons

Management limits for petroleum hydrocarbons (as presented in Schedule B1 of NEPM 2013) were considered. Management limits were selected on the conservative assumption of 'coarse' type soils.

7.1.4 Waste Classification

Data for the waste classification assessment were assessed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (2014)[19] as outlined in the following table:

Table 7-2: Waste Categories

Category	Description
General Solid Waste (non-putrescible)	• If Specific Contaminant Concentration (SCC) ≤ Contaminant Threshold (CT1) then Toxicity Characteristics Leaching Procedure (TCLP) not needed to classify the soil as general solid waste; and • If TCLP ≤ TCLP1 and SCC ≤ SCC1 then treat as general solid waste.
Restricted Solid Waste (non-putrescible)	• If SCC ≤ CT2 then TCLP not needed to classify the soil as restricted solid waste; and • If TCLP ≤ TCLP2 and SCC ≤ SCC2 then treat as restricted solid waste.
Hazardous Waste	• If SCC > CT2 then TCLP not needed to classify the soil as hazardous waste; and • If TCLP > TCLP2 and/or SCC > SCC2 then treat as hazardous waste.
Virgin Excavated Natural Material (VENM)	Natural material (such as clay, gravel, sand, soil or rock fines) that meet the following: • That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial mining or agricultural activities;

[17] Canadian Council of Ministers of the Environment, (1999). *Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)* (referred to as the Canadian Soil Quality Guidelines)

[18] Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4*. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

[19] NSW EPA, (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.* (referred to as Waste Classification Guidelines 2014)

Category	Description
	• That does not contain sulfidic ores or other waste; and • Includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

8 RESULTS

8.1 Summary of Data (QA/QC) Evaluation

The data evaluation is presented in the appendices. In summary, JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

8.2 Subsurface Conditions

A summary of the subsurface conditions encountered during the investigation is presented in the following table. Reference should be made to the borehole and test pit logs attached in the appendices for further details.

Table 8-1: Summary of Subsurface Conditions

Profile	Description
Fill	With the exception of BH6, fill was encountered at the surface all boreholes and test pits and extended to depths of approximately 0.2mBGL to 0.8mBGL. The fill typically comprised silty sand, sandy and/or clayey silt and silty clay with inclusions of ash, gravel and root fibres. No stained or odorous fill soils were encountered.
Natural Soil	Sandy, silty and/or clayey alluvial soils were encountered at the surface in BH6, and beneath the fill in all other boreholes and locations. The alluvial soils typically became sandier with depth. All boreholes and test pits were terminated in the alluvial soils at depths ranging from approximately 1.1mBGL to 5.45mBGL. No stained or odorous soils were encountered.
Bedrock	Bedrock was not encountered during the investigation.
Groundwater	Groundwater seepage was encountered in boreholes BH2 to BH5 inclusive at depths of approximately 3.5mBGL to 4.5mBGL. On completion of auger drilling, the SWLs in the boreholes were measured to range from approximately 3.8mBGL to 4.8mBGL. All other boreholes and test pits remained dry on completion of drilling/excavation and a short time after.

8.3 Field Screening

A summary of the field screening results is presented in the following table:

Table 8-2: Summary of Field Screening

Aspect	Details
PID Screening of Soil Samples for VOCs	PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices. The results ranged from 0ppm to 2.4ppm equivalent isobutylene. The results indicated that relatively low concentrations of PID detectable VOCs were detected in numerous samples.
Bulk Screening for Asbestos	The bulk field screening results are summarised in Table S5 attached in the appendices. All results were below the SAC.

8.4 Soil Laboratory Results

The soil laboratory results were assessed against the SAC presented in Section 7.1. Individual SAC are shown in the report tables attached in the appendices. A summary of the results is presented below:

8.4.1 Human Health and Environmental (Ecological) Assessment

Table 8-3: Summary of Soil Laboratory Results – Human Health and Environmental (Ecological)

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
Arsenic	24	7	0	0	-
Cadmium	24	<PQL	0	NSL	-
Chromium (total)	24	31	0	0	-
Copper	24	29	0	0	-
Lead	24	17	0	0	-
Mercury	24	<PQL	0	NSL	-
Nickel	24	27	0	0	-
Zinc	24	71	0	0	-
Total PAHs	24	<PQL	0	NSL	-
Benzo(a)pyrene	24	<PQL	NSL	0	-
Carcinogenic PAHs (as BaP TEQ)	24	<PQL	0	NSL	-
Naphthalene	24	<PQL	0	NSL	-
DDT+DDE+DDD	12	<PQL	0	NSL	-
DDT	12	<PQL	NSL	0	-
Aldrin and dieldrin	12	<PQL	0	NSL	-
Chlordane	12	<PQL	0	NSL	-
Heptachlor	12	<PQL	0	NSL	-
Chlorpyrifos (OPP)	12	<PQL	0	NSL	-
PCBs	12	<PQL	0	NSL	-

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
TRH F1	24	<PQL	0	0	-
TRH F2	24	130	1	1	The TRH F2 concentration recorded in one fill soil sample collected from BH7 (0-0.2m) exceeded the human health and ecological SAC.
TRH F3	24	540	0	0	-
TRH F4	24	350	0	0	-
Benzene	24	<PQL	0	0	-
Toluene	24	<PQL	0	0	-
Ethylbenzene	24	<PQL	0	0	-
Xylenes	24	<PQL	0	0	-
Asbestos (in soil) (%w/w)	12	ACM <0.01 AF/FA <0.001	0	NA	Asbestos was not detected in the samples analysed.

Notes:

N: Total number (primary samples)

NSL: No set limit

NL: Not limiting

8.4.2 TRH Management Limits

The laboratory results were assessed against the criteria presented in Section 7.1.3. All TRH results were below the TRH management limits. The results are presented in Table S4 attached in the appendices.

8.4.3 Waste Classification Assessment

The laboratory results were assessed against the criteria presented in Section 7.1.4. The results are presented in the report tables attached in the appendices. A summary of the results is presented in the following table:

Table 8-4: Summary of Soil Laboratory Results Compared to CT and SCC Criteria

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
Arsenic	24	0	0	-
Cadmium	24	0	0	-
Chromium	24	0	0	-
Copper	24	NSL	NSL	-

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
Lead	24	0	0	-
Mercury	24	0	0	-
Nickel	24	0	0	-
Zinc	24	NSL	NSL	-
TRH (C_6-C_9)	24	0	0	-
TRH (C_{10}-C_{36})	24	0	0	-
BTEX	24	0	0	-
Total PAHs	24	0	0	-
Benzo(a)pyrene	24	0	0	-
OCPs & OPPs	12	0	0	-
PCBs	12	0	0	-
Asbestos	12	-	-	Asbestos was not detected in the samples analysed.

N: Total number (primary samples)

NSL: No set limit

9 PRELIMINARY WASTE CLASSIFICATION ASSESSMENT

9.1 Preliminary Waste Classification of Fill

Based on the results of the waste classification assessment, and at the time of reporting, the fill material is assigned a preliminary classification of **General Solid Waste (non-putrescible)**. Further assessment including additional testing is required to confirm the final classification prior to off-site disposal. The anticipated waste quantities should also be confirmed at that time and documented in the report.

9.2 Preliminary Classification of Natural Soil

Based on the scope of work undertaken for this assessment, and at the time of reporting, JKE is of the opinion that the natural soil will likely meet the definition of **VENM** for off-site disposal or re-use purposes. Further assessment including additional testing is required to confirm the final classification prior to off-site disposal and/or re-use. The anticipated waste quantities should also be confirmed at that time and documented in the report.

10 DISCUSSION

10.1 Contamination Sources/AEC and Potential for Site Contamination

Based on the scope of work undertaken for this investigation, JKE identified the following potential contamination sources/AEC:

- Historic filling activities;
- USTs present within the site;
- Use of pesticides;
- Hazardous building materials present within existing and/or former structures;
- On-site generator and associated fuel storage; and
- Maintenance workshop/gardeners shed and associated flammable good store.

Considering the above, and based on a qualitative assessment of various lines of evidence as discussed throughout this report, JKE is of the opinion that there is a potential for site contamination, albeit the potential for widespread contamination appears to be low in our opinion. The preliminary soil data collected for the investigation is discussed further in the following subsection, as part of the Tier 1 risk assessment.

10.2 Tier 1 Risk Assessment and Review of CSM

For a contaminant to represent a risk to a receptor, the following three conditions must be present:

1. Source – The presence of a contaminant;
2. Pathway – A mechanism or action by which a receptor can become exposed to the contaminant; and
3. Receptor – The human or ecological entity which may be adversely impacted following exposure to contamination.

If one of the above components is missing, the potential for adverse risks is relatively low.

10.2.1 Asbestos

Asbestos was not identified in or on soils during this PSI.

Though asbestos was not identified during the investigation, due to the sporadic nature of asbestos impacts in fill soils, and the historic filling and construction/renovation activities undertaken at the site, JKE consider there is potential for asbestos to be encountered. Further assessment of the potential for asbestos in soils to be encountered is required.

10.2.2 Hydrocarbons

A concentration of TRH F2 above the human health and ecological SAC was recorded in the surficial fill soil sample collected from BH7 (0-0.2m). BH7 was located in the south-eastern portion of the site, to the east of the southern access driveway as shown on Figure 3 attached in the appendices. The source of the TRH was considered likely associated with a surficial spill/release, such as from lawn maintenance equipment (i.e. lawn mower, blower etc). TRH was not recorded above the PQL in the underlying natural soil sample, indicating the TRH impacts were likely confined to the surficial fill soils.

BH7 was located in a grass-covered area and the elevated TRH F2 concentration was recorded in the surficial soils. The grass cover in the vicinity of BH7 appeared healthy and well-maintained based on a cursory inspection. No visible obvious evidence of plant distress was noted. The detected TRH F2 concentration (130mg/kg) was marginally above the ecological SAC (120mg/kg). Based on the marginal exceedance of the SAC and the observed site conditions (vegetation cover and apparent healthy condition), JKE were of the opinion the TRH F2 in surficial fill in the vicinity of BH7 was unlikely to pose an unacceptable risk to ecological receptors.

From a human-health risk perspective, JKE note that the human-health SAC (110mg/kg) is based on vapour intrusion assuming that a building is or will be at this location. It is noted that the HSL for public open space (i.e. open landscaped areas) is not limiting (i.e. no set limit), as there is not considered to be a risk of vapour intrusion and unacceptable exposure to vapours in the absence of buildings/structures. Based on the marginal exceedance of the SAC, the current site configuration and the fact that surficial fill would likely be removed (for site preparation purposes) in the event that a building was constructed in this vicinity, JKE considered the TRH F2 in surficial fill in the vicinity of BH7 was unlikely to pose an unacceptable risk to human health.

All remaining hydrocarbon concentrations were below the relevant SAC.

10.2.3 Other CoPC in Soil

All remaining CoPC in soil were below the relevant SAC.

10.3 Decision Statements

The decision statements are addressed below:

> *Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?*

Yes, as discussed in Section 10.1.

> *Are any results above the SAC?*

Yes, as discussed in Section 8.4.

> *Do potential risks associated with contamination exist, and if so, what are they?*

Based on the currently available information, the potential risks posed by TRH in fill soils were considered to be low. Potential risks remain in the context of the identified AEC and this is a trigger for further (i.e. detailed) investigation.

Is remediation required?

The currently available data does not trigger a need for remediation. However, further investigation is required to better assess the potential risks associated with the potential contamination sources/AEC.

Is the site characterisation sufficient to provide adequate confidence in the above decisions?

Further investigation is required to better assess the potential risks posed to human health and ecological receptors.

Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?

JKE is of the opinion that the site can be made suitable for the proposed development. A detailed (stage 2) site investigation (DSI) is required to better assess the risks associated with the potential contamination sources/AEC and inform whether remediation is required.

10.4 Data Gaps

An assessment of data gaps is provided in the following table:

Table 10-1: Data Gap Assessment

Data Gap	Assessment
Groundwater flow direction and contaminant condition not assessed	Investigation of groundwater contamination conditions was outside the scope of the PSI. Due to the identification of potential point sources of groundwater contamination (e.g. the USTs) and potential receptors, the DSI must include an investigation of groundwater.
Soil sampling density below minimum guideline density	Sampling was limited to approximately 40% of the minimum sampling density recommended in the EPA Sampling Design Guidelines 2022, and approximately 25% of the minimum sampling density required in DGN 030. Recommendations for additional soil sampling are included in the report to address this data gap.
Building footprints not assessed.	The nominated sampling locations were positioned outside of the building footprints. The fill and soil conditions beneath the building footprints are currently unknown. JKE note that the proposed development details are unknown and the buildings may be retained. In the event that the existing buildings are not retained, further investigation beneath the building footprints is recommended following demolition. The requirements for assessing risks in the building footprints must be considered as part of the DSI process.
Asbestos quantification undertaken using boreholes.	Asbestos quantification was undertaken from boreholes (150mm nominal diameter) for some locations. Though acceptable, the WA DoH (2021) guidance recommends the use of test pits where possible. Test pits should be used where possible for the additional asbestos quantification sampling as part of the DSI.

Data Gap	Assessment
Not all AEC assessed.	The sampling locations were pre-determined and did not target all AEC identified in the PSI. No intrusive investigation was undertaken in the immediate vicinity of the two identified UST in the south of the site and the back-up generator in the east of the site. Further investigation is required to assess these AEC. Additional targeted investigation of these AEC must be considered as part of the DSI process.

10.5 Potential Remediation & Management Options

The available data does not trigger a requirement for soil remediation to occur. However, further investigation is required to better assess the potential risks associated with the potential contamination sources/AEC. There is potential for unidentified contamination to be encountered during future stages of work. JKE is of the opinion that these occurrences, if encountered, would likely be localised impacts.

On this basis, remediation (if required) would likely consist of localised excavation and off-site disposal of contaminated soils and validation of the removal. Resulting excavations would need to be reinstated with validated VENM, or other approved materials (such as validated mulch/topsoil). If contamination is identified which triggers a requirement for remediation, the remediation and validation approach must be detailed in a Remediation Action Plan (RAP).

11 CONCLUSIONS AND RECOMMENDATIONS

The investigation included a review of historical information, a site walkover inspection and soil sampling from 12 locations. The site was historically used for public recreation until circa 1960, and has been used for a hospital since.

The investigation typically encountered fill soils to depths of approximately 0.2m to 0.8m, underlain by sandy, silty and clayey alluvial soils. Groundwater seepage was encountered in boreholes BH2 to BH5 inclusive at depths of approximately 3.5m to 4.5m. On completion of auger drilling, the SWLs in the boreholes were measured to range from approximately 3.8m to 4.8m. The fill typically comprised silty sand, sandy and/or clayey silt and silty clay with inclusions of ash, gravel and root fibres. No stained or odorous fill soils were encountered.

The investigation identified fill soils at one location impacted by TRHs at concentrations that were above the adopted SAC.

The investigation has not identified contamination that would preclude the proposed development and a trigger for remediation was not identified. However, a DSI is required to better assess the AEC/potential contamination sources. The following is recommended:

- Undertake a DSI to better assess the risks associated with the AEC/potential sources of contamination and to assess whether remediation is required. The DSI should address the data gaps identified in Section 10.4 of this report. A SAQP should be prepared for the DSI prior to commencement of the investigation; and
- If required (based on the findings of the DSI), a RAP is to be prepared. Any requirements documented in a RAP are to be implemented and the site is to be remediated and validated.

The SAQP for the DSI should be prepared once the development details have been confirmed.

At this stage, JKE consider there is no requirement to notify the NSW EPA under the NSW EPA Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[20]. The duty to report should be reconsidered following completion of the DSI.

JKE consider that the report objectives outlined in Section 1.2 have been addressed.

[20] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997* (referred to as Duty to Report Contamination)

12 LIMITATIONS

The report limitations are outlined below:

- JKE accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
- Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
- This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the JKE proposal; and terms of contract between JKE and the client (as applicable);
- The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
- Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes;
- The investigation and preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, JKE has not undertaken any verification process, except where specifically stated in the report;
- JKE has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;
- JKE accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
- JKE have not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or landuse. JKE should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.

Important Information About This Report

These notes have been prepared by JKE to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors
This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

JKE will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the investigation. If the subject site is sold, ownership of the investigation report should be transferred by JKE to the new site owners who will be informed of the conditions and limitations under which the investigation was undertaken. No person should apply an investigation for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions
Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an investigation report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data
Site investigations identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an investigation indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Investigation Limitations
Although information provided by a site investigation can reduce exposure to the risk of the presence of contamination, no environmental site investigation can eliminate the risk. Even a rigorous professional investigation may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Investigations by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an investigation report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Investigation Report

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the investigation. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the investigation. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete investigation should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site investigation is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site investigation, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

Appendix A: Report Figures

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

This plan should be read in conjunction with the Environmental report.

Title: **SITE LOCATION PLAN**

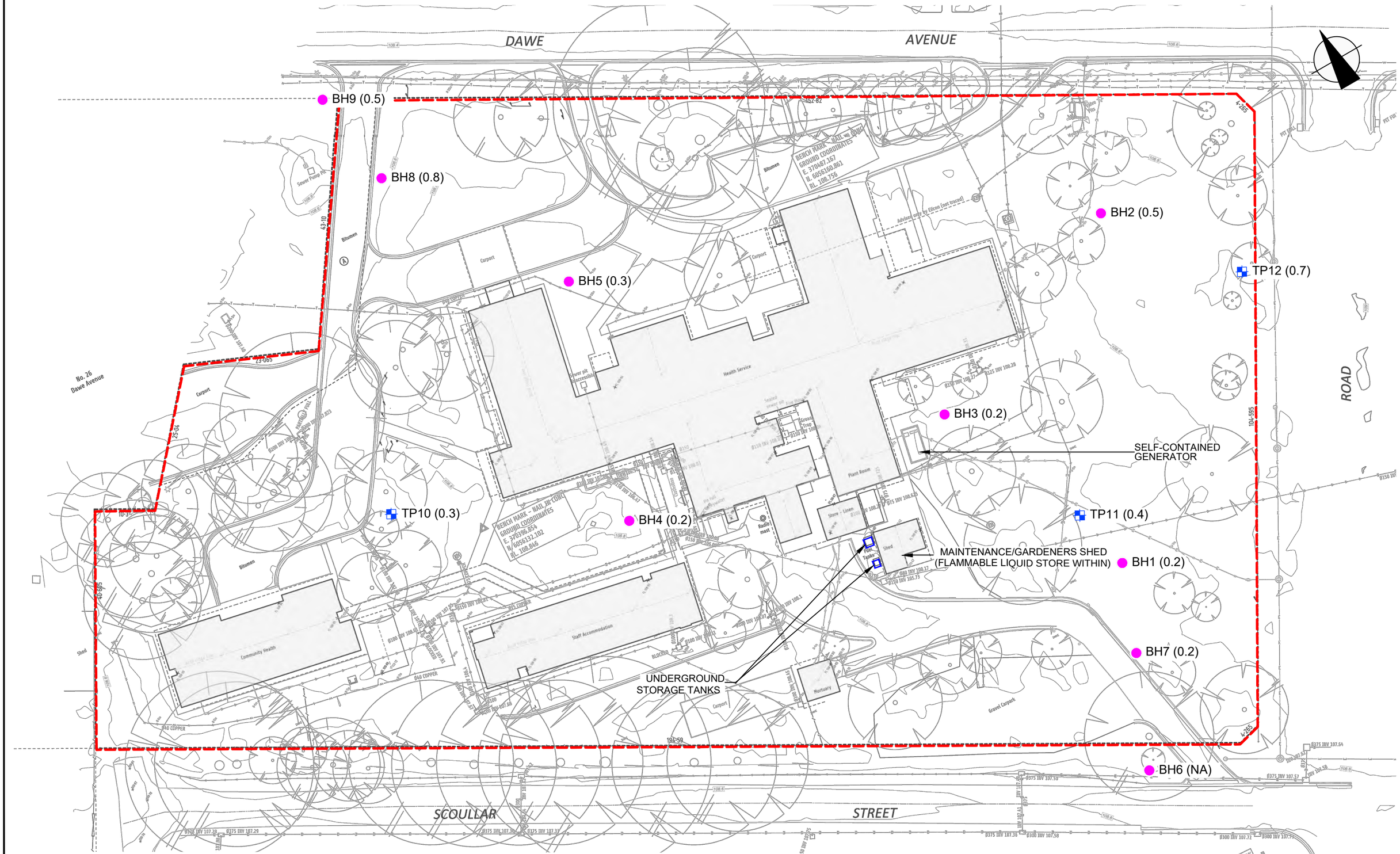
Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Project No: E35821PR

Figure No: 1

JKEnvironments

PLOT DATE: 25/05/2023 11:36:25 AM DWG FILE: K:\5C EIS JOBS\35000'S\E35821PR FINLEY\CAD\E35821PR.DWG



LEGEND

APPROXIMATE SITE BOUNDARY	
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m)
TP(Fill Depth)	TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m)

0 6 12 18 24 30
SCALE 1:600 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Title: **SAMPLE LOCATION PLAN**

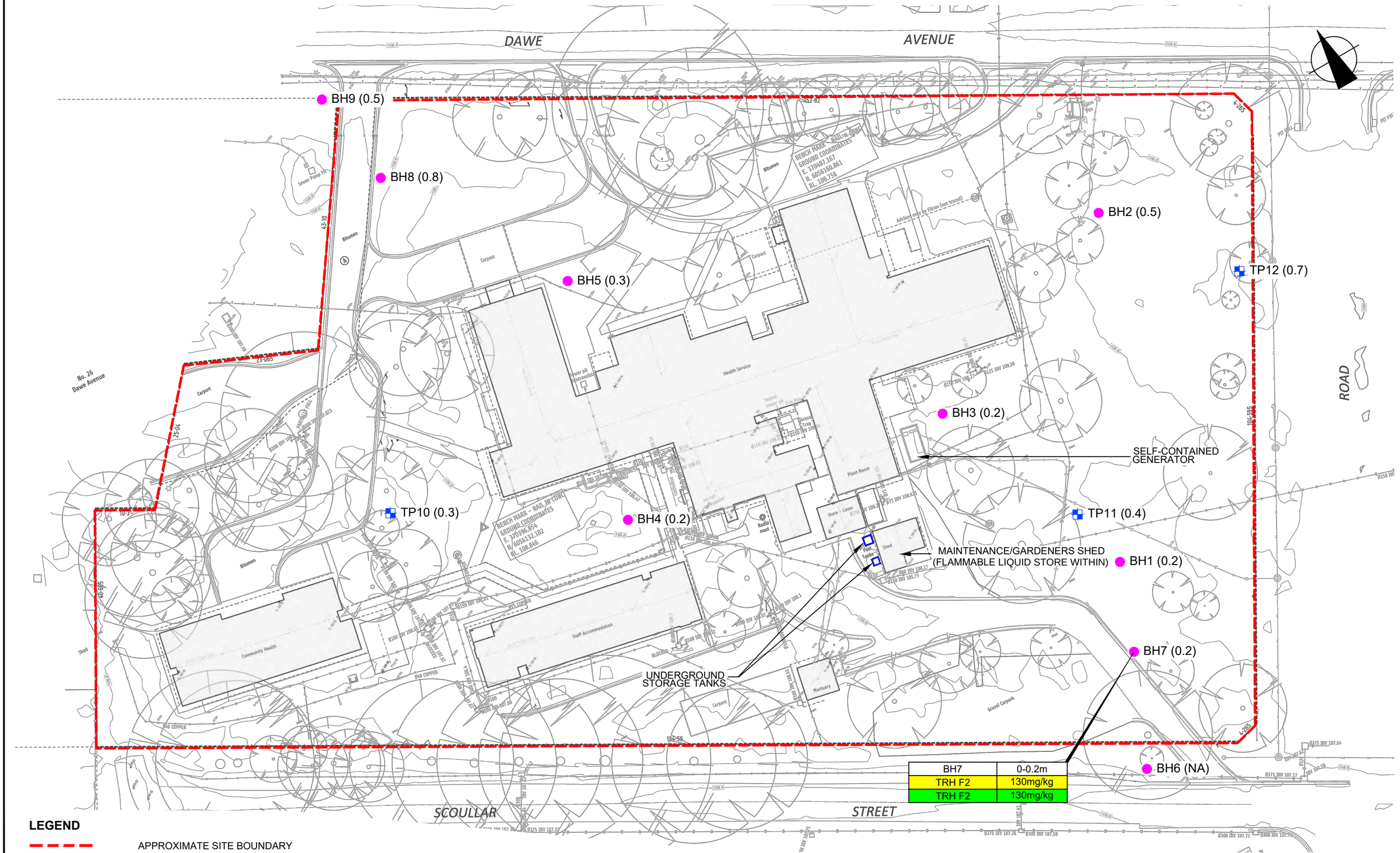
Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Project No: E35821PR

Figure No: 2

JKEnvironments

PLOT DATE: 9/06/2023 4:19:18 PM DWG FILE: K:\5C EIS JOBS\35000'S\E35821PR FINLEY\CADE\35821PR.DWG



BH7	0-0.2m
TRH F2	130mg/kg
TRH F2	130mg/kg

LEGEND

- APPROXIMATE SITE BOUNDARY
- BH(Fill Depth) BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m)
- TP(Fill Depth) TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m)

SAMPLE ID	DEPTH (metres)
CHEMICAL	CONCENTRATION

SOIL/SURFACE SAMPLE EXCEEDANCE

SOIL/SURFACE CONTAMINATION ABOVE SAC FOR HUMAN HEALTH RISK

SOIL/SURFACE CONTAMINATION ABOVE SAC FOR ECOLOGICAL RISK

0 6 12 18 24 30

SCALE 1:600 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Title: **SAC EXCEEDANCE PLAN**

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Project No: E35821PR

Figure No: 3

JKEnvironments

PLOT DATE: 25/05/2023 11:36:50 AM DWG FILE: K:\SC EIS JOBS\35000\SIE35821PR FINLEY\CADIE35821PR.DWG

Appendix B: Site Information and Site History

Selected Site Photographs

Photograph 1: Main hospital building

Photograph 2: Ambulance entrance

Photograph 3: Maintenance building

Photograph 4: Community health building

Photograph 5: Mortuary building

Photograph 6: Staff accommodation building

Photograph 7: Stored paints and fuel

Photograph 8: Fire extinguishers in boiler room

Photograph 9: Oxygen gas storage

Photograph 10: Oxygen gas storage

Photograph 11: Back-up generator and main hospital building

Photograph 12: USTs

Lotsearch Environmental Risk and Planning Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 28 Mar 2023 10:15:10

Reference: LS041986 EP

Address: Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	14/02/2023	14/02/2023	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	24/03/2023	10/03/2023	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	06/12/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	2
EPA PFAS Investigation Program	Environment Protection Authority	13/02/2023	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	14/02/2023	14/02/2023	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	14/02/2023	14/02/2023	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	13/02/2023	13/02/2023	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	1	1	2
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	2	3	3
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	1	1
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	1	3	44
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	1
Major Easements	NSW Department of Customer Service - Spatial Services	16/02/2023	16/02/2023	Quarterly	1000m	0	0	4
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/02/2023	31/12/2022	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	As required	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	14/02/2023	14/02/2023	Annually	2000m	0	0	42

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	1
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	28/02/2023	02/12/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	2
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	1	1	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	14/02/2023	14/02/2023	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	6	6	6
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/12/2022	02/12/2022	Monthly	1000m	1	2	10
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	18/10/2022	01/07/2022	Quarterly	1000m	0	0	1
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	28/02/2023	17/02/2023	Monthly	1000m	0	0	15
Bush Fire Prone Land	NSW Rural Fire Service	27/03/2023	25/10/2022	Weekly	1000m	0	0	0
Native Vegetation of the Murray Catchment Management Authority	NSW Office of Environment & Heritage	19/02/2015	24/08/2011	Annually	1000m	0	0	0
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	28/03/2023	28/03/2023	Weekly	10000m	-	-	-

Site Diagram

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 20327m²

Total Perimeter: 612m

Scale: 0 25 50 Meters

Data Sources: Aerial Imagery:
© NSW Department of Finance, Services & Innovation

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 March 2023

Contaminated Land

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

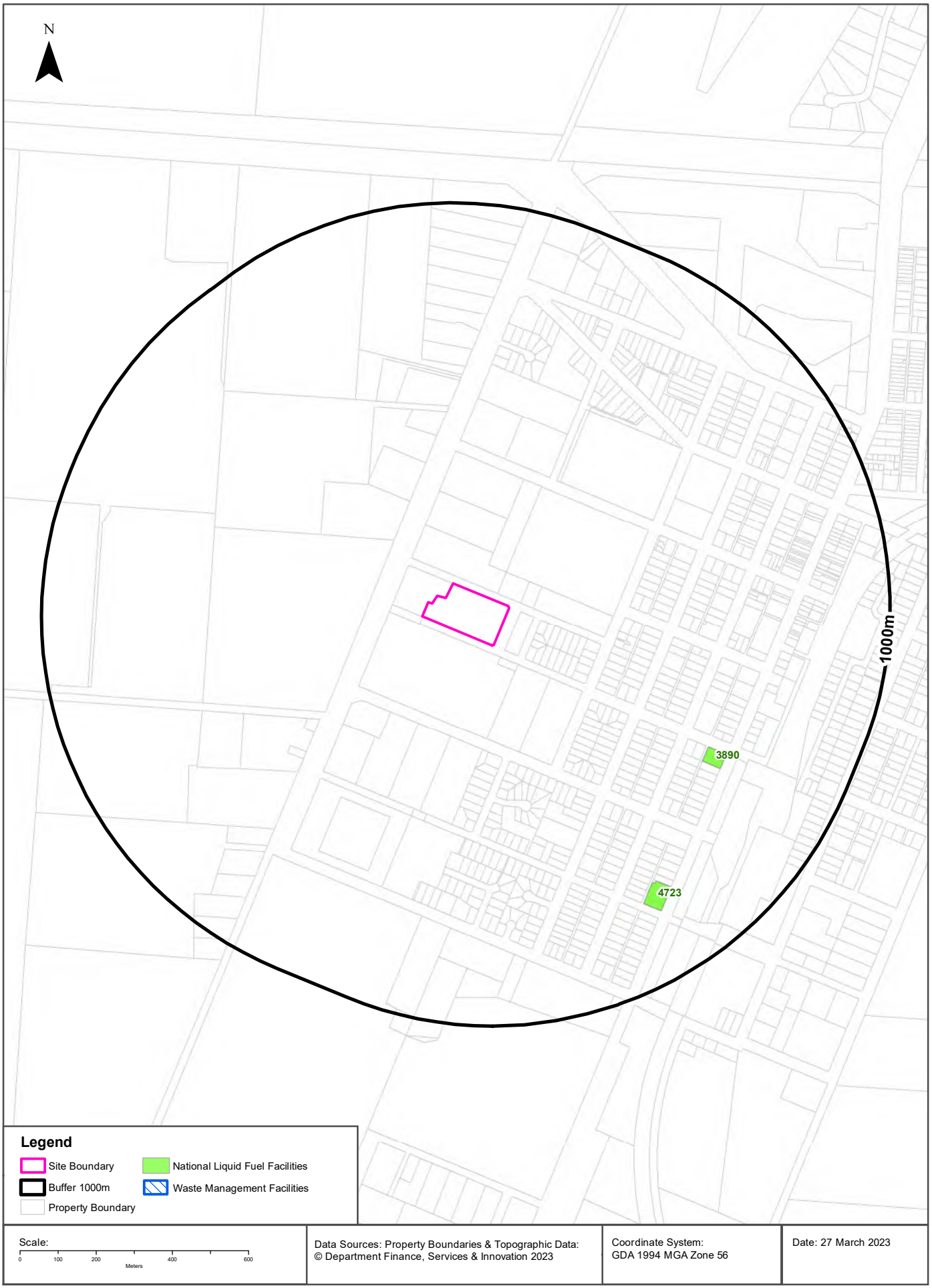
Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Waste Management & Liquid Fuel Facilities

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist	Direction
N/A	No records in buffer											

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
3890	BP	BP Finley	255-259 Murray Street	Finley	Petrol Station	Operational		25/07/2011	Premise Match	622m	South East
4723	7-Eleven Pty Ltd	Independent Finley	295-301 Murray Street	Finley	Petrol Station	Operational		13/07/2012	Premise Match	749m	South East

PFAS Investigation & Management Programs

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority

Current EPA Licensed Activities

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

EPA Activities

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Licensed Activities under the POEO Act 1997

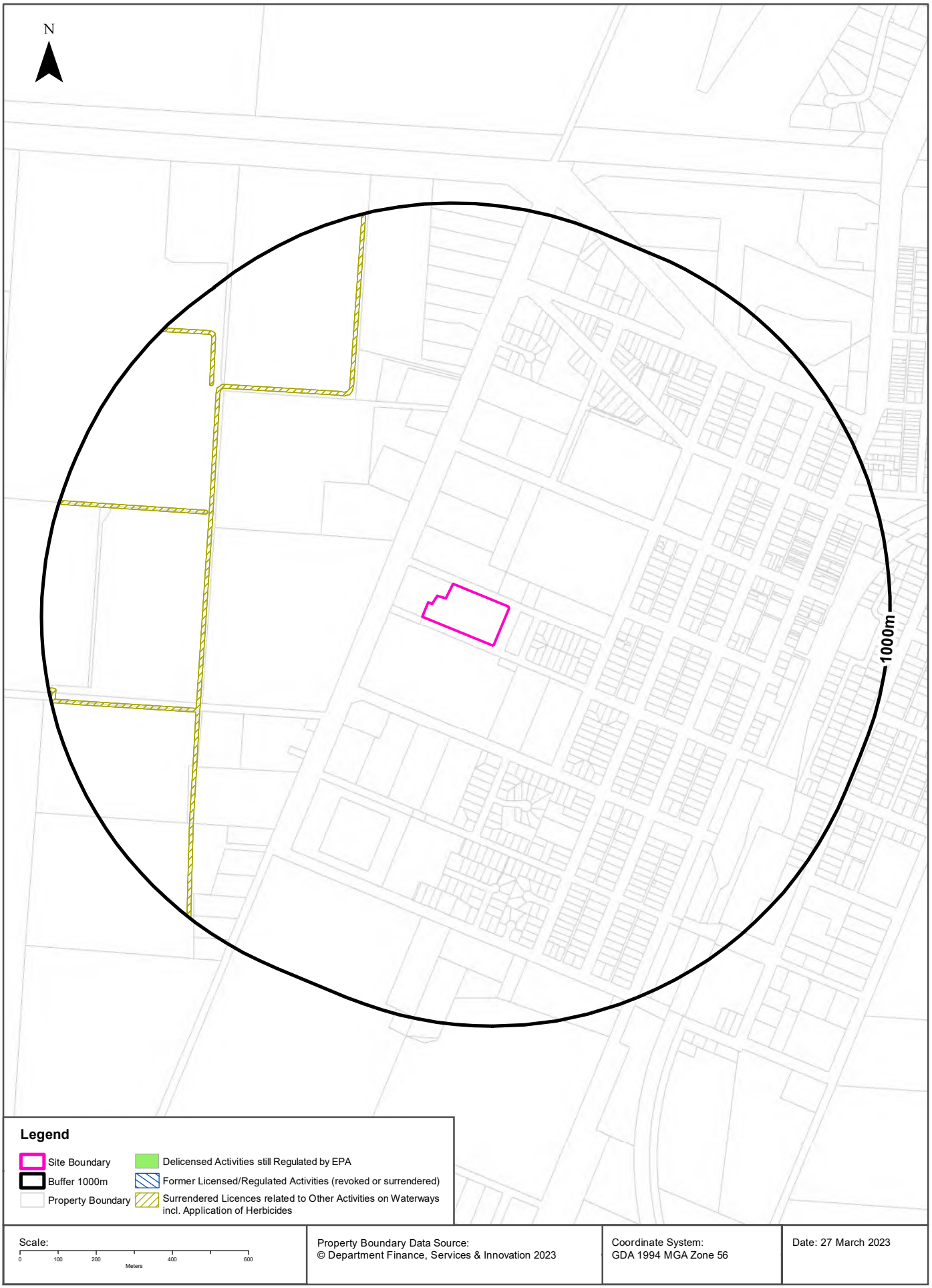
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
5014	MURRAY IRRIGATION LIMITED	MURRAY IRRIGATION AREA OF OPERATIONS WITHIN SHIRES OF	Berrigan, Murrumbidgee, Murray River, Edward River, Federation, DENILIQUIN, NSW 2710	DENILIQUIN	Irrigated agriculture	Area Match	0m	On-site
13421	UGL REGIONAL LINX PTY LTD		COUNTRY REGIONAL NETWORK, ORANGE, NSW 2800		Railway systems activities	Network of Features	807m	South East

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



EPA Activities

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

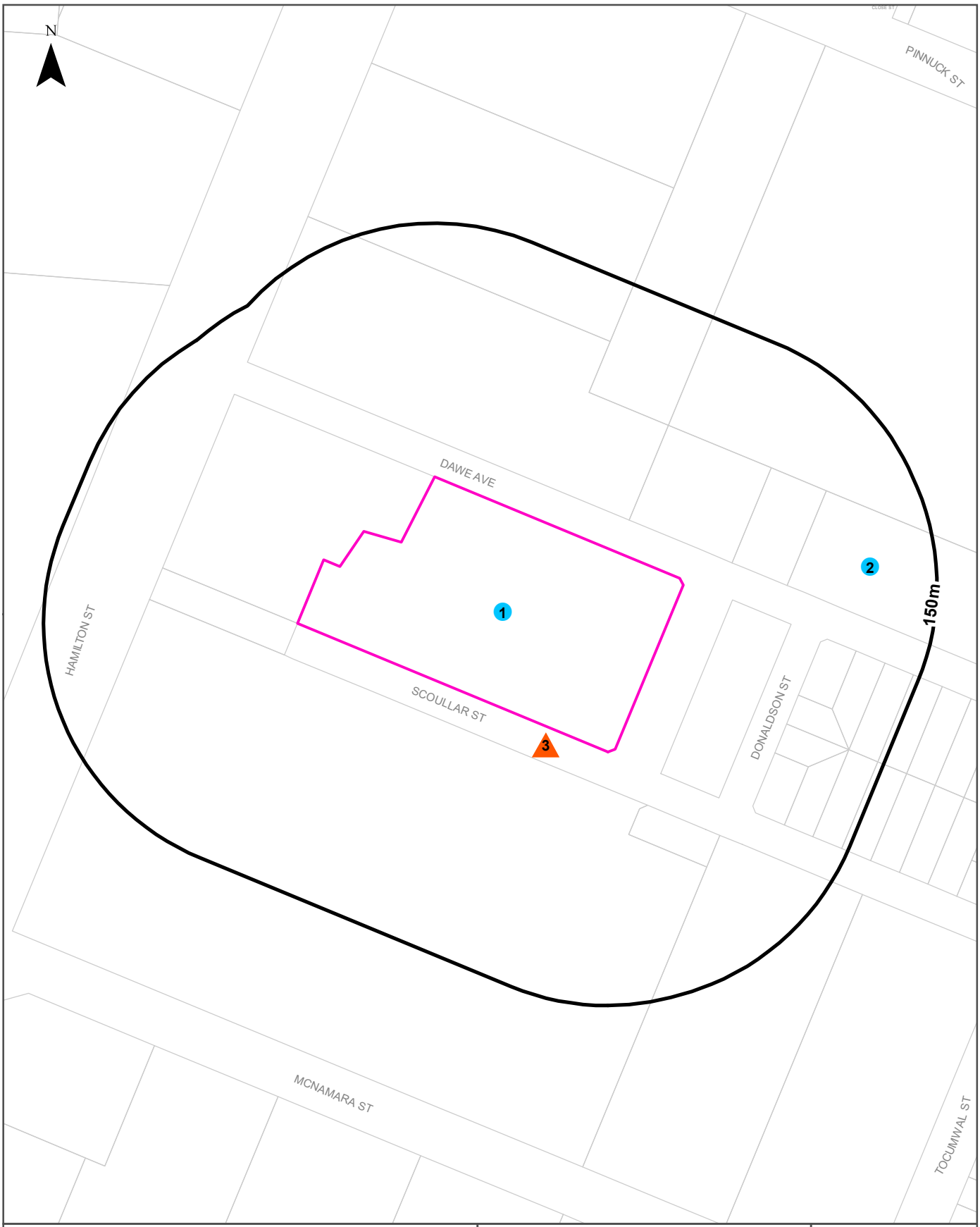
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	567m	West
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	567m	West
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	567m	West

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 40 80 120 160 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 March 2023

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Historical Business Directories

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Not Listed	Finley Hospital., Dawe St. Finley. 2713	163566	1991	Premise Match	0m	On-site
	HOSPITALS & HEALTH CENTRES	Finley Hospital, Dawe St. Finley 2713	602881	1970	Premise Match	0m	On-site
2	Not Listed	Finley R.S.L. Club., 83 Tocumwal St. Finley. 2713	167548	1991	Premise Match	61m	East

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
3	Not Listed	Finley Auto Electric., 38 Osborne St. Finley. 2713	163557	1991	Road Match	0m

Historical Business Directories

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Aerial Imagery 2021

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Scale:	Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 March 2023

0 30 60 90 120 Meters

Aerial Imagery 2019

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 27 March 2023
0 30 60 90 120 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2015

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Scale:	Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 March 2023

0 30 60 90 120 Meters

Aerial Imagery 2012

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Scale:
0 30 60 90 120
Meters

Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

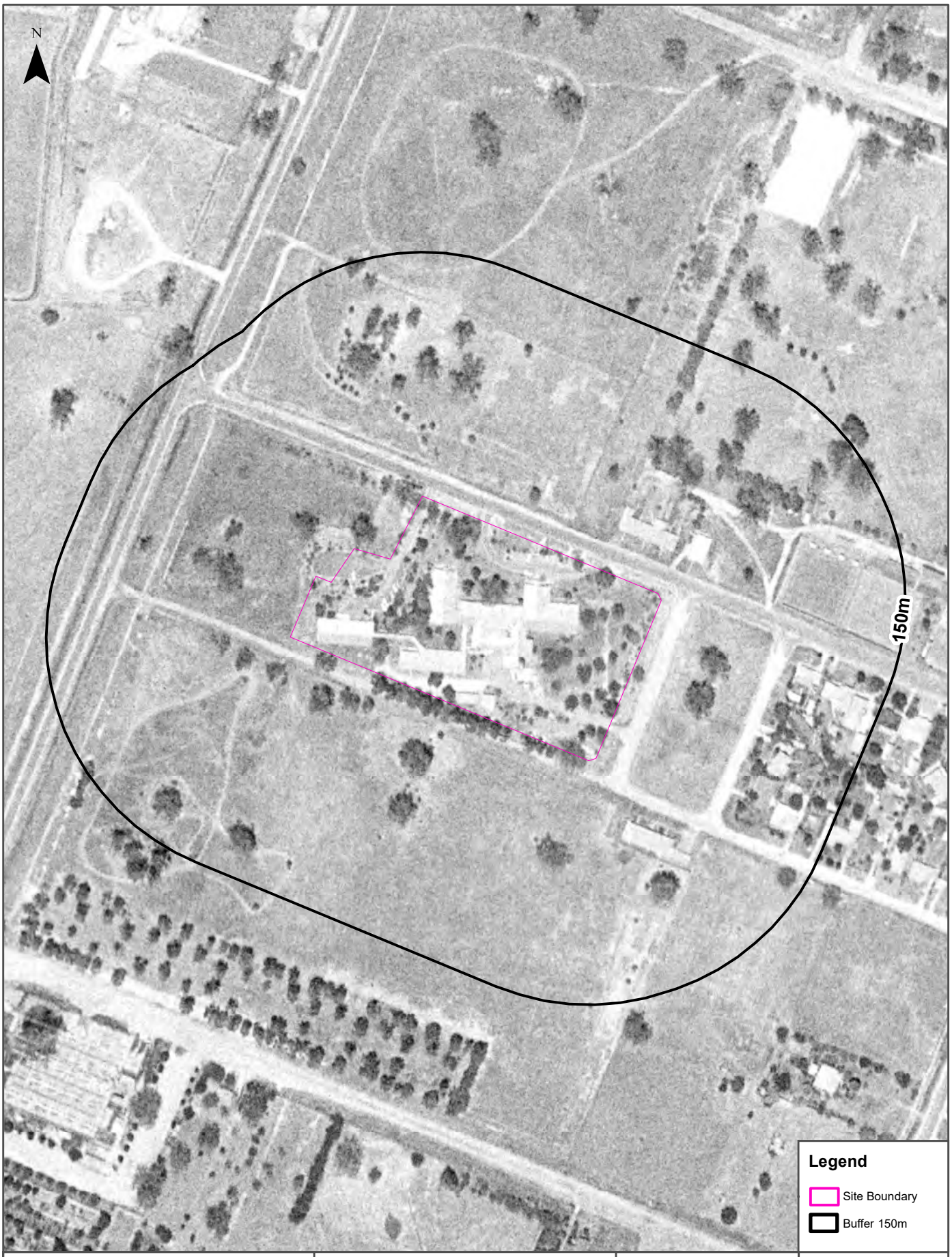
Date: 27 March 2023

Aerial Imagery 1996

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

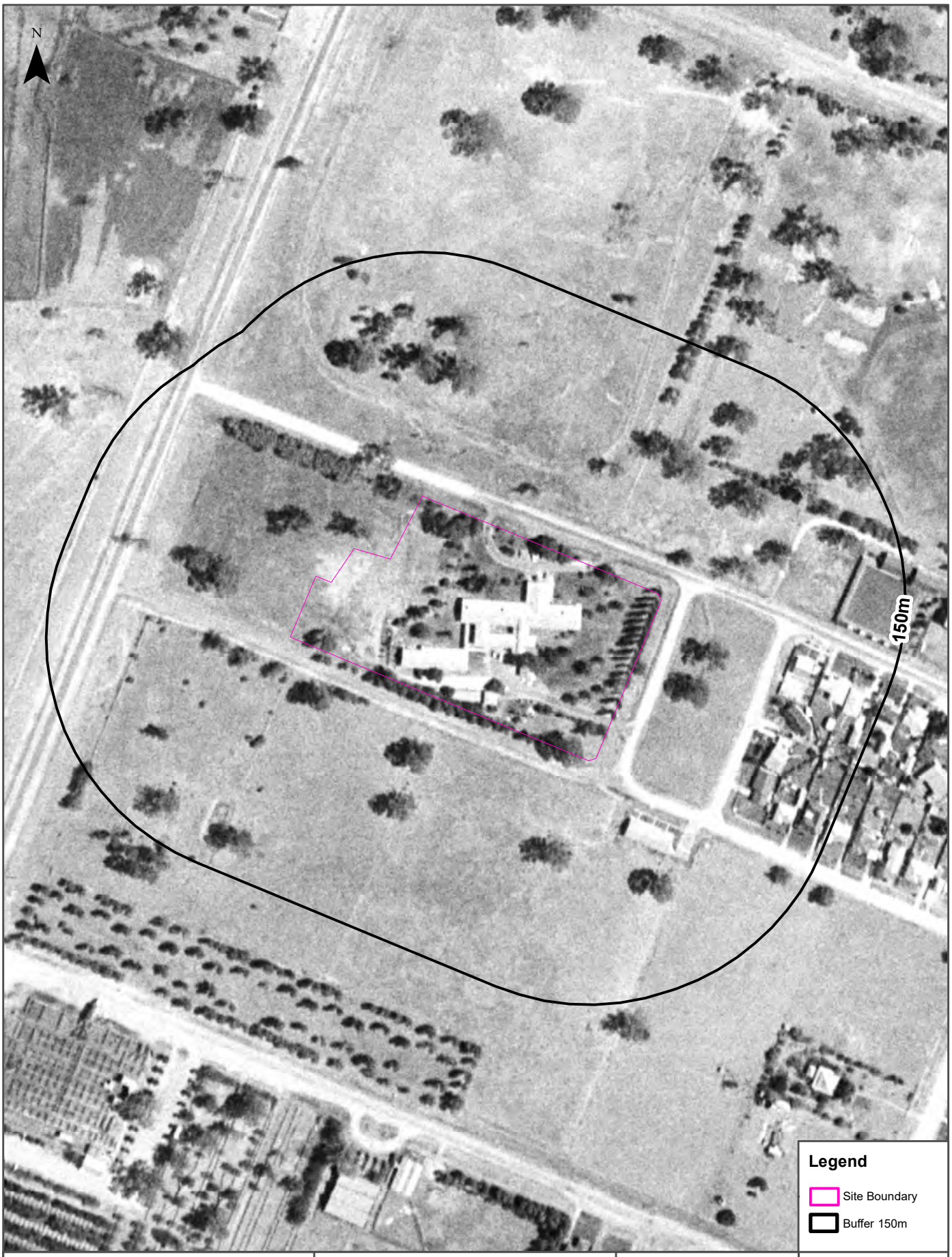
Aerial Imagery 1985

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



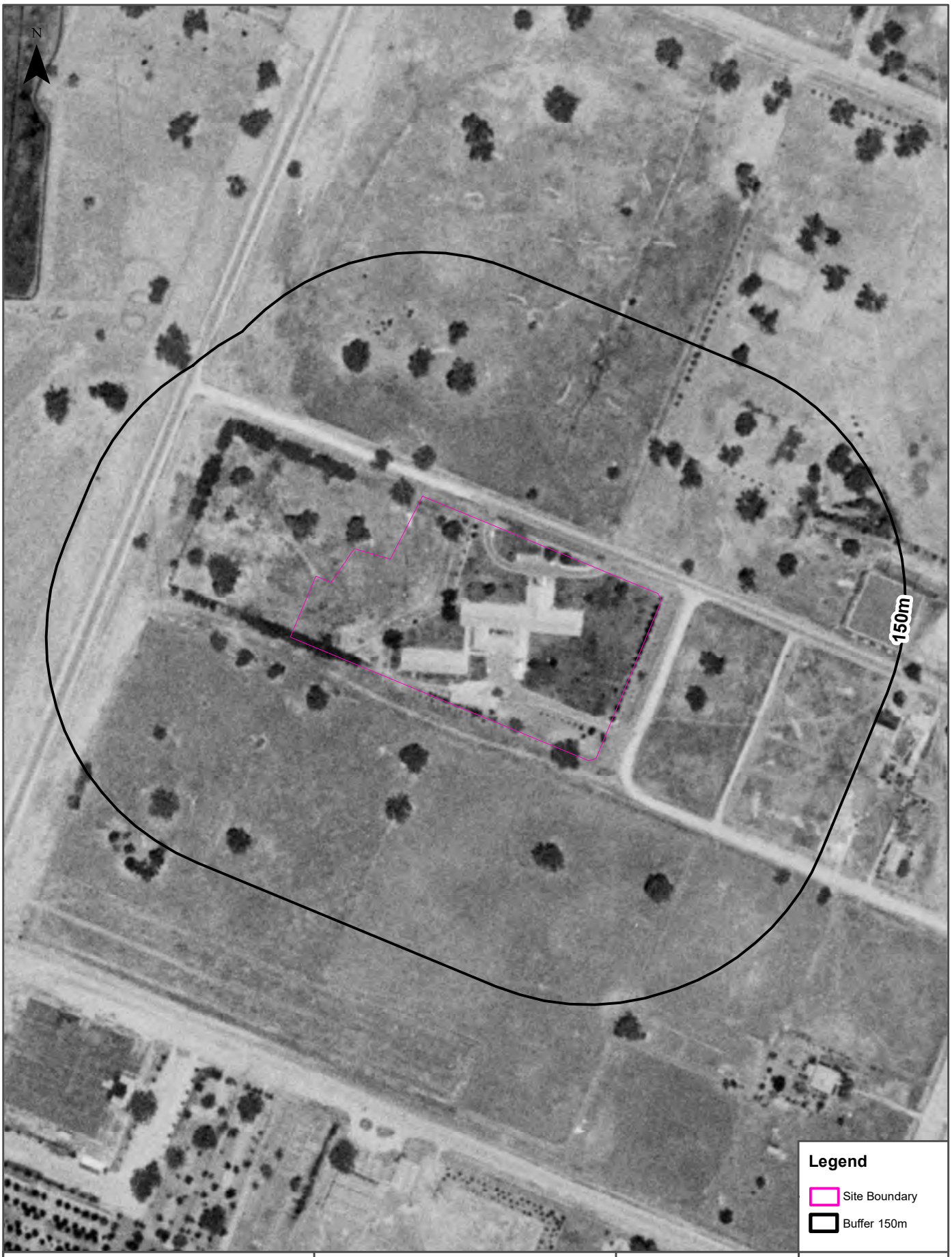
Aerial Imagery 1976

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



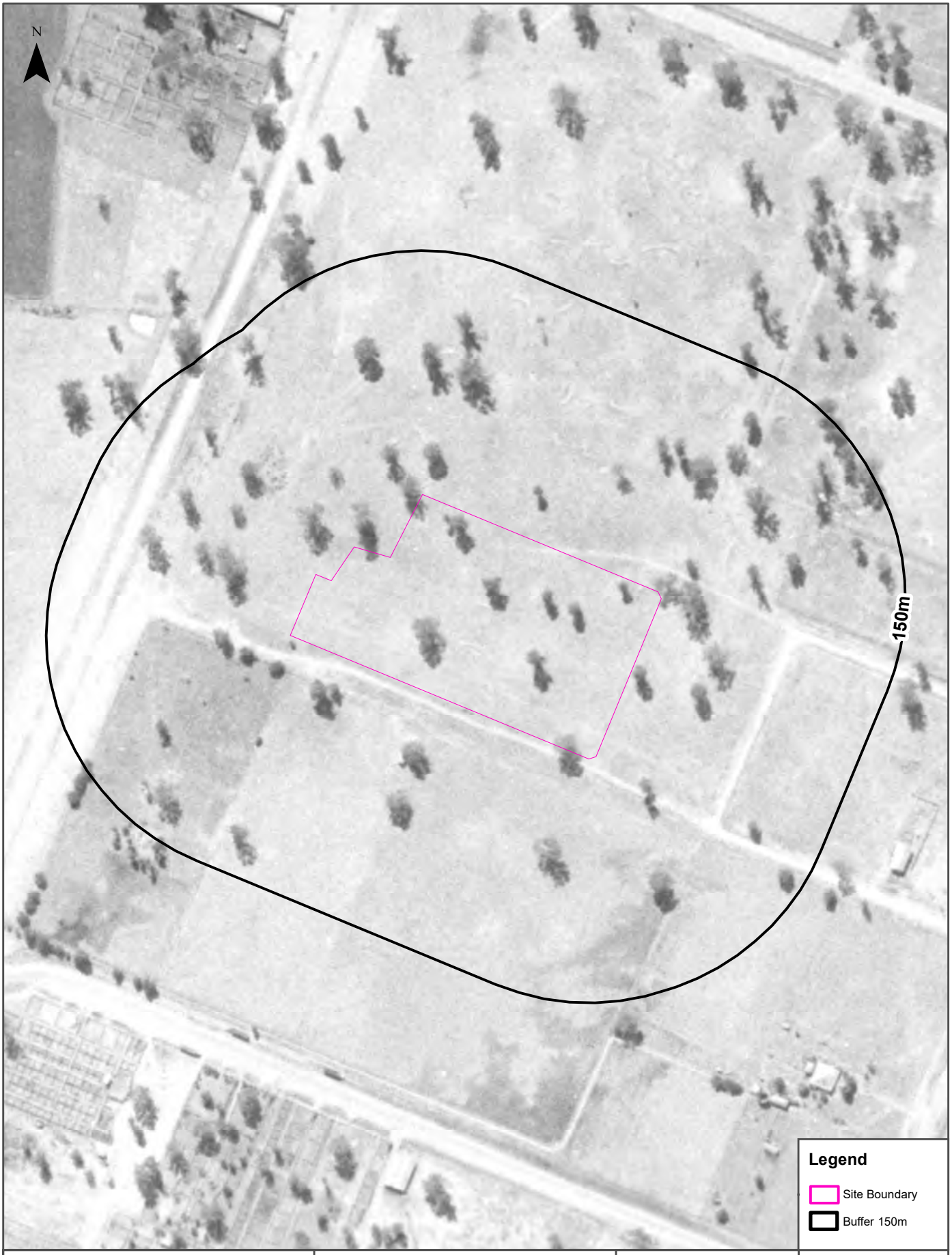
Aerial Imagery 1968

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Aerial Imagery 1960

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

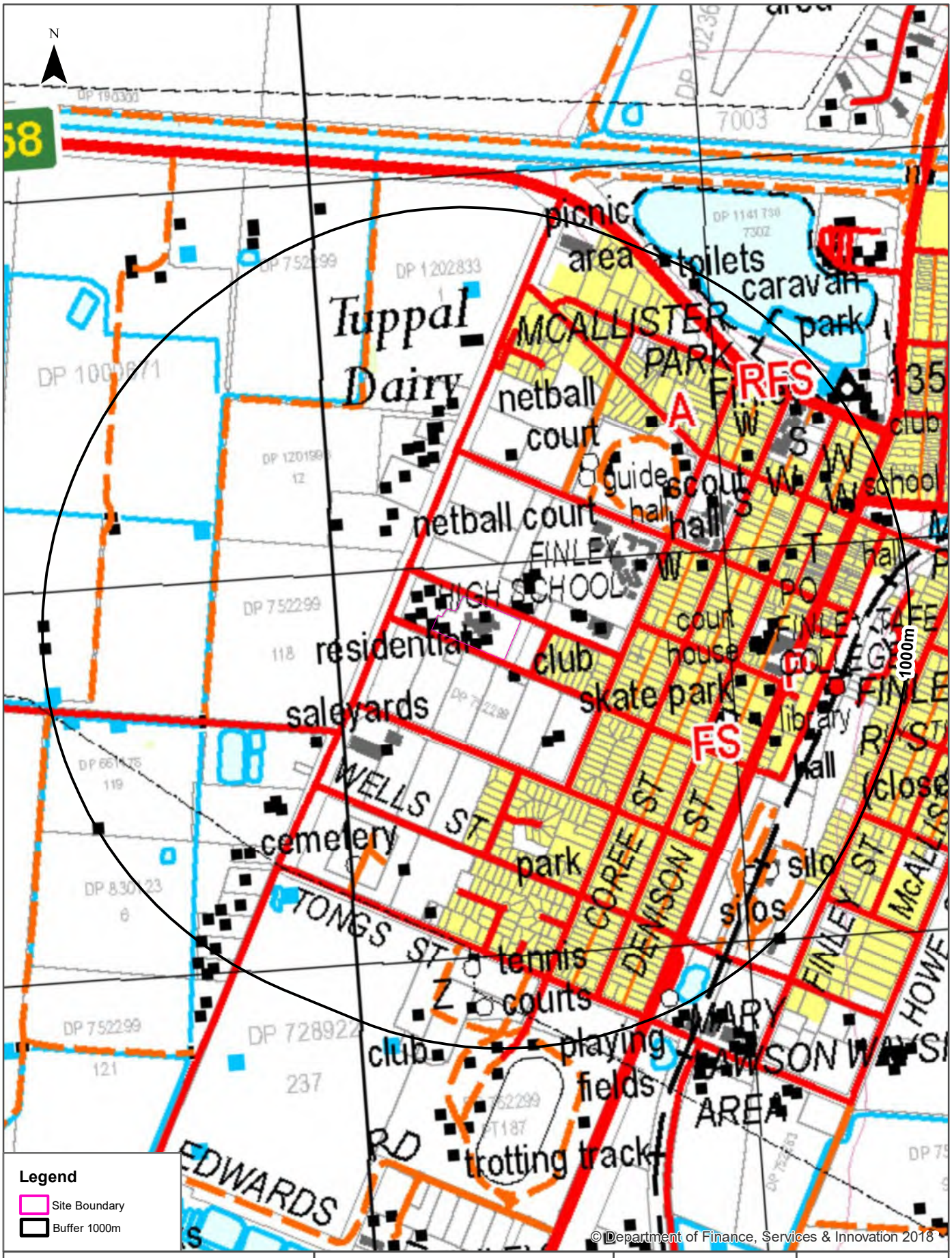


Aerial Imagery 1945

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Topographic Map 2015

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Scale: 0 150 300 450 600 Meters

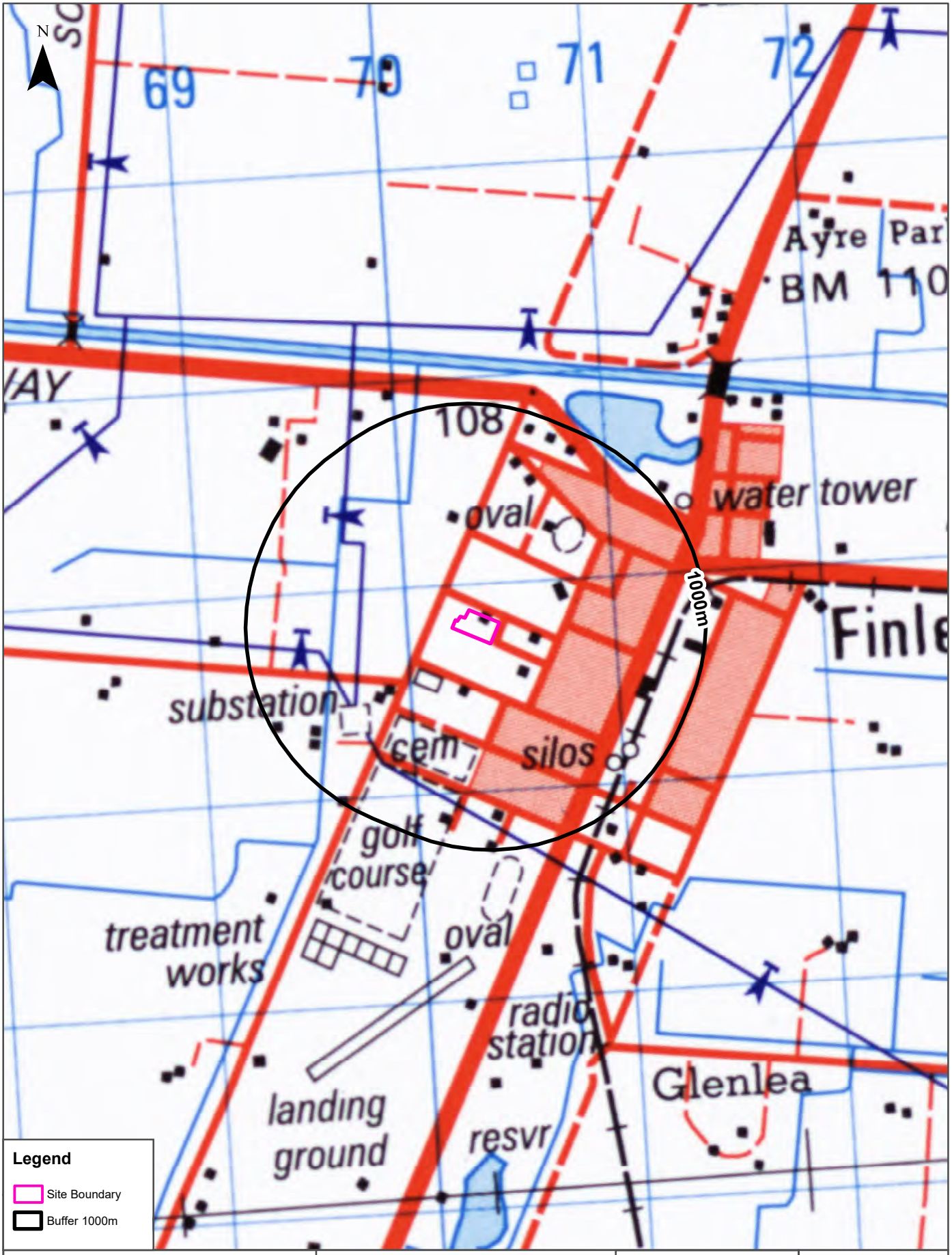
Data Sources: Topographic Map Data
© NSW Land and Property Information

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 March 2023

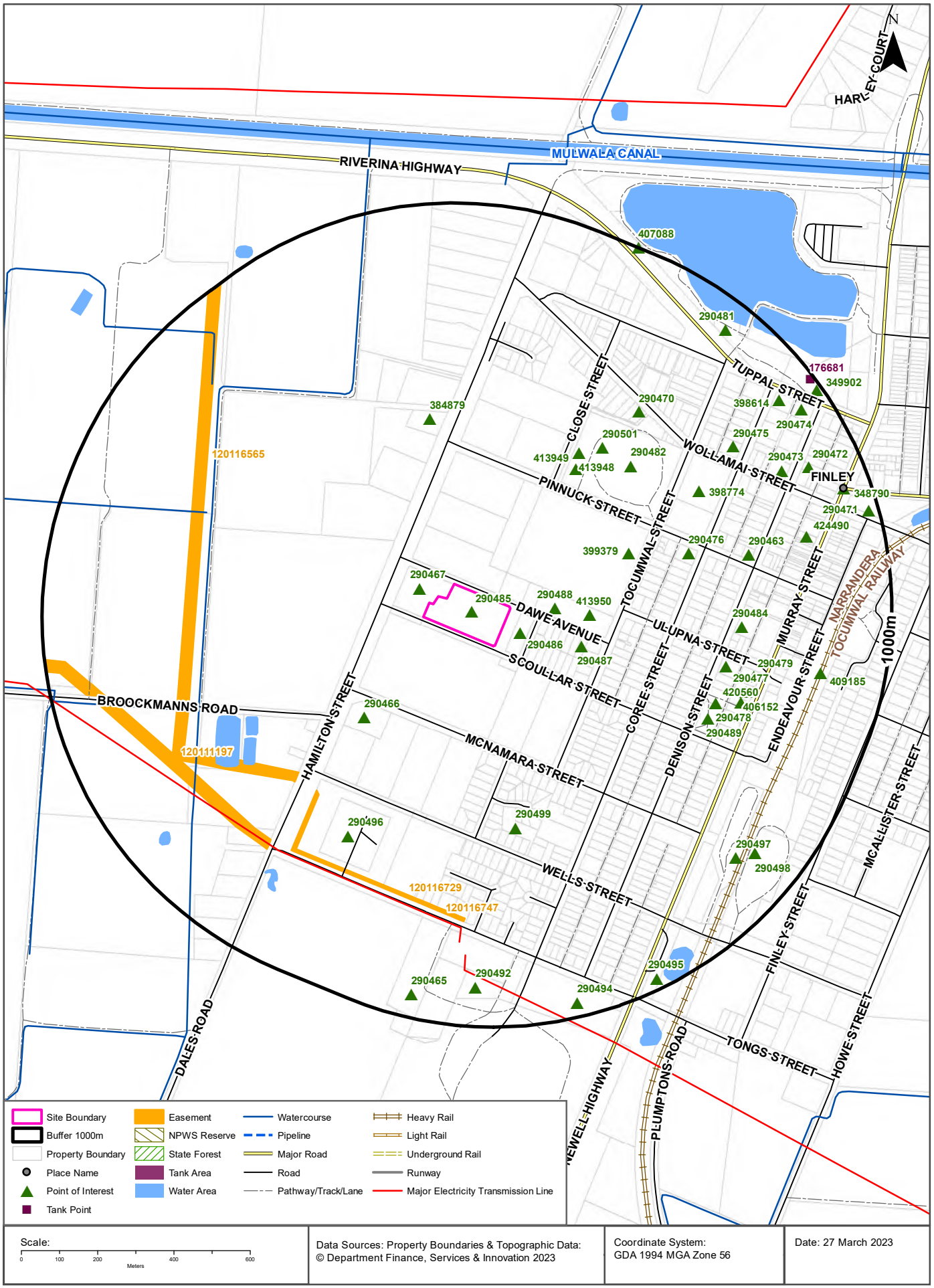
Historical Map 2002

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Topographic Features

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Topographic Features

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
290485	Integrated Health Service	FINLEY HOSPITAL	0m	On-site
290467	Nursing Home	FINLEY REGIONAL CARE	45m	North West
290486	Park	DIGGERS PARK	49m	East
290488	Sports Field	BOWLING GREENS	117m	East
413950	Club	FINLEY RETURNED SOLDIERS CLUB	208m	East
290487	Child Care Centre	BIRALEE PRE-SCHOOL	210m	East
290466	Stock Sale Yard	Stock Sale Yard	306m	South West
399379	High School	FINLEY HIGH SCHOOL	342m	East
413949	Sports Court	NETBALL COURT	401m	North East
384879	Homestead	TUPPAL DAIRY	438m	North
413948	Sports Court	NETBALL COURT	442m	North East
290499	Park	Park	481m	South
290501	Community Facility	FINLEY FOOTBALL CLUB	484m	North East
290482	Sports Field	OVAL	487m	North East
290476	Place Of Worship	ANGLICAN CHURCH	489m	East
398774	Primary School	FINLEY PUBLIC SCHOOL	581m	North East
290477	Court House	FINLEY COURT HOUSE	586m	East
290489	Park	ROTARY PARK	589m	South East
420560	Sports Court	SKATE PARK	592m	East
290496	Cemetery	FINLEY CEMETERY	607m	South West
290484	TAFE College	FINLEY TAFE COLLEGE	608m	East
290470	Ambulance Station	FINLEY AMBULANCE STATION	614m	North East
290463	Post Office	FINLEY POST OFFICE	640m	East
290478	Fire Station	FINLEY FIRE STATION	653m	East
406152	Library	FINLEY LIBRARY	656m	East
290479	Police Station	FINLEY POLICE STATION	663m	East
290475	Place Of Worship	Place Of Worship	721m	North East
290473	Place Of Worship	PRESBYTERIAN CHURCH	797m	North East
424490	Park	FOUNDRY PARK	799m	East
409185	Railway Station	FINLEY RAILWAY STATION	831m	East
290497	Silo - Commercial	SILOS	843m	South East

Map Id	Feature Type	Label	Distance	Direction
290472	Place Of Worship	Place Of Worship	865m	North East
290498	Silo - Commercial	Silo - Commercial	873m	South East
398614	Primary School	ST JOSEPH'S PRIMARY SCHOOL	891m	North East
290492	Sports Court	TENNIS COURTS	897m	South
290481	Park	MCALLISTER PARK	920m	North East
290474	Place Of Worship	CATHOLIC CHURCH	924m	North East
348790	Town	FINLEY	929m	East
290465	Club	FINLEY GOLF CLUB	940m	South
290494	Sports Field	PLAYING FIELDS	962m	South
290495	Roadside Rest Area	MARY LAWSON WAYSIDE REST AREA	973m	South East
290471	Community Facility	FINLEY WAR MEMORIAL HALL	974m	East
349902	Firestation - Bush	FINLEY RFB	986m	North East
407088	Picnic Area	Picnic Area	999m	North East

Topographic Features

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
176681	Water	Operational		01/11/2011	989m	North East

Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120116565	Primary	Undefined		523m	West
120116729	Primary	Undefined		689m	South
120111197	Primary	Undefined		708m	South West
120116747	Primary	Undefined		714m	South

Topographic Features

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

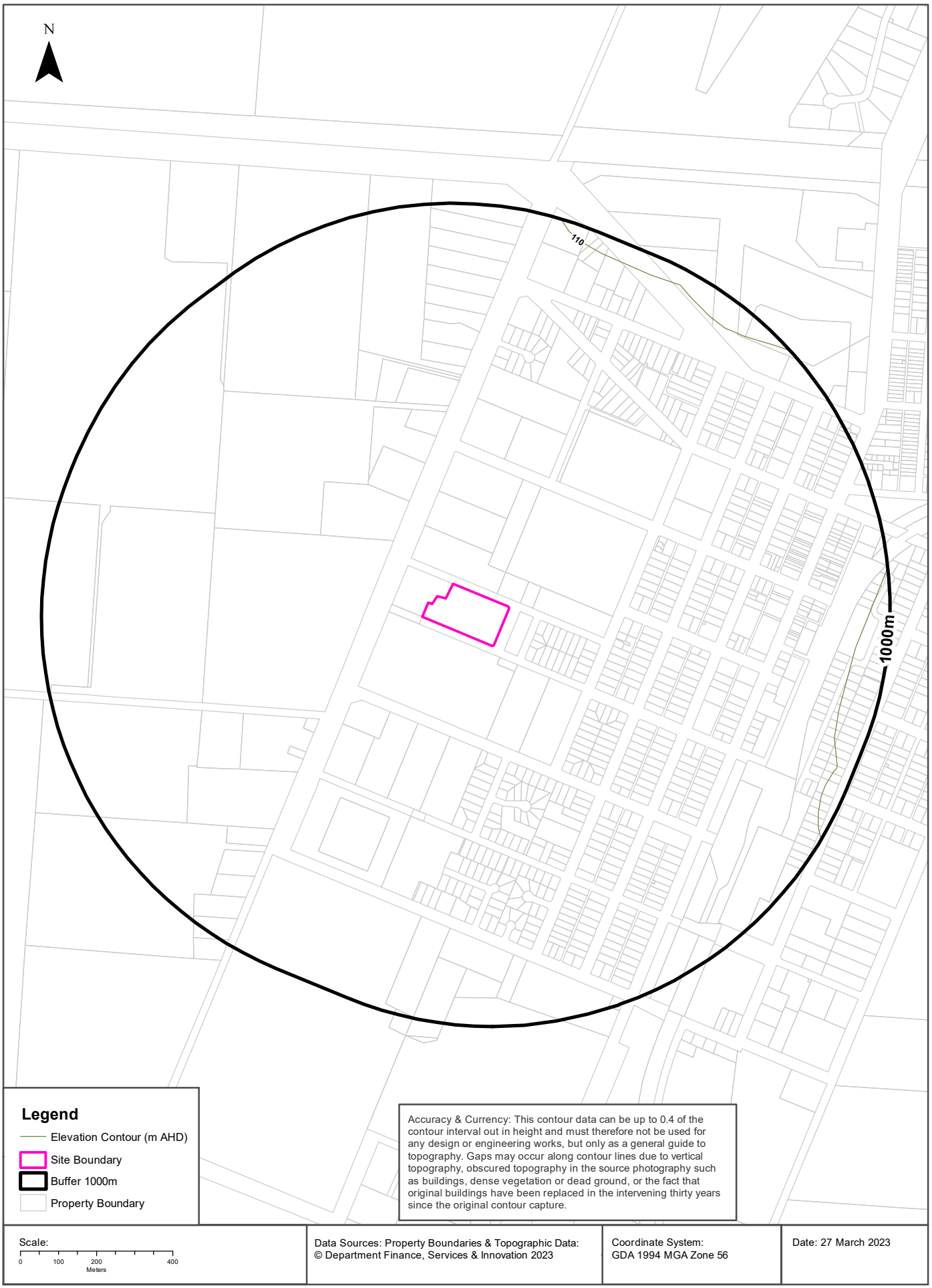
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

Elevation Contours (m AHD)

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Hydrogeology & Groundwater

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive aquifers of low to moderate productivity	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

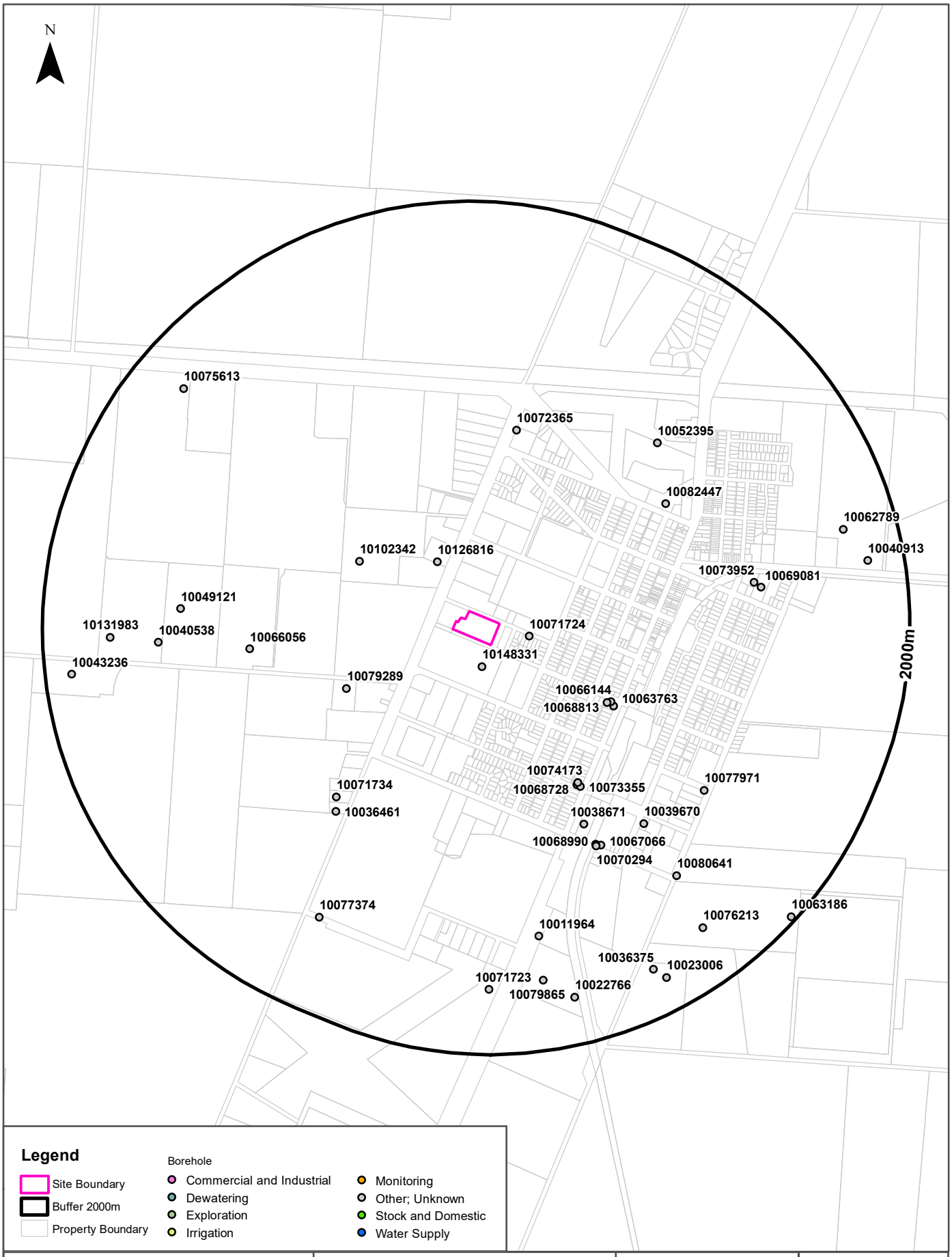
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Legend

- Site Boundary
- Buffer 2000m
- Property Boundary

Borehole

- Commercial and Industrial
- Dewatering
- Exploration
- Irrigation
- Monitoring
- Other; Unknown
- Stock and Domestic
- Water Supply

Scale: 0 100 200 400 600 800 1,000 1,200 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 27 March 2023

Hydrogeology & Groundwater

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10148331	GW022303		Decommissioned	01/07/1964			AHD				116m	South
10071724	GW502595		Functioning	08/05/1995	14.02	109.54	AHD				158m	East
10126816	GW042977		Unknown	01/03/1977	7.30		AHD	501-1000 ppm			285m	North West
10102342	GW043110		Proposed	01/10/1973	12.40		AHD				552m	North West
10079289	GW502571		Functioning	08/05/1995	12.80	109.28	AHD				592m	South West
10068813	GW504895		Functional	13/06/2011	7.80		AHD			5.60	635m	South East
10066144	GW504894		Functional	13/06/2011	7.70		AHD			5.60	650m	South East
10063763	GW504893		Functional	13/06/2011	8.00		AHD			5.80	671m	South East
10074173	GW505539		Functional	21/04/2012	10.00		AHD			7.50	798m	South East
10068728	GW505538		Functional	21/04/2012	10.50		AHD			6.50	805m	South East
10073355	GW505540		Functional	21/04/2012	10.00		AHD			8.80	822m	South East
10072365	GW502662		Functioning	08/05/1995	4.88	109.77	AHD				912m	North
10038671	GW503413		Unknown	10/01/2000	6.00		AHD		6.000	2.10	989m	South East
10066056	GW505611		Functioning	05/05/2009	77.00		AHD		4.000	22.00	994m	West
10071734	GW504125		Functioning	14/11/2007	7.00		AHD		1.400	3.90	996m	South West
10082447	GW502697		Functioning	12/08/2000	12.80	110.31	AHD				1002m	North East
10036461	GW503897		Functioning	10/09/2007	6.00		AHD		1.250	3.80	1056m	South West
10068990	GW505638		Functional	20/02/2013	13.00		AHD				1103m	South East
10070294	GW505636		Functional	20/02/2013	9.00		AHD				1111m	South East
10067066	GW505637		Functional	21/02/2013	10.00		AHD			6.00	1119m	South East
10039670	GW503901		Functioning	17/09/2007	7.00		AHD		4.000	4.00	1151m	South East
10052395	GW004191		Unknown	01/11/1900	283.50		AHD	Fresh			1171m	North East
10073952	GW503922		Functioning	16/11/2007	8.00		AHD		1.100	4.40	1260m	East
10077971	GW502502		Functioning	08/05/1995	14.02	110.08	AHD				1262m	South East
10069081	GW504319		Functioning	26/02/2005	7.00		AHD		1.200	4.00	1291m	East
10049121	GW503503		Unknown	11/12/2003	7.00		AHD		4.000	3.20	1328m	West
10040538	GW503394		Unknown	19/04/2007	6.00		AHD		2.000	1.75	1436m	West
10011964	GW049995		Unknown	01/05/1979	6.70		AHD	501-1000 ppm			1443m	South
10080641	GW500706		Unknown	09/08/1991	6.00		AHD	0.61	1.300	2.80	1449m	South East

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10077374	GW502570		Functioning	08/05/1995	7.92	109.51	AHD				1550m	South West
10079865	GW504639		Functioning	26/05/2011	20.00		AHD				1660m	South
10131983	GW061236		Unknown		5.00		AHD	0-500 ppm			1668m	West
10071723	GW502567		Functioning	08/05/1995	14.32	109.50	AHD				1684m	South
10076213	GW500486		Unknown	16/03/1998	6.00		AHD		5.000	3.50	1728m	South East
10062789	GW500675		Unknown	27/05/1998	6.00		AHD		4.200	1.70	1740m	East
10075613	GW502748		Functioning	12/08/2000	15.00	109.56	AHD				1744m	North West
10022766	GW049994		Unknown	01/05/1979	6.70		AHD	501-1000 ppm			1770m	South
10036375	GW503400		Unknown	13/03/1999	13.00		AHD		2.000	2.50	1774m	South East
10040913	GW501628		Unknown	30/09/2002	7.00		AHD	808	7.000	2.80	1824m	East
10023006	GW059759		Functioning	01/01/1983	12.00		AHD	1001-3000 ppm			1839m	South East
10043236	GW504591		Functioning	01/01/1980	10.00		AHD	good		5.00	1869m	West
10063186	GW504502		Functioning	15/02/2010	12.00		AHD		0.500	6.20	1979m	South East

Hydrogeology & Groundwater

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

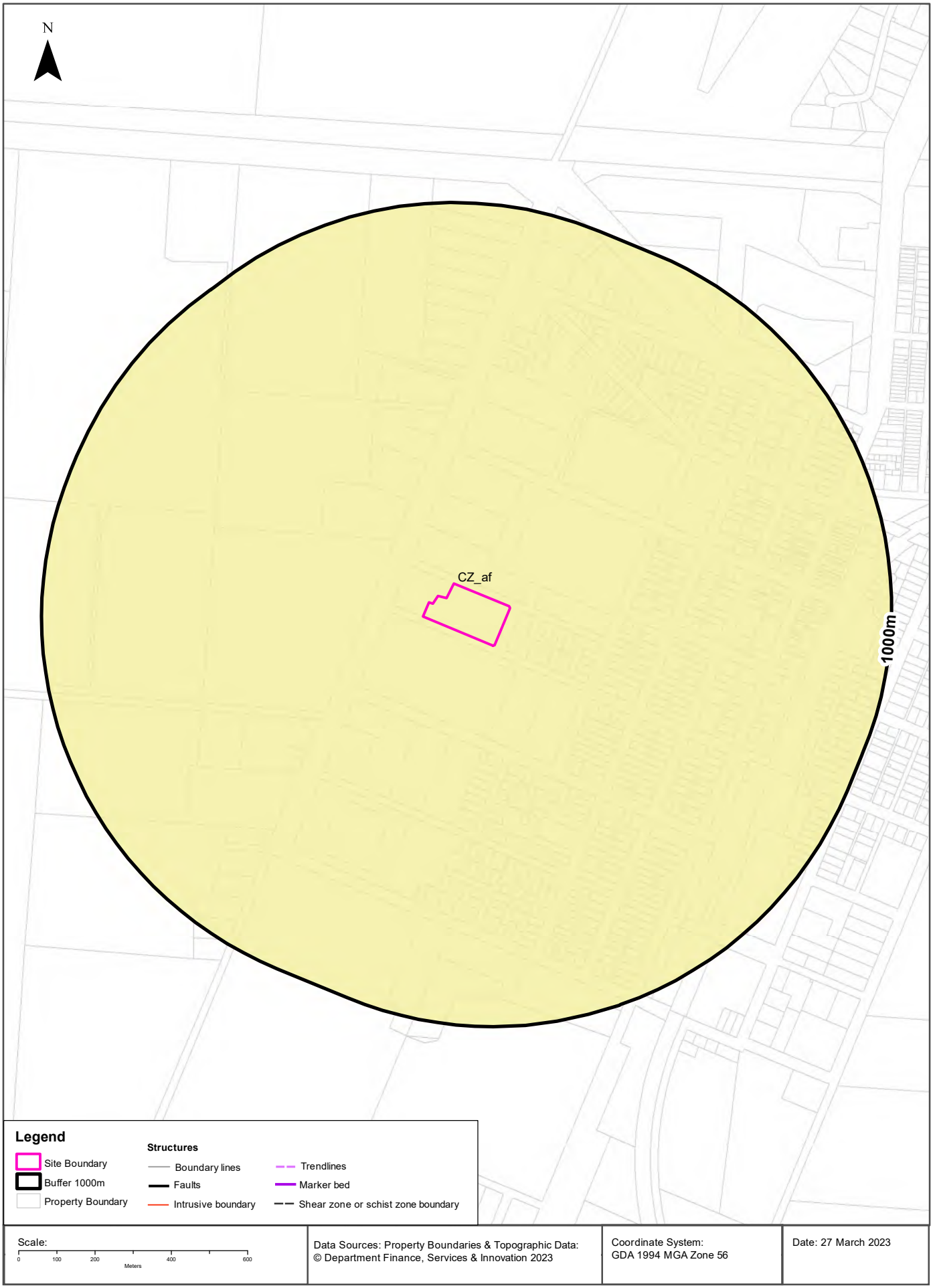
NGIS Bore ID	Drillers Log	Distance	Direction
10148331	0.00m-0.61m Soil 0.61m-3.66m Clay 3.66m-6.10m Sand 6.10m-11.58m Clay 11.58m-13.72m Clay 13.72m-24.08m Sand 24.08m-26.21m Sand 26.21m-26.82m Sand 26.82m-31.70m Sand 31.70m-37.49m Clay 37.49m-40.23m Sand 40.23m-58.22m Clay 58.22m-72.24m Clay 72.24m-74.98m Sand	116m	South
10126816	0.00m-0.80m Loam Red Some Sandy 0.80m-1.40m Clay Yellow Light Some Sandy 1.40m-4.00m Clay Yellow Heavy Impervious 4.00m-7.00m Sand Waterworn Fine Water Supply 4.00m-7.00m Gravel Small 7.00m-7.30m Clay Grey Impervious	285m	North West
10102342	0.00m-0.60m Driller 0.60m-12.49m Clay Yellow Some Sandy Water Supply	552m	North West
10068813	0.00m-0.15m Concrete 0.15m-0.80m Clayey silt 0.80m-2.00m Silt 2.00m-4.20m Silty sand 4.20m-7.80m Sand	635m	South East
10066144	0.00m-0.15m Concrete 0.15m-2.80m Clayey silt 2.80m-7.70m Silty Sand	650m	South East
10063763	0.00m-0.20m Gravel 0.20m-3.40m Silty clay 3.40m-5.20m Sandy silt 5.20m-8.00m Sand	671m	South East
10074173	0.00m-4.40m gravel 4.40m-10.00m clayey silt	798m	South East
10068728	0.00m-0.20m gravel 0.20m-4.30m silt, sandy 4.30m-8.00m clayey silt 8.00m-10.50m sand, silty	805m	South East
10073355	0.00m-4.40m gravel 4.40m-10.00m clayey silt	822m	South East
10038671	0.00m-0.50m red sandy gravel 0.50m-2.00m red brown sandy gravel 2.00m-3.50m yellow brown fine sand 3.50m-6.00m yellow brown coarse sand gravel	989m	South East
10066056	0.00m-10.00m Clay 10.00m-20.00m Clay 20.00m-28.00m Clay 28.00m-31.00m Sand 31.00m-43.00m Clay 43.00m-60.00m Clay 60.00m-62.00m Sand 62.00m-73.00m Clay 73.00m-77.00m Sand	994m	West
10071734	0.00m-3.00m Loam sand, brown 3.00m-6.90m Sand 6.90m-7.00m Sandy clay, brown	996m	South West
10036461	0.00m-1.00m Sandy loam, red 1.00m-2.00m Sandy clay, brown 2.00m-4.00m Sand, fine, brown 4.00m-6.00m Sand, coarse, brown	1056m	South West
10068990	0.00m-1.00m clayey sand 1.00m-13.00m sandy clay, brown	1103m	South East

NGIS Bore ID	Drillers Log	Distance	Direction
10070294	0.00m-0.50m clayey sand 0.50m-9.00m sandy clay, medium gravels, brown	1111m	South East
10067066	0.00m-0.80m clayey sand 0.80m-9.00m sandy clay, brown	1119m	South East
10039670	0.00m-1.00m Clay, grey brown 1.00m-3.00m Clay, grey 3.00m-4.00m Sandy clay, yellow brown 4.00m-7.00m Sand, coarse, yellow brown	1151m	South East
10052395	0.00m-36.58m Clay 36.58m-37.80m Sand 37.80m-81.99m Clay 81.99m-99.36m Clay 99.36m-114.00m Clay 114.00m-121.62m Humus 121.62m-168.86m Invalid Code 168.86m-176.17m Invalid Code 168.86m-176.17m Clay 176.17m-179.22m Invalid Code 179.22m-183.18m Granite 183.18m-283.46m Granite	1171m	North East
10073952	0.00m-1.00m Sand, loamy 1.00m-4.50m Sandy clay, brown 4.50m-7.20m Sand, coarse, brown 7.20m-8.00m Sandy clay, hard, red	1260m	East
10069081	0.00m-0.50m Sandy loam, red brown 0.50m-2.50m Clay, brown grey 2.50m-3.50m Sandy clay, yellow grey 3.50m-5.00m Sand, fine yellow grey 5.00m-7.00m Sand, coarse, yellow brown	1291m	East
10049121	0.00m-1.50m grey brown clay 1.50m-3.00m grey sandy clay 3.00m-5.50m yellow brown fine sand 5.50m-7.00m white coarse sand	1328m	West
10040538	0.00m-0.50m red brown clay 0.50m-1.50m brown clay 1.50m-2.50m grey brown clay 2.50m-3.50m yellow brown clay 3.50m-4.00m yellow brown sandy clay 4.00m-5.00m yellow brown fine sand 5.00m-6.00m yellow brown coarse sand	1436m	West
10011964	0.00m-0.91m Loam 0.91m-2.43m Clay 2.43m-3.00m Silt 3.00m-3.61m Sand Fine 3.61m-4.52m Gravel Water Supply 4.52m-6.71m Gravel Coarse Water Supply 6.71m-6.72m Clay Grey	1443m	South
10080641	0.00m-0.50m red brown sandy clay 0.50m-1.50m grey brown clay 1.50m-3.00m yellow brown sandy clay 3.00m-4.00m yellow brown clayey sand 4.00m-5.00m white fine sand 5.00m-6.00m white coarse sand	1449m	South East
10131983	0.00m-2.00m Clay 2.00m-3.50m Sand Fine Water Supply 3.50m-5.00m Gravel Coarse Water Supply	1668m	West
10062789	0.00m-2.00m sandy clay 2.00m-2.50m clay sand 2.50m-3.00m clay sand 3.00m-7.00m sand with clay	1740m	East
10022766	0.00m-0.91m Loam 0.91m-2.43m Clay 2.43m-3.00m Silt 3.00m-3.61m Sand Fine 3.61m-4.52m Gravel Water Supply 4.52m-6.71m Gravel Coarse Water Supply 6.71m-6.72m Clay Grey	1770m	South
10036375	0.00m-1.00m brown clay 1.00m-4.00m grey brown clay 4.00m-8.00m grey clay 8.00m-9.00m yellow brown sandy clay 9.00m-11.00m yellow brown clay sand 11.00m-13.00m yellow brown fine sand	1774m	South East
10040913	0.00m-0.50m red sandy loam 0.50m-1.00m red brown sandy clay 1.00m-3.00m brown grey clayey sand 3.00m-5.00m yellow brown fine sand 5.00m-7.00m white coarse sand	1824m	East

NGIS Bore ID	Drillers Log	Distance	Direction
10063186	0.00m-1.00m Topsoil, brown 1.00m-5.00m Clay, dark grey 5.00m-12.00m	1979m	South East

Geology

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Geology

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
CZ_af	Alluvial floodplain deposits	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	/Alluvium//Alluvial floodplain deposits//	Cenozoic (base) to Now (top)	Silt	0m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Naturally Occurring Asbestos Potential

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Atlas of Australian Soils

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Soils

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Oc3	Sodosol	Plains with domes, lunettes, and swampy depressions, and divided by continuous or discontinuous low river ridges associated with prior stream systems--the whole traversed by present stream valleys; layered soil or sedimentary materials common at fairly shallow depths: chief soils are hard alkaline red soils (Dr2.33), grey and brown cracking clays, commonly (Ug5.24) and (Ug5.35), and other (D) soils in a complex soil pattern with the following general features: (i) well-drained to moderately drained plains of (Dr2.33) with (Db1.33 and Db1.43), often with thin A horizons (<4 in. thick); (ii) moderately to poorly drained gilgai plains subject to some seasonal flooding of (Ug5.3), (Dr2.33), (Db1.43), (Dy2.33 and Dy2.43), and (Ug5.2) soils; (iii) poorly drained gilgai plains subject to frequent seasonal flooding of (Ug5.2), (Ug5.3), (Db1.43), (Dy2.43), (Dd1.33 and Dd1.43), and (Ug5.4) soils; (iv) swampy depressions of (Dd1.33 and Dd1.43), (Db1.43), (Dy2.43), (Dy3.43), and (Ug5) soils; (v) domes and/or lunettes on the plains of (Dr2.33), (Gn2.13), (Dy5.33), or (DrS.33) soils; (vi) river ridges of moderate relief have (Dr2.33), (Dr2.43), ?(Dr2.23), and in some places (Gn2.13) soils; (vii) sandy river ridges and sand-hills have (Uc1.2), (Dy5.33), and (DrS.33) soils; (viii) prior stream beds have various "welldrained" soils; (ix) present stream valleys have flood-plains and terraces of (Dy3.4), (Gn), and (Um) soils. As mapped, areas of unit CC3 may be included.	0m	On-site

Acid Sulfate Soils

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

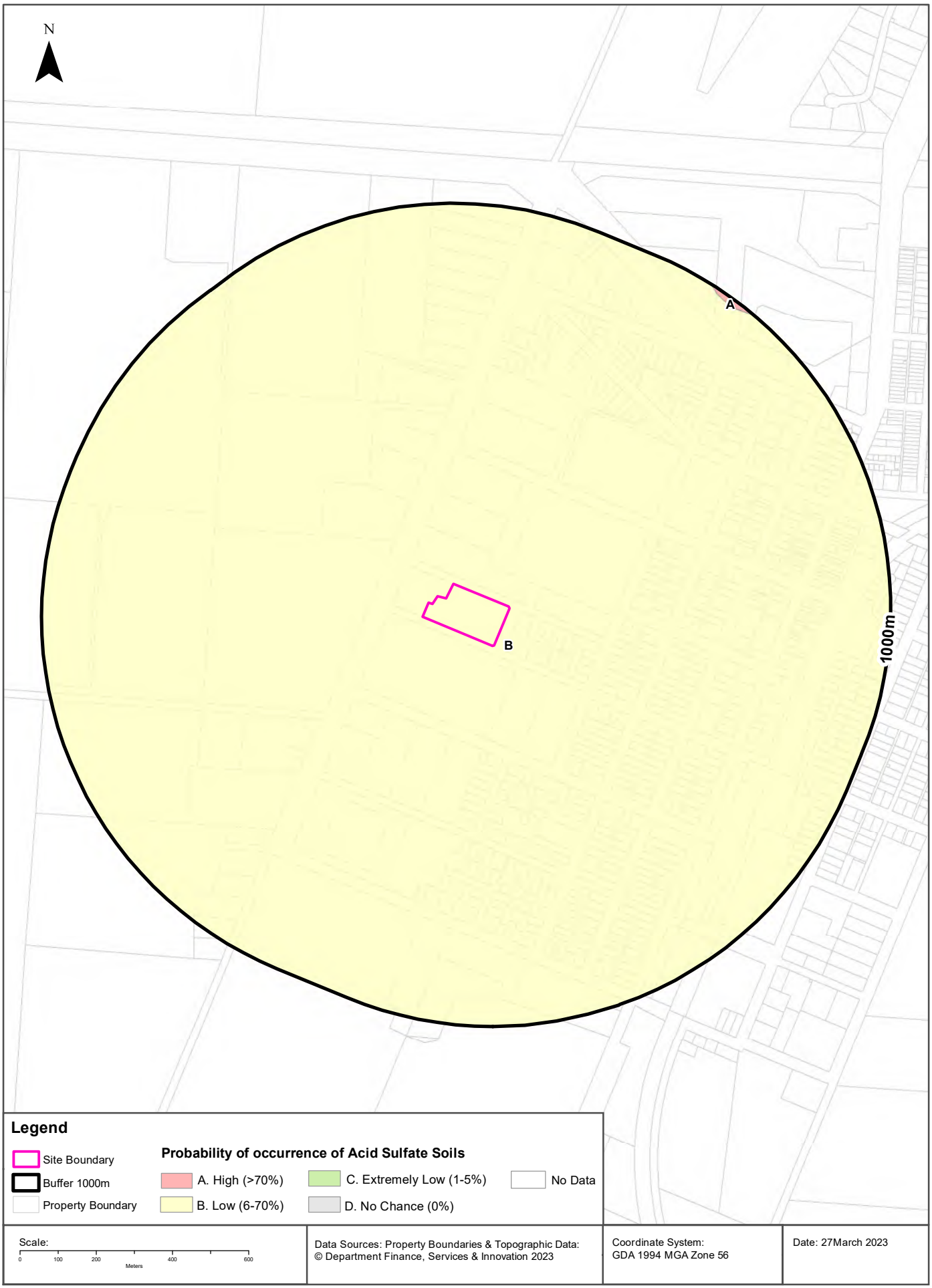
Soil Class	Description	EPI Name
N/A		

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Acid Sulfate Soils

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

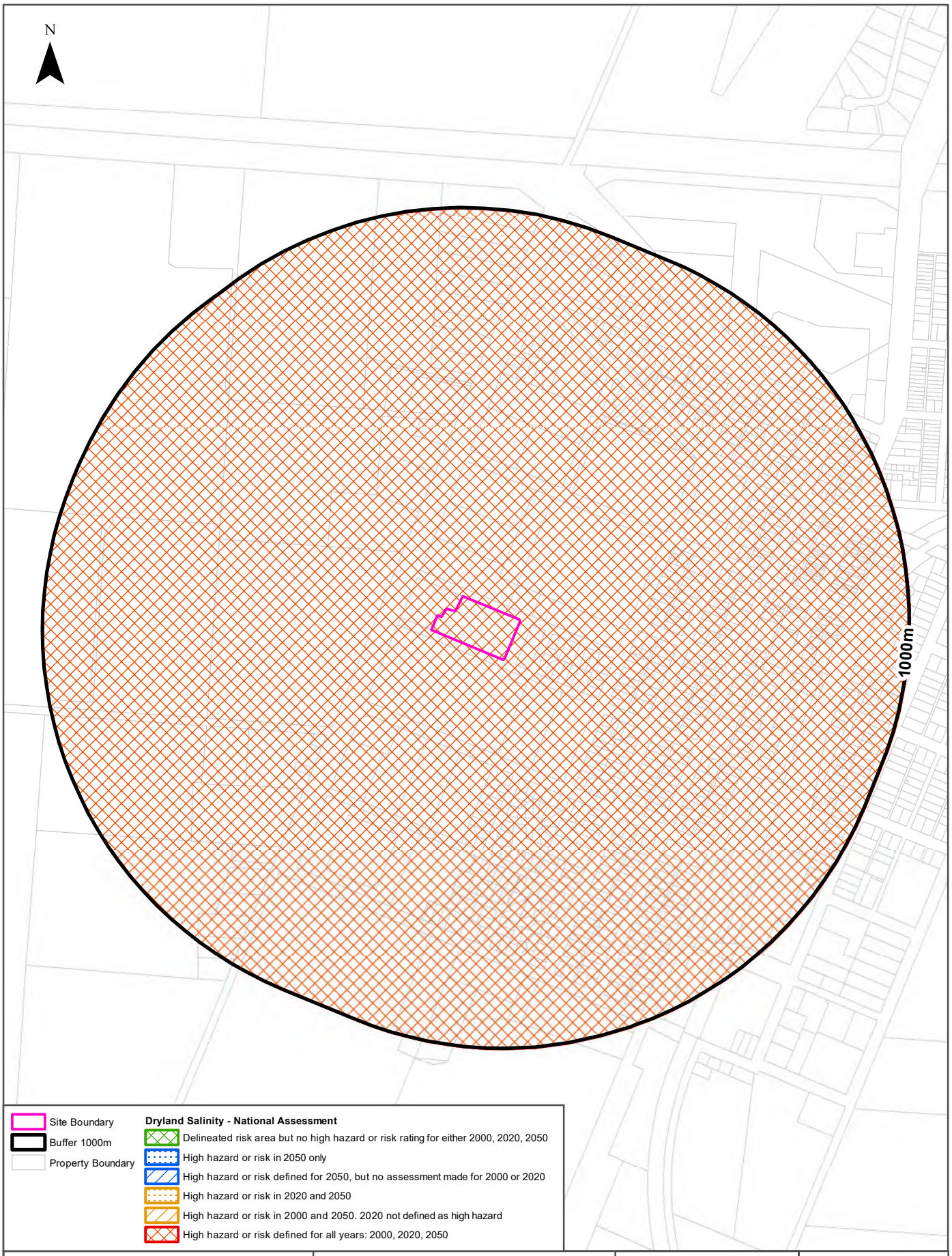
Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	980m	North East

Dryland Salinity

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Dryland Salinity

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

Is there Dryland Salinity - National Assessment data within the dataset buffer?

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	On-site

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

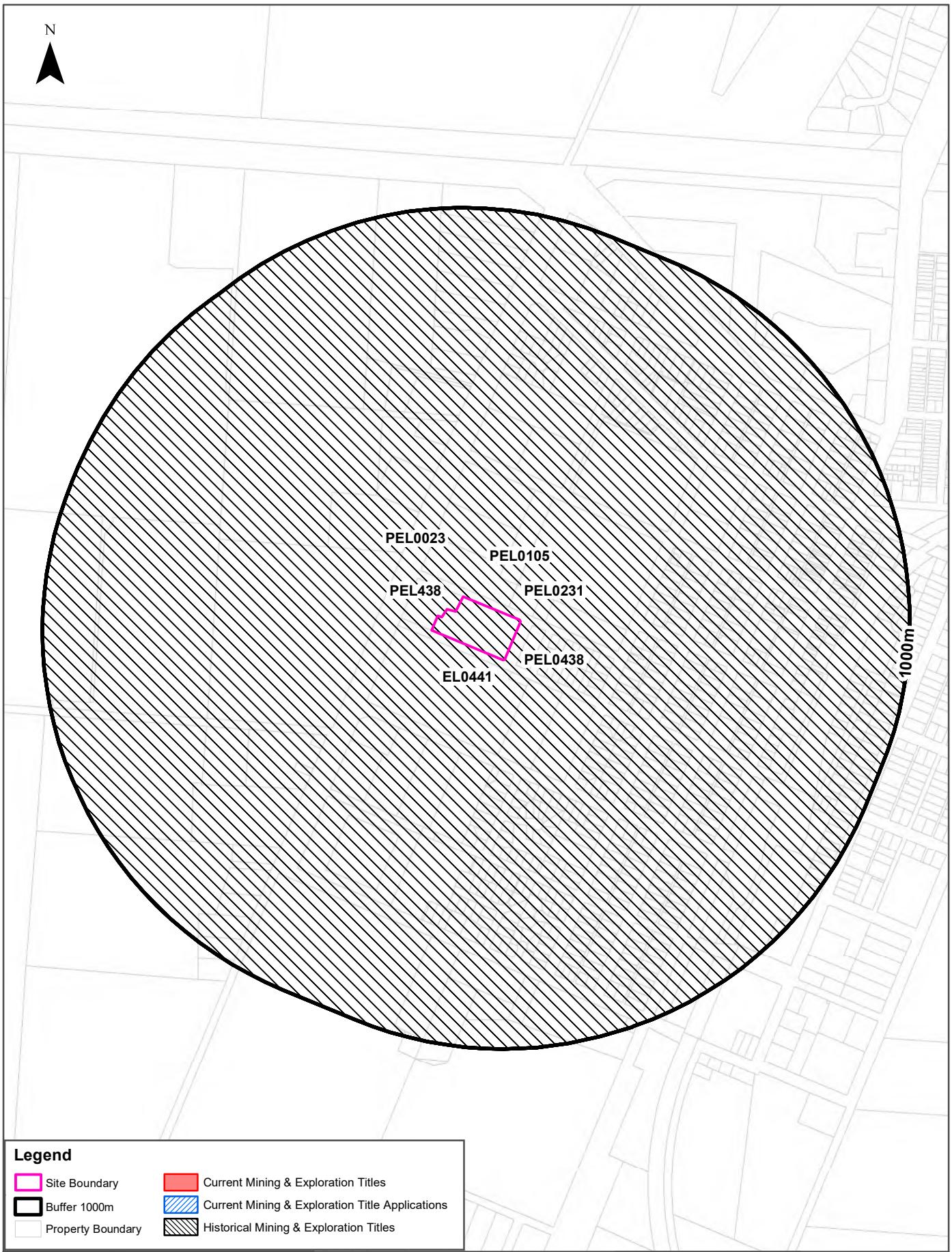
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining & Exploration Titles

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 27 March 2023

Mining

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0105	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0231	MEEKATHARRA MINERALS LTD		19841009	PETROLEUM	Petroleum	0m	On-site
PEL0438	PANNONIAN INTERNATIONAL LTD	20020908	20060410	PETROLEUM	Petroleum	0m	On-site
PEL438	APPLEGATE EXPLORATION, LLC,PANNONIAN INTERNATIONAL LTD	20010821	30000101	MINERALS		0m	On-site
PEL0023	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
EL0441	MINES ADMINISTRATION PTY LIMITED	19710501	19730501	MINERALS	U	0m	On-site

State Environmental Planning Policy

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

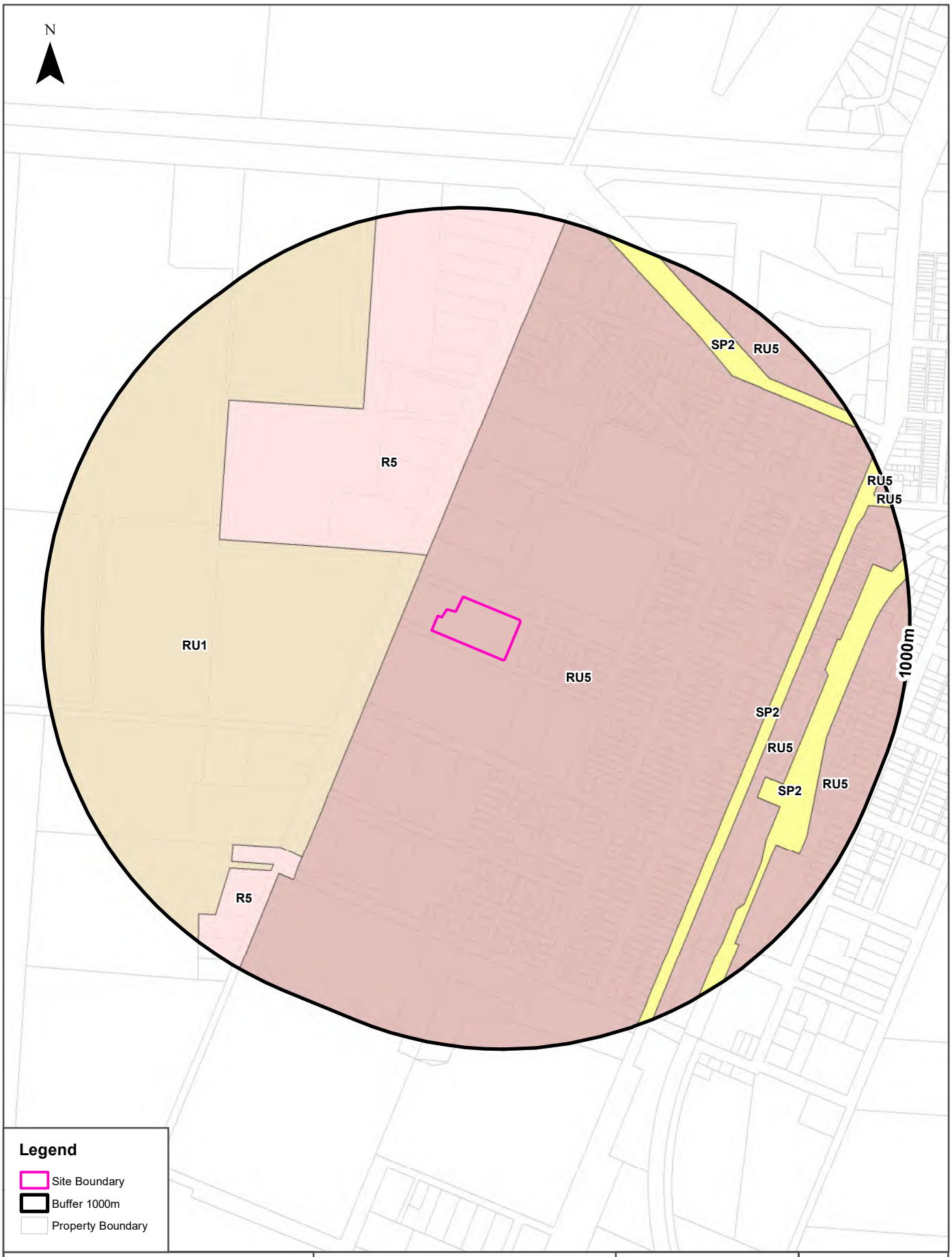
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

EPI Planning Zones

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Environmental Planning Instrument

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

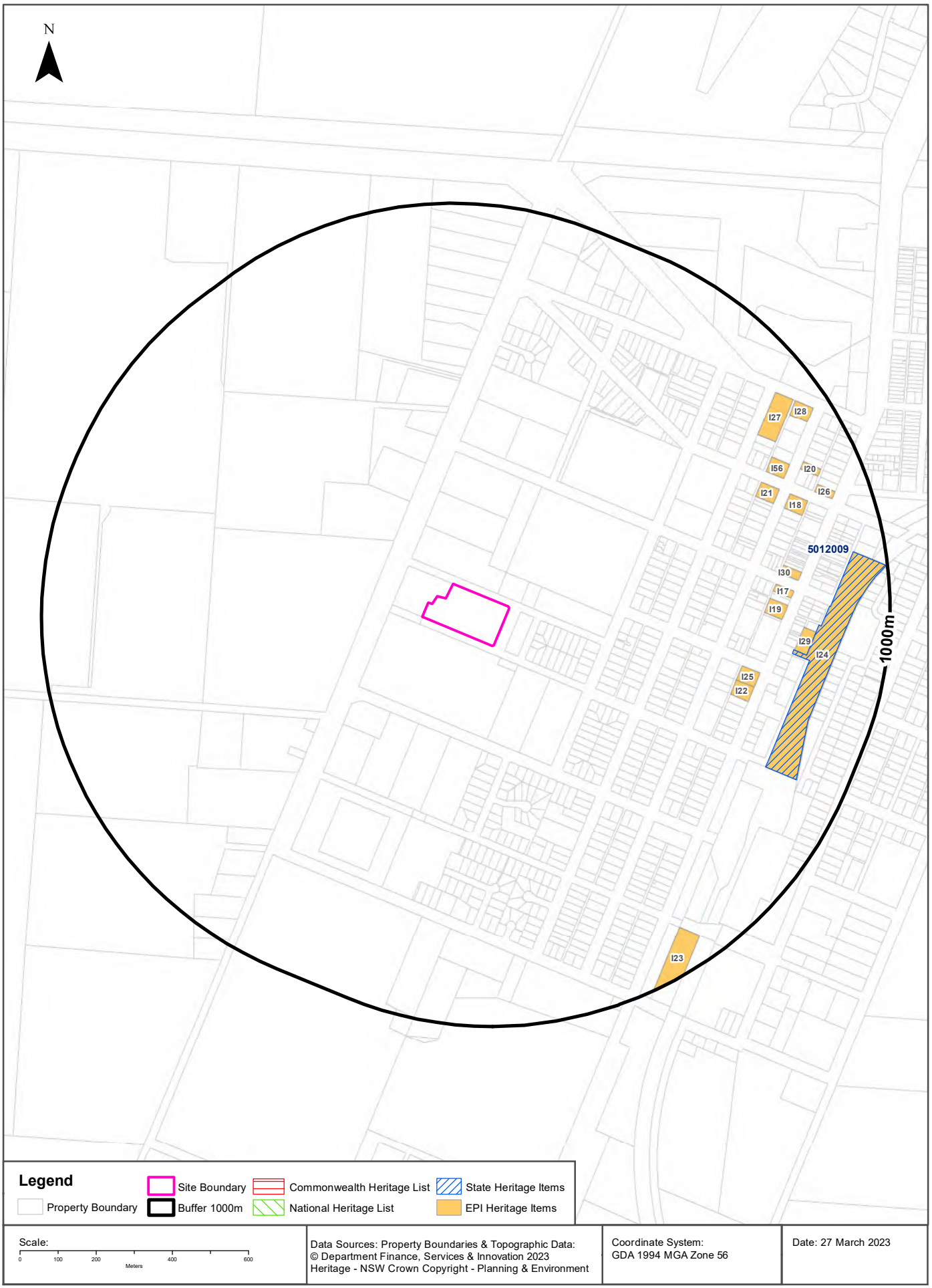
Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU5	Village		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		0m	On-site
RU1	Primary Production		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		86m	West
R5	Large Lot Residential		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		142m	North
R5	Large Lot Residential		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		671m	South West
SP2	Infrastructure	Classified Road	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		672m	East
RU5	Village		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		702m	South East
SP2	Infrastructure	Rail Infrastructure	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		733m	East
RU5	Village		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		838m	South East
RU5	Village		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		892m	North East
RU5	Village		Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	01/12/2021		963m	East

Heritage Items

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713



Heritage

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
Creative Commons 3.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/3.0/au/deed.en

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
Creative Commons 3.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/3.0/au/deed.en

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5012009	Finley Railway Precinct	Narrandera-Tocumwal railway, Finley	BERRIGAN	02/04/1999	01144	2534	753m	East

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
Creative Commons 4.0 © Commonwealth of Australia https://creativecommons.org/licenses/by/4.0/

Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I22	Library	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	622m	East
I25	Police Station	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	624m	East
I19	Country Club Hotel	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	668m	East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I17	Albion Hotel	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	693m	East
I21	Dwelling	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	709m	East
I30	Tuppal Hotel	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	717m	East
I24	Pioneer Railway Station & Surrounds	Item - General	State	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	753m	East
I29	Station Masters Residence	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	755m	East
I56	Scots Presbyterian Church	Item - General	Local	Berrigan Local Environmental Plan 2013	29/04/2016	29/04/2016	29/04/2016	763m	North East
I18	Closes Foundry	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	767m	East
I27	St Joseph's School	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	794m	North East
I20	Christian Revival Crusade (former Masonic Lodge)	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	846m	North East
I26	School of Arts	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	857m	East
I23	Log Cabin Museum	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	886m	South East
I28	St Mary's Church	Item - General	Local	Berrigan Local Environmental Plan 2013	04/10/2013	04/10/2013	29/04/2016	893m	North East

Natural Hazards

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
No records in buffer		

Ecological Constraints

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Native Vegetation of the Murray Catchment Management Authority

What Native Vegetation of the Murray Catchment Management Authority exists within the dataset buffer?

Veg Code	NVMP	Dominant	APIClass	Scientific	Trees	Shrubs	Distance	Direction
N/A	No records in buffer							

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ecological Constraints

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Ecological Constraints

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Ecological Constraints

Finley Hospital, 24 Dawe Avenue, Finley, NSW 2713

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Austrostipa wakoolica	A spear-grass	Endangered	Not Sensitive	Endangered	

Data does not include NSW category 1 sensitive species.

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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Land Title Records

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Report

NSW LRS **Sydney**

Re: - Finley Hospital, 24 Dawe Avenue, Finley

Description: - Lot 246 D.P. 1016411

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
1st December 1894	Crown Reserve No. 1804 for Public Recreation Revoked 4th December 1897	Gazette
27th October 1897	Dedicated for Race Course Revoked 25th March 1955	Gazette
5th August 1960	Crown Reserve No. 82725 dedicated for Hospital	Gazette Now 246/1016411
30th July 2015 (2015 to date)	# Health Administration Corporation	246/1016411

# Denotes Current Registered Proprietors

Leases: - NIL

Easements: -

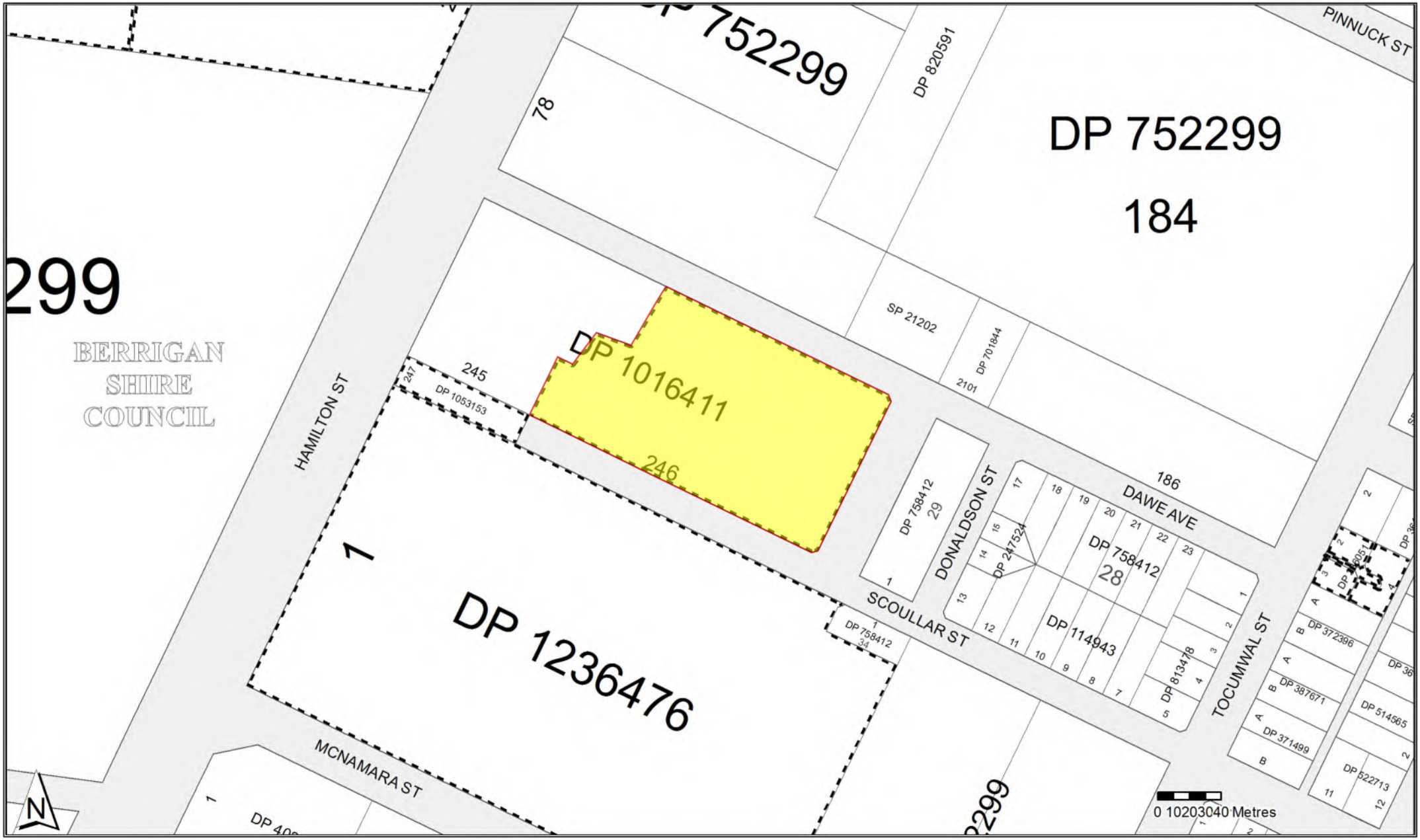
- 07.08.2000 (D.P. 1016411) Right of Access 6.5 metres wide and variable.

Yours Sincerely
Mark Groll
11 April 2023

Cadastral Records Enquiry Report : Lot 246 DP 1016411

Ref : Finley Hospital

Locality : FINLEY
Parish : ULUPNA
LGA : BERRIGAN
County : DENISON

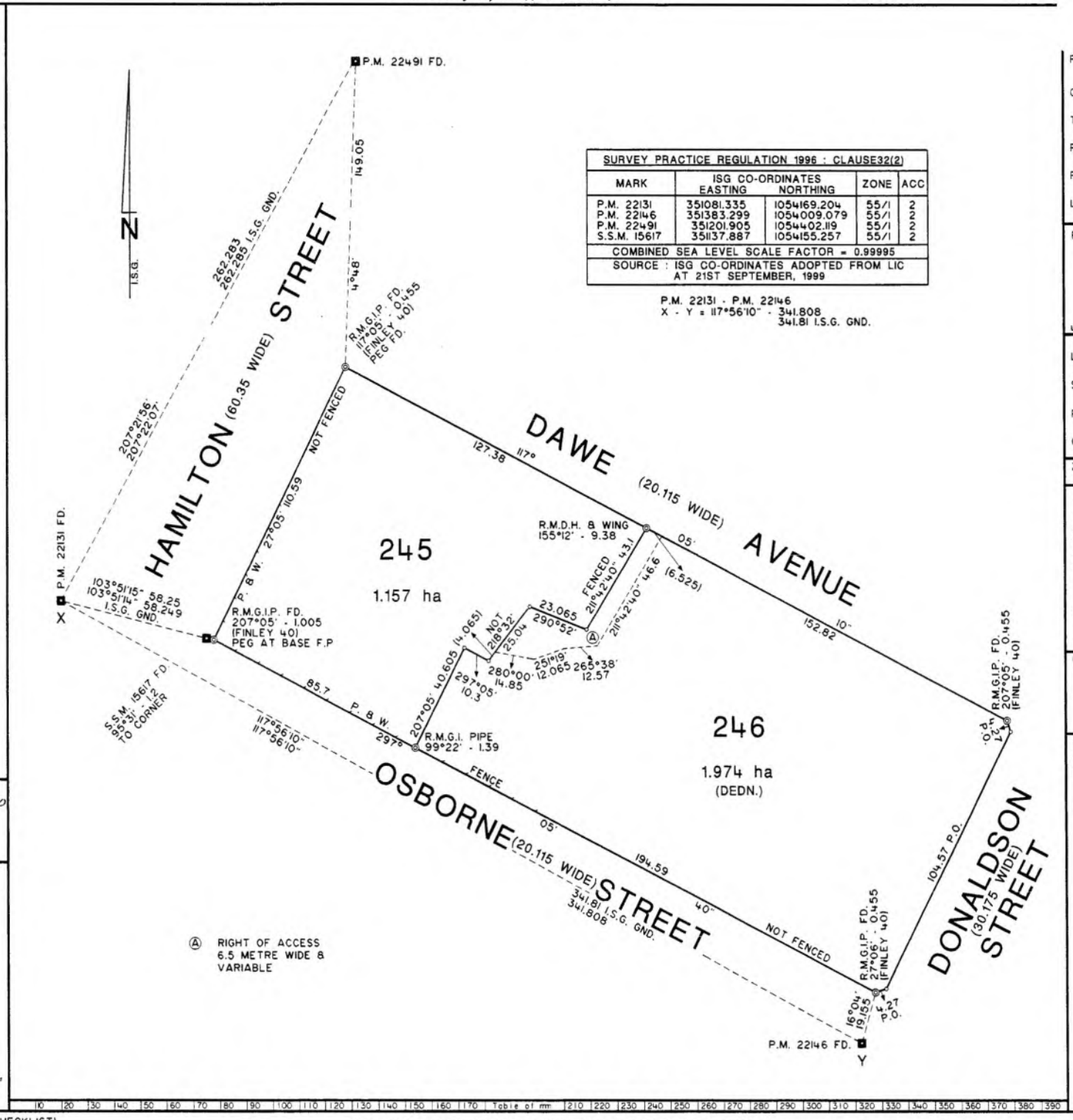


This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

PLAN FORM 2

Plan Drawing only to appear in this space

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.



SURVEY PRACTICE REGULATION 1996 : CLAUSE32(2)				
MARK	ISG CO-ORDINATES EASTING	NORTHING	ZONE	ACC
P.M. 22131	351081.335	1054169.204	55/1	2
P.M. 22146	351383.299	1054009.079	55/1	2
P.M. 22491	351201.905	1054402.119	55/1	2
S.S.M. 15617	351137.887	1054155.257	55/1	2
COMBINED SEA LEVEL SCALE FACTOR = 0.99995				
SOURCE : ISG CO-ORDINATES ADOPTED FROM LIC AT 21ST SEPTEMBER, 1999				

P.M. 22131 - P.M. 22146
X - Y = 117°56'10" - 341.808
341.81 I.S.G. GND.

Crown Lands Office Approval

PLAN APPROVED 6-7-2000
Authorised Officer

Land District DENILIQUIN
Paper No. Hy 81 H 690
Field Book pages

Subdivision Certificate

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

SUBDIVISION (insert subdivision or new road) set out hereon

* Authorised Person/~~General Manager/Accredited Certifier~~

Consent Authority : BERRIGAN SHIRE COUNCIL

Date of endorsement : 21 JUNE, 2000

Accreditation no. :

Subdivision Certificate no. : 13/2000

File no. : 79/00/DA/D9

Note :

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

*Delete if inapplicable.

SURVEYOR'S REFERENCE 8683/99-00/3002 (CHECKLIST)

DP1016411

Registered: 7-8-2000

C.A: SEE CERTIFICATE

Title System: CROWN

Purpose: SUBDIVISION

Ref. Map: TOWN OF FINLEY

Last Plan: FINLEY 40

PLAN OF SUBDIVISION OF SECTION 30

Lengths are in metres. Reduction Ratio 1:1000

LGA: BERRIGAN

Suburb/Locality: FINLEY (3)

Parish: ULUPNA

County: DENISON

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

I BRIAN LESLIE MITSCH
of DENILIQUIN, N.S.W. 2710

a surveyor registered under the Surveyors Act 1929, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Surveyors (Practice) Regulation 1996 and was completed on 12TH MAY, 2000

The survey relates to LOT 245

Datum Line : X-Y
I.S.G.
Zone : Suburban/Country

Signature
Surveyor registered under the Surveyors Act 1929

Plans used in preparation of survey/compilation.

FINLEY 40

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

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, IT IS INTENDED TO CREATE :

1. RIGHT OF ACCESS 6.5 METRE WIDE & VARIABLE

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 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

Town of Finley

PLAN OF SECTIONS 29,30

PAPERS L.B. 57.296 Pks.60.2303

A 294

Cancels pt Finley 34
Cancels part plan D 1380-1798

PARISH ULUPNA COUNTY DENISON
LAND DISTRICT DENILIQUIN LAND BOARD DISTRICT HAY
SHIRE BERRIGAN

Applied for under the Section of the Crown Lands Consolidation Act, 1913, by

Within Suburban Boundaries of Town of Finley Notd 20th March 1885
Section 30 Within R82725 from Sale for Hospital Notd 5th August 1960
Section 29 Within R 82726 from Sale for Rest Park Notd 5th August 1960

NOTATION PLAN

R.M. pd 18°28' G.I. pipe 5.0

Bdy of Por. 78

R81507 from Sale ~~(81508 from Lse gen IV)~~ for Future Public Requirements Notified 3rd April 1959

Crown Land

Sec. 30

LEVEL RED SOIL PLAIN

Box

odd 7a 2r 38p

Sec. 29

LEVEL RED SOIL PLAIN

1a 0r 15p

Reg and R.M. pd

Peg fd

Peg and R.M. pd

ROAD 100 WIDE

ROAD 150 WIDE

ROAD 300 WIDE

ROAD

44a 2r

118

78

152

153

154

155

156

182 C.W. Gardiner C.P. 53.4

186 Trustees Retd Soldiers Club Sp. Pur. 55.47 3ac.

17 28p. 15 26p. 14 26p. 13 28p.

SEC. 28

~~Res. fm S. or L. other than A.L. (Sec. 228)~~

4. 2. 38

~~D. M. Hamilton Sp. L. 36.23~~

4. 1. 13

T. R. Dyas Sp. L. 35.~~17~~ 22

4. 2. 37

4. 2. 37

CORNER	BEARING	FROM	LINKS	No ON TREE
A	Numbered Peg			30
	108°28' G.I. Pipe		2.27	
B	Numbered Peg			30
	198°28' G.I. Pipe		2.27	
C	Numbered Peg			30
	18°29' G.I. Pipe		2.27	
X	Numbered Peg			30
	198°28' G.I. Pipe		5.0	
D	Numbered Peg			29
	198°27' G.I. Pipe		2.27	
E	Numbered Peg			29
	198°28' G.I. Pipe		2.27	
F	288°27' G.I. Pipe		2.27	
G	288°27' G.I. Pipe		2.27	
Y	Numbered Peg			29
	18°29' G.I. Pipe		2.27	
H	Numbered Peg			29
	108°27' G.I. Pipe		2.27	

Scale and Plot Loose
Surround Areas: Sec. 29: 1.09528 ac.
REFERENCE MARKS Sec. 30: 7.73778 ac.

AZIMUTH TAKEN FROM X.Y.
FIELD BOOK L.D. 3341 PAGES 31.32

Charted on Head Office Maps
JJ
Examined 24.7.'61

NOTATION PLAN.
I CERTIFY that this is a CORRECT COPY of the original plan of survey and of all notations thereon now relevant, I being the officer having the custody thereof.
Officer in Charge,
Land Board Office 14 July 1961.

PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

NOTATION PLAN

I Edward Patrick Mc Anespie of Deniliquin
a Surveyor registered under the Surveyors Act, 1929 hereby certify that the survey represented in this plan is accurate and has been made by me in accordance with the Survey Practice Regulations 1933 and the special requirements of the Department of Lands was completed on the 2nd July 1960 and the reference marks have been placed as shown hereon

Surveyor registered under the Surveyors Act 1929

Transmitted to the District Surveyor with my letter of ..... No .....
CHECKED & CHARTED Dan Dolly 30.5.61
EXAMINED A.H.P.
PLAN APPROVED
Authorised Officer 30.5.1961

Finley 40
SCALE 2 CHAINS TO AN INCH 40-2824
CAT. No .....

Lithographed & Printed at the Dept of Lands, Sydney, N.S.W.

PLAN OF PORTION 78

County of Denison Parish of Ulupna

Land District of ~~Corowa~~ Deniliquin Gaz 17.12.48 Land Board District of Wagga Wagga

Resumed Area No. Pastoral Holding Central Division

Applied for under the Section of the Crown Lands Act of 1884 by

Por. No. C.P. No. ~~Within R. 21840 Notified 1st Dec. 94 for Public Recreation~~ Revoked 4th December 1897

Por. No. C.L. No. Within the Suburban Boundaries of the Village of Finley

Within R.766 from Lease Notified 13th Oct. 84 For Village and Suburban Lands Revoked 2nd Oct. 1897

~~Dedicated 27th October 1897 for Racecourse~~ Revoked 25.3.55

Change of Trust vide gaz 19th July 1901

Part por. 78 Sp.L. 54.23 Finley Returned Soldiers Club.

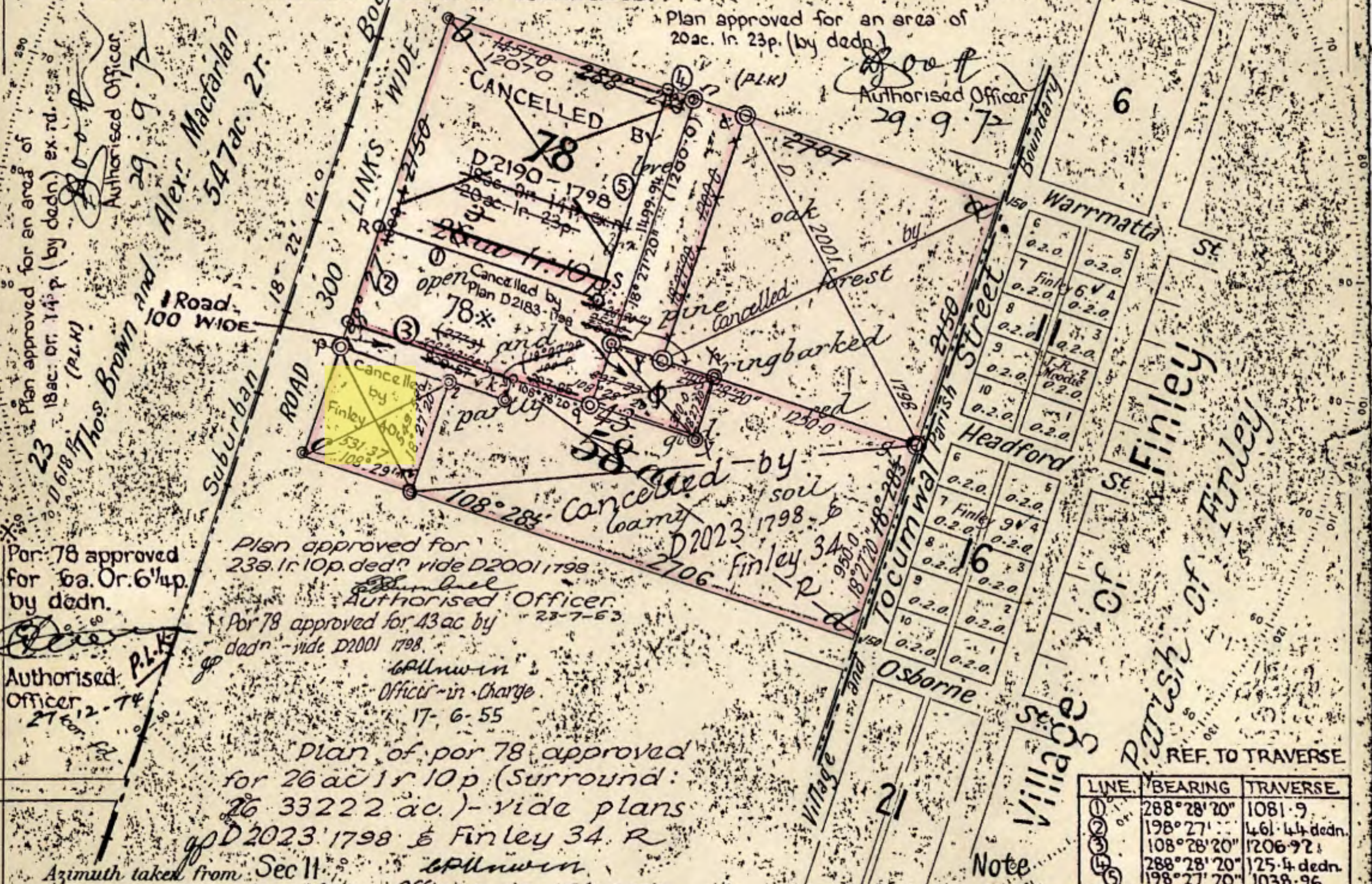
PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

~~Partly within R79322 from Sale for Public Buildings Notd 8.2.57 (abt 1r 6p)~~ vide F34.R

~~Part (About 23ac) R78170 from Sale (78171 from Lease generally) For Showground. Notified 16.12.55~~ Revoked 3.4.59

Part Portion 78 ~~(Abt 23ac)~~ R81507 fm Sale (R81508 fm. Lease genly) for Future Public Requirements. Notd 3.4.59 Sec rev. 14.12.62

~~Part Por 78 (1a 2r) within School Forest Area Gaz. 11.2.66.~~



Azimuth taken from Sec 11

Field Book Vol. XII Folio 17

REF. TO TRAVERSE.

LINE.	BEARING	TRAVERSE.
①	288°28'20"	1081·9
②	198°27'	461·44 dedn.
③	108°28'20"	1206·92
④	288°28'20"	125·4 dedn.
⑤	198°27'20"	1038·96

Note

Two pieces of galvanized iron tubing sunk twelve inches under the surface on line bc five links from corners

Reference to Corners

Corner	Bearing	From	Links	No. on Tree
R	NUMBERED PEG			214.78
	108°28'20"	G.I. PIPE	2.26	
~~a~~	~~160°17'~~	~~Oak~~	~~47½~~	~~78~~
~~b~~	~~353°0'~~	~~y.Box~~	~~35½~~	~~78~~
~~c~~	~~337°36'~~	~~Box~~	~~54~~	~~78~~
~~d~~	~~278°12'~~	~~Box~~	~~100½~~	~~78~~
~~e~~	~~Peg numbered~~			~~184~~
	~~198°27'20"~~	~~G.I.P.~~	~~5.0~~	
~~f~~	~~Peg numbered~~			~~184~~
	~~18°27'20"~~	~~G.I.P.~~	~~5.0~~	
S	NUMBERED PEG			214
	18°27'20"	G.I. PIPE	5.0	

Value of Improvements Nil

Corner Reference

Cor	Bearing	From	Links	No. on Tree
~~p~~	~~Numbered 108°28'~~	~~Peg G.I. Pipe~~	~~2.27~~	~~60~~
q	Numbered 18°27'20"	Peg G.I. Pipe	5.0	210

Corner reference

~~Reference to Traverse~~

Cr.	Bearing	From	Links	No. on Tree
~~g~~	~~Peg numbered.~~			~~184~~
	~~288°28'20"~~	~~G.I.P.~~	~~5.0~~	
~~h~~	~~Numbered Peg~~			~~184~~
	~~108°28'20"~~	~~G.I.P.~~	~~2.27~~	
~~j~~	~~Numbered Peg~~			~~78.186~~
	~~108°28'20"~~	~~G.I.P.~~	~~2.27~~	
~~k~~	~~Section peg~~			~~30.1~~
	~~288°28'20"~~	~~G.I.P.~~	~~2.27~~	
~~l~~	~~Section peg~~			~~30.1~~
	~~108°28'20"~~	~~G.I.P.~~	~~2.27~~	
~~m~~	~~Section peg~~			~~30.6~~
	~~18°27'20"~~	~~G.I.P.~~	~~2.27~~	
n	Numbered Peg			184
	198°27'20"	G.I.P.	5.0	
o	Numbered	peg		184
	18°27'20"	G.I.P.	5.0	

vide D2023 & Finley 34.R

Scale 8 Chains to an Inch

I hereby certify that I in person made and on the 16th October 1896 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

Irwin Smith Licensed Surveyor

Transmitted to the District Surveyor with my letter of 31st October 1896 No. 38

Voucher No. 96.38 Passed 29th Dec. 96

Calculation Book No. 1887 Folio 10

Checked and Charted J.B. Hunter 23.11.96

Examined
Plan approved } 28th December 1896

1380-1798 D1380-1798

Town of Finley

Cancels pt D.1380 1798

PLAN OF ALLOTS 1,2,3, SEC. 28. SECS 28, ~~29,30~~

Parish of Ulupna — County of Denison

LAND DISTRICT OF DENILIQUIN LAND BOARD DISTRICT OF HAY

BERRIGAN SHIRE

Paper: L.B. 56.560 Pks 57.143

Applied for under the Section of the Crown Lands Consolidation Act 1913 by

Within suburban boundaries of Finley Notd 20th March, 1885.

A.2948

Allot 1, Allot 2 } R79322 fm Sle for Public Buildings Notd 8.2.57

Allot 3

~~Allot3 and Unsurveyed Allots 4 and 5 Sec 28~~ Pt R79884 fm Sle (79,885 fm Lse genly) for Soil Conservation Notd 13.9.1957.

Allots 7 to 24 Sec 28 and 1 to 5 Sec 29. S.H. Area No 2854 Notd 1.8.58. Allots 12 to 18 Sec 28, Allot 8 Sec 28, Revoked Allots 1-5 Sec 29 Revoked 17.10.58 13.3.59

~~Allot 8 Sec 28, R81476 fm Sale for Public Buildings Notd 13.9.59~~ Allot 24 Sec 28 Revkd 10.10.58

Allot 24 Sec 28 R81285 from Sale for Public Buildings Notd 5.12.58.

78 R78170 fr Sale R78171 fr Lse genly

D1380

for Showground

Notified 16. 12. 1955

186 D2023 1798

Trustees Finley Returned Soldiers Club Sp Pur 55.47

ROAD 300 WIDE

ROAD 100 WIDE

ROAD 100 WIDE

ROAD 150 WIDE

TOCUMWALL ST

OSBORNE ST

Cancelled by Finley 40 SEC. 30

Cancelled by Finley 40 SEC. 29

Cancelled by Finley 37 SEC. 28

Cancelled by Finley 38

Cancelled by Finley 36

Cancelled

SEC. 16

SEC. 21

26A 1R 10P

152 D.1811 D.H. Hamilton Sp L. 29.29 4a. 2r. 38p.

153 D.1811 D.H. Hamilton Sp L. 36.23 4a. 1r. 13p.

182 D.1993 C.M. Gardiner C.P. 53.4 0a. 1r. 24p.

154 D.1811 4a. 2r. 37p.

155 D.1812 4a. 2r. 37p.

156 D.1812 4a. 2r. 37p.

157 D.1812 4a. 2r. 37p.

T. R. Dyas Sp. L. 35.22

T. R. Dyas

H.R. Burbury

Wm Tyndale

Wm Tyndale

Parish of Finley

R57856 fm Sale 57857 fm Lse genly for Hospital SEC. 21 Notd 20.3.25

Numbered pegs at other corners.

Surrounds

allot 1 Sec 28 14297ac.

allot 2 " 14084ac.

allot 3 by insp.

Azimuth taken from X.Y.

Field Book LD 3346 Pages 29-31

Reference to Corners

Letter	Bearing	From	Links	Pt on Bdy
A	Section Peg			30-1
	108°28'20" G.I. Pipe 2.27			
B	Section Peg			38-1
	288°28'20" G.I. Pipe 2.27			
C	Section Peg			30-6
	288°27'20" G.I. Pipe 2.27			
D	Section Peg			30-6
	18°27'20" G.I. Pipe 2.27			
E	Numbered Peg			17
	108°27'20" G.I. Pipe 2.27			
F	Section Peg			29-17
	198°28'20" G.I. Pipe 2.27			
G	Section Peg			29-1
	198°28'20" G.I. Pipe 2.27			
H	Numbered Peg			1
	288°27'20" G.I. Pipe 2.27			

Reference to Traverse

Line	Bearing	Distance

Checked on Head Office Plan 14.7.57

Examined

NOTATION PLAN.

I CERTIFY that this is a CORRECT COPY of the original plan of survey of all notations thereon now relevant, I being the officer having the custody thereof.

E. A. Brook
Officer in Charge, Land Board Office.

PLAN MICROFILMED

NO ADDITIONS OR AMENDMENTS TO BE MADE

I Edward Patrick McAnespie of Deniliquin a Surveyor registered under the Surveyors Act, 1929 do hereby ~~solemnly and sincerely declare~~ certify that the survey represented in this plan has been made by me in accordance with the Survey Practice Regulations 1933 and the special requirements of the Department of Lands was completed on the 22nd March 1957, and the reference marks have been placed as shown hereon. ~~And I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act 1900.~~

The accuracy is acceptable

E McAnespie
Surveyor registered under the Surveyors Act 1929

~~Subscribed and declared before me at this day of 19~~

Justice of the Peace

Transmitted to the District Surveyor with my Letter of 10.4.57 No 57.26

Checked and Charted E Walker 22.5.57

Examined J. Perry. 24.5.1957.

Plan approved C.P. Unwin Officer in charge 24.5.1957

34-2824

REFERENCE MARKS

Mk	Bearing	From	Links	Pt on Bdy
J	Numbered Peg			5
	288°27'20" G.I. Pipe 2.27			
K	Section Peg			29-5
	18°29' G.I. Pipe 2.27			
L	Section Peg			29-13
	108°27'20" G.I. Pipe 2.27			
M	Numbered Peg			17
	108°27'20" G.I. Pipe 2.27			
N	Section Peg			28-17
	198°28'20" G.I. Pipe 2.27			
P	Section Peg			28-1
	198°28'20" G.I. Pipe 2.27			
R	~~Numbered Peg~~			~~5~~
	~~288°27'20" G.I. Pipe 2.27~~			
S	Section Peg			28-5
	18°27'20" G.I. Pipe 2.27			
T	Section Peg			28-13
	108°27'20" G.I. Pipe 2.27			

NOTATION PLAN

Scale 2 Chains to an Inch

- FINLEY. 34. -

Cancels pt. D.1380 1798

PLAN OF PORTION 186

PAPERS L.B.55.345 Ten 56 3698

PARISH ULUPNA COUNTY DENISON

LAND DISTRICT DENILIQUIN LAND BOARD DISTRICT HAY

SHIRE BERRIGAN

Applied for under the 66(2) Section of the Crown Lands Consolidation Act 1913, by Trustee Finley Returned Soldiers' Club

Sp. Pur. 55 47 July 7th John Duncan Crockett & Sidney Harold Malone See note (1)

Within suburban boundaries of Finley Not^d 20th March, 1885.

(1) Por. 186. Sp. Pur. 55·47. Now Raymond Noble Close, John Damien Crockett & Sydney Harold Malone. Sale Completed. Ten. 61·5968.

NOTATION PLAN

Dedicated for Public School Site 28th October 1955

R 78170 fr. Sale
78171 fr. Lse. genly
for Showground
Not^d 16.12.1955
~26a 1r 10p.

184 D2001 D1380 78

X Peg fd 108°28'20" 250.0

A 300.0 108°28'20" 1000.0 B

C 18°27'20" 300.0 Y

186 level clear red soil (1) 15ac

288°28'20" 1000.0

3ac.

198°27'20" 300 Fence post on Corner

S.H. & CLUB HOUSE

ROAD

SEC. 29

ROAD 100 WIDE

100 WIDE

SEC. 28

ROAD 100 WIDE

TOCUMWAL ST

HEADFORD ST

OSBORNE ST

SEC. 16

Wm Parish Finley

Tindale

R Langford

H.R. Burbury

Edward Patrick M^c Inespie

Deniliquin

Surround by Inspection

PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

REFERENCE MARKS

CORNER	BEARING	FROM	LINKS	No ON TREE
A	Numbered Peg			186
	108°28'20"	G.I. Pipe	2·27	
B	Numbered Peg			186
	18°27'20"	G.I. Pipe	2·27	
C	Numbered Peg			78. 186
	108°28'20"	G.I. Pipe	2·87	
Y	Fence Post on Corner 184 186.			
	288°28'20"	G.I. Pipe	5.0 fd	

AZIMUTH TAKEN FROM X Y

FIELD BOOK L.D. 3346 PAGES 32 and on Sheet Office No.

SCALE 2 CHAINS TO AN INCH

NOTATION PLAN.

I CERTIFY that this is a CORRECT COPY of the original plan of survey and of all notations thereon now relevant, I being the officer having the custody thereof.

A.L. Brown
Officer in Charge,
Land Board Office.

I Edward Patrick M^c Inespie of Deniliquin a Surveyor registered under the Surveyors Act, 1929 hereby certify that the survey represented in this plan is accurate and has been made by me in accordance with the Survey Practice Regulations 1933 and the special requirements of the Department of Lands was completed on the 18 March 1957 and the reference marks have been placed as shown hereon

E. M^c Inespie
Surveyor registered under the Surveyors Act 1929

Transmitted to the District Surveyor with my letter of 10.4.57 No 57/25

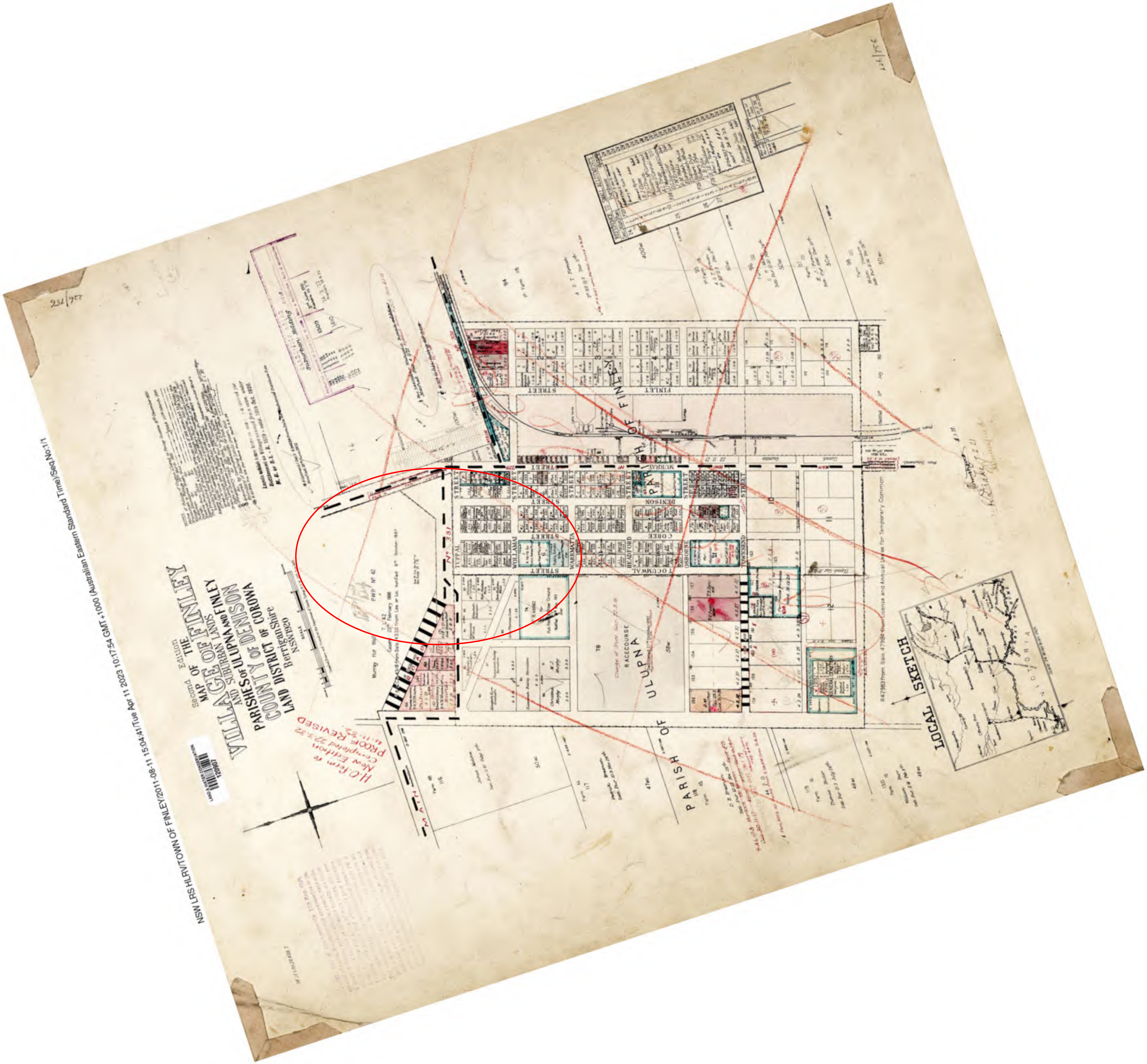
CHECKED & CHARTED A.W.B.R.W. 22.5.57

EXAMINED J. Perry 24.5.1957

PLAN APPROVED Authorised Officer 24.5.1957

Lithographed & Printed at the Department of Lands, Sydney, N.S.W.

14.7.57 CAT. No D 2023. 1798


Second Edition
MAP OF THE
VILLAGE OF FINLEY
AND SUBURBAN LANDS
PARISHES OF ULUPNA AND FINLEY
COUNTY OF DENISON
LAND DISTRICT OF COROWA
Berrigan Shire
N.S.W. 1920
PROOF REVISED
LOCAL SKETCH
VICTORIA
PARISH OF ULUPNA
PARISH OF FINLEY
RACECOURSE
FINLEY STREET
DENISON STREET
COREE STREET
TOCUMWAL STREET
TUPPAL STREET
WOLLAMAI STREET
WARMATTA STREET
HEADFORD STREET
OSBORNE STREET
TOWNSEND STREET

FOURTH EDITION

MAP OF THE TOWN OF FINLEY

AND SUBURBAN LANDS

PARISHES OF ULUPNA AND FINLEY

COUNTY OF DENISON

LAND DISTRICT OF DENILIQUIN

Berrigan Shire

N S W

SMALL PORTIONS

NOTES

DISTINCTIVE BOUNDARIES ETC

SMALL ALLOTMENTS

NOTES (Cont)

WITHIN

CLASSIFIED AREAS

REFERENCE NOTES

PARISH OF ULUPNA

PARISH OF FINLEY

RIVERINA

HIGHWAY

WAHRMATTA

BEADFORD

TONGUS

WELLS

HAMILTON

DENISON

FINLEY

Any charting or alteration must be noted on this slip in order

Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
11/4/2023 9:58AM

FOLIO: 246/1016411

First Title(s): 246/1016411
Prior Title(s): CROWN LAND

Recorded	Number	Type of Instrument	C.T. Issue
7/8/2000	DP1016411	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
15/12/2010	AF945830	DEPARTMENTAL DEALING	
19/6/2013	AH809406	DEPARTMENTAL DEALING	
4/2/2015	AJ227340	DEPARTMENTAL DEALING	
13/7/2015	AJ485486	RESUMPTION APPLICATION	EDITION 1

*** END OF SEARCH ***

Finley Hospital PRINTED ON 11/4/2023

Form: 11R
Release: 4·1

REQUEST

New South Wales
Real Property Act 1900

AJ485486H

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the [illegible] by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

(A) **STAMP DUTY** — If applicable. Office of State Revenue use only

(B) **TORRENS TITLE** — SEE TAB A

(C) **REGISTERED DEALING** — Number | Torrens Title

(D) **LODGED BY** — Document Collection Box 411B

Name, Address or DX, Telephone, and Customer Account Number if any:
LLPN1232831V
TRAVERS & CO
Suite A, Level 3, 215-217 Clarence S
Sydney NSW 2000
DX 590 SYDNEY
Reference: JCH JACOB
Mobile: 0415 206 800

CODE: R

(E) **APPLICANT** — HEALTH ADMINISTRATION CORPORATION

(F) **NATURE OF REQUEST** — Issue of certificates of title

(G) **TEXT OF REQUEST**

The Lots described in TAB A were acquired by compulsory process by the Health Administration Corporation as described in the attached Government Gazette Notice (TAB B) dated 30 January 2015, Folio 134 and it is hereby requested that the certificates of title be issued in the name of the Health Administration Corporation.

DATE _____

(H) I certify that I am an eligible witness and that an authorised officer of the applicant signed this dealing in my presence. [See note* below].

Signature of witness: J Vince

Name of witness: JACOB VINCE
Address of witness: 73 MILLER STREET
NORTH SYDNEY NSW 2060

Certified correct for the purposes of the Real Property Act 1900 by the authorised officer named below.

Signature of authorised officer: A. Grygier

Authorised officer's name: JAREK GRYGIER
Authority of officer: ~~BRYSON WILSON~~ DELEGATE
Signing on behalf of: HAC

(I) *This section is to be completed where a notice of sale is required and the relevant data has been forwarded through eNOS.*

The applicant certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 806826 Full name: JACOB VINCE Signature: J Vince

* *s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

TAB A

Site	Lot/DP
1. Ardlethan Community Health Centre	Lot 240 DP750867
2. Bateau Bay Ambulance Station	Lot 468 DP44962
3. Part Bellingen River District Hospital Site	Lot 602 DP823605
4. Boggabri Ambulance Residence	Lot 2 DP1115874
5. Part Brewarrina District Hospital Site	Lot 3, Section 18 DP758161
6. Part Dubbo Community Health Centre	Lot 393 DP754308
7. Part Finley Hospital Site	Lot 246 DP1016411
8. Harden Ambulance Station	Lot 712 DP753624
9. Jerilderie Ambulance Station	Lot 217 DP41481
10. Jindabyne Ambulance Station	Lot 166 DP756686
11. Leeton District Hospital Site	Lot 1, Section 47 DP758606
12. Moree East Ambulance Station	Lot B DP314691 & Lot 2 DP329217

Other Government Notices

ASSOCIATIONS INCORPORATION ACT 2009

Notice Under Section 509 (5) of the
Corporations Act 2001 as Applied by
Section 64 of the Associations Incorporation Act 2009

Notice is hereby given that the Incorporated Association mentioned below will be deregistered when three months have passed since the publication of this notice.

SOUTH EAST COMMUNITY COLLEGE
INCORPORATED
Y0231512

Dated this 22nd day of January 2015

R LUNNEY
Delegate of the Registrar
Registry Services

HEALTH ADMINISTRATION ACT 1982

LAND ACQUISITION (JUST TERMS COMPENSATION) ACT 1991

Notice of Compulsory Acquisition of
Land for Health Purposes

Pursuant to section 10 of the *Health Administration Act 1982* and section 19 (1) of the *Land Acquisition (Just Terms Compensation) Act 1991*, the Health Administration Corporation by its delegate declares, with the approval of His Excellency the Governor, that all the lands and interests therein described in the Schedule below are acquired by compulsory process under the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991* for the purposes of the *Health Administration Act 1982*.

Signed at Sydney, this 28th day of January 2015.

DAVID GATES
Chief Procurement Officer
NSW Ministry of Health
a duly authorised delegate of the
Health Administration Corporation

Schedule

Ardlethan Community Health Centre

All that piece or parcel of Crown land situated in the Coolamon Local Government Area, Parish of Warri, County of Bourke, being Lot 240 in Deposited Plan 750867.

Bateau Bay Ambulance Station

ALL THAT piece or parcel of land situated at Bateau Bay in the Wyong Local Government Area, Parish of Tuggerah, County of Northumberland comprising Lot 468 in DP 44962 EXCLUDING Easement for electricity and other purposes affecting the site designated (E) in DP 1180182.

Part Bellingen River District Hospital Site

All that piece or parcel of Crown land situated in the Bellingen Local Government Area, Parish of South Bellingen, County of Raleigh, being Lot 602 in Deposited Plan 823605.

Boggabri Ambulance Residence

All that piece or parcel of Crown land situated in the Narrabri Local Government Area, Parish of Boggabri, County of Pottinger, being Lot 2 in Deposited Plan 1115874.

Part Brewarrina District Hospital Site

All that piece or parcel of land situated in the Brewarrina Local Government Area, Parish of Brewarrina, County of Clyde being Lot 3, Section 18 in Deposited Plan 758161.

Part Dubbo Community Health Centre

All that piece or parcel of land situated in the Dubbo Local Government Area, Parish of Dubbo, County of Lincoln being Lot 393 in Deposited Plan 754308.

Finley Hospital

ALL THAT piece or parcel of land situated at Finley in the Berrigan Local Government Area, Parish of Ulupna, County of Denison comprising Lot 246 in DP 1016411 EXCLUDING Right of Access 6.5 metre(s) wide and variable affecting the part(s) shown so burdened in DP 1016411.

Harden Ambulance Station

All that piece or parcel of land situated in the Harden Local Government Area, Parish of Murrimboola, County of Harden being Lot 712 in Deposited Plan 753624.

Jerilderie Ambulance Station

All that piece or parcel of land situated in the Jerilderie Local Government Area, Parish of Jerilderie South, County of Urana being Lot 217 in Deposited Plan 41481.

Jindabyne Ambulance Station

All that piece or parcel of land situated in the Snowy River Local Government Area, Parish of Clyde, County of Wallace being Lot 166 in Deposited Plan 756686.

Leeton District Hospital

All that piece or parcel of land situated in the Leeton Local Government Area, Parish of Willimbong, County of Cooper being Lot 1, Section 47 in Deposited Plan 758606.

Moree East Ambulance

All those pieces or parcels of land situated in the Moree Plains Local Government Area, Parish of Moree, County of Corallie being:

ALL THAT piece or parcel of land situated at Moree in the Moree Plains Local Government Area, Parish of Moree, County of Courallie comprising Lot 2 in DP 329217 EXCLUDING Right of Way appurtenant to the land above described affecting the land 10 feet wide shown so burdened in DP 329217, and Lot B in DP 314691.

TRANSPORT FOR NSW

Opal Terms of Use

What is the Opal Card and who are we?

1. **Opal Ticketing System:** The Opal Card (**Opal Card**) is a smartcard designed for use by an electronic ticketing system (**Opal Ticketing System**). The Opal Card can be used as a form of ticketing and payment for eligible public transport services across the greater Sydney region equipped with operational Opal Card readers (**Opal Card Readers**). The Opal Card is issued by Transport for NSW (**TfNSW**). A reference to **us**, **we** or **our** is a reference to TfNSW and, where the context requires, its authorised representatives and agents.

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 246/1016411

SEARCH DATE	TIME	EDITION NO	DATE
11/4/2023	9:03 AM	1	13/7/2015

LAND

LOT 246 IN DEPOSITED PLAN 1016411
AT FINLEY
LOCAL GOVERNMENT AREA BERRIGAN
PARISH OF ULUPNA COUNTY OF DENISON
TITLE DIAGRAM DP1016411

FIRST SCHEDULE

HEALTH ADMINISTRATION CORPORATION (RA AJ485486)

SECOND SCHEDULE (1 NOTIFICATION)

1 DP1016411 RIGHT OF ACCESS 6.5 METRE(S) WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Received: 11/04/2023 09:03:43

Section 10.7 Certificates

BAROOGA | BERRIGAN | FINLEY | TOCUMWAL

Heart of the Southern Riverina

PLANNING CERTIFICATE UNDER SECTION 10.7(2)

Environmental Planning and Assessment Act, 1979 (as amended)

Certificate Number:	330/2023
Fees:	$53.00
Receipt Number:	260026
Date:	27.03.2023

Applicant: JK Environments Pty Ltd
PO Box 976
North Ryd BC NSW 1670

Property: 24 Dawe Avenue Finley
Lot 246 / DP 1016411
1.97ha

Owner: JK Environments Pty Ltd

1. Names of relevant planning instruments and DCPs

(1) Environmental planning instruments applying to the carrying out of development on the land.

(a) Local Environmental Plan (LEP)

- **Berrigan Local Environmental Plan 2013**

(b) State Environmental Planning Policies (SEPP)

- **SEPP – Housing**
- **SEPP – Transport and Infrastructure**
- **SEPP – Primary Production**
- **SEPP – Biodiversity and Conservation**
- **SEPP – Resilience and Hazards**
- **SEPP – Industry and Employment**
- **SEPP 65 – Design Quality of Residential Apartment Development**
- **SEPP – Resources and Energy**
- **SEPP – Planning Systems**
- **SEPP (Building Sustainability Index: BASIX) 2004**

(2) Proposed environmental planning instruments applying to the carrying out of development on the land.

Not Applicable

(3) Development Control Plans that apply to the carrying out of development on the land.

- Berrigan Development Control Plan, 2014

2. Zoning and land use under Berrigan LEP 2013

(a) Zone RU5 Village

(b) **Permitted without consent**
Environmental protection works; Home-based child care; Home occupations; Roads; Water reticulation systems

(c) **Permitted with consent**
Agricultural produce industries; Amusement centres; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Child care centres; Commercial premises; Community facilities; Crematoria; Depots; Dwelling houses; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Environmental facilities; Exhibition homes; Exhibition villages; Flood mitigation works; Freight transport facilities; Function centres; Helipads; Home businesses; Home industries; Home occupations (sex services); Highway service centres; Industries; Industrial retail outlets; Industrial training facilities; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Neighbourhood shops; Passenger transport facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential accommodation; Respite day care centres; Restricted premises; Rural industries; Schools; Service stations; Sewerage systems; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water supply systems; Wholesale supplies

(d) **Prohibited**
Cellar door premises; Farm stay accommodation; Heavy industries; Rural workers' dwellings; Any other development not specified in item (b) or (c)

(e) Additional permitted uses do not apply to the land

(f) The erection of a dwelling on this land is not prohibited by reason of a development standard relating to the minimum area on which a dwelling house may be erected. Refer to Lot Size Map applicable to the zone.

(g) The land is not located in an area of outstanding biodiversity value under the *Biodiversity Conservation Act 2016.*

(h) The land is not located in a designated conservation area.

(i) There is not an item of environmental heritage situated on the land.

3. **Contribution Plans**

- Berrigan Shire Council Development Contributions Plan created under Section 7.18 of the Environmental Planning Assessment Act 1979 applies to this land.

- Berrigan Shire Councils Development Servicing Plans for Water and Sewer created under Section 64 of the Local Government Act 1993 apply to this land.

4. **Complying development**

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

The complying development codes are not varied under that Policy, clause 1.12, in relation to the land.

5. **Exempt Development**

The subject 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) or 1.16A.

The exempt development codes are not varied under that Policy, clause 1.12, in relation to the land.

6. **Affected building notices and building product rectification orders**

Council is not aware of any affected building notice, building product rectification order or notice to make a building product rectification order that is in force in respect of the land.

7. **Land reserved for acquisition**

The land is not subject to acquisition by a public authority under any planning instrument or proposed environment planning instrument.

8. **Road widening and road realignment**

The land is not affected by any proposal under either Division 2 of part 3 of the *Roads Act 1993*, or any environmental planning instrument, or any resolution of the Council in relation to road widening or realignment.

9. **Flood related development controls**

The land or part of the land is not within the flood planning area or the probable maximum flood and not subject to flood related development controls.

10. **Council and other public authority policies on hazard risk restrictions**

Council, or another public authority, has not adopted a policy that restricts the development of the land because of the likelihood of landslip, bushfire, tidal inundation, subsidence, acid sulphate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk (other than flooding).

11. **Bush fire prone land**

The land is not shown as bush fire prone land designated by the Commissioner of the NSW Rural Fire Service under the Act, section 10.3.

12. **Loose-fill asbestos insulation**

A residential dwelling erected on this land has not been identified in the Asbestos Register as containing loose-fill asbestos ceiling insulation. Contact NSW Fair Trading for more information.

13. **Mine subsidence**

The subject land is not within an area proclaimed to be a mine subsidence district within the meaning of the *Coal Mine Subsidence Compensation Act 2017.*

14. **Paper subdivision information**

Not Applicable

15. **Property vegetation plans**

Not Applicable

16. **Biodiversity stewardship sites**

Not Applicable

17. **Biodiversity certified land**

The land is not biodiversity certified (within the meaning of Part 8 of the *Biodiversity Conservation Act 2016)*

18. **Orders under Trees (Disputes Between Neighbours) Act 2006**

Not Applicable

19. **Annual charges under Local Government Act1993 for coastal protection services that relate to existing coastal protection works**

Not Applicable

20. **Western Sydney Aerotropolis**

Not Applicable

21. **Development consent conditions for seniors housing**

Not Applicable

22. Site compatibility certificates and development consent conditions for affordable rental housing

A current site compatibility certificate, or former site compatibility certificate of which the Council is aware, has not been issued in relation to the proposed development on the land.

Noureen

NOUREEN WAJID

TOWN PLANNER

PLANNING CERTIFICATE UNDER SECTION 10.7(5)

Environmental Planning & Assessment Act 1979 (as amended)

Certificate No: 013/2023

Applicant: JK Environments Pty Ltd
Address: PO Box 976
North Ryd BC NSW 1670

Date: 27.03.2021
Fee paid: $80.00
Receipt No: 260026

Property: 24 Dawe Avenue Finley
Lot 246 / DP 1016411
1.97ha

Information requested	*Reply*
a) Is the land affected by a Tree Preservation Order?	*No*
b) Has any development consent with respect to the land been granted within the previous five years?	*No*
c) What is the current use of the property?	*Hospital*
d) Is the land affected by any resolution of the Council to seek amendment to any environmental planning instrument or draft environmental planning instrument applying to the land?	*No*

The above information has been taken from the Council's records but Council cannot accept responsibility for any omission or inaccuracy.

Any request for further information in connection with the above should be marked for the attention of:

Noureen

NOUREEN WAJID
TOWN PLANNER

BAROOGA | BERRIGAN | FINLEY | TOCUMWAL

Heart of the Southern Riverina

ABN: 53900833102
OFFICIAL RECEIPT
260026
27-03-2023

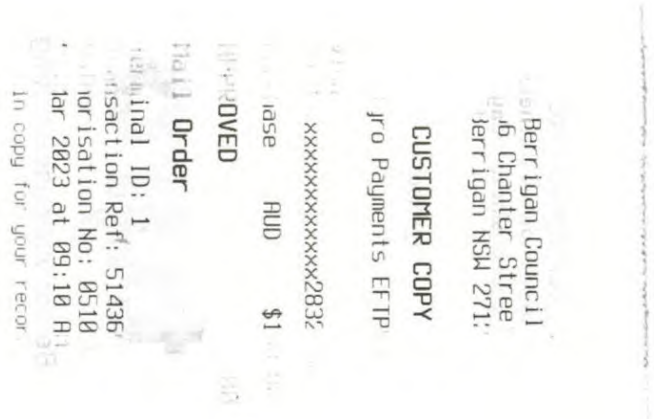
JK ENVIRONMENTS PTY LTD
PO BOX 976
NORTH RYD BC
NSW 1670

Details		Amount
Received from: JK ENVIRONMENTS PTY LTD		133.00
For: APPLICATION FOR 10.7(2) AND 10.7(5) - 24 DAWE AVENUE FINLEY	Total includes GST	0.00

System	Code	Details	GST	Amount
Gen Ledger	3600-1812-0000	Planning Certificate S10.7 -GST Free	0.00	80.00
Gen Ledger	3600-1812-0000	Planning Certificate S10.7 -GST Free	0.00	53.00
		Totals	0.00	133.00

Cash	Tendered	Change	Cheques	Direct Dep	Credit Card	EFTPOS	Rounding
0.00	0.00	0.00	0.00	0.00	133.00	0.00	0.00

Our Ref: CHRISTIEW



Payment by Cheque. - Acceptance of a cheque and the issue of a receipt therefore is conditional on collection of the proceeds, and until collection, no credit is to be given or implied.

SafeWork NSW Records

Craig Ridley

From: Craig Ridley
Sent: Tuesday, 30 May 2023 10:20 AM
To: Craig Ridley
Subject: FW: SafeWork NSW: 00820796 –Site Search application – Result found [ref:_ 00D281hl6J._500Mn44kn0:ref]

Regards
Craig Ridley
Associate | Environmental Scientist

T: +612 9888 5000
D: 0421 856 992
E: CRidley@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Licensing <licensing@safework.nsw.gov.au>
Sent: Tuesday, 30 May 2023 10:07 AM
To: Michele Richard <MRichard@jkgroup.net.au>
Subject: SafeWork NSW: 00820796 –Site Search application – Result found [ref:_00D281hl6J._500Mn44kn0:ref]

35001419 HEALTH & SAFETY MANAG~NG - Finley Dawe Ave - Scanned.PDF

Security Classification: Sensitive Personal
Please do not amend the subject line of this email

Dear Michele

Re: Site Search for Schedule 11 Hazardous Chemicals on premises Application – Result found

I refer to your application for a Site Search for Schedule 11 Hazardous Chemicals on premises, received by SafeWork NSW for the following site: 24 Dawe Ave, Finley NSW, Finley Hospital.

Please find attached copies of the documents that SafeWork NSW holds on record number 35/001419 relating to the storage of Hazardous Chemicals at the above-mentioned premises.

If you have any further information or if you have any questions, please use one of the following options, quoting the SafeWork NSW enquiry reference number: 00820796

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

Kind regards

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

ref:_00D281hl6J._500Mn44kn0:ref

BX 10

BX 0010/00033

LICENCE No.	VO
35 001419 7	

35/001419

N.S.W. GOVERNMENT DEPARTMENT OF INDUSTRIAL RE

DANGEROUS GOODS BRANCH

THE FINLEY / TOCUMWAL REGION SE

DAWE AVENUE

FINLEY 2713

WCA - Unclassified | Recfind File | 35/001419

WorkCover Authority of NSW

Custodian Licensing Unit - OHS
Created 1/01/1975

KEEPING LICENCE

HEALTH & SAFETY MANAGEMENT - LICENSING - Dangerous Goods Keepi
Licence 35/001419 - Finley, Dawe Ave

INSPECTION DISTRICT NO.

FILE SCANNED

DATE 13/11/91 BY PB DISK NAME DG 3A

35713

35/00

INSPECTION RECORD

Licence No. _____

I Have This Day RE-INSPECTED The Above Premises And Hereby Certify That The Depots Detailed On The Most Recent Licence Application (DG1) Dated ..... Agree With All Licensable Dangerous Goods Depots Located On The Premises.

....
Inspector of Dangerous Goods Date

Inspected	Initials	Requisitions made or state of depot

Licence Number 35/001419

requested 3/4/03

CLOSED FILE
2003

Occupier:
GREATER MURRAY AREA HEALTH SERVICE
FINLEY HOSPITAL

Site:

DAWE AVE,
FINLEY 2713

Finley Hospital
Dawe Avenue
PO Box 210
FINLEY NSW 2713
Phone: (03) 58831133
Fax: (03) 58831457

GREATER MURRAY AREA HEALTH SERVICE

11th March 2003

Workcover New South Wales
Dangerous Goods Licensing Section
Locked Bag 2906
LISAROW NSW 2252

Dear Sir

The aboveground tank class 2.1, UN 1075 Petroleum gases, liquefied, 7,500l has been removed and replaced with natural gas.

Yours sincerely

F.M. Langham

Fran Langham
Health Service Manager

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Tel: 9370 5000 Fax: 9370 5999 ALL MAIL TO G.P.O. BOX 5364 SYDNEY 2001

Licence No. 35/001419

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

WorkCover New South Wales

DECLARATION: Please renew licence number 35/001419 to 15/04/2003 . I confirm that all the licence details shown below are correct (amend if necessary).

Robin Haberecht R. HABERECHT 17/7/02

(Signature) *(Please print name)* *(Date signed)*

for: GREATER MURRAY AREA HEALTH SERVICE

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:** **(please do not fax)***

WorkCover New South Wales
Dangerous Goods Licensing Section
GPO BOX 5364
SYDNEY 2001

Enquiries: ph (02) 9370 5187
fax (02) 9370 6104

Details of licence on 11 July 2002

Licence Number 35/001419 **Expiry Date** 15/04/2002

Licensee GREATER MURRAY AREA HEALTH SERVICE

RECEIVED SERVICE CENTRE 22 JUL 2002 WORKCOVER NEW SOUTH WALES

Postal Address: FINLEY HOSPITAL BOX 210 P O FINLEY NSW 2713

Licensee Contact ~~ALISON LUELF~~ Ph. 0358 831 133 Fax. 0358 831 457

ROBIN HABERECHT.

Premises Licensed to Keep Dangerous Goods
GREATER MURRAY AREA HEALTH SERVICE
DAWE AVE FINLEY 2713

ENTERED DATE 30/7/02 BY

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Major Supplier of Dangerous Goods ELGAS

Emergency Contact for this Site SISTER IN CHARGE Ph. 0358 831 133

Site staffing 24HRS 7DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	ABOVE-GROUND TANK	Class 2.1	7500 L
		UN 1075 PETROLEUM GASES, LIQUEFIED	7500 L

Form DG10

35/001419

ATF.

Box 33 LIST ID.

Finley Hospital
Dawe Avenue
PO Box 210
FINLEY
NSW 2713
Phone: (03) 58831133
Fax: (03) 58831457

GREATER MURRAY HEALTH SERVICE

P.O. Box 159
WAGGA WAGGA
N. S. W. 2650
PHONE: (02) 6938 6662
FAX: (02) 6921 8243

29th June 2000

Dangerous Good Licence
Scientific Services Branch

Fax No: (02) 93706105

Dear Sir/Madam

Re: Licence No: 35/001419

Please note the following changes are required to our existing Licence.

Major supplier of Dangerous Goods: **Elgas**

Premises Licensed to keep Dangerous Goods:

Greater Murray Area Health Service
Finley Hospital
Dawe Avenue
FINLEY NSW 2713

(Please note: ***name change only*** – premises are the same location)

All other facets remain unchanged.

Thank you

per **Alison Luelf**
Health Service Manager

WORKCOVER NEW SOUTH WALES

DETAILS OF LICENCE FOR KEEPING DANGEROUS GOODS ON 22 June 1999

Licence Number 35/001419 **Expiry Date** 15/04/1993 **No of Depots.** 1

Licensee Details

Licensee MURRAY HEALTH SERVICE

Trading name FINLEY HOSPITAL

Postal Address FINLEY HOSPITAL BOX 210 P O FINLEY NSW 2713

Licensee Contact MARLENE STEPHENS Ph. 058 83 1133 Fax.

Site Details

Premises Licensed to Keep Dangerous Goods
MURRAY HEALTH SERVICE FINLEY HOSPITAL
DAWE AVE FINLEY 2713

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Major Supplier of Dangerous Goods BORAL

Emergency Contact for this Site JOHN ANDERSON Ph. 058 83 1133

Site staffing 24HRS 7DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
1	ABOVE-GROUND TANK	Class 2.1	7500 L

Printed by Scientific Services Branch, 400 Kent St, Sydney 2000 ph(02) 9370 5187

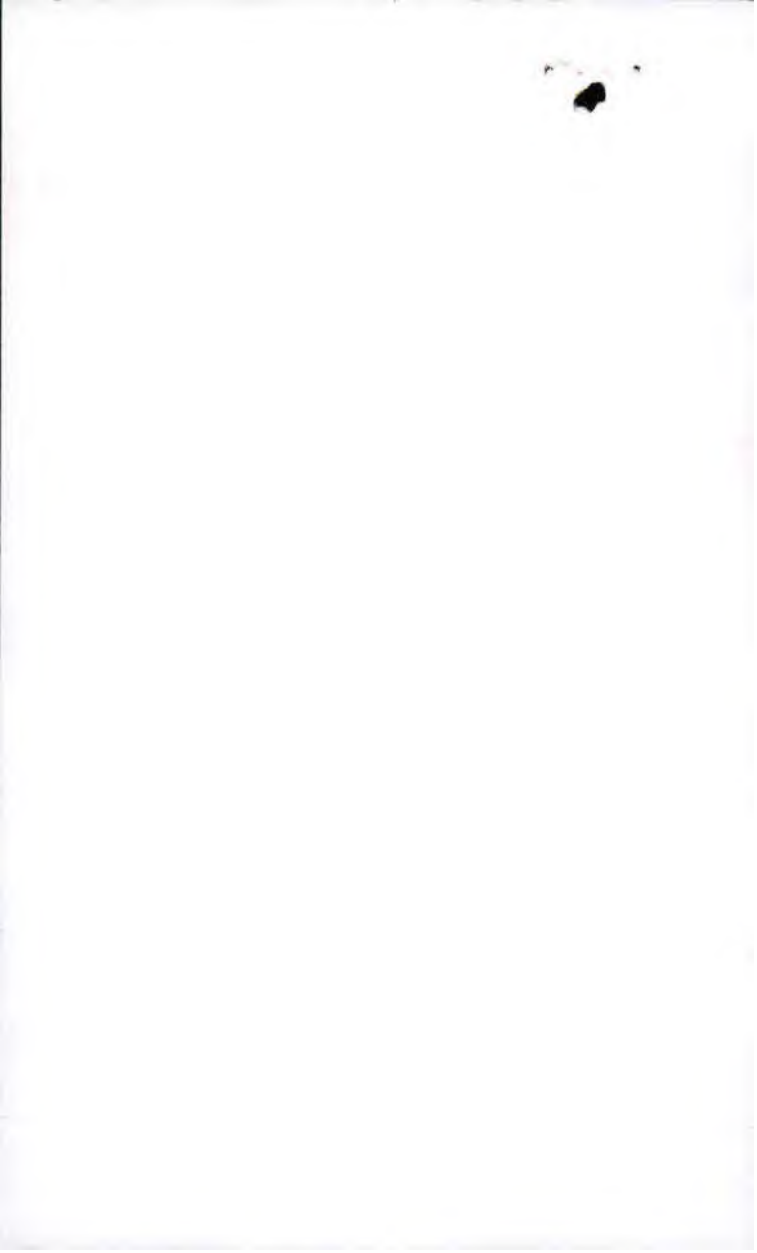
Finley Hospital
Dawe Avenue
PO Box 210
FINLEY
NSW 2713
Phone: (03) 58831133
Fax: (03) 58831457

GREATER MURRAY HEALTH SERVICE

POSTAL ADDRESS
LOCKED MAIL BAG 10
WAGGA WAGGA
NSW 2650

75 JOHNSTON STREET
WAGGA WAGGA
PH: 02 6921 5588
FAX: 02 6921 5856

With Compliments



Application for Licence to Keep Dangerous Goods

WorkCover NEW SOUTH WALES

Application for ☐ **new licence** ☐ **amendment** ☑ **transfer** ☐ **renewal of expired licence**

PART A – Applicant and site information See page 2 of Guidance Notes.

1 Name of applicant | ACN

MRS. ALISON LUELF |

2 Postal address of applicant | Suburb/Town | Postcode

P.O. BOX 210, | FINLEY | 2713

3 Trading name or site occupier's name

FINLEY HOSPITAL

4 Contact for licence inquiries

Phone	Fax	Name
(03) 5883 1133	(03) 58831457	ALISON LUELF

5 Previous licence number (if known) 35/ CC1419,

6 Previous occupier (if known) MARLENE STEPHENS

7 Site to be licensed

No	Street
	DAWE AVENUE

Suburb / Town		Postcode
FINLEY	NSW	2713

8 Main business of site HOSPITAL

9 Site staffing: Hours per day 24 Days per week 7

10 Site emergency contact

Phone	Name
(03) 5883 1133	SISTER-IN-CHARGE

lic issued 17/8/99 SW

11 Major supplier of dangerous goods BORAL ENERGY LTD

12 If a new site or for amendments to depots – see page 4 of Guidance Notes.

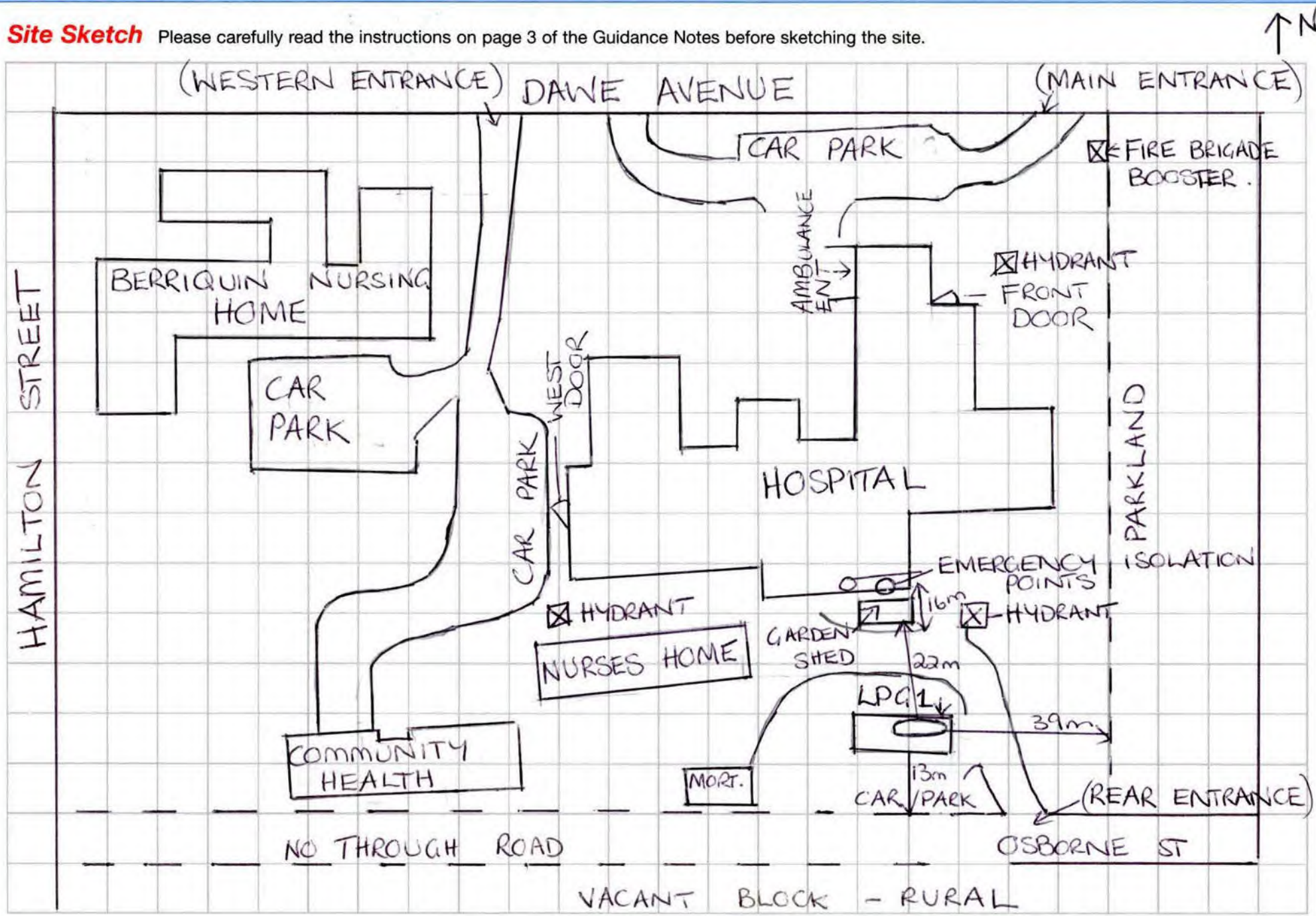
Plan stamped by:	Name of Accredited Consultant	Date stamped

I certify that the details in this application (including any accompanying computer disk) are correct and cover all licensable quantities of dangerous goods kept on the premises.

13 Signature of applicant	Printed name	Date
A. Luelf	A. LUELF	16/6/99

Please send your application, marked *CONFIDENTIAL*, to: **Dangerous Goods Licensing, WorkCover NSW, Level 3, GPO Box 5364, SYDNEY NSW 2001**

Site Sketch Please carefully read the instructions on page 3 of the Guidance Notes before sketching the site.



PART B See page 3 of the Guidance Notes

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
LPG1	ABOVE GROUND TANK	2.1	~~6000 litres~~ 7500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1075	Petroleum Gases, Liquefied	2.1	–	L.P. GAS	7500	L

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

UN Number	Proper S	PG	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

Spoke to Mrs Alison Lueff on 17/8/99, she confirmed that it is the same Tank & it is as before. 7500L storage capacity. 17/8/99

Depot Number	Typ

UN Number	Proper	e.g. m³

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

What is a depot? See page 5 of the Guidance Notes.

PART C – Dangerous Goods Storage *Complete one section per depot.*

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity
LPG1	ABOVE GROUND TANK	2.1	6000 litres. 7580 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³
1075	Petroleum Gases, Liquefied	2.1	—	L.P. GAS	7580 L	

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

Depot Number	Type of depot (see page 5)	Depot Class	Maximum storage capacity

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or common name	Typical quantity	Unit, e.g. L, kg, m³

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Telephone 370 5000 ALL MAIL TO LOCKED BAG 10, CLARENCE STREET SYDNEY 2000

Reference 35/001419

SCIENTIFIC SERVICES BRANCH
Dangerous Goods Licensing
ph. (02) 370 5187 fax (02) 370 6105

WORKCOVER
NEW SOUTH WALES

Attn: Marlene Stephens
MURRAY HEALTH SERVICE
FINLEY HOSPITAL
BOX 210 P O
FINLEY 2713

23 November 1995

Dear Sir or Madam,

RE: APPLICATION FOR LICENCE TO KEEP DANGEROUS GOODS
PREMISES: DAWE AVE , FINLEY 2713.

Thank you for your application for a licence to keep dangerous goods. When checking the application form it was found that it does not contain all the information that is required for a licence to be issued. The additional information required is indicated at the foot of the page.

Where applicable, guidelines outlining what is required are enclosed. Please read these guidance notes to help you fully complete your application. When the information is ready, please send it to the Dangerous Goods Licensing Section at the above address, quoting the above reference number (eg 35/0...).

If you need further information, or help in completing the form, please contact your local WorkCover office or dangerous goods licensing staff.

Thank you for your assistance.

Yours faithfully

P. Wall

for Senior Licensing Clerk, Dangerous Goods
encs.

The following is required to complete your application:

☐ site or applicant details as marked on the application form

☐ signature of applicant and date

☑ sketch of site (Part B) as per guidance notes enclosed

☑ full particulars of depots at the site - Part C *eg type of depot; amounts of dangerous goods in kg, litres or number (please specify); product being stored.* for depot 2.

☐ site plan stamped by a consultant accredited for all the dangerous goods classes at your site (list of accredited consultants enclosed).

THE NEW SOUTH WALES GOVERNMENT
Putting people first by managing better

PART A

WorkCover Authority

LICENCE TO KEEP DANGEROUS GOODS

(Dangerous Goods Act 1975)

Application for new licence, amendment or transfer

1. Name of applicant: MURRAY HEALTH SERVICE — ACN:

2. Site to be licensed — No: — Street: Dawe Avenue
   Sketch. Part C.

   Suburb/Town: FINLEY — Postcode: 2713

3. Previous licence number (if known): 35-001419 ?

4. Nature of site: HOSPITAL

5. Emergency contact on site:
   Phone: 058 831133 — Name: JOHN ANDERSON

6. Site staffing: Hours per day: 24 — Days per week: 7

7. Major supplier of dangerous goods: SPEED-E-GAS

8. If new site or significant modification
   Plan stamped by: — Accredited consultant's name: BORAL GAS NSW P/L — Date stamped: 24/4/91

9. Number of dangerous goods depots at site: 2

10. Trading name or occupier's name: FINLEY HOSPITAL

11. Postal address of applicant: PO BOX 210 — Suburb/Town: Finley — Postcode: 2713

12. Contact for licence enquiries:
    Phone: 058 831133 — Fax: 058 457 — Name: Marlene Stephens

I certify that the details contained in this application (or the accompanying computer disk) are true and correct

13. Signature of applicant: JFeg — Date: 28/8/95

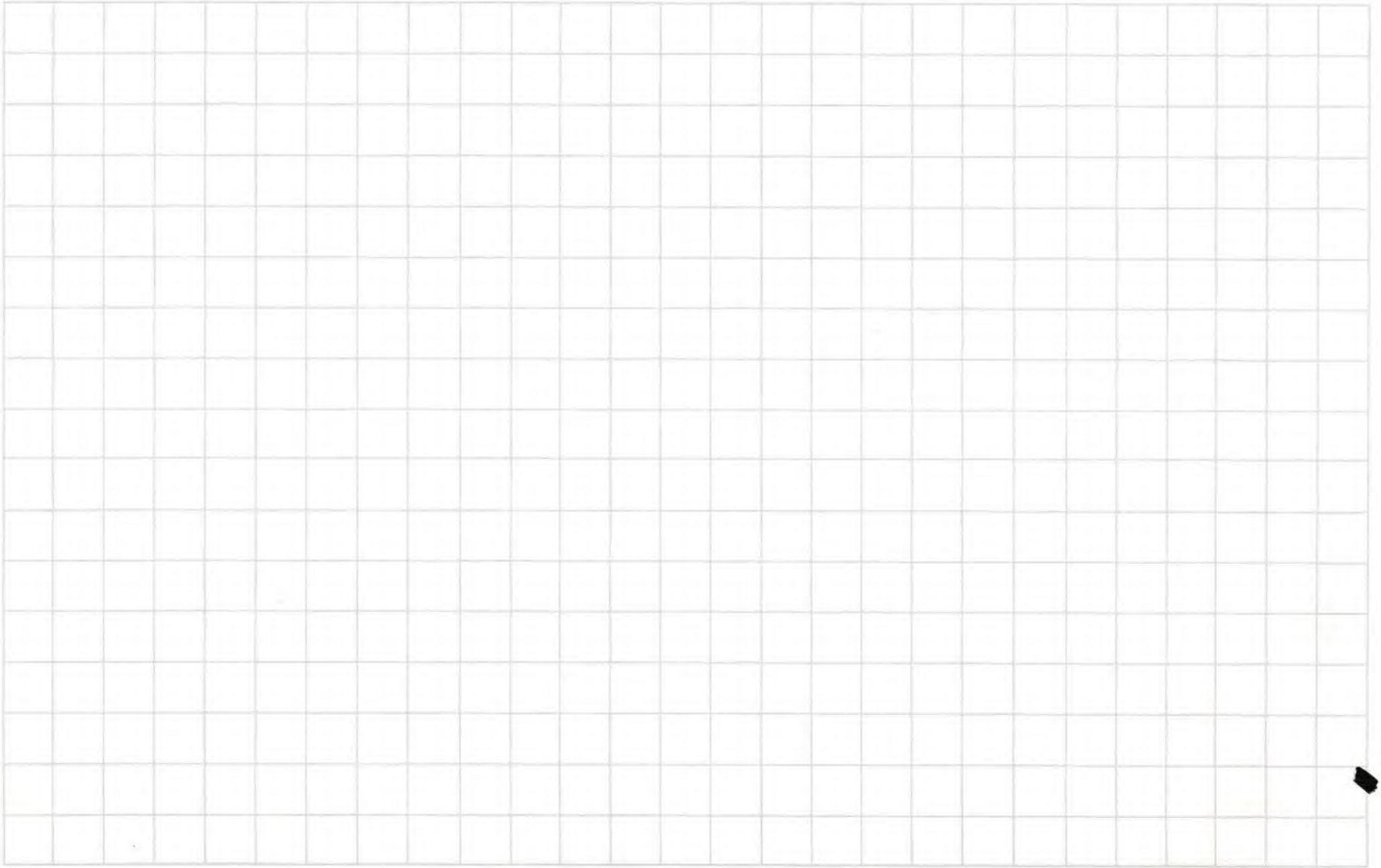
RECEIVED
13 OCT 1995
SCIENTIFIC SERVICES BRANCH

Please complete attached site sketch, depot listing and check sheet (if required) and return to WorkCover Authority in envelope provided.

Form DG1

Site Sketch

Please carefully read the instructions in Part B of the guide before sketching the site.



PART C

CHEMICAL STORAGE

Complete 1 section per depot

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot number	Type of depot	Class	Licensed maximum storage capacity
	139-4-3517 ABOVE GROUND TANK	2	7500 L

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
1075	PROPANE	2.1			LPG	7500	L

Depot number	Type of depot	Class	Licensed maximum storage capacity
2	FLAMMABLE LIQUIDS	8	20 m³

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
	—				—		

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Complete 1 section per depot

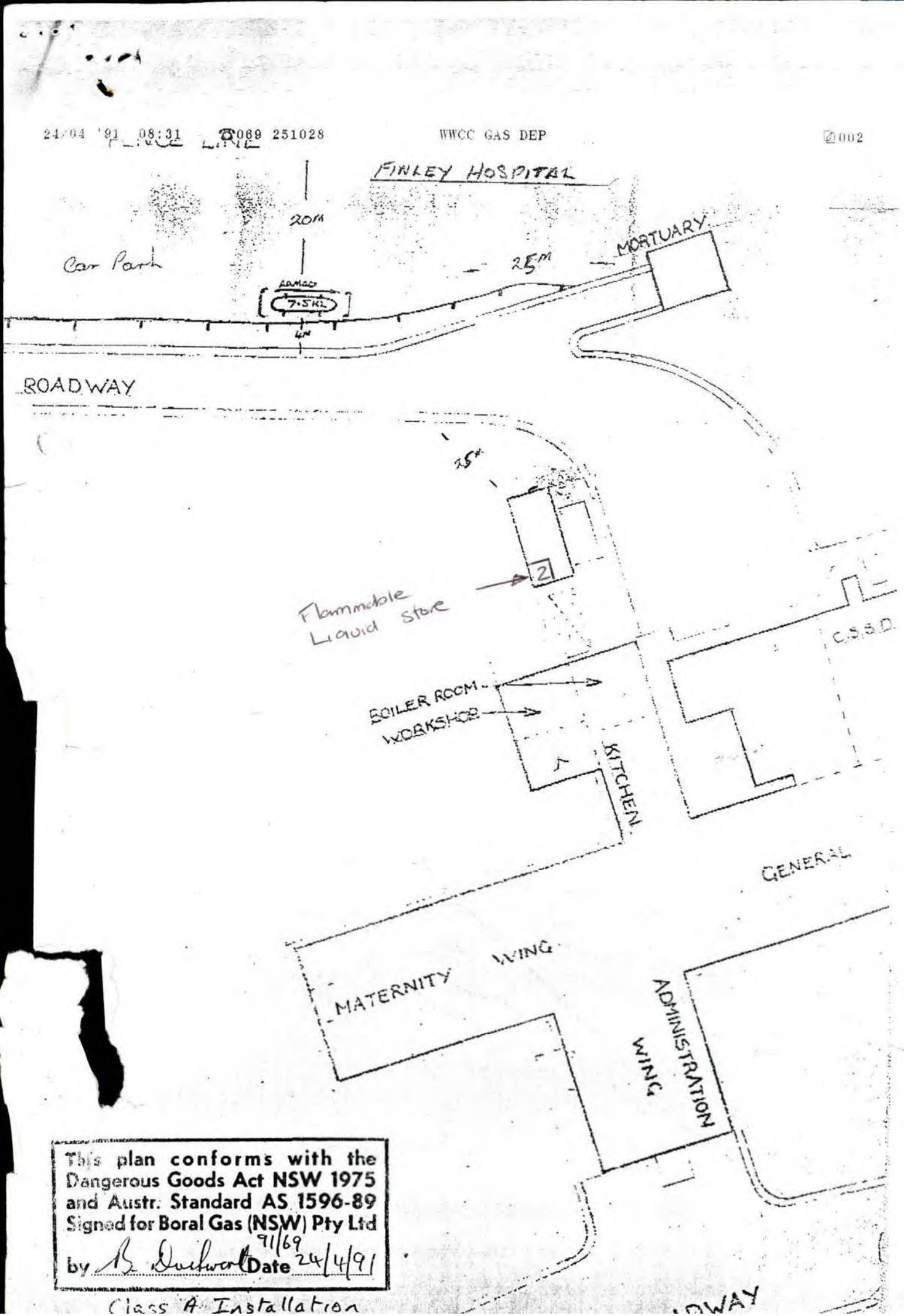
If you have more depots than the space provided, photocopy sufficient sheets first.

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m^3

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m^3



This plan conforms with the Dangerous Goods Act NSW 1975 and Austr. Standard AS 1596-89
Signed for Boral Gas (NSW) Pty Ltd
by B Duthward 91/69 Date 24/4/91

Class A Installation

THE FINLEY/TOCUMWAL
HEALTH SERVICE
3 - APR 1992

RECEIVED
- 6 APR 1992
SCIENTIFIC SERVICES
BRANCH

Reference [redacted]

WorkCover Authority

Chemical Safety Unit
Locked Bag 10, P O CLARENCE STREET NSW 2000
Ph. (02) 370 5191 OR (02) 370 5192

Licensee

FINLEY/TOCUMWAL HEALTH SERVICE
FINLEY HOSPITAL
BOX 210 P O
FINLEY 2713

25 MAR 1992

DANGEROUS GOODS BRANCH
- 9 APR 1992

Dear Sir/Madam,

RE **APPLICATION FOR RENEWAL** OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS

Our records indicate you hold licence number 35/001419 for keeping dangerous goods at DAWE AVE
FINLEY 2713.

Details of depots at site.

Depot No.	Depot type	Goods stored in depot	Quantity kg/litres/no.
1	ABOVEGROUND TANK	FLAMMABLE GASES	7 500 L

DATA
13 MAY 1992
ENTERED

This licence is now due for renewal. **TO RENEW YOUR LICENCE.** Please carefully check the details shown in this letter and make any required corrections. Then, **SIGN and DATE** the declaration below and return this letter to the WorkCover Authority, Chemical Safety Unit. **Fees for these licences have been abolished. DO NOT SEND ANY MONIES.**

Declaration: I wish to renew this licence to 15/04/93. I certify that the licence details shown in this letter are correct.

....
(Signature) (Date)

3.4.92

* All LICENSING ENQUIRES To Chemical Safety Unit ☎ (02) 370 5191 or (02) 370 5192

WOLLONGONG	(042) 26 9033	
WAGGA WAGGA	(069) 23 0692	
PORT MACQUARIE	(065) 84 1188	ST LEONARDS (02) 906 2055
ORANGE	(063) 61 7070	PARRAMATTA (02) 895 8600
NEWCASTLE	(049) 26 5400	HORSTVILLE (02) 380 0566

Dangerous Goods are divided into classes and an explanation is shown hereunder. Certain dangerous goods may be kept without a licence, providing the quantity of the goods does not exceed the amount specified in the exemptions listed below.

EXPLANATION OF DANGEROUS GOODS AND THEIR CLASSES

1.1	Blasting explosives (including detonators).
1.4	Safety cartridges and/or fireworks.
2.1	Flammable gases (e.g. L.P.G. or acetylene).
2.2, 2.3	Poisonous/cryogenic gases (e.g. ammonia, chlorine, liquid oxygen).
3.1, 3.2	Flammable liquids (e.g. any or all of, petrol, kerosene, methylated spirits, solvents).
3.3	Combustible liquids (e.g. distillate, diesel fuel, heating oil).
4	Flammable solids (e.g. nitro cellulose).
5	Oxidising substances (e.g. pool chlorine, ammonium nitrate).
6.1	(a) Poisons (e.g. sodium cyanide, pesticides); (b) Harmful substances (e.g. sodium fluorosilicate, pesticides, lead acetate).
6.2	Infectious substances (e.g. bacterial cultures).
7	Radioactive substances (storage of Class 7 is NOT covered by the Dangerous Goods Act, 1975).
8	Corrosives (e.g. hydrochloric acid, sulphuric acid, sodium hydroxide and sodium hypochlorite).

EXPLANATION OF DEPOT TYPES

Aboveground Tank	Aboveground or semi-buried tank.
Bulk Solids	Depot for bulk solid goods.
Cylinder Store	Gas cylinder store or decanting cylinders.
Magazine	External or internal explosive magazine.
Premises	Storage of safety cartridges in original packages.
Receptacle	Portable explosive receptacle (max qty 50kg).
Roofed Store	Roofed store of packaged dangerous goods includes flammable liquid cabinets and drum stores.
Roofless Store	Roofless store of packaged dangerous goods includes drum stores.
Underground tank	Underground tank

EXEMPTIONS FROM LICENCE

1. *Acetylene*: Storage of 60 cu.m or less of acetylene per premises (i.e. up to and including 8 x "G" class cylinders, the most common size of acetylene cylinder).
2. *Distillate, Diesel Fuel, Heating Oil*: Storage of 50,000 litres or less per tank.
3. *Petrol*: Storage of 100 litres or less per premises.
4. *Kerosene*: Storage of 1,000 litres or less per premises when stored aboveground.
5. *All dangerous goods of classes 6 and 8*: any quantity.

Please contact the WorkCover Authority, Chemical Safety Unit, for further exemptions.

OTHER WORKCOVER AUTHORITY OFFICES - Advice on Dangerous Goods* can also be obtained from the following offices.

	☎		☎
GOSFORD	(043) 24 3384	BANKSTOWN	(02) 707 2500
NEWCASTLE	(049) 26 5400	HURSTVILLE	(02) 580 0366

THE FINLEY/TOCUMWAL HEALTH SERVICE
3 - APR 1992

RECEIVED
- 6 APR 1992
SCIENTIFIC SERVICES BRANCH

Reference [redacted]

WorkCover Authority

Chemical Safety Unit
Locked Bag 10, P O CLARENCE STREET NSW 2000
Ph. (02) 370 5191 OR (02) 370 5192

Licensee

FINLEY/TOCUMWAL HEALTH SERVICE
FINLEY HOSPITAL
BOX 210 P O
FINLEY 2713

25 MAR 1992

DANGEROUS GOODS BRANCH
- 9 APR 1992

Dear Sir/Madam,

RE **APPLICATION FOR RENEWAL** OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS

Our records indicate you hold licence number 35/001419 for keeping dangerous goods at DAWE AVE
FINLEY 2713.

Details of depots at site.

Depot No.	Depot type	Goods stored in depot	Quantity kg/litres/no.
1	ABOVEGROUND TANK	FLAMMABLE GASES	7 500 L

DATA
13 MAY 1992
ENTERED

This licence is now due for renewal. **TO RENEW YOUR LICENCE.** Please carefully check the details shown in this letter and make any required corrections. Then, **SIGN and DATE** the declaration below and return this letter to the WorkCover Authority, Chemical Safety Unit. **Fees for these licences have been abolished. DO NOT SEND ANY MONIES.**

Declaration: I wish to renew this licence to 15/04/93. I certify that the licence details shown in this letter are correct.

....
(Signature) 3.4.92 *(Date)*

If you do not wish to renew the licence. Please provide the Chemical Safety Unit with a signed statement giving the reason why it is not to be renewed. If you have sold/vacated the site please provide the name and address of the new owner/occupier so we may contact them.

Yours faithfully

Chief Inspector of Dangerous Goods.

Licences may take some time to be issued. **Please DETACH THIS SECTION** and keep it with your previous licence expiring in 1992 as evidence that your site is licenced.

Licence number 35/001419 Expiry month: APRIL

Dangerous Goods are divided into classes and an explanation is shown hereunder. Certain dangerous goods may be kept without a licence, providing the quantity of the goods does not exceed the amount specified in the exemptions listed below.

EXPLANATION OF DANGEROUS GOODS AND THEIR CLASSES

1.1	Blasting explosives (including detonators).
1.4	Safety cartridges and/or fireworks.
2.1	Flammable gases (e.g. L.P.G. or acetylene).
2.2, 2.3	Poisonous/cryogenic gases (e.g. ammonia, chlorine, liquid oxygen).
3.1, 3.2	Flammable liquids (e.g. any or all of, petrol, kerosene, methylated spirits, solvents).
3.3	Combustible liquids (e.g. distillate, diesel fuel, heating oil).
4	Flammable solids (e.g. nitro cellulose).
5	Oxidising substances (e.g. pool chlorine, ammonium nitrate).
6.1	(a) Poisons (e.g. sodium cyanide, pesticides); (b) Harmful substances (e.g. sodium fluorosilicate, pesticides, lead acetate).
6.2	Infectious substances (e.g. bacterial cultures).
7	Radioactive substances (storage of Class 7 is NOT covered by the Dangerous Goods Act, 1975).
8	Corrosives (e.g. hydrochloric acid, sulphuric acid, sodium hydroxide and sodium hypochlorite).

EXPLANATION OF DEPOT TYPES

Aboveground Tank	Aboveground or semi-buried tank.
Bulk Solids	Depot for bulk solid goods.
Cylinder Store	Gas cylinder store or decanting cylinders.
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Premises	Storage of safety cartridges in original packages.
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Underground tank	Underground tank

EXEMPTIONS FROM LICENCE

1. *Acetylene*: Storage of 60 cu.m or less of acetylene per premises (i.e. up to and including 8 x "G" class cylinders, the most common size of acetylene cylinder).
2. *Distillate, Diesel Fuel, Heating Oil*: Storage of 50,000 litres or less per tank.
3. *Petrol*: Storage of 100 litres or less per premises.
4. *Kerosene*: Storage of 1,000 litres or less per premises when stored aboveground.
5. *All dangerous goods of classes 6 and 8*: any quantity.

Please contact the WorkCover Authority, Chemical Safety Unit, for further exemptions.

OTHER WORKCOVER AUTHORITY OFFICES - Advice on Dangerous Goods* can also be obtained from the following offices.

	☎		☎
GOSFORD	(043) 24 3384	BANKSTOWN	(02) 707 2500
NEWCASTLE	(049) 26 5400	HURSTVILLE	(02) 580 0366
ORANGE	(063) 61 7070	PARRAMATTA	(02) 895 8600
PORT MACQUARIE	(065) 84 1188	ST LEONARDS	(02) 906 2055
WAGGA WAGGA	(069) 23 0692		
WOLLONGONG	(042) 26 9033		

*** All LICENSING ENQUIRES To Chemical Safety Unit ☎ (02) 370 5191 or (02) 370 5192**

NIA .

C/R

35-001419.7

Form DGI

WORKCOVER AUTHORITY

DANGEROUS GOODS ACT, 1975

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE)*
FOR THE KEEPING OF DANGEROUS GOODS

LICENCE No. 35 001419

DANGEROUS GOODS BRANCH 16 MAY 1991

Dpil Exp.

(* Delete whichever is not required)

Name of Applicant in full (see Item 1 - Explanatory notes - page 4)	THE FINLEY/TOCUMWAL HEALTH SERVICE.
Trading name or occupier's name (if any) TF	THE FINLEY/TOCUMWAL HEALTH SERVICE.
Postal Address	PO BOX 210, FINLEY NSW Postcode 2713
Address of the premises to be licensed. (Including Street No.)	DAWE AVENUE, FINLEY NSW Postcode 2713
Nature of premises (See Item 2 - Explanatory notes - page 4)	HOSPITAL
Telephone number of applicant	STD Code (058) Number 831133

Particulars of type of depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (See item 3 - Explanatory notes - page 4)	Storage capacity	Dangerous goods: Product being stored	C & C Office use only
1	ABOVE GROUND CYLINDER	~~6000~~ LITRES 7500	L.P.G.	PD 001.100 1 100 75x2
2				
3				
4				
5				
6				
7				
8				D/E 19 JUL 1991
9				
10				
11				
12				

Has site plan been approved by the Dangerous Goods Branch? ~~Yes~~ No — If yes, no plans required. If no please attach site plan, or provide sketch plan overleaf.

Have premises previously been licensed? Yes ~~No~~ — If, yes, state name of previous occupier, and licence No. (if known)

Name of oil company supplying flammable liquid (if applicable).

Signature of applicant ..... Date 13/5/91

For external explosives magazine(s), please fill in page 3.

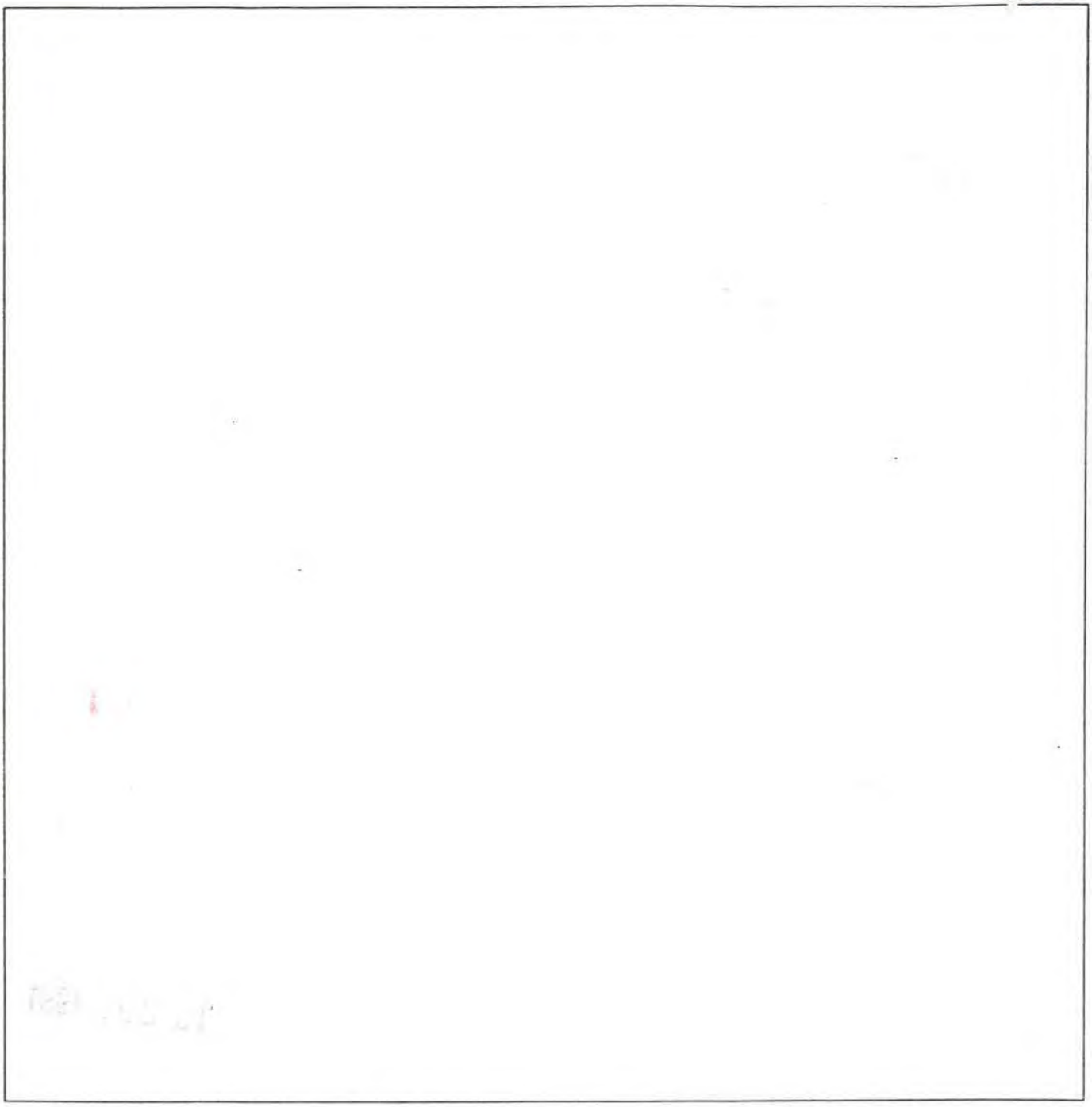
FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and ~~the~~ Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.

FJM 1.7.91

SKETCH PLAN OF SITE



Show positions of Depot(s) with:-

(1) distances from public places and protected works;

(2) street names;

(3) nature and details of adjacent properties.

LICENCE NO 35-00/419.7

FILE NO :

PROCEDURES

RETURN PLAN :

1) with letter and list of Consultants, plus D.G. 1 ( )

2) with D.G.1 (if plan approved by Consultant but not D.G.1) ( )

~~PROCESS PLAN :~~ ✓

1) to AA/DM for ~~stamp : SIGN~~ advice – We have a ( )
licence for the Findy Hospital, which has an a/g of LPG tanks for 1,000 –
~~On file~~ On plan the quantity is 7,5... – ( )

2) next L.C. on DG 1 it's 6000 – and is it ( )

3) next N.I.A. an a/g – or a cylinder store

OTHERS :

LICENCED AS A 7.5KL A/G LPG TANK.
1/7/91

Dated 20-5-91

LS

Plan Registration No. 323

PLANS SUBMITTED FOR APPROVAL

DETAILS OF FIRM SUBMITTING PLAN(S): DATE: 20/5/91

NAME: THE FINLEY /TOCUMWAL HEALTH SERVICE

ADDRESS: PO BOX 210

FINLEY 2713

NAME CONTACT: .....

PHONE: .....

Plans to be Mailed ( ) Picked Up ( ) (tick appropriate)

PLAN DETAILS: DRAWING NO.:

NAME OF COMPANY: AS ABOVE

ADDRESS OF LOCATION: DAWE AVENUE

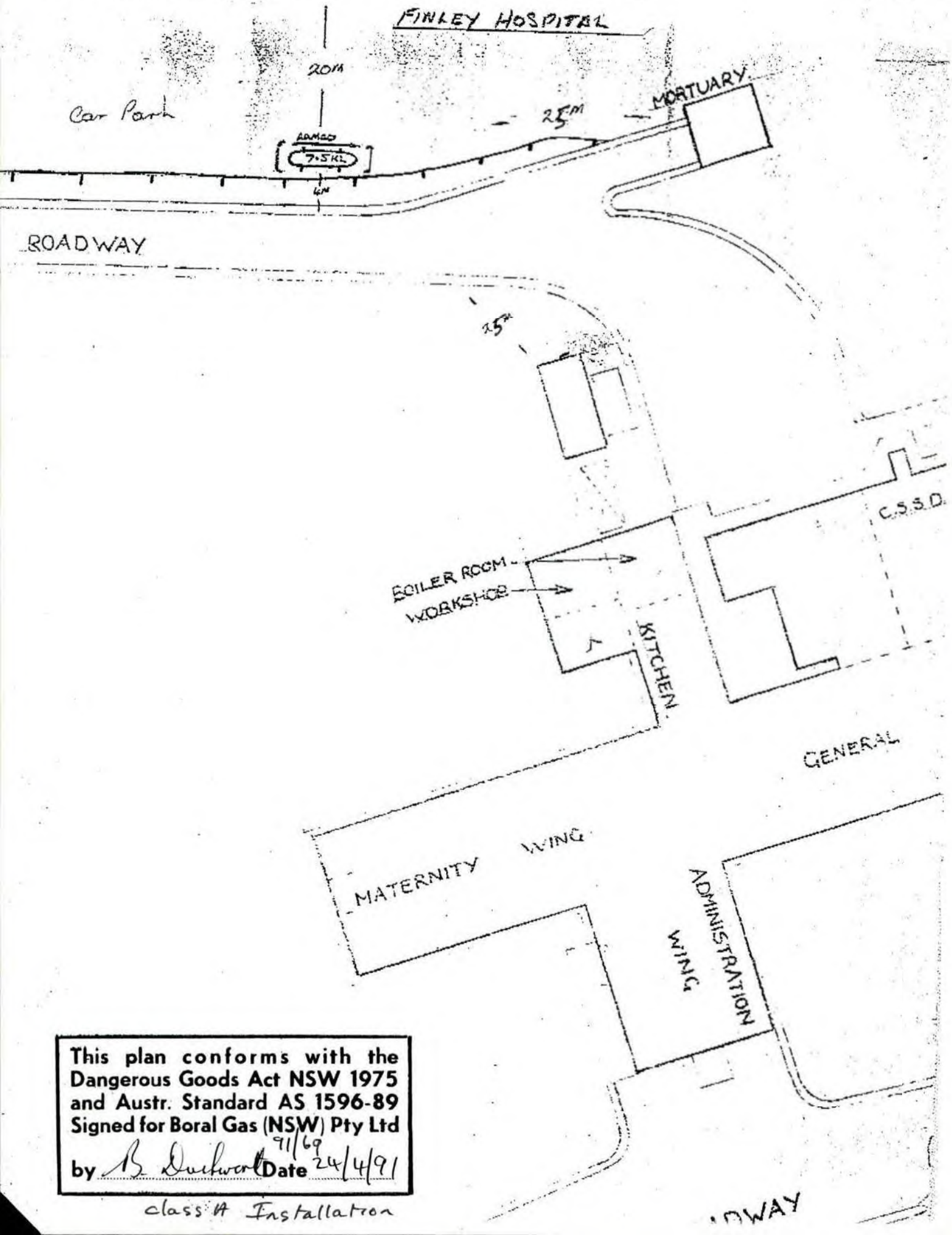
FINLEY 2713

TOWN OR CITY: .....

Approved ( ) Not Approved ( )

This form is to be kept with plan(s) until it is returned to records then is to be attached to file.

TYPE OF INSTALLATION APPROVED:	CAPACITY:
seen by FOM 1/7/91	
APPROVED BY:	DATE:



This plan conforms with the Dangerous Goods Act NSW 1975 and Austr. Standard AS 1596-89
Signed for Boral Gas (NSW) Pty Ltd
by B Duckworth 91/69 **Date** 24/4/91

class A Installation

Appendix C: Laboratory Results Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ABC:	Ambient Background Concentration
ACM:	Asbestos Containing Material
ADWG:	AustralianDrinking Water Guidelines
AF:	Asbestos Fines
ANZG	Australian and New Zealand Guidelines
B(a)P:	Benzo(a)pyrene
CEC:	Cation Exchange Capacity
CRC:	Cooperative Research Centre
CT:	Contaminant Threshold
EILs:	Ecological Investigation Levels
ESLs:	Ecological Screening Levels
FA:	Fibrous Asbestos
GIL:	Groundwater Investigation Levels
GSW:	General Solid Waste
HILs:	Health Investigation Levels
HSLs:	Health Screening Levels
HSL-SSA:	Health Screening Level-SiteSpecific Assessment
kg/L	kilograms per litre
NA:	Not Analysed
NC:	Not Calculated
NEPM:	National Environmental Protection Measure
NHMRC:	National Health and Medical Research Council
NL:	Not Limiting
NSL:	No Set Limit
OCP:	Organochlorine Pesticides
OPP:	Organophosphorus Pesticides
PAHs:	Polycyclic Aromatic Hydrocarbons
%w/w:	weight per weight
ppm:	Parts per million
PCBs:	Polychlorinated Biphenyls
PCE:	Perchloroethylene (Tetrachloroethylene or Teterachloroethene)
pH_{KCL} :	pH of filtered 1:20, 1M KCL extract, shaken overnight
pH_{ox} :	pH of filtered 1:20 1M KCl after peroxide digestion
PQL:	Practical Quantitation Limit
RS:	Rinsate Sample
RSL:	Regional Screening Levels
RSW:	Restricted Solid Waste
SAC:	Site Assessment Criteria
SCC:	Specific Contaminant Concentration
S_{Cr}:	Chromium reducible sulfur
S_{POS}:	Peroxide oxidisable Sulfur
SSA:	Site Specific Assessment
SSHSLs:	Site Specific Health Screening Levels
TAA:	Total Actual Acidity in 1M KCL extract titrated to pH6.5
TB:	Trip Blank
TCA:	1,1,1 Trichloroethane (methyl chloroform)
TCE:	Trichloroethylene (Trichloroethene)
TCLP:	Toxicity Characteristics Leaching Procedure
TPA:	Total Potential Acidity, 1M KCL peroxide digest
TS:	Trip Spike
TRH:	Total Recoverable Hydrocarbons
TSA:	Total Sulfide Acidity (TPA-TAA)
UCL:	Upper Level Confidence Limit on Mean Valu
USEPA	United States Environmental Protection Agency
VOCC:	Volatile Organic Chlorinated Compounds
WHO:	World Health Organisation

Table Specific Explanations:

HIL Tables:

- The chromium results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.
- Carcinogenic PAHs is a toxicity weighted sum of analyte concentrations for a specific list of PAH compounds relative to B(a)P. It is also refered to as the B(a)P Toxic Equivalence Quotient (TEQ).
- Statistical calculations are undertaken using ProUCL (USEPA). Statistical calculation is usually undertaken using data from fill samples.

EIL/ESL Table:

- ABC Values for selected metals have been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with low traffic have been quoted).

Waste Classification and TCLP Table:

- Data assessed using the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014).
- The assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenitrothion, Ethion, Malathion and Parathion.
- Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde.

QA/QC Table:

- Field blank, Inter and Intra laboratory duplicate results are reported in mg/kg.
- Trip spike results are reported as percentage recovery.
- Field rinsate results are reported in µg/L.

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-A: 'Residential with garden/accessible soils; children's day care centers; preschools; and primary schools'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos		
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC)			100	20	100	6000	300	40	400	7400	300	3	10	270	300	6	50	240	6	160	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH1	0-0.2	F: Silty Clay	**4**	<0.4	**18**	**13**	**13**	<0.1	**9**	**27**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH1 - [LAB_DUP]	0-0.2	Laboratory Duplicate	**4**	<0.4	**18**	**12**	**13**	<0.1	**10**	**26**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH1	0.3-0.5	Silty Clay	**4**	<0.4	**25**	**16**	**16**	<0.1	**12**	**24**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH1	1.3-1.5	Silty Clay	**7**	<0.4	**27**	**21**	**16**	<0.1	**15**	**40**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH2	0-0.2	F: Silty Clay	<4	<0.4	**16**	**12**	**11**	<0.1	**9**	**21**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH2	1-1.4	Silty Clay	**7**	<0.4	**29**	**21**	**17**	<0.1	**17**	**42**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH3	0-0.2	F: Silty Clay	<4	<0.4	**14**	**9**	**11**	<0.1	**8**	**49**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	0.3-0.5	Silty Clay	<4	<0.4	**18**	**11**	**8**	<0.1	**11**	**19**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4	0-0.2	F: Clayey Silt	<4	<0.4	**14**	**11**	**8**	<0.1	**9**	**37**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH4	0.3-0.5	Silty Clay	**5**	<0.4	**25**	**15**	**12**	<0.1	**17**	**23**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH5	0-0.2	F: Silty Sand	**5**	<0.4	**10**	**9**	**7**	<0.1	**6**	**26**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH5	0.3-0.5	Silty Clay	<4	<0.4	**20**	**12**	**11**	<0.1	**12**	**22**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH6	0-0.5	Sandy Silty Clay	**5**	<0.4	**28**	**20**	**15**	<0.1	**17**	**36**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH6 - [LAB_DUP]	0-0.5	Laboratory Duplicate	**5**	<0.4	**28**	**20**	**16**	<0.1	**16**	**37**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH7	0-0.2	F: Sandy Silty Clay	**5**	<0.4	**11**	**15**	**7**	<0.1	**11**	**65**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH7	0.2-0.7	Sandy Silty Clay	**5**	<0.4	**25**	**22**	**14**	<0.1	**27**	**46**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH8	0-0.2	F: Silty Clay	<4	<0.4	**23**	**15**	**16**	<0.1	**14**	**31**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH8	0.8-1	Sandy Silty Clay	**6**	<0.4	**28**	**29**	**16**	<0.1	**20**	**66**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH9	0-0.2	F: Sandy Silt	<4	<0.4	**18**	**14**	**12**	<0.1	**11**	**42**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH9	0.5-0.9	Silty Clay	**6**	<0.4	**26**	**28**	**14**	<0.1	**20**	**71**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP10	0-0.2	F: Silty Clay	<4	<0.4	**16**	**10**	**11**	<0.1	**8**	**24**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP10 - [LAB_DUP]	0-0.2	Laboratory Duplicate	<4	<0.4	**16**	**10**	**10**	<0.1	**8**	**23**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
TP10	0.3-0.6	Silty Clay	**5**	<0.4	**23**	**17**	**12**	<0.1	**14**	**25**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP11	0-0.2	F: Silty Clay	<4	<0.4	**18**	**12**	**11**	<0.1	**9**	**24**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP11	0.4-0.6	Silty Clay	**7**	<0.4	**30**	**25**	**16**	<0.1	**19**	**47**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP12	0-0.2	F: Silty Clay	<4	<0.4	**11**	**8**	**7**	<0.1	**6**	**22**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
TP12	0.5-0.7	F: Silty Clay	**6**	<0.4	**31**	**18**	**16**	<0.1	**18**	**32**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP1	0-0.2	Duplicate of BH1	**5**	<0.4	**21**	**14**	**15**	<0.1	**11**	**31**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP2	0-0.2	Duplicate of BH3	<4	<0.4	**17**	**11**	**11**	<0.1	**9**	**56**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP3	0-0.2	Duplicate of BH2	<4	<0.4	**18**	**13**	**10**	<0.1	**10**	**21**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP3 - [LAB_DUP]	0-0.2	Laboratory Duplicate	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	<0.1	NA	NA
SDUP4	0-0.2	Duplicate of BH4	<4	<0.4	**13**	**11**	**7**	<0.1	**8**	**34**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Number of Samples			31	31	31	31	31	31	31	31	32	32	17	17	17	17	17	17	17	18	17	12
Maximum Value			7	<PQL	31	29	17	<PQL	27	71	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Not Detected

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**

TABLE S2
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH1	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH1 - [LAB_DUP]	0-0.2	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH1	0.3-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH1	1.3-1.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH2	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH2	1-1.4	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH3	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH3	0.3-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH4	0-0.2	F: Clayey Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH4	0.3-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH5	0-0.2	F: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH5	0.3-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
BH6	0-0.5	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH6 - [LAB_DUP]	0-0.5	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
BH7	0-0.2	F: Sandy Silty Clay	0m to <1m	Sand	<25	**130**	<0.2	<0.5	<1	<1	<1	0
BH7	0.2-0.7	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH8	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH8	0.8-1	Sandy Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH9	0-0.2	F: Sandy Silt	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
BH9	0.5-0.9	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
TP10	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
TP10 - [LAB_DUP]	0-0.2	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
TP10	0.3-0.6	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.9
TP11	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
TP11	0.4-0.6	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.4
TP12	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
TP12	0.5-0.7	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
SDUP1	0-0.2	Duplicate of BH1	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0-0.2	Duplicate of BH3	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP3	0-0.2	Duplicate of BH2	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP3 - [LAB_DUP]	0-0.2	Laboratory Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP4	0-0.2	Duplicate of BH4	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples					32	32	32	32	32	32	32	24
Maximum Value					<PQL	130	<PQL	<PQL	<PQL	<PQL	<PQL	2.4

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**
The guideline corresponding to the concentration above the SAC is highlighted in grey in the Site Assessment Criteria Table below

HSL SOIL ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
BH1	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1 - [LAB_DUP]	0-0.2	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1	0.3-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1	1.3-1.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	1-1.4	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0.3-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0-0.2	F: Clayey Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0.3-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH5	0-0.2	F: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH5	0.3-0.5	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0-0.5	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6 - [LAB_DUP]	0-0.5	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7	0-0.2	F: Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7	0.2-0.7	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH8	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH8	0.8-1	Sandy Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH9	0-0.2	F: Sandy Silt	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH9	0.5-0.9	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP10	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP10 - [LAB_DUP]	0-0.2	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP10	0.3-0.6	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP11	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP11	0.4-0.6	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP12	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
TP12	0.5-0.7	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP1	0-0.2	Duplicate of BH1	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP2	0-0.2	Duplicate of BH3	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP3	0-0.2	Duplicate of BH2	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP3 - [LAB_DUP]	0-0.2	Laboratory Duplicate	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP4	0-0.2	Duplicate of BH4	0m to <1m	Sand	45	110	0.5	160	55	40	3

TABLE S3
SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS
All data in mg/kg unless stated otherwise

			C_6-C_{10} (F1) plus BTEX	$>C_{10}$-C_{16} (F2) plus napthalene	$>C_{16}$-C_{34} (F3)	$>C_{34}$-C_{40} (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			**RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE**			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH1	0-0.2	Coarse	<25	<50	**190**	<100
BH1 - [LAB_DUP]	0-0.2	Coarse	<25	<50	**330**	<100
BH1	0.3-0.5	Coarse	<25	<50	<100	<100
BH1	1.3-1.5	Coarse	<25	<50	<100	<100
BH2	0-0.2	Coarse	<25	<50	<100	<100
BH2	1-1.4	Coarse	<25	<50	<100	<100
BH3	0-0.2	Coarse	<25	<50	<100	<100
BH3	0.3-0.5	Coarse	<25	<50	<100	<100
BH4	0-0.2	Coarse	<25	<50	<100	<100
BH4	0.3-0.5	Coarse	<25	<50	<100	<100
BH5	0-0.2	Coarse	<25	<50	<100	<100
BH5	0.3-0.5	Coarse	<25	<50	<100	<100
BH6	0-0.5	Coarse	<25	<50	<100	<100
BH6 - [LAB_DUP]	0-0.5	Coarse	<25	<50	<100	<100
BH7	0-0.2	Coarse	<25	**130**	**540**	**350**
BH7	0.2-0.7	Coarse	<25	<50	<100	<100
BH8	0-0.2	Coarse	<25	<50	<100	<100
BH8	0.8-1	Coarse	<25	<50	<100	<100
BH9	0-0.2	Coarse	<25	<50	**160**	<100
BH9	0.5-0.9	Coarse	<25	<50	<100	<100
TP10	0-0.2	Coarse	<25	<50	<100	<100
TP10 - [LAB_DUP]	0-0.2	Coarse	<25	<50	<100	<100
TP10	0.3-0.6	Coarse	<25	<50	<100	<100
TP11	0-0.2	Coarse	<25	<50	<100	<100
TP11	0.4-0.6	Coarse	<25	<50	<100	<100
TP12	0-0.2	Coarse	<25	<50	<100	<100
TP12	0.5-0.7	Coarse	<25	<50	<100	<100
SDUP1	0-0.2	Coarse	<25	<50	**150**	<100
SDUP2	0-0.2	Coarse	<25	<50	<100	<100
SDUP3	0-0.2	Coarse	<25	<50	<100	<100
SDUP3 - [LAB_DUP]	0-0.2	Coarse	<25	<50	<100	<100
SDUP4	0-0.2	Coarse	<25	<50	<100	<100
Total Number of Samples			32	32	32	32
Maximum Value			<PQL	130	540	350

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**

MANAGEMENT LIMIT ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Soil Texture**	C_6-C_{10} (F1) plus BTEX	$>C_{10}$-C_{16} (F2) plus napthalene	$>C_{16}$-C_{34} (F3)	$>C_{34}$-C_{40} (F4)
BH1	0-0.2	Coarse	700	1000	2500	10000
BH1 - [LAB_DUP]	0-0.2	Coarse	700	1000	2500	10000
BH1	0.3-0.5	Coarse	700	1000	2500	10000
BH1	1.3-1.5	Coarse	700	1000	2500	10000
BH2	0-0.2	Coarse	700	1000	2500	10000
BH2	1-1.4	Coarse	700	1000	2500	10000
BH3	0-0.2	Coarse	700	1000	2500	10000
BH3	0.3-0.5	Coarse	700	1000	2500	10000
BH4	0-0.2	Coarse	700	1000	2500	10000
BH4	0.3-0.5	Coarse	700	1000	2500	10000
BH5	0-0.2	Coarse	700	1000	2500	10000
BH5	0.3-0.5	Coarse	700	1000	2500	10000
BH6	0-0.5	Coarse	700	1000	2500	10000
BH6 - [LAB_DUP]	0-0.5	Coarse	700	1000	2500	10000
BH7	0-0.2	Coarse	700	1000	2500	10000
BH7	0.2-0.7	Coarse	700	1000	2500	10000
BH8	0-0.2	Coarse	700	1000	2500	10000
BH8	0.8-1	Coarse	700	1000	2500	10000
BH9	0-0.2	Coarse	700	1000	2500	10000
BH9	0.5-0.9	Coarse	700	1000	2500	10000
TP10	0-0.2	Coarse	700	1000	2500	10000
TP10 - [LAB_DUP]	0-0.2	Coarse	700	1000	2500	10000
TP10	0.3-0.6	Coarse	700	1000	2500	10000
TP11	0-0.2	Coarse	700	1000	2500	10000
TP11	0.4-0.6	Coarse	700	1000	2500	10000
TP12	0-0.2	Coarse	700	1000	2500	10000
TP12	0.5-0.7	Coarse	700	1000	2500	10000
SDUP1	0-0.1	Coarse	700	1000	2500	10000
SDUP2	0-0.1	Coarse	700	1000	2500	10000
SDUP3	0-0.1	Coarse	700	1000	2500	10000
SDUP3 - [LAB_DUP]	0-0.1	Coarse	700	1000	2500	10000
SDUP4	0-0.2	Coarse	700	1000	2500	10000

TABLE S4
SOIL LABORATORY RESULTS COMPARED T0 DIRECT CONTACT CRITERIA
All data in mg/kg unless stated otherwise

Analyte		C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		4,400	3,300	4,500	6,300	100	14,000	4,500	12,000	1,400	
Site Use		**RESIDENTIAL WITH ACCESSIBLE SOIL- DIRECT SOIL CONTACT**									
Sample Reference	**Sample Depth**										
BH1	0-0.2	<25	<50	**190**	<100	<0.2	<0.5	<1	<1	<1	0
BH1 - [LAB_DUP]	0-0.2	<25	<50	**330**	<100	<0.2	<0.5	<1	<1	<1	NA
BH1	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH1	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH2	1-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH3	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH3	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH4	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH4	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**
BH5	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.1**
BH5	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
BH6	0-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH6 - [LAB_DUP]	0-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
BH7	0-0.2	<25	**130**	**540**	**350**	<0.2	<0.5	<1	<1	<1	0
BH7	0.2-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH8	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH8	0.8-1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH9	0-0.2	<25	<50	**160**	<100	<0.2	<0.5	<1	<1	<1	0
BH9	0.5-0.9	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
TP10	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
TP10 - [LAB_DUP]	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
TP10	0.3-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.9**
TP11	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
TP11	0.4-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.4**
TP12	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
TP12	0.5-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
SDUP1	0-0.2	<25	<50	**150**	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP3	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP3 - [LAB_DUP]	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP4	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples		32	32	32	32	32	32	32	32	32	24
Maximum Value		<PQL	130	540	350	<PQL	<PQL	<PQL	<PQL	<PQL	2.4

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**

TABLE S5
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL-A: Residential with garden/accessible soils; children's day care centers; preschools; and primary schools

FIELD DATA															LABORATORY DATA											
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
SAC			**No**					**0.01**			**0.001**			**0.001**											**0.01**	**0.001**
9/05/2023	BH1	0-0.2	No	10	10,750	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH1	0-0.2	594.57	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
9/05/2023	BH2	0-0.2	No	10	10,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH2	0-0.2	622.63	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
9/05/2023	BH3	0-0.2	No	10	10,480	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH3	0-0.2	708.16	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
9/05/2023	BH4	0-0.2	No	10	10,120	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH4	0-0.2	684.4	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
10/05/2023	BH5	0-0.2	No	10	11,450	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH5	0-0.2	664.72	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/05/2023	BH6	0-0.1	No	10	15,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH6	0-0.5	679.27	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/05/2023	BH6	0.1-0.5	NA	10	11,450	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/05/2023	BH7	0-0.2	No	10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH7	0-0.2	548.24	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
8/05/2023	BH7	0.2-0.7	NA	5	6,010	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/05/2023	BH7	0.7-1	NA	10	10,110	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8/05/2023	BH8	0-0.2	No	10	10,660	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH8	0-0.2	654.34	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
10/05/2023	BH9	0-0.2	No	10	10,010	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	BH9	0-0.2	799.77	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/05/2023	TP10	0-0.2	No	10	10,410	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	TP10	0-0.2	409.01	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/05/2023	TP10	0.2-0.3	NA	10	10,270	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2023	TP11	0-0.2	No	10	10,710	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	TP11	0-0.2	664.01	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/05/2023	TP11	0.4-0.6	NA	10	10,470	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11/05/2023	TP12	0-0.2	No	10	11,040	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	323127	TP12	0-0.2	521.44	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
11/05/2023	TP12	0.5-0.7	NA	10	10,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Concentration above the SAC **VALUE**

Update textures based on actual descriptions.

JKEnvironments

TABLE S6
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																		
							AGED HEAVY METALS-EILs						EILs		ESLs							
				pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	8	18	104	5	77	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																			
BH1	0-0.2	F: Silty Clay	Fine	NA	NA	NA	**4**	**18**	**13**	**13**	**9**	**27**	<1	<0.1	<25	<50	**190**	<100	<0.2	<0.5	<1	<1	<0.05
BH1 - [LAB_DUP]	0-0.2	Laboratory Duplicate	Fine	NA	NA	NA	**4**	**18**	**12**	**13**	**10**	**26**	<1	<0.1	<25	<50	**330**	<100	<0.2	<0.5	<1	<1	<0.05
BH1	0.3-0.5	Silty Clay	Fine	NA	NA	NA	**4**	**25**	**16**	**16**	**12**	**24**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH1	1.3-1.5	Silty Clay	Fine	NA	NA	NA	**7**	**27**	**21**	**16**	**15**	**40**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH2	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**16**	**12**	**11**	**9**	**21**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH2	1-1.4	Silty Clay	Fine	NA	NA	NA	**7**	**29**	**21**	**17**	**17**	**42**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**14**	**9**	**11**	**8**	**49**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0.3-0.5	Silty Clay	Fine	NA	NA	NA	<4	**18**	**11**	**8**	**11**	**19**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH4	0-0.2	F: Clayey Silt	Fine	NA	NA	NA	<4	**14**	**11**	**8**	**9**	**37**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH4	0.3-0.5	Silty Clay	Fine	NA	NA	NA	**5**	**25**	**15**	**12**	**17**	**23**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH5	0-0.2	F: Silty Sand	Coarse	NA	NA	NA	**5**	**10**	**9**	**7**	**6**	**26**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH5	0.3-0.5	Silty Clay	Fine	NA	NA	NA	<4	**20**	**12**	**11**	**12**	**22**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0-0.5	Sandy Silty Clay	Fine	NA	NA	NA	**5**	**28**	**20**	**15**	**17**	**36**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6 - [LAB_DUP]	0-0.5	Laboratory Duplicate	Fine	NA	NA	NA	**5**	**28**	**20**	**16**	**16**	**37**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7	0-0.2	F: Sandy Silty Clay	Fine	NA	NA	NA	**5**	**11**	**15**	**7**	**11**	**65**	<1	<0.1	<25	**130**	**540**	**350**	<0.2	<0.5	<1	<1	<0.05
BH7	0.2-0.7	Sandy Silty Clay	Fine	NA	NA	NA	**5**	**25**	**22**	**14**	**27**	**46**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH8	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**23**	**15**	**16**	**14**	**31**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH8	0.8-1	Sandy Silty Clay	Fine	NA	NA	NA	**6**	**28**	**29**	**16**	**20**	**66**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH9	0-0.2	F: Sandy Silt	Fine	NA	NA	NA	<4	**18**	**14**	**12**	**11**	**42**	<1	<0.1	<25	<50	**160**	<100	<0.2	<0.5	<1	<1	<0.05
BH9	0.5-0.9	Silty Clay	Fine	NA	NA	NA	**6**	**26**	**28**	**14**	**20**	**71**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP10	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**16**	**10**	**11**	**8**	**24**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP10 - [LAB_DUP]	0-0.2	Laboratory Duplicate	Fine	NA	NA	NA	<4	**16**	**10**	**10**	**8**	**23**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP10	0.3-0.6	Silty Clay	Fine	NA	NA	NA	**5**	**23**	**17**	**12**	**14**	**25**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP11	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**18**	**12**	**11**	**9**	**24**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP11	0.4-0.6	Silty Clay	Fine	NA	NA	NA	**7**	**30**	**25**	**16**	**19**	**47**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP12	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**11**	**8**	**7**	**6**	**22**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP12	0.5-0.7	F: Silty Clay	Fine	NA	NA	NA	**6**	**31**	**18**	**16**	**18**	**32**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP1	0-0.2	Duplicate of BH1	Fine	NA	NA	NA	**5**	**21**	**14**	**15**	**11**	**31**	<1	<0.1	<25	<50	**150**	<100	<0.2	<0.5	<1	<1	<0.05
SDUP2	0-0.2	Duplicate of BH3	Fine	NA	NA	NA	<4	**17**	**11**	**11**	**9**	**56**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP3	0-0.2	Duplicate of BH2	Fine	NA	NA	NA	<4	**18**	**13**	**10**	**10**	**21**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP3 - [LAB_DUP]	0-0.2	Laboratory Duplicate	Fine	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP4	0-0.2	Duplicate of BH4	Fine	NA	NA	NA	<4	**13**	**11**	**7**	**8**	**34**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
Total Number of Samples				0	0	0	31	31	31	31	31	31	32	17	32	32	32	32	32	32	32	32	32
Maximum Value				NA	NA	NA	7	31	29	17	27	71	<PQL	<PQL	<PQL	130	540	350	<PQL	<PQL	<PQL	<PQL	<PQL

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**	pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
BH1	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH1 - [LAB_DUP]	0-0.2	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH1	0.3-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH1	1.3-1.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH2	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH2	1-1.4	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH3	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH3	0.3-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH4	0-0.2	F: Clayey Silt	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH4	0.3-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH5	0-0.2	F: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH5	0.3-0.5	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH6	0-0.5	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH6 - [LAB_DUP]	0-0.5	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH7	0-0.2	F: Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH7	0.2-0.7	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH8	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH8	0.8-1	Sandy Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH9	0-0.2	F: Sandy Silt	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH9	0.5-0.9	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP10	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP10 - [LAB_DUP]	0-0.2	Laboratory Duplicate	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP10	0.3-0.6	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP11	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP11	0.4-0.6	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
TP12	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
TP12	0.5-0.7	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP1	0-0.2	Duplicate of BH1	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP2	0-0.2	Duplicate of BH3	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
SDUP3	0-0.2	Duplicate of BH2	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP3 - [LAB_DUP]	0-0.2	Laboratory Duplicate	Fine	NA	NA	NA	--	--	--	--	--	--	170	--	180	120	1300	5600	65	105	125	45	20
SDUP4	0-0.2	Duplicate of BH4	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20

TABLE S7
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful	Total Scheduled	PCBs	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	50	50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	50	50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	50	50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	50	50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
BH1	0-0.2	F: Silty Clay	**4**	<0.4	**18**	**13**	**13**	<0.1	**9**	**27**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	**140**	<100	**140**	<0.2	<0.5	<1	<1	Not Detected
BH1 - [LAB_DUP]	0-0.2	Laboratory Duplicate	**4**	<0.4	**18**	**12**	**13**	<0.1	**10**	**26**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	**270**	**110**	**380**	<0.2	<0.5	<1	<1	NA
BH1	0.3-0.5	Silty Clay	**4**	<0.4	**25**	**16**	**16**	<0.1	**12**	**24**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH1	1.3-1.5	Silty Clay	**7**	<0.4	**27**	**21**	**16**	<0.1	**15**	**40**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH2	0-0.2	F: Silty Clay	<4	<0.4	**16**	**12**	**11**	<0.1	**9**	**21**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH2	1-1.4	Silty Clay	**7**	<0.4	**29**	**21**	**17**	<0.1	**17**	**42**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH3	0-0.2	F: Silty Clay	<4	<0.4	**14**	**9**	**11**	<0.1	**8**	**49**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH3	0.3-0.5	Silty Clay	<4	<0.4	**18**	**11**	**8**	<0.1	**11**	**19**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0-0.2	F: Clayey Silt	<4	<0.4	**14**	**11**	**8**	<0.1	**9**	**37**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH4	0.3-0.5	Silty Clay	**5**	<0.4	**25**	**15**	**12**	<0.1	**17**	**23**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH5	0-0.2	F: Silty Sand	**5**	<0.4	**10**	**9**	**7**	<0.1	**6**	**26**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH5	0.3-0.5	Silty Clay	<4	<0.4	**20**	**12**	**11**	<0.1	**12**	**22**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH6	0-0.5	Sandy Silty Clay	**5**	<0.4	**28**	**20**	**15**	<0.1	**17**	**36**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH6 - [LAB_DUP]	0-0.5	Laboratory Duplicate	**5**	<0.4	**28**	**20**	**16**	<0.1	**16**	**37**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH7	0-0.2	F: Sandy Silty Clay	**5**	<0.4	**11**	**15**	**7**	<0.1	**11**	**65**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	**85**	**370**	**360**	**815**	<0.2	<0.5	<1	<1	Not Detected
BH7	0.2-0.7	Sandy Silty Clay	**5**	<0.4	**25**	**22**	**14**	<0.1	**27**	**46**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH8	0-0.2	F: Silty Clay	<4	<0.4	**23**	**15**	**16**	<0.1	**14**	**31**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH8	0.8-1	Sandy Silty Clay	**6**	<0.4	**28**	**29**	**16**	<0.1	**20**	**66**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH9	0-0.2	F: Sandy Silt	<4	<0.4	**18**	**14**	**12**	<0.1	**11**	**42**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	**110**	**110**	<0.2	<0.5	<1	<1	Not Detected
BH9	0.5-0.9	Silty Clay	**6**	<0.4	**26**	**28**	**14**	<0.1	**20**	**71**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP10	0-0.2	F: Silty Clay	<4	<0.4	**16**	**10**	**11**	<0.1	**8**	**24**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP10 - [LAB_DUP]	0-0.2	Laboratory Duplicate	<4	<0.4	**16**	**10**	**10**	<0.1	**8**	**23**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP10	0.3-0.6	Silty Clay	**5**	<0.4	**23**	**17**	**12**	<0.1	**14**	**25**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP11	0-0.2	F: Silty Clay	<4	<0.4	**18**	**12**	**11**	<0.1	**9**	**24**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP11	0.4-0.6	Silty Clay	**7**	<0.4	**30**	**25**	**16**	<0.1	**19**	**47**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP12	0-0.2	F: Silty Clay	<4	<0.4	**11**	**8**	**7**	<0.1	**6**	**22**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP12	0.5-0.7	F: Silty Clay	**6**	<0.4	**31**	**18**	**16**	<0.1	**18**	**32**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP1	0-0.2	Duplicate of BH1	**5**	<0.4	**21**	**14**	**15**	<0.1	**11**	**31**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	**120**	<100	**120**	<0.2	<0.5	<1	<1	NA
SDUP2	0-0.2	Duplicate of BH3	<4	<0.4	**17**	**11**	**11**	<0.1	**9**	**56**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP3	0-0.2	Duplicate of BH2	<4	<0.4	**18**	**13**	**10**	<0.1	**10**	**21**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP3 - [LAB_DUP]	0-0.2	Laboratory Duplicate	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	<0.05	NA	<0.1	<0.1	<0.1	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP4	0-0.2	Duplicate of BH4	<4	<0.4	**13**	**11**	**7**	<0.1	**8**	**34**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
Total Number of Samples			31	31	31	31	31	31	31	31	32	32	17	18	18	18	17	32	32	32	32	32	32	32	32	32	12
Maximum Value			7	<PQL	31	29	17	<PQL	27	71	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	85	370	360	815	<PQL	<PQL	<PQL	<PQL	Not Detected

Concentration above the CT1 — **VALUE**
Concentration above SCC1 — **VALUE**
Concentration above the SCC2 — **VALUE**
Concentration above PQL — **Bold**

TABLE Q1
SOIL QA/QC SUMMARY

			TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene	Naphthalene	Acenaphthylene	Acenaph-thene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j+k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthra-cene	Benzo(g,h,i)perylene
	PQL Envirolab SYD		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
Intra	BH1	0-0.2	<25	<50	190	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP1	0-0.2	<25	<50	150	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	170	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	24%	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	BH3	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP3	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH4	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP4	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field	TB1	-	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Blank	8/05/23																									
Field	FRS1 - Shovel	µg/L [1]	<10	<50	<100	<100	<1	<1	<1	<2	<1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1
Rinsate	11/05/23																									
Trip	TS1		-	-	-	-	102%	102%	102%	106%	104%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	8/05/23																									

			HCB	alpha- BHC	gamma- BHC	beta- BHC	Heptachlor	delta- BHC	Aldrin	Heptachlor Epoxide	Gamma- Chlordane	alpha- chlordane	Endosulfan I	pp- DDE	Dieldrin	Endrin	pp- DDD	Endosulfan II	pp- DDT	Endrin Aldehyde	Endosulfan Sulphate	Methoxychlor
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
Intra	BH1	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP1	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	BH3	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH2	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP3	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH4	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP4	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field	TB1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blank	8/05/23																					
Field	FRS1 - Shovel	µg/L [1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rinsate	11/05/23																					
Trip	TS1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	8/05/23																					

			Azinphos-methyl (Guthion)	Bromophos-ethyl	Chlorpyriphos	Chlorpyriphos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Parathion	Ronnel	Total PCBS	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
Intra	BH1	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4	<0.4	18	13	13	<0.1	9	27
laboratory	SDUP1	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	21	14	15	<0.1	11	31
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	4.5	nc	19.5	13.5	14	nc	10	29
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	22%	nc	15%	7%	14%	nc	20%	14%
Intra	BH3	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	14	9	11	<0.1	8	49
laboratory	SDUP2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	<4	<0.4	17	11	11	<0.1	9	56
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	15.5	10	11	nc	8.5	52.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	19%	20%	0%	nc	12%	13%
Inter	BH2	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	16	12	11	<0.1	9	21
laboratory	SDUP3	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	18	13	10	<0.1	10	21
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	17	12.5	10.5	nc	9.5	21
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	12%	8%	10%	nc	11%	0%
Inter	BH4	0-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	14	11	8	<0.1	9	37
laboratory	SDUP4	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	<4	<0.4	13	11	7	<0.1	8	34
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	13.5	11	7.5	nc	8.5	35.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	7%	0%	13%	nc	12%	8%
Field	TB1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<4	<0.4	3	2	2	<0.1	<1	3
Blank	8/05/23																						
Field	FRS1 - Shovel	µg/L [1]	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	<0.01	<0.01	0.5	<0.03	<0.0005	<0.02	0.05
Rinsate	11/05/23																						
Trip	TS1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	8/05/23																						

Result outside of QA/QC acceptance criteria (highlighted)
1. Heavy metals concentrations reported in mg/L

Appendix D: Borehole & Test Pit Logs

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BOREHOLE LOG

Borehole No. 1 1/1

SDUP1: 0-0.2m

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.7m

Date: 9/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION						0			FILL: Silty clay, low to medium plasticity, brown, trace of fine grained igneous gravel, and root fibres.	w<PL			GRASS COVER
								CI-CH	Silty CLAY: medium to high plasticity, brown and red brown, trace of fine grained sand, and root fibres.	w<PL	Hd	>600 >600	SCREEN: 10.75kg 0-0.2m, NO FCF ALLUVIAL
					N > 20 8,11,9/ 50mm REFUSAL	1			Silty CLAY: medium to high plasticity, brown, trace of fine grained sand, and fine to medium grained igneous gravel.			>600 >600	
					N = 26 5,12,14	2						>600 >600 >600	
									Silty CLAY: medium to high plasticity, light grey mottled orange brown, trace of fine grained sand, and fine to medium grained igneous gravel.			450 500 550	HP TESTING ON REMOULDED SAMPLE
▼ 2 DAYS AFTER COMPLETION						3			as above, but grey and brown.			>600 >600	
					N = 22 8,8,14	4						>600 >600	GROUNDWATER MONITORING WELL INSTALLED TO 4.9m.
						5			END OF BOREHOLE AT 5.0m				CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 4.9m TO 2.5m. CASING 2.5m TO 0.12m. 2mm SAND FILTER PACK 4.9m TO 2.5m. BENTONITE SEAL 2.5m TO 2.0m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER.
						6							
						7							

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BOREHOLE LOG

Borehole No. 2

1/1

SDUP3: 0-0.2m

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.8m

Date: 9/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	■			■		0			FILL: Silty clay, medium to high plasticity, red brown, trace of fine grained igneous gravel and root fibres.	w>PL			GRASS COVER SCREEN: 10.0kg 0-0.2m, NO FCF
	■			■	N = 27 5,12,15			CH	Silty CLAY: high plasticity, brown, trace of fine to medium grained igneous gravel, fine grained ironstone gravel, and root fibres.	w<PL	Hd	>600 >600 >600	ALLUVIAL
	■			■		1							
	■			■	N = 14 3,6,8							480 530 550	
	■			■		2			Silty CLAY: medium to high plasticity, brown, trace of fine to medium grained igneous gravel and root fibres.	w<PL	(F)		
	■			■		3		CL-CI	Silty CLAY: low to medium plasticity, light grey mottled orange brown and red brown, trace of sand.	w>PL	St		
	■			■	N = 6 2,3,3							120 170 180	
▼	■			■		4			Sandy silty CLAY: low to medium plasticity, light grey mottled orange brown, fine grained sand, trace of shell and muscovite fragments.		S-F		
▼ ON COMPLETION	■		■	■								40 30 50	HP TESTING ON REMOULDED SAMPLE
						5			END OF BOREHOLE AT 4.95m				
						6							
						7							

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BOREHOLE LOG

Borehole No. 3 1/1

SDUP2: 0-0.2m

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.8m

Date: 9/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
						0			FILL: Silty clay, low to medium plasticity, brown, trace of fine to medium grained sand, fine grained igneous gravel, and root fibres.	w>PL			GRASS COVER
								CI-CH		w>PL	VSt		SCREEN: 10.48kg 0-0.2m, NO FCF
					N = 10 3,3,7				Silty CLAY: medium to high plasticity, red brown, trace of fine grained igneous gravel, and root fibres.			250 320 350	ALLUVIAL
					N = 10 3,4,6	1			Silty CLAY: medium to high plasticity, brown mottled red brown, trace of fine to medium grained igneous gravel, ash and root fibres.	w≈PL	Hd	430 500 550	
						2		CL-CI	Silty CLAY: low to medium plasticity, brown and orange brown, trace of fine grained sand.	w>PL	F		
2 DAYS AFTER COMPLETION ▼						3						40 40 50	HP TESTING ON REMOULDED SAMPLE
▼ ON COMPLET-ION					N = 9 0,4,5	4						60 80 110	GROUNDWATER MONITORING WELL INSTALLED TO 4.88m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 4.88m TO 2.58m. CASIN
						5			END OF BOREHOLE AT 5.45m				2.58m TO 0.12m. 2mm SAND FILTER PACK 4.88m TO 2.2m. BENTONITE SEAL 2.2m TO 1.8m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER.
						6							
						7							

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BOREHOLE LOG

Borehole No. 4
1/1

SDUP4: 0-0.2m

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.8m

Date: 9/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
						0			FILL: Clayey Silt, low plasticity, red brown, with fine grained sand, trace of root fibres.	w<PL			GRASS COVER
								CI-CH		w<PL	Hd		SCREEN: 10.12kg 0-0.2m, NO FCF
					N = 18 3,9,9	1			Silty CLAY: medium to high plasticity, red brown, trace of fine to medium grained igneous gravel.				ALLUVIAL
					N = 9 3,4,5				Silty CLAY: medium to high plasticity, brown mottled light grey and orange brown, trace of fine grained igneous and ironstone gravel, and root fibres.			450 350 120	
						2		CL-CI	Silty CLAY: low to medium plasticity, light grey mottled orange brown, with fine to medium grained sand.	w>PL	VSt	250 230 200	HP TESTING ON REMOULDED SAMPLE
											(S-F)		
▼ ON COMPLET-ION					N = 2 2,2,0	3		CL	Sandy CLAY: low plasticity, brown, fine to coarse grained sand, trace of shell fragments.	w>PL	F	80 110 90	
					N = 13 3,5,8	4		SM	Silty SAND: fine to coarse grained, brown, trace of shell fragments.	W	MD		
						5			END OF BOREHOLE AT 4.95m				
						6							
						7							

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BOREHOLE LOG

Borehole No. 5

1/1

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.8m

Date: 10/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
						0			FILL: Silty sand, fine to coarse grained, brown, trace of fine grained sandstone gravel, and clay.	M			GRASS COVER
								CI-CH	Silty CLAY: medium to high plasticity, red brown and brown, trace of fine to medium grained sand fine to medium grained igneous gravel, ash and root fibres.	w≈PL	VSt		SCREEN: 11.45kg 0-0.2m, NO FCF
					N = 9 2,3,6							320 350 350	ALLUVIAL
						1		CI	Silty CLAY: medium plasticity, light grey, trace of ash and root fibres.	w>PL			
					N = 11 3,4,7							230 320 380	
						2						420 450 480	HP TESTING ON REMOULDED SAMPLE
								SC	Clayey SAND: fine to coarse grained, brown, fine to medium plasticity clay.	M	L		
						3				W			
▶ ▼ ON COMPLET-ION					N = 8 3,4,4								
						4		CI-CH	Silty CLAY: medium to high plasticity, light grey mottled orange brown, trace of root fibres.	w>PL	St- VSt	120 250 310	
					N = 11 4,6,5			SC	Clayey SAND: fine to coarse grained, brown, trace of fine to medium grained igneous gravel.	W	MD		
						5			END OF BOREHOLE AT 5.0m				
						6							
						7							

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BOREHOLE LOG

Borehole No. 6

1/1

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.6m

Date: 8/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0		CL-CI	Sandy silty CLAY: low to medium plasticity, red brown, fine to medium grained sand, with fine to medium grained igneous gravel, and root fibres.	w<PL	(Hd)		GRASS COVER SCREEN: 15.0kg 0-0.1m, NO FCF SCREEN: 11.45kg 0.1-0.5m, NO FCF
	■		■			1							SCREEN: 6.75kg 1.0-1.5m, NO FCF
									END OF BOREHOLE AT 1.5m				
						2							
						3							
						4							
						5							
						6							
						7							

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BOREHOLE LOG

Borehole No. 7

1/1

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.9m

Date: 8/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0		CL-CI	FILL: Sandy silty clay, low to medium plasticity, brown, fine to medium grained sand, with fine to medium grained igneous, claystone and sandstone gravel.	w<PL			GRASS COVER
										w<PL	Hd		SCREEN: 10.4kg 0-0.2m, NO FCF
													SCREEN: 6.01kg 0.2-0.7m, NO FCF
									Sandy silty CLAY: low to medium plasticity, red brown, fine to medium grained sand, trace of fine grained igneous gravel.			>600	SCREEN: 10.11kg 0.7-1.0m, NO FCF
						1						>600	
									as above, but brown.			>600	HP TESTING ON REMOULDED SAMPLE
									END OF BOREHOLE AT 1.5m				
						2							
						3							
						4							
						5							
						6							
						7							

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BOREHOLE LOG

Borehole No. 8 1/1

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.6m

Date: 8/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■			0			FILL: Silty clay, medium to high plasticity, brown, trace of fine to medium grained sand, fine to medium grained igneous gravel, and root fibres.	w>PL			GRASS COVER POSSIBLY NATURAL SCREEN: 10.66kg 0-0.2m, NO FCF
	■		■			1		SC	Sandy silty CLAY: low to medium plasticity, brown, fine to medium grained sand trace of fine grained igneous gravel.	w≈PL	(St)		ALLUVIAL
						2			END OF BOREHOLE AT 2.0m				
						3							
						4							
						5							
						6							
						7							

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BOREHOLE LOG

Borehole No. 9
1/1

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: 35821BF **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 108.6m

Date: 10/5/23 **Datum:** AHD

Plant Type: HANJIN DB8 **Logged/Checked by:** C.S.Y./O.F.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION						0			FILL: Sandy silt, low plasticity, red brown, fine to medium grained sand, trace of fine grained sand, clay nodules and root fibres.	w<PL			GRASS COVER SCREEN: 10.01kg 0-0.2m, NO FCF
								CL-CI	Silty CLAY: low to medium plasticity, brown, trace of fine grained sand, and clay nodules.	w<PL	(VSt)		ALLUVIAL
						1							
									END OF BOREHOLE AT 1.5m				
						2							
						3							
						4							
						5							
						6							
						7							

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **TP10** **1/1**

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: E35821PR **Method:** TEST PIT **R.L. Surface:** ≈ 108.8m

Date: 11/5/23 **Datum:** AHD

Plant Type: 5T EXCAVATOR **Logged/Checked by:** O.B./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clay, low to medium plasticity, brown, trace of root fibres.	w<PL			SCREEN: 10.41kg 0-0.2m, NO FCF
	■		■		■					FILL: Silty clay, low to medium plasticity, red brown, trace of ash and root fibres.	w<PL			SCREEN: 10.27kg 0.2-0.3m, NO FCF
	■		■		■				CI-CH	Silty CLAY: medium to high plasticity, red brown.				ALLUVIAL
							0.5							
							1							
										END OF TEST PIT AT 1.1m				
							1.5							
							2							
							2.5							
							3							
							3.5							

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ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **TP11** **1/1**

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: E35821PR **Method:** TEST PIT **R.L. Surface:** ≈ 108.7m

Date: 11/5/23 **Datum:** AHD

Plant Type: 5T EXCAVATOR **Logged/Checked by:** O.B./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clay, low to medium plasticity, brown, trace of root fibres.	w<PL			SCREEN: 10.71kg 0-0.2m, NO FCF
	■		■		■		0.5		CI-CH	Silty CLAY: medium to high plasticity, brown and red brown.	w<PL			ALLUVIAL SCREEN: 10.47kg 0.4-0.6m, NO FCF
	■		■				1							
							1.5			END OF TEST PIT AT 1.3m				
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **TP12** **1/1**

Client: HEALTH INFRASTRUCTURE

Project: PROPOSED ALTERATIONS AND ADDITIONS

Location: FINLEY HOSPITAL, 24 DAWE AVENUE, FINLEY, NSW

Job No.: E35821PR **Method:** TEST PIT **R.L. Surface:** ≈ 109.0m

Date: 11/5/23 **Datum:** AHD

Plant Type: 5T EXCAVATOR **Logged/Checked by:** O.B./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clay, low to medium plasticity, brown, trace of root fibres.	w≈PL			SCREEN: 11.04kg 0-0.2m, NO FCF
	■		■		■		0.5			FILL: Silty clay, low to medium plasticity, red brown, trace of ash and root fibres.				SCREEN: 10.50kg 0.5-0.7m, NO FCF
	■		■						CI-CH	Silty CLAY: medium to high plasticity, red brown.	w<PL			ALLUVIAL
							1							
										END OF TEST PIT AT 1.3m				
							1.5							
							2							
							2.5							
							3							
							3.5							

ENVIRONMENTAL LOGS EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the environmental report in regard to classification methods, field procedures and certain matters relating to the logging of soil and rock. Not all notes are necessarily relevant to all reports.

Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies include gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 *'Geotechnical Site Investigations'*. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geoenvironmental practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) are referred to as 'laminite'.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the

structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of limited reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock cuttings. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be assessed from the cuttings, together with some information from "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term 'mud' encompasses a range of products ranging from bentonite to polymers. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289.6.3.1–2004 (R2016) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)'*.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

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

  N = 13
  4, 6, 7

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

  N > 30
  15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

A modification to the SPT is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as 'N_c' on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

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

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than 'straight line' variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

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

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it 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 and may not be the same at the time of construction.
- 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 be washed out of the hole or 'reverted' chemically if reliable water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after the groundwater level has stabilised at intervals ranging from several days to 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 perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (eg. bricks, steel, etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably assess the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse environmental characteristics or behaviour. If the volume and nature of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classification and rock strengths indicated on the environmental logs unless noted in the report.

SYMBOL LEGENDS

SOIL


FILL


TOPSOIL


CLAY (CL, CI, CH)


SILT (ML, MH)


SAND (SP, SW)


GRAVEL (GP, GW)


SANDY CLAY (CL, CI, CH)


SILTY CLAY (CL, CI, CH)


CLAYEY SAND (SC)


SILTY SAND (SM)


GRAVELLY CLAY (CL, CI, CH)


CLAYEY GRAVEL (GC)


SANDY SILT (ML, MH)


PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK


CONGLOMERATE


SANDSTONE


SHALE/MUDSTONE


SILTSTONE


CLAYSTONE


COAL


LAMINITE


LIMESTONE


PHYLLITE, SCHIST


TUFF


GRANITE, GABBRO


DOLERITE, DIORITE


BASALT, ANDESITE


QUARTZITE

OTHER MATERIALS


BRICKS OR PAVERS


CONCRETE


ASPHALTIC CONCRETE

CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification	
Coarse grained soil (more than 65% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
ine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	–	–	–	–

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $Cu > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_U = \frac{D_{60}}{D_{10}} \qquad and \qquad C_C = \frac{(D_{30})^2}{D_{10}\, D_{60}}$$

Where D_{10}, D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

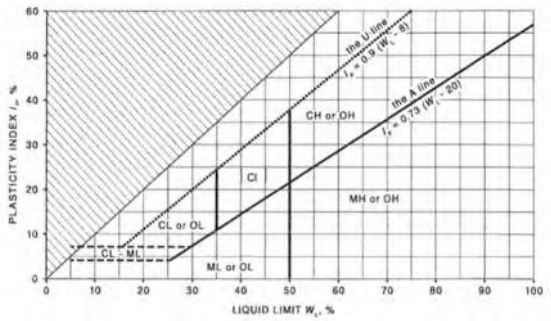
1 For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.

2 Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.

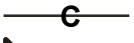
3 Clay soils with liquid limits > 35% and ≤ 50% may be classified as being of medium plasticity.

4 The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour



LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record		Standing water level. Time delay following completion of drilling/excavation may be shown.
		Extent of borehole/test pit collapse shortly after drilling/excavation.
		Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
	PFAS	Soil sample taken over depth indicated, for analysis of Per- and Polyfluoroalkyl Substances.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N_c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25	Vane shear reading in kPa of undrained shear strength.
	PID = 100	Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils)	w > PL	Moisture content estimated to be greater than plastic limit.
	$w \approx$ PL	Moisture content estimated to be approximately equal to plastic limit.
	w < PL	Moisture content estimated to be less than plastic limit.
	$w \approx$ LL	Moisture content estimated to be near liquid limit.
	w > LL	Moisture content estimated to be wet of liquid limit.
(Coarse Grained Soils)	D	DRY – runs freely through fingers.
	M	MOIST – does not run freely but no free water visible on soil surface.
	W	WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS	VERY SOFT – unconfined compressive strength ≤ 25kPa.
	S	SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa.
	F	FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa.
	St	STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa.
	VSt	VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa.
	Hd	HARD – unconfined compressive strength > 400kPa.
	Fr	FRIABLE – strength not attainable, soil crumbles.
	( )	Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.
Density Index/ Relative Density (Cohesionless Soils)		**Density Index (I_D) Range (%)** / **SPT 'N' Value Range (Blows/300mm)** VERY LOOSE: ≤ 15 / 0 – 4 LOOSE: > 15 and ≤ 35 / 4 – 10 MEDIUM DENSE: > 35 and ≤ 65 / 10 – 30 DENSE: > 65 and ≤ 85 / 30 – 50 VERY DENSE: > 85 / > 50
	VL	
	L	
	MD	
	D	
	VD	
	( )	Bracketed symbol indicates estimated density based on ease of drilling or other assessment.

Log Column	Symbol	Definition
Hand Penetrometer Readings	300 250	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.
Remarks	'V' bit	Hardened steel 'V' shaped bit.
	'TC' bit	Twin pronged tungsten carbide bit.
	T_{60}	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.
	Soil Origin	The geological origin of the soil can generally be described as: RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock. EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock. ALLUVIAL – soil deposited by creeks and rivers. ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents. MARINE – soil deposited in a marine environment. AEOLIAN – soil carried and deposited by wind. COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits. LITTORAL – beach deposited soil.

Classification of Material Weathering

Term		Abbreviation		Definition
Residual Soil		RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: *'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'*. There is some change in rock strength.

Rock Material Strength Classification

Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Guide to Strength	
			Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Appendix E: Laboratory Reports & COC Documents

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CERTIFICATE OF ANALYSIS 323127

Client Details

Client	JK Environments
Attention	C Ridley
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E35821PR, Fineley**
Number of Samples	43 Soil, 1 Water
Date samples received	15/05/2023
Date completed instructions received	15/05/2023

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	22/05/2023
Date of Issue	22/05/2023

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Authorised by Asbestos Approved Signatory: Lucy Zhu

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Hannah Nguyen, Metals Supervisor
Kyle Gavrily, Senior Chemist
Liam Timmins, Organics Supervisor
Loren Bardwell, Development Chemist
Lucy Zhu, Asbestos Supervisor

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		323127-1	323127-2	323127-4	323127-5	323127-7
Your Reference	UNITS	BH1	BH1	BH1	BH2	BH2
Depth		0-0.2	0.3-0.5	1.3-1.5	0-0.2	1-1.4
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	09/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	102	84	101	109

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		323127-10	323127-11	323127-13	323127-14	323127-17
Your Reference	UNITS	BH3	BH3	BH4	BH4	BH5
Depth		0-0.2	0.3-0.5	0-0.2	0.3-0.5	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	108	109	87	113	98

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		323127-18	323127-20	323127-22	323127-23	323127-25
Your Reference	UNITS	BH5	BH6	BH7	BH7	BH8
Depth		0.3-0.5	0-0.5	0-0.2	0.2-0.7	0-0.2
Date Sampled		10/05/2023	10/05/2023	10/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	106	97	111	106	101

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		323127-26	323127-27	323127-29	323127-31	323127-33
Your Reference	UNITS	BH8	BH9	BH9	BH10	BH10
Depth		0.8-1	0-0.2	0.5-0.9	0-0.2	0.3-0.6
Date Sampled		11/05/2023	10/05/2023	10/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	101	103	112	96	103

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		323127-34	323127-35	323127-37	323127-38	323127-40
Your Reference	UNITS	BH11	BH11	BH12	BH12	SDUP1
Depth		0-0.2	0.4-0.6	0-0.2	0.5-0.7	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	118	111	105	114	87

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		323127-41	323127-42	323127-43
Your Reference	UNITS	SDUP2	TB1	TS1
Depth		-	-	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	102%
Toluene	mg/kg	<0.5	<0.5	102%
Ethylbenzene	mg/kg	<1	<1	102%
m+p-xylene	mg/kg	<2	<2	106%
o-Xylene	mg/kg	<1	<1	104%
Naphthalene	mg/kg	<1	<1	[NT]
Total +ve Xylenes	mg/kg	<1	<1	[NT]
Surrogate aaa-Trifluorotoluene	%	92	115	112

svTRH (C10-C40) in Soil						
Our Reference		323127-1	323127-2	323127-4	323127-5	323127-7
Your Reference	UNITS	BH1	BH1	BH1	BH2	BH2
Depth		0-0.2	0.3-0.5	1.3-1.5	0-0.2	1-1.4
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	09/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	18/05/2023	18/05/2023	17/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	140	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	140	<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	190	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	190	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	84	81	76	81

svTRH (C10-C40) in Soil						
Our Reference		323127-10	323127-11	323127-13	323127-14	323127-17
Your Reference	UNITS	BH3	BH3	BH4	BH4	BH5
Depth		0-0.2	0.3-0.5	0-0.2	0.3-0.5	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	91	91	85	85	88

svTRH (C10-C40) in Soil						
Our Reference		323127-18	323127-20	323127-22	323127-23	323127-25
Your Reference	UNITS	BH5	BH6	BH7	BH7	BH8
Depth		0.3-0.5	0-0.5	0-0.2	0.2-0.7	0-0.2
Date Sampled		10/05/2023	10/05/2023	10/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	85	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	370	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	360	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	810	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	130	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	130	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	540	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	350	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	1,000	<50	<50
Surrogate o-Terphenyl	%	86	91	105	88	87

svTRH (C10-C40) in Soil						
Our Reference		323127-26	323127-27	323127-29	323127-31	323127-33
Your Reference	UNITS	BH8	BH9	BH9	BH10	BH10
Depth		0.8-1	0-0.2	0.5-0.9	0-0.2	0.3-0.6
Date Sampled		11/05/2023	10/05/2023	10/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
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	110	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	110	<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	160	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	160	<50	<50	<50
Surrogate o-Terphenyl	%	80	82	89	86	89

svTRH (C10-C40) in Soil						
Our Reference		323127-34	323127-35	323127-37	323127-38	323127-40
Your Reference	UNITS	BH11	BH11	BH12	BH12	SDUP1
Depth		0-0.2	0.4-0.6	0-0.2	0.5-0.7	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	120
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	120
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	150
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	150
Surrogate o-Terphenyl	%	81	92	78	89	79

svTRH (C10-C40) in Soil			
Our Reference		323127-41	323127-42
Your Reference	UNITS	SDUP2	TB1
Depth		-	-
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date extracted	-	16/05/2023	16/05/2023
Date analysed	-	18/05/2023	18/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	90	81

PAHs in Soil						
Our Reference		323127-1	323127-2	323127-4	323127-5	323127-7
Your Reference	UNITS	BH1	BH1	BH1	BH2	BH2
Depth		0-0.2	0.3-0.5	1.3-1.5	0-0.2	1-1.4
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	09/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	16/05/2023	16/05/2023	17/05/2023	16/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	102	92	86	99	90

PAHs in Soil						
Our Reference		323127-10	323127-11	323127-13	323127-14	323127-17
Your Reference	UNITS	BH3	BH3	BH4	BH4	BH5
Depth		0-0.2	0.3-0.5	0-0.2	0.3-0.5	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	16/05/2023	17/05/2023	16/05/2023	17/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	90	99	90	94

PAHs in Soil						
Our Reference		323127-18	323127-20	323127-22	323127-23	323127-25
Your Reference	UNITS	BH5	BH6	BH7	BH7	BH8
Depth		0.3-0.5	0-0.5	0-0.2	0.2-0.7	0-0.2
Date Sampled		10/05/2023	10/05/2023	10/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	17/05/2023	17/05/2023	16/05/2023	17/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	89	103	102	88	97

PAHs in Soil						
Our Reference		323127-26	323127-27	323127-29	323127-31	323127-33
Your Reference	UNITS	BH8	BH9	BH9	BH10	BH10
Depth		0.8-1	0-0.2	0.5-0.9	0-0.2	0.3-0.6
Date Sampled		11/05/2023	10/05/2023	10/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	17/05/2023	16/05/2023	17/05/2023	16/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	108	88	94	90

PAHs in Soil						
Our Reference		323127-34	323127-35	323127-37	323127-38	323127-40
Your Reference	UNITS	BH11	BH11	BH12	BH12	SDUP1
Depth		0-0.2	0.4-0.6	0-0.2	0.5-0.7	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	16/05/2023	17/05/2023	16/05/2023	17/05/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	101	91	99	88	106

PAHs in Soil			
Our Reference		323127-41	323127-42
Your Reference	UNITS	SDUP2	TB1
Depth		-	-
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date extracted	-	16/05/2023	16/05/2023
Date analysed	-	16/05/2023	16/05/2023
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	96

Organochlorine Pesticides in soil						
Our Reference		323127-1	323127-5	323127-10	323127-13	323127-17
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	104	104	107	105

Organochlorine Pesticides in soil						
Our Reference		323127-20	323127-22	323127-25	323127-27	323127-31
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.5	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		10/05/2023	10/05/2023	11/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	104	108	111	100

Organochlorine Pesticides in soil				
Our Reference		323127-34	323127-37	323127-40
Your Reference	UNITS	BH11	BH12	SDUP1
Depth		0-0.2	0-0.2	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	107	108

Organophosphorus Pesticides						
Our Reference		323127-1	323127-5	323127-10	323127-13	323127-17
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	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
Parathion	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
Coumaphos	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
Fenamiphos	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
Methidathion	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
Parathion (Methyl)	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
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	104	104	107	105

Organophosphorus Pesticides						
Our Reference		323127-20	323127-22	323127-25	323127-27	323127-31
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.5	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		10/05/2023	10/05/2023	11/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	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
Parathion	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
Coumaphos	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
Fenamiphos	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
Methidathion	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
Parathion (Methyl)	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
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	104	108	111	100

Organophosphorus Pesticides				
Our Reference		323127-34	323127-37	323127-40
Your Reference	UNITS	BH11	BH12	SDUP1
Depth		0-0.2	0-0.2	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1
Parathion (Methyl)	mg/kg	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	107	107	108

PCBs in Soil						
Our Reference		323127-1	323127-5	323127-10	323127-13	323127-17
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	104	104	107	105

PCBs in Soil						
Our Reference		323127-20	323127-22	323127-25	323127-27	323127-31
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.5	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		10/05/2023	10/05/2023	11/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	109	104	108	111	100

PCBs in Soil				
Our Reference		323127-34	323127-37	323127-40
Your Reference	UNITS	BH11	BH12	SDUP1
Depth		0-0.2	0-0.2	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil
Date extracted	-	16/05/2023	16/05/2023	16/05/2023
Date analysed	-	17/05/2023	17/05/2023	17/05/2023
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 TCMX	%	107	107	108

Acid Extractable metals in soil						
Our Reference		323127-1	323127-2	323127-4	323127-5	323127-7
Your Reference	UNITS	BH1	BH1	BH1	BH2	BH2
Depth		0-0.2	0.3-0.5	1.3-1.5	0-0.2	1-1.4
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	09/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Date analysed	-	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
Arsenic	mg/kg	4	4	7	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	25	27	16	29
Copper	mg/kg	13	16	21	12	21
Lead	mg/kg	13	16	16	11	17
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	12	15	9	17
Zinc	mg/kg	27	24	40	21	42

Acid Extractable metals in soil						
Our Reference		323127-10	323127-11	323127-13	323127-14	323127-17
Your Reference	UNITS	BH3	BH3	BH4	BH4	BH5
Depth		0-0.2	0.3-0.5	0-0.2	0.3-0.5	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Date analysed	-	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
Arsenic	mg/kg	<4	<4	<4	5	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	18	14	25	10
Copper	mg/kg	9	11	11	15	9
Lead	mg/kg	11	8	8	12	7
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	11	9	17	6
Zinc	mg/kg	49	19	37	23	26

Acid Extractable metals in soil						
Our Reference		323127-18	323127-20	323127-22	323127-23	323127-25
Your Reference	UNITS	BH5	BH6	BH7	BH7	BH8
Depth		0.3-0.5	0-0.5	0-0.2	0.2-0.7	0-0.2
Date Sampled		10/05/2023	10/05/2023	10/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Date analysed	-	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
Arsenic	mg/kg	<4	5	5	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	28	11	25	23
Copper	mg/kg	12	20	15	22	15
Lead	mg/kg	11	15	7	14	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	17	11	27	14
Zinc	mg/kg	22	36	65	46	31

Acid Extractable metals in soil						
Our Reference		323127-26	323127-27	323127-29	323127-31	323127-33
Your Reference	UNITS	BH8	BH9	BH9	BH10	BH10
Depth		0.8-1	0-0.2	0.5-0.9	0-0.2	0.3-0.6
Date Sampled		11/05/2023	10/05/2023	10/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Date analysed	-	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
Arsenic	mg/kg	6	<4	6	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	28	18	26	16	23
Copper	mg/kg	29	14	28	10	17
Lead	mg/kg	16	12	14	11	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	20	11	20	8	14
Zinc	mg/kg	66	42	71	24	25

Acid Extractable metals in soil						
Our Reference		323127-34	323127-35	323127-37	323127-38	323127-40
Your Reference	UNITS	BH11	BH11	BH12	BH12	SDUP1
Depth		0-0.2	0.4-0.6	0-0.2	0.5-0.7	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/05/2023	17/05/2023	17/05/2023	17/05/2023	17/05/2023
Date analysed	-	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
Arsenic	mg/kg	<4	7	<4	6	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	30	11	31	21
Copper	mg/kg	12	25	8	18	14
Lead	mg/kg	11	16	7	16	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	19	6	18	11
Zinc	mg/kg	24	47	22	32	31

Acid Extractable metals in soil			
Our Reference		323127-41	323127-42
Your Reference	UNITS	SDUP2	TB1
Depth		-	-
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date prepared	-	17/05/2023	17/05/2023
Date analysed	-	19/05/2023	19/05/2023
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	17	3
Copper	mg/kg	11	2
Lead	mg/kg	11	2
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	9	<1
Zinc	mg/kg	56	3

Moisture						
Our Reference		323127-1	323127-2	323127-4	323127-5	323127-7
Your Reference	UNITS	BH1	BH1	BH1	BH2	BH2
Depth		0-0.2	0.3-0.5	1.3-1.5	0-0.2	1-1.4
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	09/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Moisture	%	10	14	13	9.9	17

Moisture						
Our Reference		323127-10	323127-11	323127-13	323127-14	323127-17
Your Reference	UNITS	BH3	BH3	BH4	BH4	BH5
Depth		0-0.2	0.3-0.5	0-0.2	0.3-0.5	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Moisture	%	20	20	7.2	15	13

Moisture						
Our Reference		323127-18	323127-20	323127-22	323127-23	323127-25
Your Reference	UNITS	BH5	BH6	BH7	BH7	BH8
Depth		0.3-0.5	0-0.5	0-0.2	0.2-0.7	0-0.2
Date Sampled		10/05/2023	10/05/2023	10/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Moisture	%	15	12	16	14	12

Moisture						
Our Reference		323127-26	323127-27	323127-29	323127-31	323127-33
Your Reference	UNITS	BH8	BH9	BH9	BH10	BH10
Depth		0.8-1	0-0.2	0.5-0.9	0-0.2	0.3-0.6
Date Sampled		11/05/2023	10/05/2023	10/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Moisture	%	16	5.8	13	18	18

Moisture						
Our Reference		323127-34	323127-35	323127-37	323127-38	323127-40
Your Reference	UNITS	BH11	BH11	BH12	BH12	SDUP1
Depth		0-0.2	0.4-0.6	0-0.2	0.5-0.7	-
Date Sampled		11/05/2023	11/05/2023	11/05/2023	11/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/05/2023	15/05/2023	15/05/2023	15/05/2023	15/05/2023
Date analysed	-	16/05/2023	16/05/2023	16/05/2023	16/05/2023	16/05/2023
Moisture	%	7.8	15	8.5	15	11

Moisture			
Our Reference		323127-41	323127-42
Your Reference	UNITS	SDUP2	TB1
Depth		-	-
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date prepared	-	15/05/2023	15/05/2023
Date analysed	-	16/05/2023	16/05/2023
Moisture	%	21	0.7

Asbestos ID - soils NEPM - ASB-001						
Our Reference		323127-1	323127-5	323127-10	323127-13	323127-17
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		09/05/2023	09/05/2023	09/05/2023	09/05/2023	10/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/05/2023	22/05/2023	22/05/2023	22/05/2023	22/05/2023
Sample mass tested	g	594.57	622.63	708.16	684.4	664.72
Sample Description	-	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		323127-20	323127-22	323127-25	323127-27	323127-31
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.5	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		10/05/2023	10/05/2023	11/05/2023	10/05/2023	11/05/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/05/2023	22/05/2023	22/05/2023	22/05/2023	22/05/2023
Sample mass tested	g	679.27	548.24	654.34	799.77	409.01
Sample Description	-	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001			
Our Reference		323127-34	323127-37
Your Reference	UNITS	BH11	BH12
Depth		0-0.2	0-0.2
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date analysed	-	22/05/2023	22/05/2023
Sample mass tested	g	664.01	521.44
Sample Description	-	Brown coarse-grained soil and rocks	Brown coarse-grained soil and rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–
FA and AF Estimation*	g	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001

vTRH(C6-C10)/BTEXN in Water		
Our Reference		323127-44
Your Reference	UNITS	FRS1 - Shovel
Depth		-
Date Sampled		11/05/2023
Type of sample		Water
Date extracted	-	15/05/2023
Date analysed	-	16/05/2023
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	113
Surrogate toluene-d8	%	122
Surrogate 4-BFB	%	104

svTRH (C10-C40) in Water		
Our Reference		323127-44
Your Reference	UNITS	FRS1 - Shovel
Depth		-
Date Sampled		11/05/2023
Type of sample		Water
Date extracted	-	18/05/2023
Date analysed	-	18/05/2023
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	90

PAHs in Water		
Our Reference		323127-44
Your Reference	UNITS	FRS1 - Shovel
Depth		-
Date Sampled		11/05/2023
Type of sample		Water
Date extracted	-	18/05/2023
Date analysed	-	18/05/2023
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate p-Terphenyl-d14	%	97

Metals in Water - Dissolved		
Our Reference		323127-44
Your Reference	UNITS	FRS1 - Shovel
Depth		-
Date Sampled		11/05/2023
Type of sample		Water
Date digested	-	16/05/2023
Date analysed	-	16/05/2023
Arsenic - Dissolved	mg/L	<0.05
Cadmium - Dissolved	mg/L	<0.01
Chromium - Dissolved	mg/L	<0.01
Copper - Dissolved	mg/L	0.5
Lead - Dissolved	mg/L	<0.03
Mercury - Dissolved	mg/L	<0.0005
Nickel - Dissolved	mg/L	<0.02
Zinc - Dissolved	mg/L	0.05

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. **NOTE** #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF) **NOTE** #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-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-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.

Method ID	Methodology Summary
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
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.
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/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	323127-5
Date extracted	-			16/05/2023	1	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			16/05/2023	1	16/05/2023	16/05/2023		16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	114	118
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	114	118
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	114	97
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	109	91
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	114	87
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	116	88
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	126	93
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	116	1	96	96	0	101	101

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	323127-40
Date extracted	-			[NT]	20	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			[NT]	20	16/05/2023	16/05/2023		16/05/2023	16/05/2023
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	20	<25	<25	0	116	126
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	20	<25	<25	0	116	126
Benzene	mg/kg	0.2	Org-023	[NT]	20	<0.2	<0.2	0	117	128
Toluene	mg/kg	0.5	Org-023	[NT]	20	<0.5	<0.5	0	103	122
Ethylbenzene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	120	126
m+p-xylene	mg/kg	2	Org-023	[NT]	20	<2	<2	0	114	128
o-Xylene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	127	139
Naphthalene	mg/kg	1	Org-023	[NT]	20	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	20	97	104	7	118	113

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	31	16/05/2023	16/05/2023		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	31	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	31	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	31	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	31	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	31	96	103	7	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	323127-5
Date extracted	-			16/05/2023	1	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			17/05/2023	1	17/05/2023	17/05/2023		17/05/2023	18/05/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	109	108
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	140	270	63	110	108
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	110	10	86	97
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	109	108
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	190	330	54	110	108
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	86	97
Surrogate o-Terphenyl	%		Org-020	81	1	83	94	12	82	92

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	323127-40
Date extracted	-			[NT]	20	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			[NT]	20	18/05/2023	18/05/2023		18/05/2023	18/05/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	116	114
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	110	123
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	100	104
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	20	<50	<50	0	116	114
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	110	123
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	20	<100	<100	0	100	104
Surrogate o-Terphenyl	%		Org-020	[NT]	20	91	91	0	90	90

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	31	18/05/2023	18/05/2023		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	31	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	31	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	31	86	91	6	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	323127-5
Date extracted	-			16/05/2023	1	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			17/05/2023	1	17/05/2023	17/05/2023		17/05/2023	17/05/2023
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	107	95
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	95
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	88
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	120	98
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	129	106
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	129	107
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	95
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	82	78
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	95	1	102	104	2	120	92

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	323127-40
Date extracted	-			[NT]	20	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			[NT]	20	17/05/2023	17/05/2023		16/05/2023	17/05/2023
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	105	99
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	105	99
Fluorene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	99	92
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	116	102
Anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	104	110
Pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	109	113
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	87	97
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	20	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	20	<0.05	<0.05	0	110	96
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	20	103	101	2	91	100

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	31	17/05/2023	17/05/2023		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	31	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	31	94	101	7	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	323127-5
Date extracted	-			16/05/2023	1	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			17/05/2023	1	17/05/2023	17/05/2023		17/05/2023	17/05/2023
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	96
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	88
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	87	73
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	97
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	116	102
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	135	115
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	128	108
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	90
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	72
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	93
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	107	1	109	111	2	110	97

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	17/05/2023	17/05/2023		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	109	105	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	31	17/05/2023	17/05/2023		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	31	100	105	5	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	323127-5
Date extracted	-			16/05/2023	1	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			17/05/2023	1	17/05/2023	17/05/2023		17/05/2023	17/05/2023
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	102	88
Chlorpyriphos-methyl	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	117	117
Dimethoate	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	76	60
Fenitrothion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	67	63
Malathion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	91	71
Parathion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	97	86
Ronnel	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	93	75
Coumaphos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion (Methyl)	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	107	1	109	111	2	110	97

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	17/05/2023	17/05/2023		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Parathion (Methyl)	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	20	109	105	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	31	17/05/2023	17/05/2023		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion (Methyl)	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	31	100	105	5	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	323127-5
Date extracted	-			16/05/2023	1	16/05/2023	16/05/2023		16/05/2023	16/05/2023
Date analysed	-			17/05/2023	1	17/05/2023	17/05/2023		17/05/2023	17/05/2023
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	130	124
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	107	1	109	111	2	110	97

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	20	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	20	17/05/2023	17/05/2023		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	20	109	105	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	31	16/05/2023	16/05/2023		[NT]	[NT]
Date analysed	-			[NT]	31	17/05/2023	17/05/2023		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	31	100	105	5	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	323127-5
Date prepared	-			17/05/2023	1	17/05/2023	17/05/2023		17/05/2023	17/05/2023
Date analysed	-			19/05/2023	1	19/05/2023	19/05/2023		19/05/2023	19/05/2023
Arsenic	mg/kg	4	Metals-020	<4	1	4	4	0	108	98
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	106	91
Chromium	mg/kg	1	Metals-020	<1	1	18	18	0	106	98
Copper	mg/kg	1	Metals-020	<1	1	13	12	8	109	110
Lead	mg/kg	1	Metals-020	<1	1	13	13	0	110	97
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	130	125
Nickel	mg/kg	1	Metals-020	<1	1	9	10	11	107	95
Zinc	mg/kg	1	Metals-020	<1	1	27	26	4	115	96

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	323127-40
Date prepared	-			[NT]	20	17/05/2023	17/05/2023		17/05/2023	17/05/2023
Date analysed	-			[NT]	20	19/05/2023	19/05/2023		19/05/2023	19/05/2023
Arsenic	mg/kg	4	Metals-020	[NT]	20	5	5	0	104	105
Cadmium	mg/kg	0.4	Metals-020	[NT]	20	<0.4	<0.4	0	102	97
Chromium	mg/kg	1	Metals-020	[NT]	20	28	28	0	102	113
Copper	mg/kg	1	Metals-020	[NT]	20	20	20	0	107	122
Lead	mg/kg	1	Metals-020	[NT]	20	15	16	6	106	107
Mercury	mg/kg	0.1	Metals-021	[NT]	20	<0.1	<0.1	0	130	76
Nickel	mg/kg	1	Metals-020	[NT]	20	17	16	6	103	102
Zinc	mg/kg	1	Metals-020	[NT]	20	36	37	3	108	104

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	31	17/05/2023	17/05/2023		[NT]	[NT]
Date analysed	-			[NT]	31	19/05/2023	19/05/2023		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	31	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	31	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	31	16	16	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	31	10	10	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	31	11	10	10	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	31	8	8	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	31	24	23	4	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			15/05/2023	[NT]	[NT]	[NT]	[NT]	15/05/2023	[NT]
Date analysed	-			16/05/2023	[NT]	[NT]	[NT]	[NT]	16/05/2023	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	102	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	93	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	108	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate toluene-d8	%		Org-023	120	[NT]	[NT]	[NT]	[NT]	118	[NT]
Surrogate 4-BFB	%		Org-023	105	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			18/05/2023	44	18/05/2023	18/05/2023		18/05/2023	[NT]
Date analysed	-			18/05/2023	44	18/05/2023	18/05/2023		18/05/2023	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	44	<50	<50	0	89	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	44	<100	<100	0	104	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	44	<100	<100	0	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	44	<50	<50	0	89	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	44	<100	<100	0	104	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	44	<100	<100	0	114	[NT]
Surrogate o-Terphenyl	%		Org-020	82	44	90	95	5	85	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			18/05/2023	44	18/05/2023	18/05/2023		18/05/2023	[NT]
Date analysed	-			18/05/2023	44	18/05/2023	18/05/2023		18/05/2023	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	44	<0.2	<0.2	0	76	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	76	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	77	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	82	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	80	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	82	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	68	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	44	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	90	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	91	44	97	103	6	118	[NT]

QUALITY CONTROL: Metals in Water - Dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			16/05/2023	[NT]	[NT]	[NT]	[NT]	16/05/2023	[NT]
Date analysed	-			16/05/2023	[NT]	[NT]	[NT]	[NT]	16/05/2023	[NT]
Arsenic - Dissolved	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	105	[NT]
Cadmium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	100	[NT]
Chromium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	98	[NT]
Copper - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	98	[NT]
Lead - Dissolved	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	99	[NT]
Mercury - Dissolved	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	117	[NT]
Nickel - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	102	[NT]
Zinc - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	101	[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

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.

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

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	C Ridley

Sample Login Details

Your reference	E35821PR, Fineley
Envirolab Reference	323127
Date Sample Received	15/05/2023
Date Instructions Received	15/05/2023
Date Results Expected to be Reported	22/05/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	43 Soil, 1 Water
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	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Water - Dissolved	On Hold
BH1-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH1-0.3-0.5	✓	✓	✓				✓						
BH1-0.65-1													✓
BH1-1.3-1.5	✓	✓	✓				✓						
BH2-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH2-0.3-0.5													✓
BH2-1-1.4	✓	✓	✓				✓						
BH2-2.4-2.6													✓
BH2-2.7-3													✓
BH3-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH3-0.3-0.5	✓	✓	✓				✓						
BH3-3.2-3.5													✓
BH4-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH4-0.3-0.5	✓	✓	✓				✓						
BH4-0.8-1.0													✓
BH4-2-2.2													✓
BH5-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH5-0.3-0.5	✓	✓	✓				✓						
BH5-1-1.3													✓
BH6-0-0.5	✓	✓	✓	✓	✓	✓	✓	✓					
BH6-1-1.5													✓
BH7-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH7-0.2-0.7	✓	✓	✓				✓						
BH7-0.7-1													✓
BH8-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH8-0.8-1	✓	✓	✓				✓						
BH9-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH9-0.3-0.5													✓
BH9-0.5-0.9	✓	✓	✓				✓						
BH9-1.2-1.5													✓
BH10-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH10-0.2-0.3													✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Water - Dissolved	On Hold
BH10-0.3-0.6	✓	✓	✓				✓						
BH11-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH11-0.4-0.6	✓	✓	✓				✓						
BH11-1.1-1.3													✓
BH12-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH12-0.5-0.7	✓	✓	✓				✓						
BH12-1.1-1.3													✓
SDUP1	✓	✓	✓	✓	✓	✓	✓						
SDUP2	✓	✓	✓				✓						
TB1	✓	✓					✓						
TS1	✓												
FRS1 - Shovel									✓	✓	✓	✓	

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 AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E35821PR Date Results Required: STANDARD Page: 1 of 2	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: CRidley@jkenvironments.com.au

Location: Finley

Sampler: OB

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6an	Combo 3an	Combo 6	Combo 3	Asbestos (NEPM)	Asbestos ID	TRH/BTEX	BTEX				
9/05/2023	1	BH1	0-0.2	G, A	0	F: Silty Clay	X											
9/05/2023	2	BH1	0.3-0.5	G ✓	0	Silty Clay				X								
9/05/2023	3	BH1	0.65-1	G, A	0	Silty Clay												
9/05/2023	4	BH1	1.3-1.5	G ✓	0.3	Silty Clay				X								
9/05/2023	5	BH2	0-0.2	G, A	0	F: Silty Clay	X											
9/05/2023	6	BH2	0.3-0.5	G, A	0	F: Silty Clay												
9/05/2023	7	BH2	1-1.4	G, A	0	F: Silty Clay				X								
9/05/2023	8	BH2	2.4-2.6	G ✓	0.3	Silty Clay												
9/05/2023	9	BH2	2.7-3	G, A	0.2	Silty Clay												
9/05/2023	10	BH3	0-0.2	G, A	0	F: Silty Clay	X											
9/05/2023	11	BH3	0.3-0.5	G, A	0	Silty Clay				X								
9/05/2023	12	BH3	3.2-3.5	G ✓	0	Silty Clay												
9/05/2023	13	BH4	0-0.2	G, A	0	F: Clayey Silt	X											
9/05/2023	14	BH4	0.3-0.5	G ✓	0.1	F: Silty Clay				X								
9/05/2023	15	BH4	0.8-0.1	G, A	0	F: Silty Clay												
9/05/2023	16	BH4	2-2.2	G, A	0	Silty Clay												
10/05/2023	17	BH5	0-0.2	G, A	0.1	F: Silty Sand	X											
10/05/2023	18	BH5	0.3-0.5	G, A	0.2	F: Silty Clay				X								
10/05/2023	19	BH5	1-1.3	G, A	0	Silty Clay												
10/05/2023	20	BH6	0-0.5	G, A	0	F: Sandy Silty Clay	X											
10/05/2023	21	BH6	1-1.5	G, A	0	F: Sandy Silty Clay												
10/05/2023	22	BH7	0-0.2	G, A	0	F: Sandy Silty Clay	X											
10/05/2023	23	BH7	0.2-0.7	G, A	0	F: Sandy Silty Clay				X								
10/05/2023	24	BH7	0.7-1	G, A	0	F: Sandy Silty Clay												
11/05/2023	25	BH8	0-0.2	G, A	0	F: Silty Clay	X											

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar G1 - 500mL Amber Glass Bottle
A - Ziplock Asbestos Bag V - BTEX Vial
P - Plastic Bag H - HNO3 Wash PVC

Relinquished By: OB	Date: 15/5/23	Time:	Received By: ELSSYD	Date: 15/05/23 1300

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 323127

Date Received: 15/05/23
Time Received: 1300
Received By: SP
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

JKE Job Number: E35821PR
Date Results Required: STANDARD
Page: 2 of 2

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 F: 02-9888 5001
Attention: Cridley@jkenvironments.com.au

Location: Finley
Sampler: OB

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6an	Combo 3an	Combo 6	Combo 3	Asbestos (NEPM)	Asbestos ID	TRH/BTEX	BTEX				
11/05/2023	26	BH8	0.8-1	G, A	0	Sandy Silty Clay				X								
10/05/2023	27	BH9	0-0.2	G, A	0	F: Sandy Silt	X											
10/05/2023	28	BH9	0.3-0.5	G, A	0	F: Sandy Silt												
10/05/2023	29	BH9	0.5-0.9	G, A	0	F: Silty Clay				X								
10/05/2023	30	BH9	1.2-1.5	G, A	0	F: Silty Clay												
11/05/2023	31	TP10	0-0.2	G, A	0.2	F: Silty Clay	X											
11/05/2023	32	TP10	0.2-0.3	G, A	0.2	F: Silty Clay												
11/05/2023	33	TP10	0.3-0.6	G, A	0.9	Silty Clay				X								
11/05/2023	34	TP11	0-0.2	G, A	0.2	F: Silty Clay	X											
11/05/2023	35	TP11	0.4-0.6	G, A	2.4	F: Silty Clay				X								
11/05/2023	36	TP11	1.1-1.3	G, A	0	Silty Clay												
11/05/2023	37	TP12	0-0.2	G, A	0	F: Silty Clay	X											
11/05/2023	38	TP12	0.5-0.7	G, A	0	F: Silty Clay				X								
11/05/2023	39	TP12	1.1-1.3	G, A	0	Silty Clay												
11/05/2023	40	SDUP1	-	G		Soil Duplicate			X									
11/05/2023	41	SDUP2	-	G		Soil Duplicate				X								
11/05/2023	SO	SDUP3	-	G		Soil Duplicate			X									
11/05/2023	SO	SDUP4	-	G		Soil Duplicate				X								
11/05/2023	42	TB1	-	G		Trip Blank				X								
11/05/2023	43	TS1	-	V		Trip Spike								X				
11/05/2023	44	FRS1 - Shovel	-	G1,V,H		Rinsate				X								

** Please send SDUP3 and SDUP4 as Inter-lab **

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar G1 - 500mL Amber Glass Bottle
A - Ziplock Asbestos Bag V - BTEX Vial
P - Plastic Bag H - HNO3 Wash PVC

Relinquished By: OB
Date: 15/5/23
Time:
Received By: ELSSYD
Date: 15/05/23 1300

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 323127
Date Received: 15/05/23
Time Received: 1300
Received By: SP
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

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CERTIFICATE OF ANALYSIS 37376

Client Details

Client	JK Environments
Attention	Craig Ridley
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E35821PR**
Number of Samples	2 Soil
Date samples received	17/05/2023
Date completed instructions received	17/05/2023

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.

Report Details

Date results requested by	23/05/2023
Date of Issue	23/05/2023

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Results Approved By
Suk Lee, Organic Supervisor
Tara White, Metals Team Leader
Tianna Milburn, Chemist (FAS)

Authorised By
Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		37376-1	37376-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date extracted	-	19/05/2023	19/05/2023
Date analysed	-	19/05/2023	19/05/2023
vTRH C_6 - C_9	mg/kg	<25	<25
vTRH C_6 - C_{10}	mg/kg	<25	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total BTEX	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	89	90

TRH Soil C10-C40 NEPM			
Our Reference	UNITS	37376-1	37376-2
Your Reference		SDUP3	SDUP4
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date extracted	-	19/05/2023	19/05/2023
Date analysed	-	20/05/2023	20/05/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	86	87

PAHs in Soil			
Our Reference	UNITS	37376-1	37376-2
Your Reference		SDUP3	SDUP4
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date extracted	-	19/05/2023	19/05/2023
Date analysed	-	20/05/2023	20/05/2023
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	82	86

OCP in Soil		
Our Reference		37376-1
Your Reference	UNITS	SDUP3
Date Sampled		11/05/2023
Type of sample		Soil
Date extracted	-	19/05/2023
Date analysed	-	20/05/2023
alpha-BHC	mg/kg	<0.1
Hexachlorobenzene	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve reported Aldrin + Dieldrin	mg/kg	<0.1
Total +ve reported DDT+DDD+DDE	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	86

OP in Soil		
Our Reference		37376-1
Your Reference	UNITS	SDUP3
Date Sampled		11/05/2023
Type of sample		Soil
Date extracted	-	19/05/2023
Date analysed	-	20/05/2023
Azinphos-methyl	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyrifos	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorovos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	86

PCBs in Soil		
Our Reference		37376-1
Your Reference	UNITS	SDUP3
Date Sampled		11/05/2023
Type of sample		Soil
Date extracted	-	19/05/2023
Date analysed	-	20/05/2023
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-fluorobiphenyl	%	88

Acid Extractable metals in soil			
Our Reference		37376-1	37376-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date digested	-	22/05/2023	22/05/2023
Date analysed	-	22/05/2023	22/05/2023
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	18	13
Copper	mg/kg	13	11
Lead	mg/kg	10	7
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	10	8
Zinc	mg/kg	21	34

Moisture			
Our Reference		37376-1	37376-2
Your Reference	UNITS	SDUP3	SDUP4
Date Sampled		11/05/2023	11/05/2023
Type of sample		Soil	Soil
Date prepared	-	19/05/2023	19/05/2023
Date analysed	-	20/05/2023	20/05/2023
Moisture	%	16	7.0

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105°C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	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. 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	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD or GC-MS. 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	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Note, For OCs the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. 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-1	[NT]
Date extracted	-			19/05/2023	1	19/05/2023	19/05/2023		19/05/2023	[NT]
Date analysed	-			19/05/2023	1	19/05/2023	19/05/2023		19/05/2023	[NT]
vTRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	100	[NT]
vTRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	100	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	97	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	99	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	98	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	103	[NT]
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	98	[NT]
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	87	1	89	85	5	92	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/05/2023	1	19/05/2023	19/05/2023		19/05/2023	[NT]
Date analysed	-			21/05/2023	1	20/05/2023	20/05/2023		21/05/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	93	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	82	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	93	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	93	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	82	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	93	[NT]
Surrogate o-Terphenyl	%		Org-020	98	1	86	87	1	82	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/05/2023	1	19/05/2023	19/05/2023		19/05/2023	[NT]
Date analysed	-			20/05/2023	1	20/05/2023	20/05/2023		20/05/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	80	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022/025	90	1	82	82	0	82	[NT]

QUALITY CONTROL: OCP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/05/2023	[NT]	[NT]	[NT]	[NT]	19/05/2023	[NT]
Date analysed	-			20/05/2023	[NT]	[NT]	[NT]	[NT]	20/05/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	76	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022/025	94	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: OP in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/05/2023	1	19/05/2023	19/05/2023		19/05/2023	[NT]
Date analysed	-			20/05/2023	1	20/05/2023	20/05/2023		20/05/2023	[NT]
Azinphos-methyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	74	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	84	[NT]
Diazinon	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	90	[NT]
Dichlorovos	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	78	[NT]
Fenitrothion	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	64	[NT]
Malathion	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022/025	94	1	86	86	0	88	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			19/05/2023	[NT]	[NT]	[NT]	[NT]	19/05/2023	[NT]
Date analysed	-			20/05/2023	[NT]	[NT]	[NT]	[NT]	20/05/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Aroclor 1260	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-fluorobiphenyl	%		Org-022/025	98	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			22/05/2023	[NT]	[NT]	[NT]	[NT]	22/05/2023	[NT]
Date analysed	-			22/05/2023	[NT]	[NT]	[NT]	[NT]	22/05/2023	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	113	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	107	[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.

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Craig Ridley

Sample Login Details

Your reference	E35821PR
Envirolab Reference	37376
Date Sample Received	17/05/2023
Date Instructions Received	17/05/2023
Date Results Expected to be Reported	23/05/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	12.3
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Pamela Adams	Chris De Luca
Phone: 03 9763 2500	**Phone: 03 9763 2500**
Fax: 03 9763 2633	**Fax: 03 9763 2633**
Email: padams@envirolab.com.au	**Email: cdeluca@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	TRH Soil C10-C40 NEPM	PAHs in Soil	OCP in Soil	OP in Soil	PCBsin Soil	Acid Extractable metalsin soil
SDUP3	✓	✓	✓	✓	✓	✓	✓
SDUP4	✓	✓	✓				✓

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.

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E35821PR Date Results Required: STANDARD Page: 2 of 2	FROM: JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Cridley@jkenvironments.com.au

Location: Finley
Sampler: OB

Sample Preserved in Esky on Ice

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Tests Required: Combo 6an	Combo 3an	Combo 6	Combo 3	Asbestos (NEPM)	Asbestos ID	TRH/BTEX	BTEX				
11/05/2023	26	BH8	0.8-1	G, A	0	Sandy Silty Clay				X								
10/05/2023	27	BH9	0-0.2	G, A	0	F: Sandy Silt	X											
10/05/2023	28	BH9	0.3-0.5	G, A	0	F: Sandy Silt												
10/05/2023	29	BH9	0.5-0.9	G, A	0	F: Silty Clay				X								
10/05/2023	30	BH9	1.2-1.5	G, A	0	F: Silty Clay												
11/05/2023	31	TP10	0-0.2	G, A	0.2	F: Silty Clay	X											
11/05/2023	32	TP10	0.2-0.3	G, A	0.2	F: Silty Clay												
11/05/2023	33	TP10	0.3-0.6	G, A	0.9	Silty Clay				X								
11/05/2023	34	TP11	0-0.2	G, A	0.2	F: Silty Clay	X											
11/05/2023	35	TP11	0.4-0.6	G, A	2.4	F: Silty Clay				X								
11/05/2023	36	TP11	1.1-1.3	G, A	0	Silty Clay												
11/05/2023	37	TP12	0-0.2	G, A	0	F: Silty Clay	X											
11/05/2023	38	TP12	0.5-0.7	G, A	0	F: Silty Clay				X								
11/05/2023	39	TP12	1.1-1.3	G, A	0	Silty Clay												
11/05/2023	40	SDUP1	-	G		Soil Duplicate			X									
11/05/2023	41	SDUP2	-	G		Soil Duplicate				X								
11/05/2023	SO	SDUP3	-	G		Soil Duplicate			X									
11/05/2023	SO	SDUP4	-	G		Soil Duplicate				X								
11/05/2023	42	TB1	-	G		Trip Blank				X								
11/05/2023	43	TS1	-	V		Trip Spike								X				
11/05/2023	44	FRS1 - Shovel	-	G1,V,H		Rinsate				X								

** Please send SDUP3 and SDUP4 as Inter-lab **

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar G1 - 500mL Amber Glass Bottle A - Ziplock Asbestos Bag V - BTEX Vial P - Plastic Bag H - HNO3 Wash PVC			
Relinquished By: OB as SYD Sherry	Date: 15/5/23 16/5/23	Time:	Received By: ELS SYD	Date: 15/05/23 1300

ENVIROLAB
Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500

Job No: 37376
Date Received: 17/5/23
Time Received: 12:15
Received By: AP
Temp: Cool/Ambient 12.3
Cooling: Ice/Icepack
Security: Intact/Broken/None

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 323127
Date Received: 15/05/23
Time Received: 1300
Received By: SP
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Appendix F: Report Explanatory Notes

QA/QC Definitions

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994)[21] methods and those described in *Environmental Sampling and Analysis, A Practical Guide,* (1991)[22]. The NEPM (2013) is consistent with these documents.

A. Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection Limit for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations: *"The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit*" (Keith, 1991).

B. Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD).

C. Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured (i.e. the proximity of an averaged result to the true value, where all random errors have been statistically removed). The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes. Accuracy is typically reported as percent recovery.

D. Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handing and analysis protocols and use of proper chain-of-custody and documentation procedures.

E. Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms;
- Sample receipt form;
- All sample results reported;
- All blank data reported;

[21] US EPA, (1994). *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (US EPA SW-846)

[22] Keith., H, (1991). *Environmental Sampling and Analysis, A Practical Guide*

- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

F. Comparability

Comparability is the evaluation of the similarity of conditions (e.g. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

G. Blanks

The purpose of laboratory and field blanks is to check for artefacts and interferences that may arise during sampling, transport and analysis.

H. Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{\text{(Spike Sample Result – Sample Result) x 100}}{\text{Concentration of Spike Added}}$$

I. Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

J. Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{(D1 - D2) \times 100}{\{(D1 + D2)/2\}}$$

Appendix G: Data (QA/QC) Evaluation

Data (QA/QC) Evaluation

A. INTRODUCTION

This Data (QA/QC) Evaluation forms part of the validation process for the DQOs documented in Section 6.1 of this report. Checks were made to assess the data in terms of precision, accuracy, representativeness, comparability and completeness. These 'PARCC' parameters are referred to collectively as DQIs and are defined in the Report Explanatory Notes attached in the report appendices.

1. Field and Laboratory Considerations

The quality of the analytical data produced for this project has been considered in relation to the following:

- Sample collection, storage, transport and analysis;
- Laboratory PQLs;
- Field QA/QC results; and
- Laboratory QA/QC results.

2. Field QA/QC Samples and Analysis

A summary of the field QA/QC samples collected and analysed for this investigation is provided in the following table:

Sample Type	Sample Identification	Frequency (of Sample Type)	Analysis Performed
Intra-laboratory duplicate (soil)	SDUP1 (primary sample BH1 0-0.2m)	Approximately 8% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Intra-laboratory duplicate (soil)	SDUP2 (primary sample BH3 0-0.2m)	As above	Heavy metals, TRH/BTEX, PAHs
Inter-laboratory duplicate (soil)	SDUP4 (primary sample BH2 0-0.2m)	Approximately 8% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Inter-laboratory duplicate (soil)	SDUP4 (primary sample BH4 0-0.2m)	As above	Heavy metals, TRH/BTEX, PAHs
Trip spike (soil)	TS1 (8-11 May 2023)	One for the investigation to demonstrate adequacy of preservation, storage and transport methods	BTEX
Trip blank (soil)	TB1 (8-11 May 2023)	One for the investigation to demonstrate adequacy of storage and transport methods	Heavy metals, TRH/BTEX, PAHs
Rinsate (soil – shovel)	FRS1 - Shovel (11 May 2023)	One for the investigation to demonstrate adequacy of decontamination methods	TRH/BTEX

The results for the field QA/QC samples are detailed in Table Q1 attached to the investigation report and are discussed in the subsequent sections of this Data (QA/QC) Evaluation report.

3. Data Assessment Criteria

JKE adopted the following criteria for assessing the field and laboratory QA/QC analytical results:

Field Duplicates

Acceptable targets for precision of field duplicates in this report will be 30% or less, consistent with NEPM (2013). RPD failures will be considered qualitatively on a case-by-case basis taking into account factors such as the concentrations used to calculate the RPD (i.e. RPD exceedance where concentrations are close to the PQL are typically not as significant as those where concentrations are reported at least five or 10 times the PQL), sample type, collection methods and the specific analyte where the RPD exceedance was reported.

Trip Blanks and Rinsates

Acceptable targets for trip blank and rinsate samples in this report will be less than the PQL for organic analytes. Metals will be considered on a case-by-case basis with regards to typical background concentrations in soils and published drinking water guidelines for waters.

Trip Spikes

Acceptable targets for trip spike samples in this report will be 70% to 130%.

Laboratory QA/QC

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the laboratory reports. These criteria were developed and implemented in accordance with the laboratory's NATA accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

A summary of the acceptable limits adopted by the primary laboratory (Envirolab) is provided below:

RPDs

- Results that are <5 times the PQL, any RPD is acceptable; and
- Results >5 times the PQL, RPDs between 0-50% are acceptable.

Laboratory Control Samples (LCS) and Matrix Spikes

- 70-130% recovery acceptable for metals and inorganics;
- 60-140% recovery acceptable for organics; and
- 10-140% recovery acceptable for VOCs.

Surrogate Spikes

- 60-140% recovery acceptable for general organics; and
- 10-140% recovery acceptable for VOCs.

Method Blanks

- All results less than PQL.

B. DATA EVALUATION

1. Sample Collection, Storage, Transport and Analysis

Samples were collected by trained field staff in accordance in accordance with our standard field sampling procedures, which were designed to be consistent with relevant guidelines, including NEPM (2013) and other guidelines made under the CLM Act 1997.

Appropriate sample preservation, handling and storage procedures were adopted. Laboratory analysis was undertaken within specified holding times generally in accordance with Schedule B(3) of NEPM (2013) and the laboratory NATA accredited methodologies. Envirolab noted that the asbestos results were reported to be consistent with the recommendations in NEPM (2013), however this level of reporting is outside the scope of their NATA accreditation. In the absence of other available analytical methods for asbestos, this was found to be acceptable for the purpose of this investigation.

JKE identified the following minor nomenclature discrepancies in relation to COC and laboratory documentation:

- Test pits TP10 to TP12 inclusive were identified as BH10 to BH12 respectively on the laboratory report. JKE note that the COC documentation correctly identified these as test pits;
- The dates recorded on the COC for the trip spike and trip blank samples correlated with the completion of the fieldwork, rather than the commencement. The trip spike and blank samples were prepared prior to travelling to the site for the commencement of the fieldwork and were analysed within the recommended holding times; and
- The sample collected from BH4 (0.8-1.0m) was incorrectly transcribed on the COC as BH4 (0.8-0.1m). JKE note this sample was not selected for laboratory analysis.

The discrepancies were minor and were considered to have had no adverse impact on the data set or the investigation as a whole.

Review of the project data also indicated that:

- COC documentation was adequately maintained;
- Sample receipt advice documentation was provided for all sample batches;
- All analytical results were reported; and
- Consistent units were used to report the analysis results.

2. Laboratory PQLs

Appropriate PQLs were adopted for the analysis and all PQLs were below the SAC.

3. Field QA/QC Sample Results

Field Duplicates

The results indicated that field precision was acceptable. No RPD exceedances were reported.

Trip Blanks

During the investigation, one soil trip blank was placed in the esky during sampling and transported back to the laboratory. The soil trip blank analysis results were all less than the PQLs with the exception of chromium, copper, lead and zinc with reported concentrations ranging from 2mg/kg to 3mg/kg. Low level metals concentrations are typical in washed sand which is utilised as blank material. In JKE's experience, the concentrations reported were consistent with background concentrations in a sand matrix and were not indicative of cross-contamination. On this basis, cross contamination between samples that may have significance for data validity did not occur.

Rinsates

All results were below the PQL with the exception of copper and zinc, with reported concentrations of 0.5mg/L and 0.05mg/L respectively. Low level metals concentrations are typical in potable water which is utilised for rinsing and the collection of rinsate samples. In JKE's experience, the concentrations reported were consistent with expected concentrations in potable water (the Australian drinking water guidelines for copper is 2mg/L whilst the aesthetic consideration for zinc is 3mg/L). On this basis, cross contamination between samples that may have significance for data validity did not occur.

Trip Spikes

The results ranged from 102% to 106% and indicated that field preservation methods were appropriate.

4. Laboratory QA/QC

The analytical methods implemented by the laboratory were performed in accordance with their NATA accreditation and were consistent with Schedule B(3) of NEPM (2013). The frequency of data reported for the laboratory QA/QC (i.e. duplicates, spikes, blanks, LCS) was considered to be acceptable for the purpose of this investigation.

A review of the laboratory QA/QC data did not identify non-conformances.

C. DATA QUALITY SUMMARY

JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

Non-conformances were reported for some field QA/QC measures. These non-conformances were considered to be sporadic and minor, and were not considered to be indicative of systematic errors. On this basis, these non-conformances are not considered to materially impact the report findings.

Appendix H: Guidelines and Reference Documents

Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). Acid Sulfate Soils Manual

Australian and New Zealand Environment Conservation Council (ANZECC), (2000). Australian and New Zealand Guidelines for Fresh and Marine Water Quality

Canadian Council of Ministers of the Environment, (1999). Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)

CRC Care, (2011). Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document

Contaminated Land Management Act 1997 (NSW)

Department of Land and Water Conservation, (1997). 1:25,000 Acid Sulfate Soil Risk Map Series

Managing Land Contamination, Planning Guidelines SEPP55 – Remediation of Land (1998)

National Environment Protection Council (NEPC), (2013). National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)

National Health and Medical Research Council (NHMRC), (2021). National Water Quality Management Strategy, Australian Drinking Water Guidelines 2011

NSW Department of Environment and Conservation, (2007). Guidelines for the Assessment and Management of Groundwater Contamination

NSW EPA, (1995). Contaminated Sites Sampling Design Guidelines

NSW EPA, (2014). Waste Classification Guidelines - Part 1: Classifying Waste

NSW EPA, (2015). Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997

NSW EPA, (2017). Guidelines for the NSW Site Auditor Scheme, 3rd Edition

NSW EPA, (2020). Consultants Reporting on Contaminated Land, Contaminated Land Guidelines

NSW Health Infrastructure, (2021). Design Guidance Note No. 030. Site Investigations: Project Opportunities and Constraints

NSW Health Infrastructure, (2020). Design Guidance Note No. 060. Contaminated Land Management Framework

Olszowy, H., Torr, P., and Imray, P., (1995). Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

Protection of the Environment Operations Act 1997 (NSW)

State Environmental Planning Policy (Resilience and Hazards) 2021 (NSW)

World Health Organisation (WHO), (2008). Petroleum Products in Drinking-water, Background document for the development of WHO Guidelines for Drinking Water Quality

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