

Detailed Site Investigation

88 Newton Road, Wetherill Park, NSW

Prepared for: Centuria Capital Limited
EP3206.001 22 April 2024

APPROVED COMPANY ISO 9001 Quality Management Systems QMS Certification Services

APPROVED COMPANY AS/NZS 4801 Occupational Health & Safety Management Systems QMS Certification Services

APPROVED COMPANY ISO 14001 Environmental Management Systems QMS Certification Services

EP RISK

Detailed Site Investigation

88 Newton Road, Wetherill Park, NSW

Centuria Capital Limited
Level 41, Chifley Tower
2 Chifley Square
Sydney NSW 2000

22 April 2024

Our Ref: EP3206.001

LIMITATIONS

This Detailed Site Investigation was conducted on the behalf of Centuria Capital Limited for the purpose/s stated in **Section 1**.

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Executive Summary

Introduction

EP Risk Management Pty Ltd (EP Risk) was engaged by Centuria Capital Limited (Centuria, the Client) to undertake a Detailed Site Investigation (DSI) for a property located at 88 Newton Road, Wetherill, New South Wales (NSW) (the Site). It is understood that the Site is proposed to be redeveloped into a single storey warehouse with associated offices and a car park (Proposed Development), and the DSI is required in support of a local Development Application (DA) to Fairfield City Council. The Site comprises of Lot 1 in deposited plan (DP) 1017259.

Objective

The objective of the investigations was to undertake a Geotechnical assessment of subsurface conditions at the Site in conjunction with a Preliminary and Detailed Site Investigation to identify the extent of contamination (if present) and determine whether the Site is suitable for the proposed development in addition to determining the potential risks to site workers, future users and the environment from the identified contamination.

Summary of Findings

The summary of findings of the Detailed Site Investigation are as follows:

- As of **6 October 2023**, surrounding land uses comprised of various commercial properties along Newton Road to the South and East. North of the Site was a constructed drainage easement followed by a Caltex service station and further commercial properties. West of the property was a vacant lot and a drainage channel followed by commercial properties.
- Based on the review of the historical information, the Site was formerly used as a farmland. The Site operated as grazing land prior to 1970, when the western portion of the Site was occupied by a residential property and owned by farmer Joseph Attard. By 1982 and to circa 1991 the eastern portion of the Site was owned by Edenbri Pty Limited and appeared to be occupied as a storage yard of either building materials and stockpiled material. By 2000, construction of the current buildings that occupies the Site today was underway, and Consolidated Paper Industries Pty Limited and Challenger Property Nominees Pty Limited owned the Site. The property has since been leased to ITW Australia Pty Ltd (Office 1) from 1/7/2019 to 30/6/2022 and Weir Minerals Australia Ltd (Weir Minerals) including Office and Amenities 3, Shed 1, Low Rise Warehouse expiring in 21/12/2026. Currently, the warehouse is seen as storage / distribution centre for various commercial parts for Weir Minerals.
- In general, the subsurface conditions comprised:
  - 0 – 0.1 mBGL: Surface condition: Grass cover, concrete, pebbles, road base
  - 0 – 0.2 mBGL: TOPSOIL: gravelly clayey sand/ silty sand / gravelly sandy clay
  - 0 – 2.9 mBGL: FILL: gravelly sandy clay/ sandy clay,
  - 0.2 – 7.5 mBGL: NATURAL: Sandy CLAY/ Silty CLAY/ SILTSTONE / CLAY
  - 3 – 7.5 mBGL: Shale: extremely to moderately weathered
- All BTEXN / PAH / OCP / OPP / Metals TRH and TPH concentrations of the soil samples analysed were reported below the adopted human health and ecological criteria and / or laboratory limit of reporting (LOR).

- The two (2) fibre cement fragments collected during field screening within test pit location TP37 reported concentrations of bonded (non-friable) asbestos below the adopted HSL at a concentration of 0.008 % w/w. Two (2) fibre cement fragments (MS01 and MS02) identified on the southeastern surface of the Site returned a positive result for Chrysotile (white asbestos).
- Asbestos fines / Fibrous asbestos (AF/FA) were not detected above the (non-NATA) laboratory LOR (0.001% w/w) within the fifteen (15) soil samples analysed. Asbestos was not detected within the remaining soil samples submitted for Asbestos ID (AS4964:2004) (0.1 g/kg) and trace analysis.
- Concentrations of Net Acidity and Chromium Reducible Sulfur were reported at less than the National Acis Sulfate Soils Guidelines NASSG (2018) Action Criteria for > 1000 tones disturbed for clay material with the exception of five (5) samples which reported concentrations of Net acidity above the Action Criteria. Based on a review of the data the Acid Sulfate Soils requiring management appeared to be limited to the eastern extent of the Site present at depths from 2 – 3 metres below ground level.
- Based on the results of the salinity testing, the Site is predominantly characterised by non-saline to slightly saline soils. Furthermore, the results indicate the salinity predominantly increases with depth across the Site.
- The area surrounding TP37 poses a potential risk to on-site workers during the proposed works due to the identification of bonded asbestos. Works within this ASBINS area as highlighted within **Figure 1** attached, should be conducted under Class B (bonded) conditions. An unexpected finds protocol should be adopted for future development works should any asbestos be observed during works.
- In consideration of the proposed development plans and the location of identified actual acid sulfate soils at the Site, it is considered unlikely that excavations will disturb actual acid sulfate soils which have been identified in natural Clay at depths ranging from 2 – 3 mBGL. Should deeper excavations within the AASS area occur (or be required) or should any physical signs of ASS be observed during the works, further investigations and the development of a potential management strategy may be required.
- Overall, based on this assessment and the conceptual site model for the proposed development there are no complete source-pathway-receptor linkages.

Conclusion and Recommendations

Based on this assessment and the conceptual site model, the material assessed is suitable to remain on-site under the proposed development and is considered to pose a low risk to current and future land users. Considering the above, it is satisfied that the Site is suitable for the proposed the development, in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021 (SEPP 2021).

While contamination at a level warranting management or remediation was not identified, the following is recommended to meet industry best practice during development activities:

- Predominantly non-saline to slightly saline soils were identified in shallow soils increasing to slightly to moderately saline soils at depth. Salinity management measures should be included as part of the construction environmental management plan for the Site.
- Anthropogenic material from the demolition of the existing buildings and infrastructure should be removed from the Site prior to any vegetation clearance or earthwork activities.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.
- Works within identified areas containing ASBINS should be completed in accordance with the Work Health and Safety Regulation 2017, the SafeWork NSW Code of Practice: How to Manage and Control Asbestos in the Workplace 2019; and AS2621 - Australian Standard for Demolition of Structures 2001

- Where any on-site material requires disposal, these should be assessed in accordance with NSW EPA, Waste Classification Guidelines, Part 1: Classifying Waste (2014) and the NSW EPA Waste Recovery Framework prior to disposal or beneficial re-use. It is noted that the results of this limited DSI assessment should be included in the final waste classification.

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1 Introduction

EP Risk Management Pty Ltd (EP Risk) was engaged by Centuria Capital Limited (Centuria, the Client) to undertake a Detailed Site Investigation for a property located at 88 Newton Road, Wetherill, New South Wales (NSW) (the Site). It is understood that the Site is proposed to be redeveloped into a single storey warehouse with associated offices and car parking areas (Proposed Development). This DSI is required in support of a locatl Development Application (DA) to Fairfield City Council. The area is currently zoned as E4 – General Industrial under the Fairfield Environment Plan (LEP) 2013, EP Risk understands that no planned changes to the current land use is intended.

The report addresses Chapter 4 of the State Environmental Planning Policy (SEPP) Resilience and Hazards 2021.

1.1 Site Identification

The Site identification details are presented in **Table 1**.

Table 1 – Site Identification

Item	Description
Address	88 Newton Road, Wetherill Park, NSW (**Figure 1**)
Legal description	The Site is legally described as Lot 1 in deposited plan (DP) 1017259.
Approximate Area	Approximately 5.19 hectares (ha).
Municipality	Fairfield City Council (Council)
Zoning	The Fairfield Environment Plan (LEP) 2013 identifies the Site as E4 – General Industrial.

1.2 Proposed Development

The development proposes the following: demolition of existing buildings and structures, construction and operational use of a single storey warehouse and distribution centre with ancillary office space and amenities, on-site parking, landscaping and access, and other associated works including bulk earthworks, site preparation works and site clearance, as well as augmentation and construction of servicing utilities [1].

The proposed architectural designs are included in **Appendix I**. The proposed design for the site area is shown below in **Figure 1**.

[1] SBA Architects Pty Ltd, Network 88 - Multi Level Warehouse - Development Application, 94 Newton Road, Wetherill Park, dated: 9.11.2023, (SBA 2023).

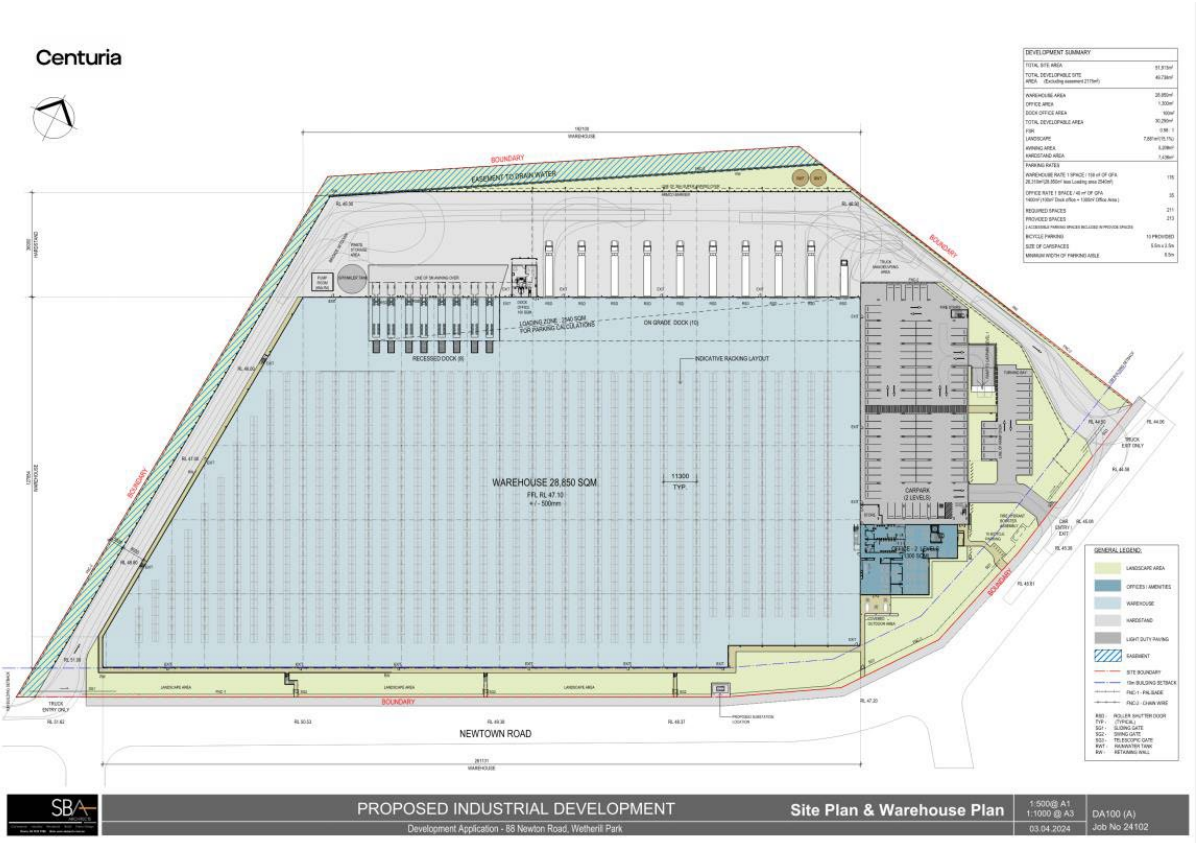


Figure 1 – Key Plan for the Development

1.3 Objective

The objective of the proposed works is to undertake a Geotechnical assessment of subsurface conditions at the Site in conjunction with a Preliminary and Detailed Site Investigation to identify the extent of contamination (if present) and determine whether the Site is suitable for the proposed development in addition to determining the potential risks to site workers, future users and the environment from the identified contamination.

1.4 Scope of Work

The following scope of works was completed to achieve the objectives:

- Undertake a desktop study for a Site history review based on:
    - Council and regulatory records;
    - Historical and current land title records;
    - Historical aerial photographs;
    - Regulatory searches, including NSW Environmental Protection Authority (EPA) Notified, Contaminated and Investigation Sites; and
    - Geological and hydrological information.
- Undertake a Site visit to observe onsite and offsite conditions.
- Identify potentially contaminating activities that have occurred at the Site and develop a preliminary site conceptual model (CSM).
- Prepare all work health and safety documentation and procure dial before you dig information.

- Advancement of thirty (30) boreholes within the Site boundary to the maximum depth of 3.0 m BGL to assist the geotechnical assessment attached as **Appendix G**.
- Advancement of twenty (20) boreholes within the Site boundary to the maximum depth of 6.0 m BGL.
- Advance seven (7) test pits within the Site boundary to the maximum depth of 2.0 metres below ground level (m BGL) or prior rock refusal.
- Field screening for bonded (non-friable) asbestos – containing material (ACM) (> 7 mm) within all of the test pits/ boreholes progressed via collection of 10 L soil samples from test pits at up to two depths within the fill materials (dependent on fill thickness) and sieving of soil through a 7 mm sieve to assess for bonded (non-friable) ACM in accordance with National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM 2013) and the Western Australian (WA) Department of Health (DOH) (2020) *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (DOH 2021).
- Collection of soil samples from the seven (7) test pits and fifty (50) boreholes and submission of the sample to a National Association of Testing Authorities (NATA) accredited laboratory for analysis.
- Analytical testing for soil samples collected from natural material from fifteen (15) borehole locations for Chromium Reducible Sulfur to assist with the acid sulfate soil requirements.
- Headspace field screening of collected samples for ionisable volatile organic compounds (VOC) using a calibrated photo-ionisation detector (PID).
- Conversion of four (4) geotechnical boreholes into groundwater monitoring wells for groundwater analysis.
- Groundwater sampling of the newly installed monitoring wells at the Site.
- Preparation of a report in accordance with the NSW EPA (2020) *Guideline for Consultants Reporting on Contaminated Land* and the ASC NEPM 2013.
- Submission of a geotechnical report (prepared by Fortify Geotech) attached as Appendix G.

1.5 Review of Previous Reports

Technical Due Diligence Report[2]

SGA Property Consultancy Pty Ltd (SGA), carried out a Technical Due Diligence Report, on behalf of Fife Capital Pty Ltd at 88 Newton Road, Wetherill Park NSW (included as **Appendix J** to this report. SGA was requested to undertake a Limited Hazardous Materials and Environmental Assessment, and the following was identified:

- Synthetic Mineral Fibres (SMF) within the ceiling tiles, insulation and pipe/duct work within both buildings on-site; and
- R22 refrigerant gas (hydro chlorofluorocarbon (HCFC)) within air conditioner units.

The SMF identified was considered to pose a very low risk, the R22 was being phased out and future supplies restricted.

An environmental assessment based on a review of soil, geology, hydrogeology, government environmental databases, information collected from the Australian Heritage Council, review of historical aerial photographs and Site inspection details. The environmental assessment identified previous agricultural activities in the 1980s, and the use of the Site as a storage facility in the 1980s - 1990s.

[2] SGA Property Consultancy, Technical Due Diligence Report, 94 Newton Road, Wetherill Park, NSW, Issued: June 2013.

No asbestos was identified on-site, however a detailed asbestos assessment was recommended due to the construction of the on-site property in 2001 (prior to 2004).

Based on the results of the limited hazardous materials and environmental assessment undertaken on-site SGA reported that the Site presented a low hazardous materials risk and a low environmental risk.

Surface Water and Groundwater Impact Statement

EP Risk Management Pty Ltd (EP Risk) was engaged by Centuria to undertake a Surface Water and Groundwater Impact Assessment (EP Risk 2023) [3] for the Site (submitted as part of the DA package).

The scope of works included a desktop hydrogeological study including a review of previous reports prepared for the Site and publicly available hydrogeological information, development of a Groundwater Conceptual Model and an analysis of the proposed dewatering required for the development, an assessment of the construction and operational impacts associated with the Proposed Development on the surrounding groundwater and surface water nearby the Site, development of appropriate mitigation and monitoring measures to be implemented throughout the construction and/or operation and an assessment of their effectiveness with respect to surface and groundwater impacts.

Based on the information contained in the concept plans provided, it was considered that minimal dewatering will be required and would mostly be limited to perched water rather than groundwater during construction including:

- Some minor dewatering of the perched water aquifer in the southwestern portion during bulk earthworks may be required.
- Some minor dewatering in some proposed stormwater and sewer excavations (likely only perched water) may be required.

The following was noted:

Potential construction stage impacts include contamination from chemical or hydrocarbon spills and increased sediment loads being discharged to downstream systems as a result of runoff from exposed areas. Construction impacts would be managed through implementation of Surface Water Management Plans (SWMPs) in accordance with the Blue Book and detailed planning and management of construction sites to avoid impacting overland flow paths without appropriate mitigation.

Water quality impacts would be managed through implementation of water sensitive urban design measures.

Construction stage impacts on groundwater may occur due to minor interception of perched water by excavations associated with construction. Impacts on perched water level due to dewatering would occur during the construction phase only.

1.6 Technical Framework

The DSI was conducted in general accordance with:

- ASC NEPM (2013).
- NSW EPA (2017) Guidelines for the NSW Auditor Scheme (3rd Edition) (NSW Auditor Guidelines).
- NSW EPA (2020) Contaminated Land Guidelines – Consultants Reporting on Contaminated Sites.
- Protection of the Environment Operations (POEO) Act 1997.

[3] EP Risk 2023, Surface Water and Groundwater Impact Statement, 94 Newton Road, Wetherill Park, NSW, EP3206.002, issued: 10 November 2023 (EP Risk 2023).

- The Fairfield LEP (2013).
- State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP)
- Department of Environment and Conservation NSW (DEC) (2007) *Guidelines for the Assessment and Management of Groundwater Contamination.*
- Friebel, E & Nadebaum, P 2011, Health Screening Levels for Petroleum Hydrocarbons in soil and groundwater. Part 1: Technical development document, CRC CARE Technical Report no. 10, CRC for Contamination Assessment and Remediation of the Environment (CRC CARE), Adelaide, Australia.
- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.
- National Health and Medical Research Council (NHMRC) (2008) *Guidelines for Managing Risk in Recreational Waters.*
- NHMRC and National Resource Management Ministerial Council (NHMRCC) (2011) National Water Quality Management Strategy, Australian Drinking Water Guidelines 6, 2011 (version 3.8 updated September 2022) (ADWG 2011).
- NSW EPA (2022) *Contaminated Land Guidelines*: *Sampling Design part 1 – application*.
- The United States Environment Protection Agency (USEPA) (2006) Guidance on Systematic Planning Using the Data Quality Objectives Process, ref: EPA QA/G-4.
- Western Australian (WA) Department of Health (DOH) (2021) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (DOH 2021).
- NSW EPA (2021) Position Statement – WA Guidelines for asbestos-contaminated sites.
- Planning Secretary's Environmental Assessment Requirements (SSD-41589232).
- Stone, Y, Ahern C R, and Blunden N (1998). Acid Sulfate Soil Manual 1998. Acid Sulfate Soil Management Advisory Committee, Wollongbar, NSW, Australia (NSW ASS Manual 1998).
- Dear, S-E, Ahern, C R, O'Brien, L E, Dobos, S K, McElnea, A E, Moore, N G and Watling, K M (2014) Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines (QLD ASS Technical Manual 2014).
- Contaminated Land Management Act 1997 (CLM Act).
- Protection of the Environment Operations Act 1997 (POEO Act).
- National Acid Sulfate Soils Guidance "National Acid Sulfate Soils Sampling and Identification Methods Manual" 2018 (National ASS Guidance 2018).
- Department of Land and Water Conservation (DLWC), Site Investigations for Urban Salinity (2002).
- The PFAS National Environmental Management Plan (NEMP2) (2020).

2 Site Condition and Surrounding Environment

The majority of information provided in the following sections was obtained from Lotsearch Environmental Risk and Planning Report (Lotsearch, 2023), which was obtained for the Site. A copy of the Lotsearch (2023) report is attached as **Appendix A**.

2.1 Land Use and Layout

The Site has an area of approximately 5.19 ha. It is located within the Wetherill Park Industrial Area and close to the junction of Newton Road and Victoria Street. The Site is located between an existing drainage channel, Newton Road and other industrial land and has an irregular shaped allotment. It is broadly flat, with a minor fall in levels from south to north and west to east. An EP Risk Environmental Consultant attended the Site on 13th July 2023 to undertake a site walkover and visual inspection. General site features observed are summarised below:

- Two buildings were present on-site, one (1) large warehouse within the western portion of the Site and an office building with a surrounding carpark located within the eastern section of the Site.
- Loading docks were located on the north and eastern sides of the warehouse.
- Areas of landscaped open space are located immediately east and west of the main warehouse building.
- Trees and other vegetative screening are located along the southern, eastern and western boundaries of the site and around the internal vehicular access routes and car park.
- A stormwater drainage channel was located approximately 2m north of the Site.
- No evidence of above ground storage tanks (ASTs) or Underground Storage Tanks (USTs) were observed on-site.
- A fire sprinkler system was observed within the warehouse.
- The warehouse was being used as a storage / distribution centre for various commercial parts.
- Access to the Site for heavy vehicles is provided from its southern boundary along Newton Road. Access for light vehicles is provided from the eastern boundary of the site along Newton Road. A car parking area is provided in the eastern part of the Site.

Photographs of the Site are attached as **Appendix B**.

2.2 Surrounding Land Use

The area surrounding the Site is predominately characterised by industrial uses, including large and small-medium format warehouse and distribution centres and other industrial-related activities. As of **6 October 2023**, surrounding land uses comprised of:

- North: A drainage channel, commercial properties and a Caltex service station followed by Victoria Street and other commercial properties. Zoned as E4 – General Industrial.
- South: Newton Road, followed by commercial properties. Zoned as E4 – General Industrial.
- East: Newton Road, followed by commercial properties. Zoned as E4 – General Industrial.
- West: A vacant lot and a drainage channel followed by commercial properties. Zoned as E4 – General Industrial.

2.3 Environmental Setting

A summary of the information accessible through publicly available records is summarised in **Table 2** below.

Table 2 – Environmental Setting

Record	Findings
Topography and Hydrology	The approximate elevation of the Site was between 46 – 52 (m) Australian Heigh Datum (AHD). The local topography declined towards the northeast. There were no significant topographic features within the Site boundary. Due to the coverage of buildings and hardstand at the Site, the majority of the surface runoff is expected to be directed to the municipal stormwater system or the adjacent drainage channel to the north. A plan showing the topographical contours of the Site is provided within the Lotsearch (2023) Report in **Appendix A**.
Geology	Based on the geological data sourced from the NSW Department of Industry, Resources and Energy (Lotsearch, 2023), the southern portion of the Site is underlain by the Middle Triassic aged Bringelly Shale comprising shale, carbonaceous claystone, laminate, lithic sandstone and rare coal. In addition, the northern portion of the Site is underlain by Cenozoic to now-aged alluvium comprising unconsolidated alluvial clay, silt, sand and gravel deposits.
Soil Landscapes	Based on the soil landscape data sourced from the NSW OEH (Lotsearch, 2023), the Site is located within the Kurosol soil order. The soil landscapes are the South Creek Soil Landscape occupying the northern portion of the Site, which comprises the present active floodplain of many drainage networks of the Cumberland Plain. The main soils of the South Creek Soil Landscape are Structured Plastic Clays or Structured Loams in and immediately adjacent to drainage lines where pedogenesis has occurred; Red and Yellow Podzolic Soils are the most common terraces with small areas of Structured Grey Clays, leached clay and Yellow Solodic Soils. In addition, the Blacktown Soil Landscape occupies the central and southern portions of the Site, which occurs extensively on the Cumberland Lowlands. The main soils of the Blacktown Soil Landscape are shallow to moderately deep hard setting mottled texture contrast soils, Red and Brown Podzolic Soils on crests grading to Yellow Podzolic Soils on lower slopes and in drainage lines.
Hydrogeology	A search of the Bureau of Meteorology's (BOM) National Groundwater Information System undertaken by Lotsearch (2023) indicated there were no registered groundwater bores located on-site. However, 36 registered groundwater bores were located within 2 km of the Site. The authorised purpose of the bores was for monitoring. The closest bore was 332 m northeast of the Site, and the depth of the bore was 5.10 m below ground level (m BGL). Standing water levels or salinity were not reported on the bore report. According to Geoscience Australia's Hydrogeology map of Australia, aquifers beneath the Site are anticipated to be porous, extensive aquifers of low to moderate productivity. The regional groundwater flow direction of the upper aquifer is expected to be to the northeast towards Prospect Creek. The Site is located within the Wianamatta Group which consists of three units: the Ashfield Shale, the Minchinbury Sandstone and the Bringelly Shale, with the Minchinbury Sandstone of negligible thickness (McNally, 2004). In Western Sydney, the Wianamatta Group has a maximum thickness of up to 300 m; however, a more typical thickness ranges from 100 to 150 m. Two (2) aquifer systems are associated with the shale formations of the Wianamatta Group. The upper aquifer typically has a depth of 3 to 10 m and comprises of residual soils and colluvium derived from the shales, floodplain alluvium and the weather saprolite. Hydraulic conductivities reportedly range between 0.01 and 10-5m/day with the higher end conductivities suggesting open fractures in weather shales or ferricrete bands. The lower aquifer system occurs comprises of fine – grained mudrocks and

Table 2 – Environmental Setting

Record	Findings
	occurs below the base of the weathering. Hydraulic conductivities reportedly range between 0.001 and 10^{-8} m/day, with the lower end reflecting the intrinsic impermeability of the unfractured shale. Both aquifers are reported to have limited storage and low bore yields, typically less than 0.1 ML/day (McNally, 2004; Parson Brinckerhoff, 2013). Aquifers in the Wianamatta Group are not generally targets for water supply due to generally very low yields, in places highly saline groundwater (5,000 to >15,000 mg/L in the Western Sydney area) and the lack of water – bearing zones (Russell et al., 2009).
Natural Occurring Asbestos Potential	No reported naturally occurring asbestos potential has been identified within 1 km of the Site.
Acid Sulfate Soils	Based upon a review of the Fairfield LEP (2013), the Site is not located within an area mapped as an acid sulfate soil risk area. A search of the Atlas of Australian ASS database completed by Lotsearch (2023) identifies the Site to be within a Class C category for acid sulfate soils. The Class C category is considered to have an extremely low probability of ASS occurrence (1-5% chance) of occurrence.
Dryland Salinity	The National Assessment data for Dryland Salinity reported the majority of the Site to be a high hazard or risk of Dryland Salinity (National Land and Water Resources Audit). The Site lies within an area of moderate salinity potential based on the NSW Office of Environment and Heritage Dryland Salinity Potential of Western Sydney dataset.
Bushfire Prone Area	The Bushfire Protection Assessment by Travers Bushfire & Ecology found that bushfire can potentially affect the proposed development from the west, resulting in future buildings being exposed to some potential radiant heat and ember attack. The building is to be constructed in accordance with a Type A construction as a large, isolated building under the Nature Conservation Council. This will facilitate access for firefighting to the south of the site. It was recommended that a landscaping plan be finalised and assessed by a suitably qualified bushfire consultant prior to occupation.
Ecology	According to NSW OEH, the site has no ecological constraints. One (1) moderate groundwater-dependent ecosystem (Vegetation) was identified 937 m southwest of the site. No RAMSAR wetlands existed on-site or within 1km of the site.
Waste Management Facilities	One (1) operational waste management facility was identified within 1 km of the Site: • Sita Australia Pty Ltd – David Road Recycling and Waste Transfer – 20 David Road, Wetherill Park (969 m northeast).
National Liquid Fuel Facilities	Four (4) operational national liquid fuel facilities were identified within 1 km of the Site: • Petrol Station – Caltex – Caltex Wetherill Park – 449 Victoria Street, Wetherill Park (65 m north). • Petrol Station – Caltex – Caltex Wetherill Park – 32 McIlwraith Street, Wetherill Park (401 m south). • Petrol Station – Coles Express Wetherill Park – 413 Victoria Street, Wetherill Park (563 m east). • Petrol Station – BP – BP Wetherill Park – 1181 The Horsley Drive, Wetherill Park (801 m east). Due to the separation distance between the petrol stations and the Site and the inferred groundwater flow to be in a general northeast direction, it is considered unlikely that any contamination may occur from these activities on-Site.
Mining Subsidence	With reference to the Mining Subsidence District Data sourced from Lotsearch (2023), the Site is not located within a mining subsidence district.
Mining and Exploration Titles	A total of 12 Historical Mining and Exploration Titles exist within the boundaries of the Site, identified for petroleum and minerals resources. The most recent end date for

Table 2 – Environmental Setting	
Record	**Findings**
	the titles was 03/06/2015 for Dart Energy (Apollo) Pty Ltd for petroleum exploration. The remaining end dates are noted between 1968 and 2013 on-site.
Cattle Dips	No records of cattle dips were recorded at or within 1 km of the Site according to a search of the Department of Primary Industries Data Base and visual observations of the Site.
Former Gasworks	No former gasworks have been identified at or within 1 km of the Site.

2.4 Regulatory Searches

A summary of the regulatory searches performed by Lotsearch (2022) are summarised in **Table 3**.

Table 3 – Regulatory Searches	
Search	Results
Contaminated Land	The Site was not listed as contaminated under the Contaminated Land Management Act (CLM Act) 1997. As of 06.10.23, the Site was not listed on the NSW Environment Protection Authority (NSW EPA) Record for Contaminated Sites notified to the NSW EPA in accordance with the CLM Act 1997. Two (2) properties within 1 km of the Site were listed on the NSW EPA database for Contaminated Sites notified to the NSW EPA: • BOC Sydney Operations Centre Sydney Operations Centre – Regulation being finalised – 428 – 440 Victoria Street, Wetherill Park (247 m northeast) • Camide Former Landfill – Regulation under CLM Act not required – Newton Road, Wetherill Park (553 m northeast)
Licensed Activities under the Protection of the Environment Operations Act 1997	There were 21 Licensed activities under the POEO Act within 1 km of the Site. The licensed activities have been summarised below: • Six (6) records for BOC Sydney Operations Centre Limited – Sydney Operation Centre – 428 – 440 Victoria Street, Wetherill Park (247 m northeast). o Chemical production waste generation. o Pesticides and related products (toxic substances production). o Pesticides and related products production. o Dangerous good production. o General chemicals storage. o Toxic substances production. • Bega Dairy and Drinks Pty Ltd – Dairy Farmers Wetherill Park – Dairy processing – 443 Victoria Street, Wetherill Park (286 m east).' • Sika Australia Pty Ltd – Sika Australia – Petrochemical production – 18 Hargraves Place (541 m northeast).

Table 3 – Regulatory Searches

Search	Results

	• Three (3) records for Parexgroup Pty Ltd – Davco Construction Materials Pty Ltd – 67 Elizabeth Street, Wetherill Park (679 m northeast).
	  ○ Paints/polishes/adhesives production.
	  ○ Cement or lime handling.
	  ○ Chemical production waste generation.
	• Two (2) records for Eco-Cycle Materials Pty Ltd – 155 Newton Road, Wetherill Park (686 m northeast).
	  ○ Waste storage – other types of waste.
	  ○ Non-thermal treatment of general waste.
	• Primary Flooring Pty Ltd – Dunlop Flooring – Plastic resin production. 183 -187 Newton Road, Wetherill Park (762 m north).
	• Two (2) records for CSR Building Products Limited – CSR Building Products, Wetherill Park – 376 Victoria Street, Wetherill Park (842 m east).
	  ○ Cement of lime handling.
	  ○ Crushing, grinding or separating.
	• Two (2) records for Universal Aluminium Co Pty Ltd – Universal Anodisers – 207 Newton Road, Wetherill Park (933 m northwest).
	  ○ Metal waste generation.
	  ○ Metal coating.
	• Three (3) records for Veolia Recycling & Recovery Pty Ltd – Wetherill Park Resource Recovery Facility – 20 Davis Road, Wetherill Park (969 m northeast)
	  ○ Waste storage – hazardous, restricted solid, liquid, clinical and related waste and asbestos waste.
	  ○ Non-thermal treatment of hazardous and other waste.
	  ○ Waste storage – other types of waste.
	The licensed activities are considered to present a low risk of contamination based upon the separation distance between the licensed activities and the Site.

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered	There were 16 records of former licensed activities under the POEO Act, now surrendered, identified at or within 1 km of the Site. Four (4) records of Former Licensed Activities under the POEO Act 1997, now surrendered, located within the Site boundary: • Luhrmann Environment Management Pty Ltd – Waterways throughout NSW – Application of herbicides. • Robert Orchard – Waterways throughout NSW – Application of herbicides.

Table 3 – Regulatory Searches	
Search	Results
	• Fairfield City Council – Waterways throughout NSW – Application of herbicides. • Sydney Weed & Pest Management Pty Ltd – Waterways throughout NSW – Application of herbicides. For further information regarding Former Licensed Activities under the POEO Act 1997 within a 1km radius of the Site, refer to Lot Search (2022). The former licensed activities are considered to present a low risk of contamination based upon either the nature of the activities or the separation distance between the activities and the Site.
Delicensed Activities Still Regulated by the NSW EPA	There were four (4) records of delicensed activities still regulated by the NSW EPA identified within 1 km of the Site: • CSR Viridian Limited – Hazardous, industrial or group A waste generation or storage – 139 – 145 Newton Road, Wetherill Park (348 m northeast). • Cummins South Pacific Pty Ltd – Cummins – Hazardous, industrial or group A waste generation or storage – 492 – 494 Victoria Street, Wetherill Park (458 m northwest). • Hymix Australia Pty Limited – Concrete works – 173 – 179 Cowpasture Road, Wetherill Park (870 m west). • Sasso Readymix Concrete Pty Ltd – Concrete works – 176 Newton Road, Wetherill Park (943 m northwest). The delicensed activities are considered to present a low risk of contamination based upon either the nature of the activities or the separation distance between the activities and the Site.
NSW EPA per- and poly-fluoroalkyl substances (PFAS) Investigation and Management Programs	No sites under the NSW PFAS Investigation Program, Defence PFAS Investigation Program, Defence PFAS Management Program or Airservices Australian National PFAS Management Program were identified at or within 1 km of the Site.
Defence 3-Year Regional Contamination Investigation Program	No sites assessed as part of the Defence 3-Year Regional Contamination Investigation Program were identified within 1 km of the Site.
Heritage	Two (2) Environmental Planning Instrument ('EPI') heritage items were identified within 1km of the site; however, the items were not considered to pose a risk to the site or be impacted by potential contamination at the site based on the separation distance.

3 Site History

The Site history sources utilised during the review included:

- Historical aerial photography.
- Historical business directories.
- Historical title search information.

3.1 Review of Historical Aerial Photos

Aerial photographs from 1930, 1955, 1961, 1970, 1982, 1991, 2000, 2007, 2011, 2016, 2020 and 2023 were reviewed to identify past land uses of the Site and surroundings. **Table 4** provides a summary of the review.

Table 4 – Historical Aerial Photograph Review

Year	Description
1930	**Site:** The majority of the area consisted of predominately vacant agricultural land with a few mature trees. No structures were evident at the Site during this time. **Surroundings:** The surrounding area generally consisted of vacant agricultural land with mature trees.
1955	**Site:** No significant changes had occurred relative to the 1930 aerial photograph. **Surroundings:** A dam had been established to the west. In addition, residential buildings and sheds had been constructed to the south. Furthermore, a dam had been established to the south.
1961	**Site:** No significant changes had occurred relative to the 1930 aerial photograph. **Surroundings:** Additional crops and a dam had been established to the south.
1970	**Site:** A residential building had been constructed in the southern central area. In addition, a crop had been established in the southwestern area. **Surroundings:** What is today known as Newton Road had been developed adjacent to the south and east. In addition, additional residential buildings had been constructed to the southwest and southeast. Furthermore, crops and a dam had been established to the southeast.
1982	**Site:** The crops were no longer present in the southwestern area. Inroads connecting the eastern portion to Newton Road had been developed. The eastern portion appeared to be used for the storage of building materials, and stockpiled material was present. **Surroundings:** A significant portion of the cropping activities to the south appeared to have ceased. A large warehouse had been constructed to the southwest, and building materials or stockpiled material appeared to be stored in the surrounding area. In addition, a warehouse had been constructed to the north.
1991	**Site:** Building materials were stored in the western portion of the Site. **Surroundings:** What is today known as Victoria Street had been developed to the north. In addition, a roundabout on the corner of Victoria Street and Newton Road had been developed. Furthermore, what is today known as McIlwraith Street had been developed to the south. The development of a road to the east was underway. Multiple commercial warehouses had been constructed to the north, east and south. A drainage channel adjacent to the north had been established.
2000	**Site:** Redevelopment of the Site was in progress with the construction of a large central warehouse and a smaller commercial building in the eastern portion. In addition, a concrete hardstand driveway, which provided access to the western portion of the Site from Newton Road, had also been established. **Surroundings:** Additional commercial warehouses had been constructed to the north, east and south. In addition, the development to the east of what is today known as Metters Place had

Table 4 – Historical Aerial Photograph Review	
Year	**Description**
	been completed. Furthermore, land to the west had been cleared and stockpiled, and the construction of a commercial warehouse was in progress.
2007	**Site:** The construction of the central warehouse and smaller commercial building in the eastern portion of the Site had been completed. In addition, the concrete hardstand extended to the northern area. Furthermore, an asphalt hardstand car park had been developed in the eastern area. **Surroundings:** Additional commercial warehouses had been constructed to the north, east, south and west. A construction lay-down yard is visible to the north, and stockpiled material was present.
2011	**Site:** No significant changes had occurred relative to the 2007 aerial photograph. **Surroundings:** Additional commercial warehouses had been constructed to the north and south. Further stockpiled material is present to the north at the construction lay down yard.
2016	**Site:** No significant changes had occurred relative to the 2011 aerial photograph. **Surroundings:** A service station had been constructed to the north, and the construction of the concrete hardstand driveway was still in progress.
2020	**Site:** No significant changes had occurred relative to the 2016 aerial photograph. **Surroundings:** Several commercial warehouses had been constructed to the northwest, and construction of other buildings was in progress. In addition, a construction lay down yard was visible to the north.
2023	**Site:** No significant changes had occurred relative to the 2020 aerial photograph. **Surroundings:** Construction of additional commercial warehouses to the northwest had been completed. In addition, a commercial warehouse had been constructed to the northeast.

The aerial photographs reviewed are provided in the Lotsearch (2023) report provided as **Appendix A**.

3.2 Business Directory Search

No business activities were recorded at the Site; however, multiple business records matched to the area or road predominately including but not limited to:

- Steel merchants;
- Transmission equipment manufactures &/or distributors;
- Road transport services intrastate;
- Earth moving equipment manufacturers/importers &/or distributors;
- Aluminium/aluminium alloy manufacturers &/or distributors;
- Waste collection and disposal; and
- Dairy product manufacturers &/or wholesalers.

No records of garages or dry cleaners were recorded onsite; however, two (2) motor garages were matched to Newton and Victoria Road.

3.3 Historical Title Search

The historical title search completed by Lotsearch (2023) indicated that the land titles were created in 1921. Notable owners include graziers, Loretta Constructions and Investments Pty Ltd, Garrick Developments Pty Limited, Dolso Properties Pty Ltd, Edenbri Pty Limited, Consolidated Paper Industries Pty Limited, Australian Postal Corporation and the current owners The Trust Company (Australia) Limited.

The historical title search completed by Lotsearch (2023) is attached as **Appendix D**.

3.4 Summary of Site History

Based on the review of the historical information, the Site was formerly used as a farmland. The Site operated as grazing land prior to 1970, when the western portion of the Site was occupied by a residential property and owned by farmer Joseph Attard. By 1982 and to circa 1991, the eastern portion of the Site was owned by Edenbri Pty Limited and appeared to be occupied as a storage yard of either building materials and stockpiled material. By 2000, construction of the current buildings that occupies the Site today was underway, and Consolidated Paper Industries Pty Limited and Challenger Property Nominees Pty Limited owned the Site. By 2007, the construction at the Site had been completed, and the Site was owned by the Australian Postal Corporation and Challenger Property Nominees Pty limited. In 2013, The Trust Company (Australia Limited) became the current registered proprietor. The Site has remained relatively unchanged since 2007.

4 Preliminary Conceptual Site Model

The following preliminary conceptual site model (CSM) identifies potential source-pathway-receptor (SPR) linkages in consideration of the Site history and current land uses. A SPR linkage occurs where there is a contamination source, a pathway and a receptor present.

4.1 Potential Contamination Sources

Potential contaminating activities, contamination sources and CoPC are summarised in **Table 5.**
It should be noted that Acid sulfate Soils are not listed as a contaminant of concern within the CSM below, primarily due to their extremely low likelihood of occurrence, as determined during the desktop review. Nonetheless, ASS analysis has been included within the analytical schedule to fulfill the SEARS application requirements.

Table 5 – Potential Contamination Sources

Source	Potential Contaminating Activity	CoPC
On-site	Potential historical fill from earthworks of unknown origin and quality.	Metals[1], TRH, BTEX, PAH, PCB, OCP, OPP and asbestos.
	Former agricultural uses of the Site.	OCP and OPP.
Off-site	Historical use of the surrounding area for agricultural / farming purposes.	OCP and OPP.
	Printers lithographic and motor engineers located 21m southeast (cross-gradient) of the Site.	PFAS and SVOCs.
	Potential contaminating activities from surrounding commercial/ industrial properties.	Metals, TRH, BTEX, PAH, OCP and OPP.

[1]Heavy Metals (Arsenic, Cadmium, Chromium, Lead, Mercury, Copper, Nickel, Zinc)

4.2 Potential Affected Media

Current affected media at the Site could potentially include soil, surface water and groundwater.

4.3 Potential Transport Pathways

The following potential exposure pathways for the CoPC have been identified to exist for potential contamination sources based on a review of Site history:

- Inhalation of fugitive dust during high wind events and/or future construction/remediation and/or users on-site.
- Direct contact and ingestion during use of the Site involving disturbance of the soil, groundwater and/or construction and remediation works on-site.
- Surface water run-off during rainfall events or infiltrating into subsurface soils and groundwater.

4.4 Potential Human and Ecological Receptors

Potential human and ecological receptors at and near the Site are considered to be:

- On-site receptors:
    - Current and future construction and maintenance workers.
    - Current and future users and visitors of the Site.
    - Current and future terrestrial fauna and flora.
- Off-site receptors:
    - Current and future construction and maintenance workers at surrounding residential properties, commercial and public open spaces and recreational facilities.
    - Current and future users and visitors of surrounding residential properties, commercial and public open spaces and recreational facilities.
    - Current and future terrestrial flora and fauna in the nearby areas.

4.5 Potential and Complete Exposure Pathways

The following potential exposure pathways have been identified for the Site:

- Excavation of on-site soils during the proposed development works or future maintenance works creating a potential exposure pathway for direct contact and ingestion of soils and inhalation of fugitive dusts by future construction and maintenance workers and visitors should soils be contaminated by CoPC.
- The removal of surface cover, such as grass and concrete, during high rainfall events may transport soils and associated contaminants into subsequent waterways. Therefore, a potentially complete pathway exists for direct contact and ingestion of potentially contaminated soils and impacted surface water and sediments by terrestrial and aquatic fauna and flora dependant on South Creek.
- Should groundwater be contaminated and be encountered during intrusive maintenance work or redevelopment a potential exposure pathway exists from potentially contaminated groundwater from on-site and off-site potential sources.

4.6 Preliminary CSM Summary

Based on the components of the above CSM, the potential risk to human health and/or the environment was considered moderate, prior to further investigation. Refer to the preliminary CSM in **Table 6** below.

Table 6 – Potential Exposure Pathways

Location	Primary Sources	Secondary Sources / Affected Media	Release Mechanism	Pathway	On-Site: Current and future intrusive construction/ maintenance workers	On-Site: Current temporary and future users and visitors of the Site, including future residents / commercial workers	On-Site: Limited on-Site ecological receptors (terrestrial flora and fauna) in the landscaped areas at the Site	Off-Site: Current and future intrusive construction and maintenance workers at surrounding properties	Off-Site: Current and future employees, occupants and visitors of surrounding properties	Off-Site: Aquatic fauna and flora at Surrounding Waterways
On-site	Potentially imported fill materials of unknown origin and quality	Soil Groundwater	Direct Contact	Ingestion/ Dermal Contact	**Moderate** / Rare	Rare	**Moderate**	Rare	N/A	N/A
	Former agricultural uses of the Site			Ingestion / Dermal Contact	Rare	**N/A**	N/A	N/A	N/A	N/A
	The Site boundary listed within a high hazard risk area / moderate salinity potential			Uptake by flora and fauna	**N/A**	**N/A**	Rare	**N/A**	**N/A**	**N/A**
Off-site	Adjacent commercial / industrial properties	Off-site Groundwater	Migration of contaminated groundwater	Dermal Contact	Rare	Rare	Rare			
				Ingestion	Rare	Rare	N/A			
				Uptake by flora and fauna	N/A	N/A	Rare			
	Printers lithographic and motor engineers located 21m southeast of the Site.			Dermal Contact	Rare	Rare	Rare			
				Ingestion	Rare	Rare	N/A			
				Uptake by flora and fauna	N/A	N/A	Rare			
	Historical use of the surrounding area for agricultural / farming purposes			Dermal Contact	Rare	Rare	Rare			
				Ingestion	Rare	Rare	N/A			
				Uptake by flora and fauna	N/A	N/A	Rare			

Potential Exposure Pathway Key:

Soil

Groundwater

5 Sampling and Analysis

5.1 Data Quality Objectives

To assess whether the sampling strategy was appropriate, EP Risk adopted the data quality objectives (DQOs) planning process as:

- Recommended in the ASC NEPM 2013.
- Required within the NSW EPA (2017), *Guidelines for the NSW Site Auditors Scheme (3rd edition)*.
- With consideration to technical details outlined in US EPA (2006) *Guidance on Systematic Planning Using the Data Quality Objectives Process, ref: EPA QA/G-4* and AS 4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds*.

Step 1 - State the Problem

Preliminary Conceptual Site Model based on the site history review:

- **Sources** – buried building and demolition wastes.
- **Contaminants** – potentially metals, organics (TRHs, BTEX, PAHs and OCPs/OPPs), and asbestos fibres/fragments.
- **Media** – The current potential affected media at the Site include soil, soil vapour and groundwater. Based on the targeted nature of this assessment for due diligence purposes, sampling and reporting are limited to soils and groundwater on-site.
- **Receptors** – Site workers. If developed, site workers (surface and sub-surface), visitors (adults and children) and offsite residents.
- **Pathways** – dermal contact, inhalation of dust and ingestion have been identified as the pathways of concern. Further assessment of groundwater and/or soil gas will be considered based on the findings of this investigation.

The DSI was required to assess whether any contaminating activities are likely to have occurred at the Site, which may present a human health or ecological risk under the proposed land use.

Steps 2, 3 and 5 - Goals of the Study, Required Inputs and Analytic Approach

Given that the Site is to be redeveloped into a commercial/industrial development, the decision-making process for urban redevelopment Sites provided by the NSW EPA (2017) was considered in the development of the following decisions that need to be addressed.

The decision-making process for assessing urban redevelopment sites was adopted and summarised in **Table 7**.

The inputs required to make the decision are presented in **Table 6**

The Tier 1 assessment criteria for the contaminants of concern are presented in **Section 6.** These criteria have been adopted to determine whether additional assessment is required and/or whether the Site is suitable for the proposed land use.

Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to adopted assessment criteria as undertaken by assessment of quality assurance/quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 5.2**.

Step 4 - Define the Boundaries of the Study

The spatial boundaries of the DSI is defined within 88 Newton Road, Wetherill Park, NSW. The legal description of the Site is Lot 1 in deposited plan DP1017259 and covers an area of approximately 5.19 ha. The maximum proposed depth for the investigation set at 6.0 m BGL for soil and within the upper aquifer to a maximum depth of 7.5 m BGL for groundwater. The approximate boundaries are shown in **Figure 1**.

Due to the project objectives, seasonality was not assessed as part of this investigation. Data was, therefore, representative of the timing and duration of the current investigation.

Table 7 – Goals of the Study, Required Inputs and Analytic Approach

Decision	Rule	Inputs/Media	Associated AECs	CoPCs
Has soil and groundwater been assessed against relevant health investigation levels ('HILs') and health screening levels ('HSLs'), and has the potential for migration of contamination been considered?	The nature and extent of soil and groundwater impacts will be assessed, and analytical data will be compared against the adopted health and ecological criteria. The following statistical criteria were adopted with respect to soils and groundwater: Either: the reported concentrations are all below the adopted site criteria; Or: the average site concentration for each analyte must be below the adopted site criterion; no single analyte concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results must be less than 50% of the site criteria. And: the 95% upper confidence limit ('UCLmean') of the average concentration for each analyte must be below the adopted site criterion. If the statistical criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is Yes, the media has been assessed, and No, there is no potential for migration of contamination. Otherwise, the decision is No and Yes, there is potential for migration of contamination, and further assessments may be required to determine the risk at the Site.	Sampling and analysis of soil and groundwater and site observations.	Imported fill materials and former stockpiles of unknown origin and quality.	Soil - TRH, BTEX, PAH, heavy metals [1], PCB, OCP, OPP and asbestos. Groundwater - Heavy metals, TRH, BTEX and PAH.
Are there any issues relating to local area background soil concentrations that exceed relevant investigation levels that have been adequately addressed in the site assessment report(s)?	If the 95% UCL of natural soils that are considered to not be impacted by potential sources of contamination exceed adopted health and ecological criteria, the decision is Yes. Otherwise, the decision is No.	Sampling and analysis of natural soils and site observations.	Imported fill materials and former stockpiles of unknown origin and quality.	
Are there impacts of chemical mixtures?	Is more than one chemical within a group of contaminants considered to have a similar mode of action present, which increases the risk of harm? If there is, a hazard quotient ('HQ') and Hazard Index ('HI') should be calculated from the analytical results for each sample in accordance with NEPM 2013. If the HI is calculated to be greater than 1, the decision is Yes. Otherwise, the decision is No.	Sampling and analysis of soils and groundwater and site observations.	Imported fill materials and former stockpiles of unknown origin and quality.	
Are there any potential ecological risks? If yes, have these been assessed? Are there any potential human health risks to the identified Site receptors?	Soil and groundwater impacts will be assessed, and data will be compared to the adopted criteria. The decisions will be made based on Decisions 1 and 2 above. And: If the reported concentrations are all below the adopted site criteria and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.	Soil and groundwater sampling and analysis and site observations.	Imported fill materials and former stockpiles of unknown origin and quality.	

Table 7 – Goals of the Study, Required Inputs and Analytic Approach

Decision	Rule	Inputs/Media	Associated AECs	CoPCs
Is there any evidence of, or potential for, migration of contaminants from the site? Has this been appropriately addressed, including potential risks to offsite receptors, and reported to the site owner or occupier?	Are chemical contaminants present within natural soil at concentrations exceeding the adopted site criteria? And: is there a potential transport pathway/mechanism If yes, the answer to the decision is Yes. Otherwise, if contaminants are not chemical in nature and are unable to migrate offsite alone, the answer to the decision is No.			Soil - TRH, BTEX, PAH, heavy metals [1], PCB, OCP, OPP and asbestos. Groundwater - Heavy metals, TRH, BTEX and PAH.
Are there any aesthetics issues in fill at the site?	If there are any unacceptable staining, odours, or significant amounts of anthropogenic fill materials, the answer to the decision is Yes. Otherwise, the answer to the decision is No.			
Is there sufficient information to accurately characterise the site contamination?	If the total number of samples collected is greater than or equal to the recommended number of sample points in accordance with NSW EPA (2022) Sampling Design Guidelines; And: the likelihood of on-site soil contamination impacting surface water and offsite receptors is considered unlikely. And: no areas that exceeded the adopted criteria require further characterisation. Then the decision is Yes, there is sufficient information to accurately characterise the Site contamination. Otherwise, the decision is No.			
Is further investigation required?	Is the answer to any of the above decisions Yes? If yes, further investigation may be required to be developed. If no, further investigation may not be required.			
Is a site management strategy required?	Is the answer to any of the above decisions Yes? If yes, a site management strategy may be required to be developed. If no, a site management strategy may not be required.			

Step 6 – Specify Performance or Acceptance Criteria

As per EPA (2022), Step 6 of the DQOs process establishes quantitative criteria known as performance or acceptance criteria:

- For decision problems, these are typically tolerable limits on the probability or chance (risk) of the collected data leading to making an erroneous decision (e.g. confidence levels)
- For estimation problems, these are typically an level of statistical confidence (e.g. confidence intervals).

Specify probability limits for false rejection and false acceptance of decision errors.

- Specify the decision rule as a statistical hypothesis test – The null hypothesis is that the material is contaminated and exceeds the adopted criteria. The alternative hypothesis is that the material is not contaminated above the adopted criteria.
- Examine the consequences of making incorrect decisions from the test:
    - The material is accepted as suitable for HIL-D land use when it is not, thereby potentially risking human health or environmental impacts.
    - Unnecessary disposal of the material offsite, imposing needless financial and resource burdens on the development project and resulting in an inappropriate waste classification.
- Place acceptable limits on the likelihood of making decision errors, including acceptable alpha (α) and beta (β) risk levels for the stated hypotheses:
    - Null hypothesis (H_0): the 95% UCL and other requirements are > the action level.
    - Alternate hypothesis (H_A): the 95% UCL and other requirements are ≤ the action level.
    - Potential outcomes include Type I and Type II errors:
        - Type I error of determining the material is acceptable for the proposed HIL-D land use when it is not (wrongly rejects true H_0).
        - Type II error of determining the material is unacceptable for the proposed HIL-D land use when it is acceptable (wrongly accepts false H_0).
    - For performance criteria, the acceptable limits on the likelihood of making decision errors to be applied are:
        - alpha risk (Type I error) of $\alpha = 0.05$
        - beta risk (Type II error) of $\beta = 0.2$.

No previously collected data are available for use; therefore, acceptance criteria are not required.

5.2 Data Quality Indicators

The acceptable limit of error for sampling techniques and laboratory analysis was defined by the DQIs as follows:

Precision

A measure of the reproducibility of measurements under a given set of conditions. The relative percent difference (RPD) has been adopted to assess the precision of data between duplicate sample pairs according to the following equation.

$$RPD\% = \frac{[\mathrm{Cp} - \mathrm{Cd}]}{\mathrm{Cp} + \mathrm{Cd}} \times 200$$

Where:
Cp = Primary sample
Cd = Duplicate Sample

An acceptance criterion of ±50% had been adopted for inorganic field duplicates and triplicates and ±50% for organic field duplicates and triplicates. However, it should be noted that exceedances of these criteria are common for heterogeneous soil or fill or for low analyte concentrations.

Accuracy

A measure of the bias in the analytical results can often be attributed to field contamination, insufficient preservation or sample preparation, or inappropriate analytical techniques. The accuracy of the analytical data is assessed by consideration of laboratory control samples and laboratory spikes.

The DQOs, requirements and indicators for the assessment are presented in **Table 8**.

Representativeness

Expresses the accuracy and precision with which sample data represents an environmental condition. Data representativeness was achieved by the collection of samples at an appropriate pattern and density, as well as consistent and repeatable sampling techniques and procedures.

Completeness

Refers to the percentage of data that can be considered valid data. Sufficient data was required to enable an assessment of the Decision Rules.

Comparability

A qualitative comparison of the confidence with which one data set can be compared to another. This was achieved through consistent sampling, analytical testing and reporting techniques.

Table 8 – DQI and Requirements		
DQI	**Requirement**	**Data Quality Assessment (DQA) Criteria**
Precision		
Standard operating procedures are appropriate and complied with	The sampling methods comply with industry standards and guidelines	Meet requirement
Intra-laboratory duplicates	1 per 20 samples	RPDs < 50%
Inter-laboratory duplicates	1 per 20 samples	RPDs < 50%
Laboratory duplicates	Minimum of 1 per batch per analyte	RPDs < 50%
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte	Recoveries 50% to 150%
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate)	Recoveries 70% to 130%
Laboratory control samples	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Representativeness		
Sampling methodology - preservation	Appropriate for the sample type and analytes	Meet requirement
Samples extracted and analysed within holding times	Specific to each analyte	Meet requirement
Laboratory method blanks	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Trip blanks	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Trip spikes	1 per lab batch for volatile analytes	Recoveries 60-100%
Rinsate	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Comparability		
Sampling approach	Consistent for each sample	Meet requirement
Analysis methodology	Consistent methodology for each sample	Meet requirement
Handling conditions and sampler	Consistent for each sample	Meet requirement
Field observations and analytical	Field observations to support analytical results	Meet requirement

Table 8 – DQI and Requirements		
DQI	**Requirement**	**Data Quality Assessment (DQA) Criteria**
Consistent laboratory reporting limit	Consistent between primary and secondary laboratories	Meet requirement
Completeness		
Sampling staff	Consistent sampling staff was used.	Meet requirement
Laboratory accreditation	NATA Accredited laboratory for methods used	Meet requirement
Accredited methods	NATA-accredited methods were used appropriately for each analyte.	Meet requirement
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013).	Meet requirement
Laboratory reporting limit	Laboratory reporting limits consistent and appropriate	Meet requirement
Consistent weather/field conditions	Consistent	Meet requirement
Chain of custody documentation	Appropriately completed	Meet requirement
Field sampling documentation	Appropriately completed	Meet requirement
Overall data set quality	95% of the data must satisfy the DQIs of both field and laboratory data.	

6 Sampling Design and Methodology (Step 7)

Various strategies for developing a statistically based sampling plan are identified in EPA (2022)[4], including judgemental, random, systematic and stratified sampling patterns. Random sampling is not considered appropriate. The specific scope is discussed below.

EP Risk used ALS and Eurofins as the primary and secondary laboratories, which are NATA accredited for the required analysis. The laboratory analysis was undertaken in accordance with **Table 13**.

6.1 Soil Sampling

A total of fifty-seven (57) sampling locations were required to obtain Site coverage in accordance with the NSW EPA Sampling Design Guidelines – Part 1 (NSW EPA 2022) for a Site of approximately 5 ha. Thirty (30) 3.0 mBGL boreholes were progressed to assist the geotechnical assessment, and 20 deeper boreholes were progressed to 6 m BGL. The final seven (7) test pit investigation locations within the grassed areas were undertaken using a 3-tonne excavator. One (1) soil sample from the fill material at each test pit/soil bore location was submitted to the primary laboratory for analysis, in addition to 10 samples from natural material.

Acid Sulfate Soils

A total of fifteen (15) sampling locations are required to obtain Site coverage in accordance with the National Acid Sulfate Soils Guidance: *National acid sulfate soils sampling and identification methods manual, Table 6.1 Minimum soil sampling densities for ASS investigations*.

Salinity

A total of fifteen (15) sampling locations are required to obtain Site coverage in accordance with the Site investigations for urban salinity, **Table 1**, Recommended Levels of Site Description.

Proposed soil sampling locations are provided as **Figure 1** attached, and the scope is detailed in **Table 7** below.

[4] NSW EPA (2022) *Sampling Design Guidelines part 1.*

7 Assessment Criteria

7.1 Soil

7.1.1 Salinity

Salinity is a measure of the total amount of salts present in the soil, it can be quantified by measuring the electrical conductivity of the soil in solution, as presented in **Table 9**[5]. It is noted that these values provided in DWLC (2002) were derived for agricultural purposes, as no structure-based classification system classification exists at present. For the purposes of assessing the results of the analytical testing of soil at the site, the criteria for the assessment has been adopted from the following guidelines:

- Department of Land and Water Conservation ('DLWC'), Site Investigations for Urban Salinity (2002).

Table 9 - Soil Salinity Classification

Soil Salinity Rating	ECe[6] (dS/m)	Comments
Non-saline	<2	Salinity effects mostly negligible
Slightly saline	2-4	Yields of very sensitive crops may be affected
Moderately saline	4-8	Yields of many crops affected
Very saline	8-16	Only tolerant crops yield satisfactorily
Highly saline	>16	Only a few very tolerant crops yield satisfactorily

Table 10 provides general guidelines for salinity of irrigation water as per ANZECC (1992), to classify the waters saline content.

Table 10 - Water Salinity Classification

Water Salinity Rating	ECe (dS/m)	Comments
Low salinity	0-0.28	Low-salinity water can be used with most crops on most soils and with all methods of water application with little likelihood that a salinity problem will develop. Some leaching is required, but this occurs under normal irrigation practices except in soils of extremely low permeability
Medium Salinity	0.28 – 0.8	Medium-salinity water can be used if moderate leaching occurs. Plants with medium salt tolerance can be grown, usually without special measures for salinity control. Sprinkler irrigation with the more-saline waters in this group may cause leaf scorch on salt-sensitive crops, especially at high temperatures in the daytime and with low application rates
High Salinity	0.8 – 2.3	High-salinity water cannot be used on soils with restricted drainage. Even with adequate drainage, special management for salinity control may be required, and the salt tolerance of the plants to be irrigated must be considered
Very High Salinity	2.3 – 5.5	Very high-salinity water is not suitable for irrigation water under ordinary conditions. For use, soils must be permeable, drainage adequate, water must be applied in excess to provide considerable leaching, and salt-tolerant crops should be selected

[5] Sourced from DLWC (2002).
[6] ECe – electrical conductivity of a saturated soil extract.

Extreme Salinity	>5.5	Extremely high-salinity water may be used only on permeable, welldrained soils under good management, especially in relation to leaching and for salt-tolerant crops, or for occasional emergency use

7.1.2 Acid Sulfate Soils

The following ASS indicators and assessment criteria are based on the National ASS Guidance 2018.

Field Screening

Acid sulfate soils generally consist of clays and sands containing pyritic material and are usually found in estuarine areas. The field indicators of AASS include:

- Soil pH readings measured in the field of less than 4;
- Iron staining on any drain surfaces;
- Unusually clear or milky green water discharge;
- Iron mottling of soil in the subsurface; and
- Corrosion of concrete or steel structures.
- Grey sands and inclusions of shells

Undisturbed soil which contains iron sulfides or sulfidic material, which have not been exposed to air and oxidised, generally waterlogged, and have a pH of 4 or more and may be neutral or slightly alkaline are known as PASS. The following may also be indicators of PASS:

- Presence of any sulfurous odours;
- pH following oxidation with 30% hydrogen peroxide (H_2O_2) is less than 3;
- Strength of the oxidation reaction; and
- Lowering of the pH by at least 1 unit.
- The above field screening observations are used to guide selection of samples for laboratory analysis. Soil samples submitted for laboratory analysis are tested using chromium reducible sulfur method and the results assessed against the criteria shown in **Table 11** for the disturbance of <1,000 or >1,000 tonnes (National ASS Guidance 2018).

Table 11 – Soil Assessment Criteria					
Texture Range	**Approximate Clay Content (%)**	**1-1,000 tonne Material Disturbed**		**>1,000 tonne Material Disturbed**	
		Net Acidity		Net Acidity	
		% S oxidizable (oven-dry basis)	mol H+/tonne (oven dry basis)	% S oxidisable (oven-dry basis)	mol H+/tonne (oven dry basis)
Coarse and Peats Sands to loamy sands	< 5	≥ 0.03	≥ 18	≥ 0.03	≥ 18
Medium Clayey sand to light clays	5-40	≥ 0.06	≥ 36		
Fine Light medium to heavy clays	> 40	≥ 0.1	≥ 62		

Leachate Criteria

The treatment and management of surface water flows from areas containing ASS to prevent leaching of acidic waters and metal contaminants into the environment should maintain the present surface water quality. The discharge of surface water should be done so in accordance with NSW EPA, Water NSW and Council requirements. In the absence of site-specific criteria, the minimum requirements are presented in **Table 12.**

Table 12 – Adopted Leachate Criteria		
Indicator	**Fresh Water**	**Marine Water**
pH	**6.5-8.0**	**8.0-8.4 and <0.2 unit change**
Suspended Solids	Not Defined	
Dissolved Oxygen (field measured, %)	110	
Oil and Grease	None visible or detected	
Iron Floc and Scum	None visible or detected in discharge water	

Table 13 – Sampling and Analysis Plan and Methodology

Media	Scope of Work (Inputs)	Number of Sampling Locations	Samples and Analysis	Adopted Tier 1 Criteria
Soil	The methodology for soil sampling was as follows: • Soil samples were collected from 57 test pit/borehole locations. • Collection of soil samples from 0.1 m below ground level ('m BGL'), 0.5 mBGL, 1.0 m BGL and every 1.0 m thereafter until a target depth of 3.0 – 6.0 m BGL or 0.3 m into natural soils or refusal (whichever is encountered first). • Test pits were advanced via a 3-tonne excavator to a maximum depth of 3.0 m BGL or prior rock refusal. • Boreholes were advanced via a geoprobe to a maximum depth of 6.0 m BGL or prior refusal. Surface samples were collected using a stainless-steel trowel cleaned between locations. • Soils were logged for type, colour, texture, other characteristics and indications of contamination as presented in the test pit logs attached as **Appendix D**. • Screening of soil samples using a photoionisation detector ('PID'). • A dedicated pair of nitrile gloves were used for each sample to prevent cross-contamination. • Sufficient soil samples were collected and placed into laboratory-prepared sampling jars with a unique sample ID added to the label on each jar. • The sample jars were preserved on ice immediately after sampling and during shipment to a NATA-accredited laboratory for analysis. The laboratory chain of custody documentation was completed and accompanied the samples during shipment.	7 test pits and 50 boreholes	Analytical testing by a National Association Testing Authorities ('NATA') accredited laboratory of one (1) selective soil sample per test pit/borehole from fill material and 10 select samples from natural material (maximum 67 samples) for the following: • Heavy metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc) / Organochlorine pesticides (OCP) / Organophosphorus pesticides (OPP) - 39 • Total Recoverable Hydrocarbons (TRH) / Benzene, toluene, xylene, ethylbenzene (BTEX) / Polyaromatic Hydrocarbons (PAH) / Polychlorinated biphenyls (PCB) – 39 • TRH / BTEX / PAH / Heavy metals – 10 • Phenols – 1 • Asbestos w/w % - 2 • Chromium reducible sulfur – 12 • pH, CEC, %ESP, Exchangeable Cations – 39 • Conductivity (EC) – 39 QA/QC Samples are as follows: • Duplicates/triplicates (as per primary) – 4 • Rinsate (as per primary) – 3 - Metals, TRH, PAH, BTEX, PAH • Trip Blank and Spike- BTEX, TRH C6-C9 - 3	For the purposes of assessing the results of analytical testing of soil at the Site, the following guidelines will be considered: • **Health-based Criteria** for the current and proposed land use: ASC NEPM 2013 Health-based Investigation Levels (HILs) and Health-Based Screening Levels (HSLs) for commercial/industrial land and the CRC Care (2011) HSLs for intrusive maintenance worker (shallow trench) and direct contact. • **Ecological Criteria**: ASC NEPM 2013 Ecological-based Investigation Levels (EILs) and Ecological-based Screening Levels (ESLs) for commercial and industrial. • **Management Limits**: ASC NEPM 2013 management limits are based upon the physical properties of petroleum hydrocarbons to form observable light non-aqueous phase liquid (LNAPL), create fire and explosion hazards or penetrate or damage underground services. The management limits for commercial/industrial land based on coarse soil have been adopted. • **Aesthetics**: The consultant should also consider the need for remediation based on the 'aesthetic' contamination as outlined in Schedule B (1) of the ASC NEPM 2013, which states that 'there are no numeric Aesthetic Guidelines however site assessment requires balanced consideration of the quality, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity'. Soil odour, discolouration and the presence of anthropogenic materials will need to be assessed during the assessment. The adopted soil criteria for the site are presented below. **Guidelines** / **COPC** / **Adopted Criteria** ASC NEPM 2013 / Heavy metals/OCP/PCB/ Phenols / • HIL D (commercial/industrial land) ASC NEPM 2013 / Heavy metals/OCP/PAH / • EIL (commercial/industrial); < 2 m ASC NEPM 2013 / TRH and BTEXN / • Vapour intrusion HSL D (commercial/industrial land); 0 - <1m; sand • ESLs (commercial/industrial); <2m ASC NEPM 2013 / TRH / • Management limits (commercial and industrial); coarse soil. CRC Care (2011) / TRH and BTEXN / • Direct contact and intrusive maintenance workers HSLs. • Vapour Intrusion HSLs for Intrusive Maintenance Workers (Shallow Trench). The adopted assessment criteria for acid sulfate soils and salinity evaluation is described separately below.

Table 14 – Sampling and Analysis Plan and Methodology

Media	Scope of Work (Inputs)	Number of Sampling Locations	Samples and Analysis	Adopted Tier 1 Criteria
Groundwater	• The groundwater monitoring well installation and sampling methodology were as follows: • Four groundwater monitoring wells (MW01, MW02, MW03 and MW04) were installed to a maximum depth of 7.5 m BGL. The groundwater monitoring well locations are presented in **Figure 2**. • Class 18 uPVC 50 mm slotted screen and blank casing were installed in each groundwater monitoring well. • A filter pack comprising clean graded sands was installed within the annular space between the borehole and the well casing, extending from the base of the screened interval to approximately 0.5 m above the top of the slotted casing. • The groundwater monitoring wells were developed using a disposable bailer to remove at least five bore volumes and then left for approximately seven days to recharge and stabilise within the aquifer. • A groundwater monitoring event ('GME') was undertaken on 17th September and 8th of October 2023. An interface probe was used to measure the depth of groundwater within each groundwater monitoring well. • A low-flow peristaltic pump was used to sample the monitoring wells. • A water quality meter and flow cell were used to measure water quality parameters EC, pH, ORP, DO and temperature. The equipment calibration certificates are attached as **Appendix F**. • Groundwater samples analysed for dissolved metals were filtered in the field through a dedicated, disposable 0.45 µm mesh filter to remove suspended solids. • Groundwater samples were collected in preserved jars specific to each analyte with a unique sample ID added to the label on each jar. • The sample containers were preserved on ice immediately after sampling and during shipment to the laboratories. The laboratory chain of custody documentation was completed and accompanied the samples during shipment.	4	Analytical testing by a NATA-accredited laboratory selected groundwater samples (if applicable) for the following: • TRH, Heavy Metals, BTEX and PAH – 4. QA/QC Samples are as follows: • Duplicates/triplicates (as per primary) – 2 • Rinsate (as per primary) – 1 - Metals, TRH, PAH, BTEX, PAHs • Trip Blank and Spike- BTEX, TRH C6-C9 - 1	For the purposes of assessing the results of analytical testing of groundwater at the Site, the following guidelines were considered: • (NHMRC 2011) Australian Drinking Water Guidelines, National Health and Medical Research Council; for Drinking water and Aesthetic guidelines. - NHMRC_ADWG 2011 (Revised 2022) Aesthetic - NHMRC_ADWG 2011 (Revised 2022) Health • ANZG 2018 (Freshwater) DGV 95% for slightly to moderately disturbed systems. • NHMRC Guidelines for Managing Risk in Recreational Waters, 2008 (GMRRW 2008). • National Environment Protection (Assessment of Site Contamination) Investigation Levels For Soil and Groundwater - NEPM 2013 Table 1C GILs, Fresh Waters - NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m • The PFAS National Environmental Management Plan (NEMP) - PFAS NEMP 2020 Freshwater 95% - PFAS NEMP 2020 Freshwater 99% (PFAS bioaccumulate)

8 Quality Assurance and Quality Control (QA/QC)

An assessment of the field and laboratory DQI results is presented in **Table 15**.

Table 15 – DQI Results Summary

DQI	Requirement	DQA
Precision		
Standard operating procedures are appropriate and complied with	The sampling methods comply with industry standards and guidelines.	Yes
Field duplicates	• 1 per 20 samples; and • RPDs < 50%.	Yes Yes[7]
Field triplicates	• 1 per 20 samples; and • RPDs < 50%.	Yes Yes[8]
Laboratory duplicates	• Minimum of 1 per batch per analyte; • RPDs < 50%; and • >10%, laboratory specified.	Yes Yes Yes
Accuracy		
Laboratory matrix spikes	• 1 per batch per volatile/semi-volatile analyte; and • Recoveries >70% to 130%	Yes Yes
Laboratory surrogate spikes	• 1 per volatile/semi-volatile analyte sample (as appropriate); and • Recoveries 70% to 130%	Yes Yes
Laboratory control samples	• At least 1 per batch for analyte tested; and • 70-130%	Yes Yes
Representativeness		
Sample collection – preservation	Appropriate for the sample type and analytes	Yes
Decontamination procedures	All sampling equipment is to be decontaminated between each sample	Yes
Holding times	Samples extracted and analysed within laboratory-prescribed holding times	Yes
Trip blanks	• 1 per field laboratory reporting limit	Yes Yes
Trip spikes	• 1 per field batch for volatile analytes; and • Recoveries 70-130%	Yes Yes
Rinsate	• 1 per field batch for volatile analytes; and • Result < laboratory reporting limit	Yes Yes

[7] One water and one soil duplicate analytes exceeded the adopted quality control criteria. The soil exceedances are attributed to the heterogenous nature of the soil samples. The water exceedances are attributed to the low level concentrations observed in the water samples. It is considered that these exceedances of the quality control criteria have not affected the usability of the data set collected in this investigation.

[8] One water triplicate analytes and nine soil triplicate analyte exceeded the adopted quality control criteria. The soil exceedances are attributed to the heterogenous nature of the sediment sample. The water exceedances are attributed to the low level concentrations observed in the water samples. It is considered that these exceedances of the quality control criteria have not affected the usability of the data set collected in this investigation.

Table 15 – DQI Results Summary		
DQI	**Requirement**	**DQA**
Laboratory Method Blanks	• At least 1 per batch per analyte tested for; and • Result < laboratory reporting limit	Yes Yes
Completeness		
Sample logs and surface water field sheets	Provided	Yes
Chain of custody	Provided	Yes
Sample receipt acknowledgement	Provided	Yes
Laboratory reports	Provided	Yes
Comparability		
Sampling staff	Consistent sampling staff used	Yes
Laboratory accreditation	NATA-accredited laboratory for methods used	Yes
Accredited methods	NATA-accredited methods used appropriately for each analyte	Yes
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013)	Yes
Laboratory reporting limits are consistent and appropriate	Meet Requirement	Yes
Consistent weather/field conditions	Consistent	Yes
Overall data set quality	95% of the data must satisfy the DQIs of both field and laboratory data	Yes

Based on the information provided in **Table 15**, EP Risk considers that the DQIs for the project have been met, and the data is appropriate for the purposes of this assessment.

9 Results

9.1 Field Conditions

9.1.1 Soil

The subsurface conditions encountered within the test pits/ boreholes across the Site are detailed in the attached logs and within the geotechnical report attached. These should be read in conjunction with the general notes proceeding them, which explain the descriptive terms and classification methods used in the report. In general, the subsurface conditions in the test pits can be summarised as follows:

- 0 – 0.1 mBGL: Surface condition: Grass cover, concrete, pebbles, road base
- 0 – 0.2 mBGL: TOPSOIL: gravelly clayey sand/ silty sand / gravelly sandy clay
- 0 – 2.9 mBGL: FILL: gravelly sandy clay/ sandy clay,
- 0.2 – 7.5 mBGL: NATURAL: Sandy CLAY/ Silty CLAY/ SILTSTONE / CLAY
- 3 – 7.5 mBGL: Shale: extremely to moderately weathered

Groundwater was not observed in any of the test pits at the time of the investigation. It should be noted the groundwater conditions may vary with seasonal and weather conditions along with construction related site conditions. Detailed soil profile logs are within the attached as **Appendix D** and within the geotechnical report as **Appendix G.**

Asbestos

Two (2) suspected fragments of visible ACM in fair condition were observed on the grounds surface within the southeastern section of the Site on the **18** and **19 August 2023** as shown within the Figure attached.

Two (2) suspected bonded (non-friable) ACM (>7mm) fragments were observed in fair condition during field screening within one (1) location (TP37) out of the fifty-seven (57) test pits / boreholes progressed. The fragments were observed at an approximate depth of 0.2 mBGL.

Soil Vapour Screening

No signs of visual staining or odours were observed in any sample collection with PID readings all recorded below background levels with the exception of BH46 where slight hydrocarbon odours were detected. PID readings did not exceed 19.2 ppm within this area. Samples were taken at 0.5 and 6.0 mBGL, levels of C6-C9 and C10-C16 were below to laboratory limit of detection.

Acid Sulfate Soils

The ASS field testing was used to guide the required sampling for the NATA accredited laboratory analysis.

The field observations made with respect to ASS are summarised below:

- No iron staining on any drain surfaces was observed at the time of the assessment;
- No shells and/ or grey coloured sands were observed at the time of the assessment;
- No clear or milky green water discharge was observed at the time of the assessment;
- No Iron mottling of soil in the subsurface at the time of the assessment;
- No Corrosion of concrete or steel structures at the time of the assessment;

- Sulfurous odours were not identified at the time of the assessment; and
- No stressed vegetation was observed at the time of the assessment.

9.1.2 Groundwater

Water Bearing Zones

Groundwater depths were recorded during sampling and the results presented in **Table 16** below.

Table 16 – Stabilised Groundwater Levels

Well ID	Elevation of Top of Casing (mAHD)	Easting	Northing	Sample Date	Depth to stabilised groundwater (mBGL)	Groundwater Elevation (mAHD)	Total Well Depth
MW01	51.538	304811.9	6252719	17.9.2023	4.9	46.638	8.5
				1.11.2023	5.13	46.408	7.3
MW02	46.32	304912	6252903	17.9.2023	5.52	40.8	6.5
				1.11.2023	5.715	40.605	6.81
MW03	45.343	304782.8	6252874	17.9.2023	3.76	41.583	7
				1.11.2023	3.853	41.49	7.75
MW04	45.22	3050041	6252924	17.9.2023	4.153	41.067	6.55
				1.11.2023	4.375	40.845	6.66

The elevation of the top of casing of the onsite monitoring wells was surveyed and the site survey drawing is provided as **Appendix H**.

Groundwater Flow

The regional groundwater flow direction of the upper aquifer is expected to be to the northeast towards Prospect Creek.

Groundwater Physical Parameters

Groundwater parameters were recorded during groundwater monitoring and the results of the stabilised parameters prior to sampling are presented in **Table 17**.

Table 17 - Stabilised Groundwater Physical Parameters

Well ID	Sample Date	Temperature (°C)	EC (µS/cm)	pH	DO (mg/L)	ORP (mV)
MW01	17.9.2023	20.5	22,130	6.98	1.55	107.2
	1.11.2023	21.2	21,130	6.94	4.19	139.3
MW02	17.9.2023	22.7	12,062	7	0.66	115
	1.11.2023	21	11,057	6.84	0.27	111.6
MW03	17.9.2023	20	3,820	7	0.25	93.9
	1.11.2023	21.1	5,060	6.83	0.91	174.3
MW04	17.9.2023	23.2	21,568	5.99	0.4	121
	1.11.2023	22.1	20,353	6.5	3.57	61.8

Based upon the groundwater parameters provided in **Table 17**, groundwater is slightly acidic to neutral pH, with generally low levels of dissolved oxygen and oxidating conditions.

9.2 Groundwater Analytical results

The results of groundwater analytical testing are contained in the analytical summary tables section at the rear of the report and the laboratory Certificates of Analysis (COA) are attached as **Appendix F.**

9.2.1 Heavy Metals

Dissolved metal concentrations of the water samples analysed were reported below the adopted human health and ecological criteria and / or laboratory limit of reporting (LOR), with the exception of the following samples:

- MW01 –
  - Chromium (0.002 mg/L) exceeded the adopted ANZG (2018) Freshwater 95% Toxicant DGV guideline.
  - Copper (0.016 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
  - Nickel (0.049 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV, the NEPM 2013 Table 1C GILs, Fresh Waters Guidelines and the NHMRC_ADWG 2011 (Revised 2022) Health guidelines.
  - Zinc (0.028 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.

- MW02 –
  - Cadmium (0.0004 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
  - Chromium (0.002 mg/L) exceeded the adopted ANZG (2018) Freshwater 95% Toxicant DGV guideline.
  - Copper (0.016 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
  - Nickel (0.013 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
  - Zinc (0.062 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
- MW03 – no exceedances
- MW04 –
  - Cadmium (0.0004 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
  - Copper (0.069 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
  - Nickel (0.074 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.
  - Zinc (0.23 mg/L) exceeded the ANZG (2018) Freshwater 95% Toxicant DGV and the NEPM 2013 Table 1C GILs, Fresh Waters guidelines.

9.2.2 TRH / BTEXN / PAH / OCP / OPP / TPH

All TRH / BTEXN / PAH / OCP / OPP / and TPH concentrations of the water samples analysed were reported below the adopted criteria and / or laboratory LOR with the exception of concentration of Benzene in MW04 (2 µg/L) which were above the NHMRC_ADWG 2011 (Revised 2018) Health guidelines.

Perfluoroalkyl and Polyfluoroalkyl Substances

All PFAS concentrations with the groundwater samples analysed were reported below the adopted criteria and / or laboratory LOR.

Detections of 6:2 Fluorotelomer sulfonic acid (6:2 FTS), Perfluorohexane sulfonic acid (PFHxS), and Sum of PFAS (WA DER List) and within MW01, MW02 and MW03 were reported, however no criteria is yet to be adopted for these specific analytes.

Salinity

The measurement of electrical conductivity of groundwater provides a reference for salinity only and indicates that a specific location was likely suffering from a measured degree of salinity. **Table 18** provides the groundwater water electrical conductivity results for the site. The results have been compared with ANZECC (2000) Table 5.6 general guidelines for salinity of irrigation water, to classify the waters saline content.

Table 18 - Summary of Water Salinity Results			
Sample ID	**SWL (m BTOC)**	**EC_w (dS/m)**	**Irrigation**
MW01	4.90	13,000	Extremely high-salinity
MW02	5.52	6,000	Extremely high-salinity
MW03	3.76	1,900	High-salinity
MW04	4.153	13,000	Extremely high-salinity

Physiochemical Parameters

A number of additional physiochemical parameters were also recorded for the groundwater samples including analysis for major cations and major anions, with the results from the 1st November 2023 presented the piper diagram as **Figure 7.4.1.**

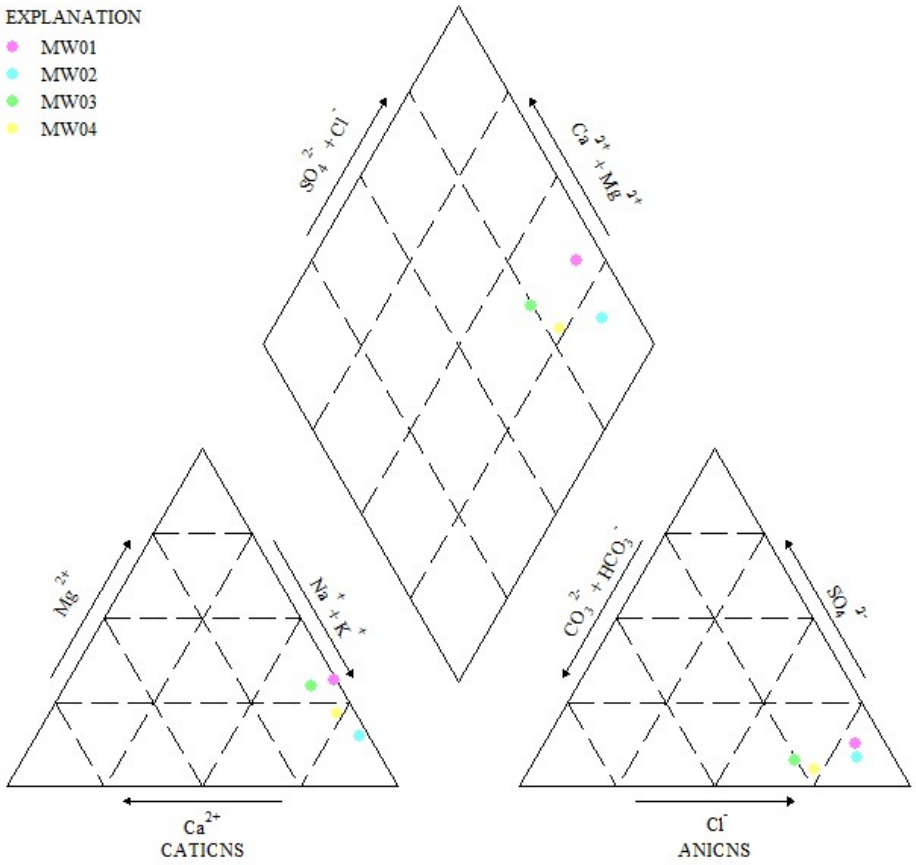


Figure 7.4.1 – Piper Diagram

The groundwater sample from all four of the monitoring wells (MW01-MW04) can be classified as sodium chloride (Na-Cl) type waters.

9.3 Soil Analytical Testing

The results of soil analytical testing are contained in the analytical summary tables section at the rear of the report and the laboratory Certificates of Analysis (COA) are attached as **Appendix F.**

9.3.1 Asbestos

The two (2) fibre cement fragments collected during field screening within TP37 reported concentrations of bonded (non-friable) asbestos below the adopted HSL at a concentration of 0.008 % w/w.

Two (2) fibre cement fragments (MS01 and MS02) identified on the south eastern surface of the Site returned a positive result for Chrysotile (white asbestos).

Asbestos fines / friable asbestos (AF/FA) were not detected above the (non-NATA) laboratory LOR (0.001% w/w) within remaining soil samples.

Asbestos was not detected within the remaining soil samples submitted for Asbestos ID (AS4964:2004) (0.1 g/kg) and trace analysis. Refer to **Table T7** attached for further details.

9.3.2 TRH / BTEXN / PAH / OCP / OPP / TPH

All BTEXN / PAH / OCP / OPP / Metals TRH and TPH concentrations of the soil samples analysed were reported below the adopted human health and ecological criteria and / or laboratory limit of reporting (LOR).

9.3.3 Salinity

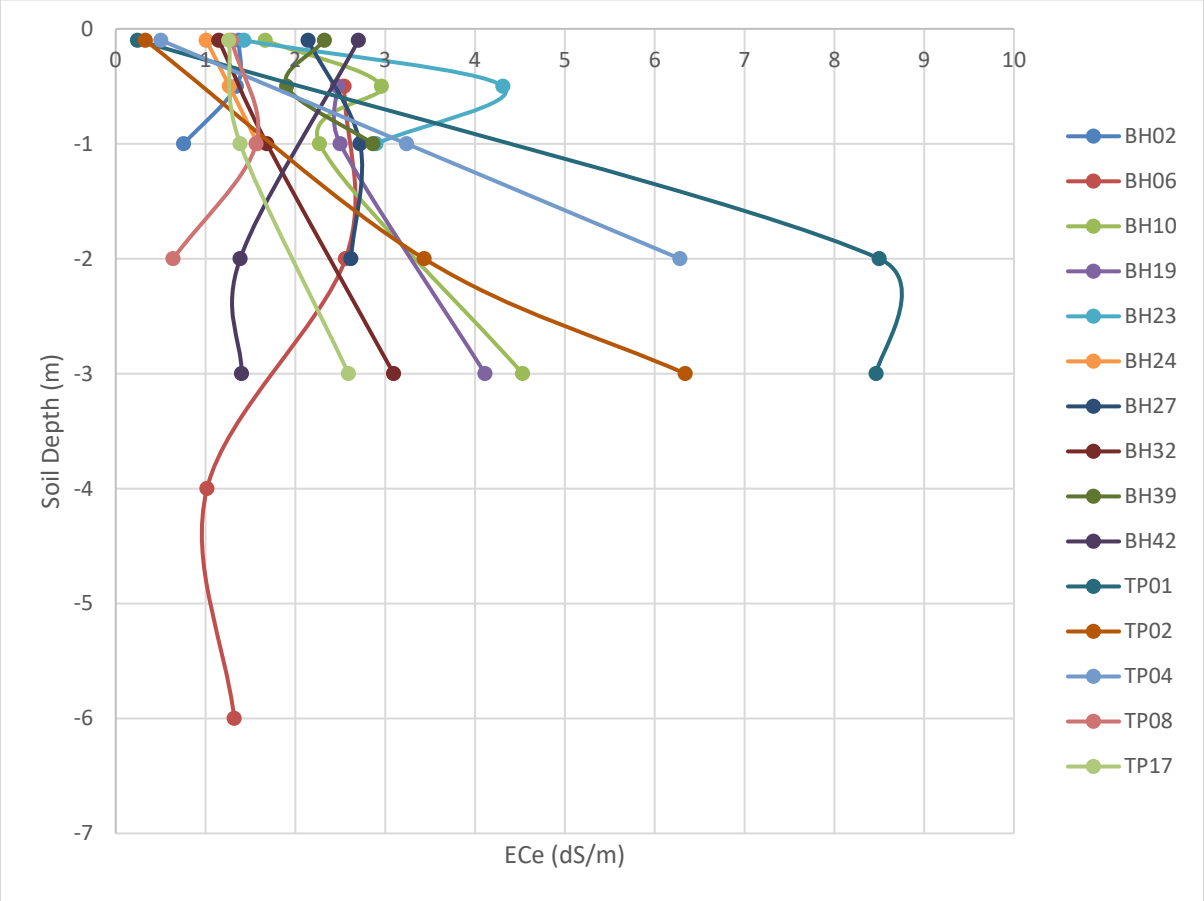
The results of the salinity testing indicated that the soil on-site is predominantly non-saline at the surface. Salinity was observed to generally increase with depth with predominantly non-saline to moderately saline soils in natural residual clays. Very saline soils was observed in one location (TP01). A summary of the salinity results is presented in **Table 19**. A graph displaying the soil electrical conductivity change with depth is illustrated in **Graph 1** below.

Based on the results of the salinity testing the Site is predominantly characterised by non-saline to slightly saline saline soils. Furthermore, the results indicate the salinity predominantly increases with depth across the Site.

Table 19 - Summary of Salinity Results

Sample ID	Soil Description	EC (dS/m)	Multiplication Factor	ECe (dS/m)	Salinity Rating
BH02_0.1	FILL: Silty SAND	0.098	14	1.372	Non-Saline
BH02_0.5	Clayey gravelly SAND	0.096	14	1.344	Non-Saline
BH02_1.0	Sandy CLAY	0.089	8.5	0.7565	Non-Saline
BH06_0.5	CLAY	0.318	8	2.544	Slightly Saline
BH06_2.0	Sandy CLAY	0.301	8.5	2.5585	Slightly Saline
BH06_4.0	CLAY	0.127	8	1.016	Non-Saline
BH06_6.0	CLAY	0.165	8	1.32	Non-Saline
BH10_0.1	FILL: Gravelly Sandy CLAY	0.196	8.5	1.666	Non-Saline
BH10_0.5	Sandy CLAY	0.348	8.5	2.958	Slightly Saline
BH10_1.0	Sandy CLAY	0.267	8.5	2.2695	Slightly Saline
BH10_3.0	Sandy CLAY	0.533	8.5	4.5305	Moderately Saline
BH19_0.5	CLAY	0.353	7	2.471	Slightly Saline
BH19_1.0	Gravelly CLAY	0.357	7	2.499	Slightly Saline
BH19_3.0	CLAY	0.514	8	4.112	Moderately Saline
BH23_0.1	Fill: Silty SAND	0.102	14	1.428	Non-Saline
BH23_0.5	Clayey SAND	0.308	14	4.312	Moderately Saline
BH23_1.0	Sandy CLAY	0.341	8.5	2.8985	Slightly Saline
BH024/MW04_0.1	FILL: Silty SAND	0.072	14	1.008	Non-Saline
BH024/MW04_0.5	Sandy CLAY	0.149	8.5	1.2665	Non-Saline
BH024/MW04_1.0	Sandy CLAY	0.186	8.5	1.581	Non-Saline
BH27_0.1	FILL: Gravelly Sand	0.126	17	2.142	Slightly Saline
BH27_1.0	Sandy CLAY	0.32	8.5	2.72	Slightly Saline
BH27_2.0	Sandy CLAY	0.308	8.5	2.618	Slightly Saline
BH32_0.1	FILL: Silty Gravelly SAND	0.082	14	1.148	Non-Saline
BH32_1.0	Sandy CLAY	0.198	8.5	1.683	Non-Saline
BH32_3.0	Sandy CLAY	0.364	8.5	3.094	Slightly Saline
BH39_0.1	FILL: Silty SAND	0.166	14	2.324	Slightly Saline
BH39_0.5	Sandy CLAY	0.224	8.5	1.904	Non-Saline
BH39_1.0	Sandy CLAY	0.337	8.5	2.8645	Slightly Saline
BH42_0.1	FILL: Gravelly Sand	0.159	17	2.703	Slightly Saline
BH42_2.0	Sandy CLAY	0.163	8.5	1.3855	Non-Saline
BH42_3.0	Sandy CLAY	0.165	8.5	1.4025	Non-Saline
TP01_0.1	FILL: Gravelly Sandy CLAY	0.027	9	0.243	Non-Saline
TP01_2.0	Sandy CLAY	1	8.5	8.5	Very Saline
TP01_3.0	Sandy CLAY	0.996	8.5	8.466	Very Saline
TP02_0.1	Top Soil	0.033	10	0.33	Non-Saline
TP02_2.0	Sandy CLAY	0.404	8.5	3.434	Slightly Saline
TP02_3.0	Sandy CLAY	0.746	8.5	6.341	Moderately Saline

TP04_0.1	FILL: Gravelly Clayey SAND	0.036	14	0.504	Non-Saline
TP04_1.0	Sandy CLAY	0.381	8.5	3.2385	Slightly Saline
TP04_2.0	Sandy CLAY	0.739	8.5	6.2815	Moderately Saline
TP08_0.1	Top Soil	0.129	10	1.29	Non-Saline
TP08_1.0	Sandy CLAY	0.184	8.5	1.564	Non-Saline
TP08_2.0	Sandy Silty CLAY	0.071	9	0.639	Non-Saline
TP17_0.1	Top Soil	0.126	10	1.26	Non-Saline
TP17_1.0	FILL: Gravelly Sandy CLAY	0.154	9	1.386	Non-Saline
TP17_3.0	Gravelly sandy CLAY	0.288	9	2.592	Slightly Saline
TP49_3.0	Sandy CLAY	0.32	8.5	2.72	Slightly Saline



Graph 1 – Salinity across the soil profile

9.3.4 *Acid Sulfate Soils*

Concentrations of Net Acidity and Chromium Reducible Sulfur were reported at less than the NASSG (2018) Action Criteria for > 1000 tones disturbed for clay material with the exception of five (5) samples which reported concentrations of Net acidity above the NASSG Action Criteria.

A summary of the chromium reducible sulfur analysis are presented in **Table 8** below. The results indicate there is actual acid sulfate soils (AASS) which may require management at the Site. Based on a review of the data the Acid Sulfate Soils requiring management appear to be limited to the eastern extent of the Site and are present at depths from 2 – 3 metres below ground level. **Figure** shows the locations of the exceedances.

Table 8 – Summary of Chromium Reducible Sulfur Analytical Results

Analyte		Actual Acidity		Potential Acidity		Acid Base Accounting		
		Titratable Actual Acidity		Chromium Reducible Sulfur		Net Acidity excluding Acid Neutralising Capacity (ANC)		Liming Rate
Units	**Geology**	**% pyrite S**	**mole H+ / t**	**mole H+ / t**	**% pyrite S**	**mole H+ / t**	**% pyrite S**	**kg $CaCO_3$/t**
Action Criteria		**-**	**-**	**-**	**≥ 0.03***	**≥ 18***	**-**	**-**
BH05_5.0	SHALE	<0.02	<2	<10	0.008	<10	<0.02	<1
BH06_1.0	CLAY	<0.02	3	<10	0.009	<10	<0.02	<1
BH07_2.8	CLAY	0.02	16	<10	0.013	24	0.04	2
BH10_3.0	CLAY	<0.02	<2	<10	0.013	<10	<0.02	<1
BH18_3.0	CLAY	<0.02	4	<10	0.012	12	<0.02	<1
BH19_2.0	CLAY	<0.02	8	<10	0.006	12	<0.02	<1
BH21_3.0	CLAY	0.05	32	<10	<0.005	32	0.05	2
BH27_2.0	CLAY	0.04	23	<10	<0.005	23	0.04	2
BH35_3.0	CLAY	0.03	19	<10	0.010	25	0.04	2
BH46_6.0	CLAY	<0.02	<2	<10	0.008	<10	<0.02	<1
BH47_3.0	CLAY	<0.02	<2	<10	0.010	<10	<0.02	<1
TP01_3.0	CLAY	<0.02	2	<10	0.006	<10	<0.02	<1
TP04_3.0	CLAY	<0.02	<2	<10	0.010	<10	<0.02	<1
TP37_2.8	CLAY	0.03	18	<10	0.011	25	0.04	2
TP49_3.0	CLAY	<0.02	12	<10	0.008	17	0.03	1



Figure 1 – Acid Sulfate Soils exceedance locations

Sample Location concentration exceeding action criteria

Sample location concentration below action criteria

9.3.5 *Aesthetics*

Minimal anthropogenic materials were present in the soil profile and no significant fill was identified across the Site. Some anthropogenic material including bricks, glass and plastic was observed in multiple test pits progressed to the east of the current warehouse building.

10 Discussion

Based on the decision-making process for assessing urban redevelopment sites detailed in EPA (2017) and present in **Table 7**, the decisions required to be made are detailed below. It should be noted that further information relating to Ground and Water Conditions (SEARS Section 12) is reported in the Surface Water and Groundwater Impact Assessment conducted by EP Risk (EP Risk 2023) as summarised in Section 1.5 above.

Has soil and groundwater been assessed against relevant health investigation levels ('HILs') and health screening levels ('HSLs'), and has the potential for migration of contamination been considered?

Soil sample results across the Site have been compared to the commercial/ industrial health-based and ecological criteria. TRH / BTEXN / PAH / OCP / OPP and TPH chemicals within the in-situ soil samples were reported less than the adopted criteria.

Two (2) fibre cement fragments (MS01 and MS02) identified on the southeastern surface of the Site returned a positive result for chrysotile (white asbestos). The two (2) fibre cement fragments collected during field screening within TP37 were reported at concentrations below the adopted HSL (0.008 % w/w). Based on the depth of the bonded asbestos identified, migration of asbestos contamination off-site is considered unlikely.

In terms of groundwater, the following exceedances to the adopted health and ecological groundwater criteria were reported:

- MW01 – Chromium (0.002 mg/L), Copper (0.016 mg/L), Nickel (0.049 mg/L), Zinc (0.028 mg/L).
- MW02 – Cadmium (0.0004 mg/L), Chromium (0.002 mg/L), Copper (0.016 mg/L), Nickel (0.013 mg/L), Zinc (0.062 mg/L).
- MW04 – Benzene (2 µg/L), Cadmium (0.0004 mg/L), Copper (0.069 mg/L), Nickel (0.074 mg/L), Zinc (0.23 mg/L).

The findings suggest an elevated presence of metals in the groundwater at the site. As, the exceedances of the established ecological and health-based drinking water standards are relatively minor the concentrations are likely attributed to background levels typical of the heavily industrialised surroundings. The one (1) benzene exceedance of the health-based drinking water criteria was reported in MW04, however users of groundwater for drinking water would be unlikely to be a potential current or future receptor due to the proposed reticulated water at the Site.

Detections of 6:2 Fluorotelomer sulfonic acid (6:2 FTS), Perfluorohexane sulfonic acid (PFHxS) and Sum of PFAS (WA DER List) and within MW01, MW02 and MW03 were reported. No adopted criteria is currently available for these chemicals and the minor detections are likely contributed to the surrounding heavily industrial land use.

Are there any unacceptable risks to future onsite or offsite receptors from impacted soil or groundwater?

The area surrounding TP37 poses a potential risk to on-site workers during the proposed works due to the identification of bonded asbestos. Works within this ASBINS area as highlighted within **Figure 1** attached, should be conducted under Class B (bonded) conditions.

Based on the information provided by Centuria and the groundwater impact assessment conducted by EP Risk (EP Risk 2023a), direct exposure to potentially contaminating groundwater during the proposed development works seems unlikely, however, perched water may be encountered in the southwestern corner. Concentrations of chromium, Copper, Nickel and Zinc exceeded the GIL, DGVs and ADWG guidelines, which is considered to pose a low risk for ecological receptors on site and is likely attributed to background conditions associated with the surrounding heavily industrial land use. Due to the slightly elevated levels of heavy metals the groundwater is not permitted to be used for drinking water on-Site.

Are there any background issues?

All in-situ soil samples analysed for TRH / BTEXN / PAH / OCP / OPP and TPH were reported less than the adopted criteria. As mentioned above, minor background contamination identified within groundwater should not be encountered in the proposed works. Due to minor contamination no groundwater/ purged water should be used as drinking water on-site.

Are there impacts of chemical mixtures?

There were no impacts of chemical mixtures relevant to the proposed development.

Are there any aesthetics issues in fill at the site?

Minimal fill was reported across the Site and there were no observed stockpiles of anthropogenic materials. It should be noted that some anthropogenic materials including bricks, glass, plastic was observed in FILL in multiple test pits progressed to the east of the existing warehouse buildings. Bonded (non-friable) asbestos was identified in FILL at on test pit location (TP37).

Is Further Investigation Required?

No further investigation is required with respect to contamination.

Is a Site Management Strategy Required?

Acid Sulfate Soils

Based on the proposed development plans (provided within **Appendix I** to this report) the majority of the Site will remain undisturbed as part of the development with the majority of deeper (> 2 mBGL) excavations occurring in the southwestern portion of the Site. Some excavation is proposed on the southeastern boundary although these are limited to the top 1 – 2 meters of soil.

In consideration of the proposed development plans and the location of identified actual acid sulfate soils at the Site, it is considered unlikely that excavations will disturb actual acid sulfate soils which have been identified in natural Clay at depths ranging from 2 – 3 mBGL. Should deeper excavations within the AASS area occur (or be required) or should any physical signs of ASS be observed during the works, further investigations and the development of a potential management strategy may be required.

Asbestos

As the asbestos identified within TP37 is below HSL no further management is required. If any excavation is to occur within the outlined asbestos area, works should be conducted under Class B asbestos conditions. An unexpected finds protocol should be adopted should any asbestos be observed during works.

Salinity

While contamination at a level warranting management or remediation was not identified, the following is recommended to meet industry best practice during development activities:

- Predominantly non-saline to slightly saline soils were identified in shallow soils increasing to slightly to moderately saline soils at depth. Salinity management should be included as part of the construction environmental management plan for the Site.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.

Based on the information contained in the architectural plans provided, and the information within the GWIA (EP Risk 2023) it's considered that minimal dewatering will be required during construction including:

- Some minor dewatering of the perched water aquifer during bulk earthworks may be required.
- Some minor dewatering (likely perched water) in some proposed stormwater and sewer excavations may be required.
- It is estimated approximately 15 m of the proposed sewer line in the northern portion of the Site will require dewatering (from RL 41.21 to 41.58).

Due to the limited extent of dewatering required at the Site, groundwater (if encountered) could be pumped using onsite pumps or liquid vacuum trucks where encountered in the excavations. Opportunities for reuse of water at the Site that meet the water quality objectives would be minimal given the high total dissolved solids and salinity measured in the groundwater. Where large volumes are proposed treatment and disposal to sewer under a trade waste agreement (TWA) would likely be the preferred disposal option. A detailed water treatment design should be prepared if large volumes dewatering is required.

11 Refined Conceptual Site Model

A refined conceptual site model (CSM) has been developed based upon the information provided in previous sections of this report.

Contaminating activities based on the Site inspection and review of historical records, the following activities have occurred on-site and off-site which may have resulted in the potential for contamination. These activities are summarised as follows:

- Potential historical fill from earthworks, unknown origin and quality.
- Former agricultural uses of the Site
- The Site boundary listed within a high hazard risk area / moderate salinity potential
- Historical use of the surrounding area for agricultural / farming purposes
- Printers lithographic and motor engineers located 21m south east of the Site.
- Potential contaminating activities from surrounding commercial/ industrial properties.

11.1 Affected Media

The potential affected media at the Site is considered to be soil. As per the groundwater impact statement conducted by EP Risk (2023), groundwater is unlikely to be encountered during the proposed works and as such is not considered a potential affected media or source pathway. As groundwater is not considered a potential source-pathway-receptor linkage, off-site migration of contamination is considered minimal.

11.2 Human and Ecological Receptors

The following potential exposure pathways for the CoPC have been identified to exist for potential contamination sources based on a review the Site history:

- Inhalation of fugitive dust during high wind events and/or future construction/remediation and/or users on-site.
- Direct contact and ingestion during use of the Site involving disturbance of the soil and/or construction and remediation works on-site.
- Surface water run-off during rainfall events or infiltrating into subsurface soils and groundwater.

11.3 Potential and Complete Exposure Pathways

An analysis of the potential exposure pathways between the COPC and the identified human and ecological receptors are presented in **Table 20.**

Overall, based on this assessment and the conceptual site model for the proposed development there are no complete source-pathway-receptor linkages.

Table 20– Potential Exposure Pathways

Location	Primary Sources	Secondary Sources / Affected Media	Release Mechanism	Pathway	On-Site			Off-Site		
					Current and future intrusive construction/ maintenance workers	Current temporary and future users and visitors of the Site, including future residents / commercial workers	Limited on-Site ecological receptors (terrestrial flora and fauna) in the landscaped areas at the Site	Current and future intrusive construction and maintenance workers at surrounding properties	Current and future employees, occupants and visitors of surrounding properties	Aquatic fauna and flora at Surrounding Waterways
On-site	Potentially imported fill materials of unknown origin and quality including asbestos material	Soil	Direct Contact	Ingestion/ Dermal Contact	Rare	Rare	Rare	Rare	N/A	N/A
	Potentially imported fill materials containing bonded (non-friable) ACM (**TP37**)			Inhalation	Rare	**N/A**	N/A	N/A	N/A	N/A
	Former agricultural uses of the Site			Ingestion / Dermal Contact	Rare	**N/A**	N/A	N/A	N/A	N/A
	The Site boundary listed within a high hazard risk area / moderate salinity potential			Uptake by flora and fauna	**N/A**	**N/A**	Rare	**N/A**	**N/A**	**N/A**
Off-site	Adjacent commercial / industrial properties	Off-site Groundwater	Migration of contaminated groundwater	Dermal Contact	N/A	N/A	N/A			
				Ingestion	N/A	N/A	N/A			
				Uptake by flora and fauna	N/A	N/A	N/A			
	Printers lithographic and motor engineers located 21m southeast of the Site.			Dermal Contact	N/A	N/A	N/A			
				Ingestion	N/A	N/A	N/A			
				Uptake by flora and fauna	N/A	N/A	N/A			
	Historical use of the surrounding area for agricultural / farming purposes			Dermal Contact	N/A	N/A	N/A			
				Ingestion	N/A	N/A	N/A			
				Uptake by flora and fauna	N/A	N/A	N/A			

Potential Exposure Pathway Key:

Soil

Groundwater

12 Conclusion and Recommendations

EP Risk was engaged by Centuria Capital Limited to undertake a DSI for a state significant development application involving a single story warehouse development at a Site located at 88 Newton Road, Wetherill Park NSW. The proposed development is under a commercial / industrial land use.

The DSI was required to assess whether any contaminating activities are likely to have occurred at the Site which may present a human health or ecological risk under the proposed land use.

The following potentially contaminating activities were identified:

- On-site: Potential importation of fill materials of unknown origin and quality, former agricultural uses of the Site, the Site boundary listed within a high hazard risk area / moderate salinity potential.
- Off-site: Adjacent commercial / industrial properties, printers lithographic and motor engineers located 21m southeast of the Site, historical use of the surrounding area for agricultural / farming purposes.

During the Site walkover and during an intrusive investigation minor anthropogenic waste was observed. Two (2) existing buildings; a large warehouse and an office building, were present onsite along with a surrounding carpark and access roads.

Based on the review of the historical information, the Site was formerly used as cleared farmland, residential property and a storage yard. The Site operated as grazing land prior to 1970. By 1982 the Site appeared to be occupied as a storage yard of either building materials and stockpiled material. By 2000, construction of the current buildings that occupied the Site today was underway, the Site has remained relatively unchanged since 2007. The surrounding land use comprised rural, agricultural, industrial and commercial land use.

A total of fifty seven (57)sample locations were progressed across the Site in addition to four groundwater monitoring wells. A breakdown of the locations are summarised below:

- Thirty (30) boreholes to an extent of 3.0 mBGL
- Twenty (20) deeper boreholes to 6 mBGL
- Seven (7) shallow test pits to a extend of 2 mBGL.

Based on this assessment, and the conceptual site model, the material assessed is suitable to remain on-site under the proposed development and is considered to pose a low risk to current and future land users. Considering the above, it is satisfied that the Site is suitable for the proposed the development, in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021 (SEPP 2021).

While contamination at a level warranting management or remediation was not identified, the following is recommended to meet industry best practice during development activities:

- Predominantly non-saline to slightly saline soils were identified in shallow soils increasing to slightly to moderately saline soils at depth. Salinity management measures should be included as part of the construction environmental management plan for the Site.
- Anthropogenic material from the demolition of the existing buildings and infrastructure should be removed from the Site prior to any vegetation clearance or earthwork activities.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.

- Works within identified areas containing ASBINS should be completed in accordance with the Work Health and Safety Regulation 2017, the SafeWork NSW Code of Practice: How to Manage and Control Asbestos in the Workplace 2019; and AS2621 - Australian Standard for Demolition of Structures 2001
- Where any on-site material requires disposal, these should be assessed in accordance with NSW EPA, Waste Classification Guidelines, Part 1: Classifying Waste (2014) and the NSW EPA Waste Recovery Framework prior to disposal or beneficial re-use. It is noted that the results of this limited DSI assessment should be included in the final waste classification.

Figures


TP50
TP06
BH40
BH39
TP49
TP05
BH41
BH48
BH42/MW02
BH38
BH25
BH24/MW04
BH43
BH37
BH47
BH44
TP36
BH26
TP07
BH22
BH23
BH46/ MW03
BH45/MW03
BH34
BH35
BH27
BH28
BH21
BH09
BH29
TP33
BH30
BH20
BH32
TP08
MS01
BH19
BH31
BH10
TP04
MS02
BH18
BH11
BH07
TP17
BH12
BH06
BH16
BH05
TP03
BH13
BH04
TP01
TP14
TP15
BH03
TP02
BH02/MW01 (ASS)
BH01
N
Legend
ASBINS area
Site Boundary
Shallow Testpits
Bonded Asbestos Material Samples
Deep Testpits
Deep Boreholes
Shallow Boreholes
0
25 m
50 m
© Department of Finance, Services & Innovation 2018
EP RISK
Produced by Datanest.earth
Title:
DSI - Sampling Locations and Site Boundaries
Client: Centuria
Figure:
EP3206 - Centuria Wetherill Park Sampling Layout
Project:
Wetherill Park DSI
Drawn: ZW
Date: 27-10-2023
Checked:
OG
Size:
A4
Proj No.: EP3206
Scale: 1:1609
Version:
draft

Analytical Tables

	BTEX							TRH							Phenols										Halogenated Benzenes	Inorganics											Metals							
	Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylenes Total	Total BTEX	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C24 Fraction (F3)	>C24-C28 Fraction (F4)	>C28-C40 Fraction (Sum)	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol	Hexachlorobenzene	Exchangeable Sodium Percent	pH	Moisture Content	Exchangeable Calcium	Exchangeable Magnesium	Exchangeable Potassium	Exchangeable Sodium	Cation Exchange Capacity	Electrical Conductivity (Lab)	Moisture Content (dried @ 105°C)	pH (Lab)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	-	%	meq/100g	meq/100g	meq/100g	meq/100g	meq/100g	mS/cm	%	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.1	0.1	0.1	0.2	0.1	0.3	0.2	10	10	50	50	100	100	50	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.05	0.1	1	0.1	0.1	0.1	0.1	0.1	1	1	0.1	2	0.4	2	5	5	0.1	2	5
Direct Contact HSL D Commercial/ Industrial	11,000	430		27,000			81,000		26,000		20,000		27,000	38,000																																
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil									700		1,000		3,500	10,000																																
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand >>0m, <1m		3					230			260																																		
>=1m, <2m		3								370																																		
>=2m, <4m		3								630																																		
>=4m		3																																									
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind	370																																						160							
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil >=0m, <2m		75	135	165			180			215	170	170	1,700	3,300																														
NEPM 2013 Table 1A(1) HILs Comm/ind D Soil																											660	240,000	80												3,000	900		240,000	1,500	730	6,000	400,000
NSW 2014 General Solid Waste CT1 (No Leaching)		10	288	600			1,000										8,000	40					4,000																100	20			100	4	40	
NSW 2014 Restricted Solid Waste SCC2 (with leached)		72	2,073	4,320			7,200										57,600	288					28,800				2,073												2,000	400			6,000	200	4,200	

Field ID	Matrix Type	Depth	Date																																											
TP01_0.1	Soil	0.1	27 Jul 2023																																										
TP01_0.5	Soil	0.5	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05		10.7												
TP01_2.0	Soil	2	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																			20.9	21.1	<0.1	3.6	<0.1	1.0	4.6	1,000	7.1	6	<1	27	24	11	<0.1	21	45
TP01_3.0	Soil	3	27 Jul 2023																																		21.7		<0.1	15.8	<0.1	4.4	20.2	996	7.6											
TP02_0.1	Soil	0.1	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	<0.2	8.9	5.7	2.9	0.2	<0.2	8.8	33	7.7	7	<1	29	25	26	<0.1	16	51
TP02_2.0	Soil	2	27 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			7.6	-	-	5.0	8.9	<0.1	1.1	15.1	404	7.5	-	-	-	-	-	-	-	-	-	-
TP02_3.0	Soil	3	27 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			18.6	-	-	<0.1	11.2	<0.1	2.6	13.9	746	8.6	-	-	-	-	-	-	-	-	-	-
TP03_0.5	Soil	0.5	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05		9.7												
TP04_0.1	Soil	0.1	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	13.9	5.4	3.6	<0.2	<0.2	9.1	36	7.7	8	<1	29	26	24	<0.1	20	53
TP04_1.0	Soil	1	27 Jul 2023																																		21.5		1.7	12.9	<0.1	4.0	18.6	381	8.3											
TP04_2.0	Soil	2	27 Jul 2023																																		26.2		<0.2	11.0	<0.2	3.9	15.0	739	9.0											
TP04_3.0	Soil	3	27 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05_1.0	Soil	1	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	6.6	-	-	-	-	-	-	-	6	<1	22	24	76	0.1	11	96
TP05_2.0	Soil	2	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	15.4	-	-	-	-	-	-	-	12	<1	39	73	149	<0.1	16	544
TP06_0.1	Soil	0.1	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	48	48	<50	<50	180	<100	180																		<0.05	-	9.9	-	-	-	-	-	-	-	6	<1	27	20	26	<0.1	13	41
TP07_1.0	Soil	1	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	10.0	-	-	-	-	-	-	-	7	<1	8	37	152	0.3	8	158
BH01_0.1	Soil	0.1	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	10.6	-	-	-	-	-	-	-	5	<1	10	22	107	0.2	8	115
BH01_0.1	Soil	0.1	27 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02_0.1	Soil	0.1	19 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	28.0	10.1	3.2	13.0	0.4	6.5	23.0	98	7.0	7	<1	28	28	26	<0.1	20	90
BH02_0.5	Soil	0.5	19 Jul 2023																																		<0.2		5.3	3.3	<0.2	<0.2	8.6	96	7.8											
BH02_1.0	Soil	1	19 Jul 2023																																		<0.2		2.9	2.2	<0.2	<0.2	5.1	89	7.6											
BH02_2.0	Soil	2	19 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																			10.3									7	<1	34	22	25	<0.1	15	49
BH02_4.5	Soil	4.5	19 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_0.1	Soil	0.1	27 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_0.5	Soil	0.5	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	13.8	-	-	-	-	-	-	-	<5	<1	12	30	14	<0.1	28	39
BH03_3.0	Soil	3	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																			-	17.6	-	-	-	-	-	-	-	<5	<1	8	20	6	<0.1	14	53
BH04_0.4	Soil	0.4	17 Sep 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	21.8	-	-	-	-	-	-	-	<5	<1	12	32	12	<0.1	40	47
BH05_0.2	Soil	0.2	24 Sep 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	12.2	-	-	-	-	-	-	-	<5	<1	13	68	<5	<0.1	153	46
BH05_5.0	Soil	5	24 Sep 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.2	Soil	0.2	24 Sep 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	11.6	-	-	-	-	-	-	-	<5	<1	22	62	<5	<0.1	138	50
BH06_0.5	Soil	0.5	24 Sep 2023																																		30.0												
BH06_1.0	Soil	1	24 Sep 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	0.2	3.5	<0.1	1.6	5.4	318	7.2	-	-	-	-	-	-	-	-	-	-
BH06_2.0	Soil	2	24 Sep 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			31.1	-	0.4	3.0	<0.1	1.6	5.2	301	7.3	-	-	-	-	-	-	-	-	-	-
BH06_4.0	Soil	4	24 Sep 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	<0.5	0.5	<0.2	<0.5	0.5	127	7.9	-	-	-	-	-	-	-	-	-	-
BH06_6.0	Soil	6	24 Sep 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	<0.2	<0.2	<0.2	<0.2	<0.2	165	8.2	-	-	-	-	-	-	-	-	-	-
BH07_0.1	Soil	0.1	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	11.5	-	-	-	-	-	-	-	7	<1	32	19	25	<0.1	13	75
BH07_0.1	Soil	0.1	26 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07_2.8	Soil	2.8	26 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08_0.1	Soil	0.1	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	8.4	8.0	0.6	<0.1	<0.2	8.6	129	8.0	<5	<1	21	21	36	<0.1	18	59
TP08_1.0	Soil	1	26 Jul 2023																																		27.6		0.2	7.2	0.2	2.9	11.5	184	5.3											
TP08_2.0	Soil	2	26 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			29.2	-	<0.1	6.1	0.2	2.6	8.9	71	5.6	-	-	-	-	-	-	-	-	-	-
BH09_0.1	Soil	0.1	25 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	13.6	-	-	-	-	-	-	-	5	<1	16	24	51	0.1	15	82
BH09_0.1	Soil	0.1	25 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09_2.0	Soil	2	25 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	18.0	-	-	-	-	-	-	-	8	<1	19	22	12	<0.1	16	55
BH10_0.1	Soil	0.1	25 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	<0.2	10.7	6.5	1.8	<0.2	<0.2	8.3	196	8.7	7	<1	27	20	27	<0.1	12	44
BH10_0.1	Soil	0.1	25 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10_0.5	Soil	0.5	25 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			15.6	-	4.0	3.2	<0.2	1.4	8.7	348	8.1	-	-	-	-	-	-	-	-	-	-
BH10_1.0	Soil	1	25 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			28.8	-	1.3	8.4	0.3	4.1	14.1	267	6.9	-	-	-	-	-	-	-	-	-	-
BH10_3.0	Soil	3	25 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			39.6	-	0.6	5.6	<0.2	4.1	10.4	533	8.2	-	-	-	-	-	-	-	-	-	-
BH11_0.3	Soil	0.3	08 Oct 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	18.6	-	-	-	-	-	-	-	8	<1	40	23	15	<0.1	29	22
BH12_0.2	Soil	0.2	17 Sep 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	10.8	-	-	-	-	-	-	-	<5	<1	14	79	<5	<0.1	155	47
BH13_0.1	Soil	0.1	24 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	11.6	-	-	-	-	-	-	-	5	<1	8	32	18	<0.1	22	47
BH13_0.1	Soil	0.1	24 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13_1.0	Soil	1	24 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																			10.3	-	-	-	-	-	-	-	-	<5	<1	10	38	16	<0.1	20	74
TP14_0.1	Soil	0.1	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	16.1	-	-	-	-	-	-	-	8	<1	34	16	24	<0.1	12	38
TP14_0.1	Soil	0.1	27 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15_0.1	Soil	0.1	27 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15_0.5	Soil	0.5	27 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	8.1	-	-	-	-	-	-	-	7	<1	34	24	28	<0.1	20	52
TP16_2.0	Soil	2	19 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	13.9	-	-	-	-	-	-	-	9	<1	17	32	25	<0.1	36	78
TP17_0.1	Soil	0.1	26 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	6.9	1.2	<0.2	<0.2	8.1	126	8.1	-	-	-	-	-	-	-	-	-	-
TP17_0.1	Soil	0.1	26 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17_1.0	Soil	1	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	19.8	10.0	2.9	5.3	<0.1	2.0	10.2	154	8.5	7	<1	27	23	24	<0.1	16	46
TP17_3.0	Soil	3	26 Jul 2023																																		43.2		<0.2	4.9	<0.2	3.8	8.7	288	8.2											
BH18_0.5	Soil	0.5	24 Sep 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	10.5	-	-	-	-	-	-	-	11	<1	26	30	28	<0.1	40	79
BH18_3.0	Soil	3	24 Sep 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19_0.3	Soil	0.3	24 Sep 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	18.2	-	-	-	-	-	-	-	7	<1	33	25	10	<0.1	20	22
BH19_0.5	Soil	0.5	24 Sep 2023																																		17.4		0.9	7.5	0.1	1.8	10.4	353	5.9											
BH19_1.0	Soil	1	24 Sep 2023																																		23.2		0.2	4.2	<0.1	1.4	5.9	357	6.3											
BH19_2.0	Soil	2	24 Sep 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19_3.0	Soil	3	24 Sep 2023																																		32.6		0.1	3.1	0.1	1.6	4.9	514	6.8											
BH20_0.3	Soil	0.3	08 Oct 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	10.7	-	-	-	-	-	-	-	<5	<1	21	48	12	<0.1	140	48
BH21_0.1	Soil	0.1	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	17.7	-	-	-	-	-	-	-	8	<1	35	24	27	<0.1	10	40
BH21_0.1	Soil	0.1	26 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21_0.5	Soil	0.5	26 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	9.0	-	-	-	-	-	-	-	5	<1	9	22	84	0.2	7	83
BH21_3.0	Soil	3	26 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22_0.1	Soil	0.1	18 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	15.1	-	-	-	-	-	-	-	11	<1	31	19	16	<0.1	8	20
BH22_6.0	Soil	6	19 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23_0.1	Soil	0.1	18 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	5.4	8.9	6.3	5.4	0.2	0.7	12.5	102	7.2	8	<1	39	20	31	<0.1	14	49
BH23_0.5	Soil	0.5	18 Jul 2023																																		5.1		4.0	6.2	0.2	0.6	10.9	308	6.2											
BH23_1.0	Soil	1	18 Jul 2023																																		2.9		4.4	5.2	0.2	0.3	10.0	341	6.0											
BH024/MW04_0.1	Soil	0.1	18 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	4.9	8.3	6.9	4.2	0.3	0.6	12.0	72	7.1	6	<1	28	15	20	<0.1	11	27
BH024/MW04_0.5	Soil	0.5	18 Jul 2023																																		12.6		4.2	5.4	0.2	1.4	11.2	149	6.7											
BH024/MW04_1.0	Soil	1	18 Jul 2023																																		24.4		1.2	8.9	0.2	3.3	13.7	186	5.4											
BH24/MW04_5.0	Soil	5	18 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																			12.7	-	-	-	-	-	-	-	-	9	<1	16	36	12	<0.1	30	84
BH25_0.1	Soil	0.1	25 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	15.2	-	-	-	-	-	-	-	6	<1	24	21	18	<0.1	12	31
BH26_0.1	Soil	0.1	25 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	-	15.9	-	-	-	-	-	-	-	<5	<1	18	27	48	<0.1	25	65
BH27_0.1	Soil	0.1	25 Jul 2023	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50																		<0.05	<0.2	16.3	11.4	0.5	<0.2	<0.2	12.1	126	8.8	5	<1	20	23	47	<0.1	18	85
BH27_0.1	Soil	0.1	25 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																			-	-	-

			Organochlorine Pesticides					Organochlorine Pesticides																Organophosphorous Pesticides															
			4,4 DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Azinphos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.05
Direct Contact HSL D Commercial/ Industrial																																								
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																																								
NEPM 2013 Table 1A(3) Comm/ind D Soil HSL for Vapour Intrusion, Sand >=0m, <1m																																								
>=1m, <2m																																								
>=2m, <4m																																								
>=4m																																								
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind													640																												
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil >=0m, <2m																																									
NEPM 2013 Table 1A(1) HILs Comm/ind D Soil				45		530								3,600		2,000				100				50		2,500					2,000									
NSW 2014 General Solid Waste CT1 (No Leaching)																60															4									
NSW 2014 Restricted Solid Waste SCC2 (with leached)																432															30									
Field ID	**Matrix Type**	**Depth**	**Date**																																						
TP01_0.1	**Soil**	**0.1**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP01_0.5	**Soil**	**0.5**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP01_2.0	**Soil**	**2**	**27 Jul 2023**																																						
TP01_3.0	**Soil**	**3**	**27 Jul 2023**																																						
TP02_0.1	**Soil**	**0.1**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP02_2.0	**Soil**	**2**	**27 Jul 2023**																																						
TP02_3.0	**Soil**	**3**	**27 Jul 2023**																																						
TP03_0.5	**Soil**	**0.5**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP04_0.1	**Soil**	**0.1**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP04_1.0	**Soil**	**1**	**27 Jul 2023**																																						
TP04_2.0	**Soil**	**2**	**27 Jul 2023**																																						
TP04_3.0	**Soil**	**3**	**27 Jul 2023**																																						
TP05_1.0	**Soil**	**1**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP05_2.0	**Soil**	**2**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP06_0.1	**Soil**	**0.1**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP07_1.0	**Soil**	**1**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH01_0.1	**Soil**	**0.1**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH01_0.1	**Soil**	**0.1**	**27 Jul 2023**																																						
BH02_0.1	**Soil**	**0.1**	**19 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH02_0.5	**Soil**	**0.5**	**19 Jul 2023**																																						
BH02_1.0	**Soil**	**1**	**19 Jul 2023**																																						
BH02_2.0	**Soil**	**2**	**19 Jul 2023**																																						
BH02_4.5	**Soil**	**4.5**	**19 Jul 2023**																																						
BH03_0.1	**Soil**	**0.1**	**27 Jul 2023**																																						
BH03_0.5	**Soil**	**0.5**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH03_3.0	**Soil**	**3**	**27 Jul 2023**																																						
BH04_0.4	**Soil**	**0.4**	**17 Sep 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH05_0.2	**Soil**	**0.2**	**24 Sep 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH05_5.0	**Soil**	**5**	**24 Sep 2023**																																						
BH06_0.2	**Soil**	**0.2**	**24 Sep 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH06_0.5	**Soil**	**0.5**	**24 Sep 2023**																																						
BH06_1.0	**Soil**	**1**	**24 Sep 2023**																																						
BH06_2.0	**Soil**	**2**	**24 Sep 2023**																																						
BH06_4.0	**Soil**	**4**	**24 Sep 2023**																																						
BH06_6.0	**Soil**	**6**	**24 Sep 2023**																																						
BH07_0.1	**Soil**	**0.1**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH07_0.1	**Soil**	**0.1**	**26 Jul 2023**																																						
BH07_2.8	**Soil**	**2.8**	**26 Jul 2023**																																						
TP08_0.1	**Soil**	**0.1**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP08_1.0	**Soil**	**1**	**26 Jul 2023**																																						
TP08_2.0	**Soil**	**2**	**26 Jul 2023**																																						
BH09_0.1	**Soil**	**0.1**	**25 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH09_0.1	**Soil**	**0.1**	**25 Jul 2023**																																						
BH09_2.0	**Soil**	**2**	**25 Jul 2023**																																						
BH10_0.1	**Soil**	**0.1**	**25 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH10_0.1	**Soil**	**0.1**	**25 Jul 2023**																																						
BH10_0.5	**Soil**	**0.5**	**25 Jul 2023**																																						
BH10_1.0	**Soil**	**1**	**25 Jul 2023**																																						
BH10_3.0	**Soil**	**3**	**25 Jul 2023**																																						
BH11_0.3	**Soil**	**0.3**	**08 Oct 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH12_0.2	**Soil**	**0.2**	**17 Sep 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH13_0.1	**Soil**	**0.1**	**24 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH13_0.1	**Soil**	**0.1**	**24 Jul 2023**																																						
BH13_1.0	**Soil**	**1**	**24 Jul 2023**																																						
TP14_0.1	**Soil**	**0.1**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP14_0.1	**Soil**	**0.1**	**27 Jul 2023**																																						
TP15_0.1	**Soil**	**0.1**	**27 Jul 2023**																																						
TP15_0.5	**Soil**	**0.5**	**27 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH16_2.0	**Soil**	**2**	**19 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP17_0.1	**Soil**	**0.1**	**26 Jul 2023**																																						
TP17_0.1	**Soil**	**0.1**	**26 Jul 2023**																																						
TP17_1.0	**Soil**	**1**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
TP17_3.0	**Soil**	**3**	**26 Jul 2023**																																						
BH18_0.5	**Soil**	**0.5**	**24 Sep 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH18_3.0	**Soil**	**3**	**24 Sep 2023**																																						
BH19_0.3	**Soil**	**0.3**	**24 Sep 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH19_0.5	**Soil**	**0.5**	**24 Sep 2023**																																						
BH19_1.0	**Soil**	**1**	**24 Sep 2023**																																						
BH19_2.0	**Soil**	**2**	**24 Sep 2023**																																						
BH19_3.0	**Soil**	**3**	**24 Sep 2023**																																						
BH20_0.3	**Soil**	**0.3**	**08 Oct 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH21_0.1	**Soil**	**0.1**	**26 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH21_0.1	**Soil**	**0.1**	**26 Jul 2023**																																						
BH21_0.5	**Soil**	**0.5**	**26 Jul 2023**																																						
BH21_3.0	**Soil**	**3**	**26 Jul 2023**																																						
BH22_0.1	**Soil**	**0.1**	**18 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH22_6.0	**Soil**	**6**	**19 Jul 2023**																																						
BH23_0.1	**Soil**	**0.1**	**18 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH23_0.5	**Soil**	**0.5**	**18 Jul 2023**																																						
BH23_1.0	**Soil**	**1**	**18 Jul 2023**																																						
BH024/MW04_0.1	**Soil**	**0.1**	**18 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH024/MW04_0.5	**Soil**	**0.5**	**18 Jul 2023**																																						
BH024/MW04_1.0	**Soil**	**1**	**18 Jul 2023**																																						
BH24/MW04_5.0	**Soil**	**5**	**18 Jul 2023**																																						
BH25_0.1	**Soil**	**0.1**	**18 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH26_0.1	**Soil**	**0.1**	**25 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH27_0.1	**Soil**	**0.1**	**25 Jul 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH27_0.1	**Soil**	**0.1**	**25 Jul 2023**																																						
BH27_1.0	**Soil**	**1**	**25 Jul 2023**																																						
BH27_2.0	**Soil**	**2**	**25 Jul 2023**																																						
BH28_0.3	**Soil**	**0.3**	**08 Oct 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH29_0.3	**Soil**	**0.3**	**08 Oct 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH30_0.4	**Soil**	**0.4**	**24 Sep 2023**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05
BH30_1.5	**Soil**	**1.5**	**24 Sep 2023**	<0.05

			PAH																PCBs	Pesticides				TPH				Acid Sulphate Soils	Acid Sulphate Soils - Acid Base Accounting				Acid Sulphate Soils - Acidity Trail	Acid Sulphate Soils - ANC			Acid Sulphate Soils - Liming Rate		Acid Sulphate Soils - Potential Acidity	
			2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	PCBs (Sum of total)	Dimethoate/O-methyl	Fenamiphos	Fenthion	Pirimphos-ethyl	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	Net Acidity without ANCE	pH (KCl)	Net Acidity without ANCE	ANCE Fineness Factor	Net Acidity (acidity units)	Net Acidity (sulfur units)	Titratable Actual Acidity (sulfur units)	Titratable Actual Acidity	Acid Neutralising Capacity (acidity units)	Acid Neutralising Capacity	Acid Neutralising Capacity (sulfur units)	Liming Rate	Liming Rate excluding ANC	Chromium Reducible Sulphur (acidity units)	Chromium Reducible Sulfur
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% S	-	moles H+/t	-	mole H+/t	%S	%S	mole H+/t	%CaCO3	%S	kg CaCO3/t	kg CaCO3/t	mole H+/t	%S
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.05	0.05	0.2	0.05	10	20	50	50	50	0.02	0.1	10	0.5	10	0.02	0.02	2	10	0.01	0.01	1	1	10	0.005
Direct Contact HSL D Commercial/ Industrial																	11,000																											
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																																											
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand >>0m, <1m																																											
>=1m, <2m																																											
>=2m, <4m																																											
>=4m																																											
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																	370																											
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil >=0m, <2m					1.4																																						
NEPM 2013 Table 1A(1) HILs Comm/ind D Soil																				4,000	7																							
NSW 2014 General Solid Waste CT1 (No Leaching)					0.8															200	50				650				10,000														
NSW 2014 Restricted Solid Waste SCC2 (with leached)					23															800	50				2,600				40,000														
Field ID	**Matrix Type**	**Depth**	**Date**																																									
TP01_0.1	Soil	**0.1**	**27 Jul 2023**																																									
TP01_0.5	Soil	**0.5**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP01_2.0	Soil	**2**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5						<10	<50	<100	<100	<50														
TP01_3.0	Soil	**3**	**27 Jul 2023**																												<0.03	6.4	<10	1.5	<10	<0.03	<0.02	2				<1	<1	<10	0.006
TP02_0.1	Soil	**0.1**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP02_2.0	Soil	**2**	**27 Jul 2023**																																									
TP02_3.0	Soil	**3**	**27 Jul 2023**																																									
TP03_0.5	Soil	**0.5**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP04_0.1	Soil	**0.1**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP04_1.0	Soil	**1**	**27 Jul 2023**																																									
TP04_2.0	Soil	**2**	**27 Jul 2023**																																									
TP04_3.0	Soil	**3**	**27 Jul 2023**																												<0.03	6.7	<10	1.5	<10	<0.03	<0.02	<2	122	0.61	0.20	<1	<1	<10	0.010
TP05_1.0	Soil	**1**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	0.6	0.7	0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	0.8	3.4	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP05_2.0	Soil	**2**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP06_0.1	Soil	**0.1**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	120	120														
TP07_1.0	Soil	**1**	**26 Jul 2023**	<0.5	<0.5	<0.5	0.7	0.7	0.9	<0.5	<0.5	0.7	1.5	<0.5	<0.5	0.7	1.3	6.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH01_0.1	Soil	**0.1**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH01_0.1	Soil	**0.1**	**27 Jul 2023**																																									
BH02_0.1	Soil	**0.1**	**19 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH02_0.5	Soil	**0.5**	**19 Jul 2023**																																									
BH02_1.0	Soil	**1**	**19 Jul 2023**																																									
BH02_2.0	Soil	**2**	**19 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5						<10	<50	<100	<100	<50														
BH02_4.5	Soil	**4.5**	**19 Jul 2023**																																									
BH03_0.1	Soil	**0.1**	**27 Jul 2023**																																									
BH03_0.5	Soil	**0.5**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH03_3.0	Soil	**3**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH04_0.4	Soil	**0.4**	**17 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH05_0.2	Soil	**0.2**	**24 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH05_5.0	Soil	**5**	**24 Sep 2023**																												<0.03	8.0	<10	1.5	<10	<0.03	<0.02	<2	509	2.55	0.82	<3	<3	<10	0.008
BH06_0.2	Soil	**0.2**	**24 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH06_0.5	Soil	**0.5**	**24 Sep 2023**																																									
BH06_1.0	Soil	**1**	**24 Sep 2023**																												<0.03	6.4	<10	1.5	<10	<0.03	<0.02	3				<1	<1	<10	0.009
BH06_2.0	Soil	**2**	**24 Sep 2023**																																									
BH06_4.0	Soil	**4**	**24 Sep 2023**																																									
BH06_6.0	Soil	**6**	**24 Sep 2023**																																									
BH07_0.1	Soil	**0.1**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH07_0.1	Soil	**0.1**	**26 Jul 2023**																																									
BH07_2.8	Soil	**2.8**	**26 Jul 2023**																												0.04	4.8	24	1.5	24	0.04	0.02	16				2	2	<10	0.013
TP08_0.1	Soil	**0.1**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP08_1.0	Soil	**1**	**26 Jul 2023**																																									
TP08_2.0	Soil	**2**	**26 Jul 2023**																																									
BH09_0.1	Soil	**0.1**	**25 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH09_0.1	Soil	**0.1**	**25 Jul 2023**																																									
BH09_2.0	Soil	**2**	**25 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH10_0.1	Soil	**0.1**	**25 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH10_0.1	Soil	**0.1**	**25 Jul 2023**																																									
BH10_0.5	Soil	**0.5**	**25 Jul 2023**																																									
BH10_1.0	Soil	**1**	**25 Jul 2023**																																									
BH10_3.0	Soil	**3**	**25 Jul 2023**																												<0.03	6.5	<10	1.5	<10	<0.03	<0.02	<2	75	0.38	0.12	<3	<3	<10	0.013
BH11_0.3	Soil	**0.3**	**08 Oct 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH12_0.2	Soil	**0.2**	**17 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH13_0.1	Soil	**0.1**	**24 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH13_0.1	Soil	**0.1**	**24 Jul 2023**																																									
BH13_1.0	Soil	**1**	**24 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP14_0.1	Soil	**0.1**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP14_0.1	Soil	**0.1**	**27 Jul 2023**																																									
TP15_0.1	Soil	**0.1**	**27 Jul 2023**																																									
TP15_0.5	Soil	**0.5**	**27 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP15_1.0	Soil	**1**	**27 Jul 2023**																																									
BH16_2.0	Soil	**2**	**19 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP17_0.1	Soil	**0.1**	**26 Jul 2023**																																									
TP17_0.1	Soil	**0.1**	**26 Jul 2023**																																									
TP17_1.0	Soil	**1**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP17_3.0	Soil	**3**	**26 Jul 2023**																																									
BH18_0.5	Soil	**0.5**	**24 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH18_3.0	Soil	**3**	**24 Sep 2023**																												<0.03	6.3	12	1.5	12	<0.03	<0.02	4				<3	<3	<10	0.012
BH19_0.3	Soil	**0.3**	**24 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH19_0.5	Soil	**0.5**	**24 Sep 2023**																																									
BH19_1.0	Soil	**1**	**24 Sep 2023**																																									
BH19_2.0	Soil	**2**	**24 Sep 2023**																												<0.03	5.9	12	1.5	12	<0.03	<0.02	8				<3	<3	<10	0.006
BH19_3.0	Soil	**3**	**24 Sep 2023**																																									
BH20_0.3	Soil	**0.3**	**08 Oct 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH21_0.1	Soil	**0.1**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH21_0.1	Soil	**0.1**	**26 Jul 2023**																																									
BH21_0.5	Soil	**0.5**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH21_3.0	Soil	**3**	**26 Jul 2023**																												0.05	6.3	32	1.5	32	0.05	0.05	32				2	2	<10	<0.005
BH22_0.1	Soil	**0.1**	**18 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH22_6.0	Soil	**6**	**19 Jul 2023**																																									
BH23_0.1	Soil	**0.1**	**18 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH23_0.5	Soil	**0.5**	**18 Jul 2023**																																									
BH23_1.0	Soil	**1**	**18 Jul 2023**																																									
BH024/MW04_0.1	Soil	**0.1**	**18 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH024/MW04_0.5	Soil	**0.5**	**18 Jul 2023**																																									
BH024/MW04_1.0	Soil	**1**	**18 Jul 2023**																																									
BH24/MW04_5.0	Soil	**5**	**18 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH25_0.1	Soil	**0.1**	**18 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH26_0.1	Soil	**0.1**	**25 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH27_0.1	Soil	**0.1**	**25 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH27_0.1	Soil	**0.1**	**25 Jul 2023**																																									
BH27_1.0	Soil	**1**	**25 Jul 2023**																																									
BH27_2.0	Soil	**2**	**25 Jul 2023**																												0.04	5.0	23	1.5	23	0.04	0.04	23				2	2	<10	<0.005
BH28_0.3	Soil	**0.3**	**08 Oct 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH29_0.3	Soil	**0.3**	**08 Oct 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH30_0.4	Soil	**0.4**	**24 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH30_1.5	Soil	**1.5**	**24 Sep 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH31_0.1	Soil	**0.1**	**19 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH32_0.1	Soil	**0.1**	**24 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	80	620	620	1,320														
BH32_1.0	Soil	**1**	**24 Jul 2023**																																									
BH32_2.0	Soil	**2**	**24 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
BH32_3.0	Soil	**3**	**24 Jul 2023**																																									
TP33_0.1	Soil	**0.1**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50														
TP33_3.0	Soil	**3**	**26 Jul 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.

				BTEX						TRH							Phenols											Amino Aliphatics			
				Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol	N-nitrosodiethylamine	N-nitrosodi-n-butylamine	N-nitrosodi-n-propylamine	N-Nitrosomethylethylamine
				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.01	1	1	1	2	1	3	20	20	50	50	100	100	100	4	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2
NHMRC_ADWG 2011 (Revised 2018) Aesthetic						25	3			20										2	0.3			0.1									
NHMRC_ADWG 2011 (Revised 2018) Health					1	800	300			600							600			20	200			300				10					
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs				0.016	950	180	80		350											20	160			490				10	320				
PFAS NEMP 2020 Freshwater 95%																																	
PFAS NEMP 2020 Freshwater 99%																																	
NEPM 2013 Table 1C GILs, Fresh Waters				0.016	950				350	550										3	120			340				3.6	320				
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m					5,000							6,000																					
Field ID	**Lab Report Number**	**Matrix Type**	**Date**																														
MW01	**1028890**	**Water**	**17 Sep 2023**	<0.01	<1	<1	<1	<2	<1	<3	<20	<20	<50	<50	<100	<100	<100	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2
MW01	**ES2334633**	**Water**	**08 Oct 2023**		<1	<2	<2	<2	<2									<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2
MW02	**1028890**	**Water**	**17 Sep 2023**	<0.01	<1	<1	<1	<2	<1	<3	<20	<20	<50	<50	<100	<100	<100																
MW02	**ES2334633**	**Water**	**08 Oct 2023**		<1	<2	<2	<2	<2									<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2
MW03	**1028890**	**Water**	**17 Sep 2023**	<0.01	<1	<1	<1	<2	<1	<3	<20	<20	<50	<50	<100	<100	<100																
MW03	**ES2334633**	**Water**	**08 Oct 2023**		<1	<2	<2	<2	<2									<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2
MW04	**1028890**	**Water**	**17 Sep 2023**	<0.01	2	<1	<1	<2	<1	<3	<20	<20	<50	<50	<100	<100	<100																
MW04	**ES2334633**	**Water**	**08 Oct 2023**		<1	<2	<2	<2	<2									<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2

	Amino Aromatics		Other	Anilines						Chlorinated Hydrocarbons														
	1-naphthylamine	N-Nitrosodiphenyl & Diphenylamine	Acetophenone	2-nitroaniline	3-nitroaniline	4-chloroaniline	4-nitroaniline	2-methyl-5-nitroaniline	Aniline	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromodichloromethane	Bromoform
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	4	2	4	4	2	2	2	2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
NHMRC_ADWG 2011 (Revised 2018) Aesthetic																									
NHMRC_ADWG 2011 (Revised 2018) Health															30				3						
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs									250				6,500												
PFAS NEMP 2020 Freshwater 95%																									
PFAS NEMP 2020 Freshwater 99%																									
NEPM 2013 Table 1C GILs, Fresh Waters									8				6,500												
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m																									

Field ID	Lab Report Number	Matrix Type	Date																						
MW01	1028890	Water	17 Sep 2023																						
MW01	ES2334633	Water	08 Oct 2023	<2	<4	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW02	1028890	Water	17 Sep 2023																						
MW02	ES2334633	Water	08 Oct 2023	<2	<4	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW03	1028890	Water	17 Sep 2023																						
MW03	ES2334633	Water	08 Oct 2023	<2	<4	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW04	1028890	Water	17 Sep 2023																						
MW04	ES2334633	Water	08 Oct 2023	<2	<4	<2	<4	<4	<2	<2	<2	<2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

	Chlorinated Hydrocarbons																Explosives				Halogenated Benzenes										
	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-dinitrotoluene	Nitrobenzene	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	HexaChlorobenzene	Pentachlorobenzene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	5	5	50	5	50	5	5	5	2	10	2	5	5	5	5	50	0.002	4	4	2	5	2	2	2	2	5	5	5	5	4	2
NHMRC_ADWG 2011 (Revised 2018) Aesthetic																							1	20	0.3				10		
NHMRC_ADWG 2011 (Revised 2018) Health	3					60			0.7				50	60		0.3							1,500		40				300		
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs											360	330						65		550	10	170	160	260	60						
PFAS NEMP 2020 Freshwater 95%																															
PFAS NEMP 2020 Freshwater 99%																															
NEPM 2013 Table 1C GILs, Fresh Waters											290										3	85	160	260	60						
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m																															

Field ID	Lab Report Number	Matrix Type	Date																													
MW01	1028890	Water	17 Sep 2023																													
MW01	ES2334633	Water	08 Oct 2023	<5	<5	<50	<5	<50	<5	<5	<5	<2	<10	<2	<5	<5	<5	<5	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2
MW02	1028890	Water	17 Sep 2023																													
MW02	ES2334633	Water	08 Oct 2023	<5	<5	<50	<5	<50	<5	<5	<5	<2	<10	<2	<5	<5	<5	<5	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2
MW03	1028890	Water	17 Sep 2023																													
MW03	ES2334633	Water	08 Oct 2023	<5	<5	<50	<5	<50	<5	<5	<5	<2	<10	<2	<5	<5	<5	<5	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2
MW04	1028890	Water	17 Sep 2023																													
MW04	ES2334633	Water	08 Oct 2023	<5	<5	<50	<5	<50	<5	<5	<5	<2	<10	<2	<5	<5	<5	<5	<5	<50	<0.002	<4	<4	<2	<5	<2	<2	<2	<2	<5	<5	<5	<5	<4	<2

	Halogenated Hydrocarbons					Herbicides	Perfluoroalkane Carboxylic Acids					(n:2) Fluorotelomer Sulfonic Acids				Perfluoroalkane Sulfonic Acids			PFAS		Inorganics	MAH								
	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	Pronamide	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorobutane sulfonic acid (PFBS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorooctane sulfonic acid (PFOS)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Salinity	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	5	50	50	5	50	2	0.1	0.02	0.02	0.02	0.01	0.05	0.05	0.05	0.05	0.02	0.01	0.01	0.01	0.01	0.1	5	5	5	5	5	5	5	5	5
NHMRC_ADWG 2011 (Revised 2018) Aesthetic																												4	
NHMRC_ADWG 2011 (Revised 2018) Health	1	1				70																						30	
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs																													
PFAS NEMP 2020 Freshwater 95%											220							0.13											
PFAS NEMP 2020 Freshwater 99%											19							0.00023											
NEPM 2013 Table 1C GILs, Fresh Waters																													
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m																													
Field ID	**Lab Report Number**	**Matrix Type**	**Date**																											
MW01	**1028890**	**Water**	**17 Sep 2023**																		13,000									
MW01	**ES2334633**	**Water**	**08 Oct 2023**	<5	<50	<50	<5	<50	<2	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	0.45	<0.05	<0.05	<0.02	<0.01	<0.01	<0.01	0.45		<5	<5	<5	<5	<5	<5	<5	<5
MW02	**1028890**	**Water**	**17 Sep 2023**																		6,000									
MW02	**ES2334633**	**Water**	**08 Oct 2023**	<5	<50	<50	<5	<50	<2	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	0.82	<0.05	<0.05	<0.02	<0.01	<0.01	<0.01	0.82		<5	<5	<5	<5	<5	<5	<5	<5
MW03	**1028890**	**Water**	**17 Sep 2023**																		1,900									
MW03	**ES2334633**	**Water**	**08 Oct 2023**	<5	<50	<50	<5	<50	<2	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	0.29	<0.05	<0.05	<0.02	0.02	<0.01	0.02	0.31		<5	<5	<5	<5	<5	<5	<5	<5
MW04	**1028890**	**Water**	**17 Sep 2023**																		13,000									
MW04	**ES2334633**	**Water**	**08 Oct 2023**	<5	<50	<50	<5	<50	<2	<0.1	<0.02	<0.02	<0.02	<0.01	<0.05	<0.05	<0.05	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01		<5	<5	<5	<5	<5	<5	<5	<5

	Metals								Nitroaromatics			Organochlorine Pesticides															
	Arsenic (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)	2-Picoline	4-aminobiphenyl	Pentachloronitrobenzene	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.001	0.0002	0.001	0.001	0.001	0.0001	0.001	0.005	2	2	2	2	2	2	4	2	2	2	4	4	2	2	2	2	2	2	2	2
NHMRC_ADWG 2011 (Revised 2018) Aesthetic				1				3																				
NHMRC_ADWG 2011 (Revised 2018) Health	0.01	0.002	0.05	2	0.01	0.001	0.02				30				0.3				9							10	0.3	
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs	0.013	0.0002	0.0004	0.0014	0.0034	0.0006	0.011	0.008											0.01						0.02	0.2	0.09	
PFAS NEMP 2020 Freshwater 95%																												
PFAS NEMP 2020 Freshwater 99%																												
NEPM 2013 Table 1C GILs, Fresh Waters		0.0002		0.0014	0.0034	0.00006	0.011	0.008											0.006						0.01	0.2	0.01	
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m																												

Field ID	Lab Report Number	Matrix Type	Date																									
MW01	1028890	Water	17 Sep 2023	<0.001	<0.0002	0.002	0.016	<0.001	<0.0001	0.049	0.028																	
MW01	ES2334633	Water	08 Oct 2023									<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MW02	1028890	Water	17 Sep 2023	0.001	0.0004	0.002	0.016	0.002	<0.0001	0.013	0.062																	
MW02	ES2334633	Water	08 Oct 2023									<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MW03	1028890	Water	17 Sep 2023	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	0.008																	
MW03	ES2334633	Water	08 Oct 2023									<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MW04	1028890	Water	17 Sep 2023	<0.001	0.0004	<0.001	0.069	0.001	<0.0001	0.074	0.23																	
MW04	ES2334633	Water	08 Oct 2023									<2	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

	Organophosphorous Pesticides										PAH																				
	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Prothiofos	Benzo(b+j+k)fluoranthene	2-chloronaphthalene	2-methylnaphthalene	3-methylcholanthrene	7,12-dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)
	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	2	0.002	2	2	2	2	2	2	2	0.004	2	2	2	2	1	1	1	1	1	0.001	1	1	1	1	1	1	1	1	1	1
NHMRC_ADWG 2011 (Revised 2018) Aesthetic																															
NHMRC_ADWG 2011 (Revised 2018) Health	2	10		4	5	7	4	7	70											0.01											
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs		0.01		0.01		0.15			0.05																				16		
PFAS NEMP 2020 Freshwater 95%																															
PFAS NEMP 2020 Freshwater 99%																															
NEPM 2013 Table 1C GILs, Fresh Waters		0.01		0.01		0.15			0.05																				16		
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m																															
Field ID	**Lab Report Number**	**Matrix Type**	**Date**																													
MW01	**1028890**	**Water**	**17 Sep 2023**																													
MW01	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<0.004	<2	<2	<2	<2	<2	<1	<1	<1	<1	<0.001	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2
MW02	**1028890**	**Water**	**17 Sep 2023**																													
MW02	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<0.004	<2	<2	<2	<2	<2	<1	<1	<1	<1	<0.001	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2
MW03	**1028890**	**Water**	**17 Sep 2023**																													
MW03	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<0.004	<2	<2	<2	<2	<2	<1	<1	<1	<1	<0.001	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2
MW04	**1028890**	**Water**	**17 Sep 2023**																													
MW04	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<0.002	<2	<2	<2	<2	<2	<2	<2	<0.004	<2	<2	<2	<2	<2	<1	<1	<1	<1	<0.001	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2

	Pesticides			Phthalates						Solvents					
	Chlorobenzilate	Carbazole	Pirimphos-ethyl	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Isophorone	Vinyl acetate
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	2	2	10	2	2	2	2	2	50	50	50	5	2	50
NHMRC_ADWG 2011 (Revised 2018) Aesthetic															
NHMRC_ADWG 2011 (Revised 2018) Health			0.5	10											
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs						1,000	3,700	26							
PFAS NEMP 2020 Freshwater 95%															
PFAS NEMP 2020 Freshwater 99%															
NEPM 2013 Table 1C GILs, Fresh Waters						1,000	3,700	10							
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m															
Field ID	**Lab Report Number**	**Matrix Type**	**Date**												
MW01	**1028890**	**Water**	**17 Sep 2023**												
MW01	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50	<50	<50	<5	<2	<50
MW02	**1028890**	**Water**	**17 Sep 2023**												
MW02	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50	<50	<50	<5	<2	<50
MW03	**1028890**	**Water**	**17 Sep 2023**												
MW03	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50	<50	<50	<5	<2	<50
MW04	**1028890**	**Water**	**17 Sep 2023**												
MW04	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<10	<2	<2	<2	<2	<2	<50	<50	<50	<5	<2	<50

	SVOCs																TPH						VOCs		
	2-(acetylamino) fluorene	3,3-Dichlorobenzidine	4-(dimethylamino) azobenzene	4-bromophenyl phenyl ether	4-chlorophenyl phenyl ether	4-Nitroquinoline-N-oxide	Azobenzene	Bis(2-chloroethoxy) methane	Bis(2-chloroethyl)ether	Dibenzofuran	Hexachloropropene	Methapyrilene	N-nitrosomorpholine	N-nitrosopiperidine	N-nitrosopyrrolidine	Phenacetin	C6-C9 Fraction		C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	Pentachloroethane
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	%	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2	20	1	50	100	100	100	5	5	5
NHMRC_ADWG 2011 (Revised 2018) Aesthetic																									
NHMRC_ADWG 2011 (Revised 2018) Health																						600			
ANZG (2023) Freshwater 95% (slightly to moderatley) toxicant DGVs																									
PFAS NEMP 2020 Freshwater 95%																									
PFAS NEMP 2020 Freshwater 99%																									
NEPM 2013 Table 1C GILs, Fresh Waters																									
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand >=2m, <8m																									
Field ID	**Lab Report Number**	**Matrix Type**	**Date**																							
MW01	**1028890**	**Water**	**17 Sep 2023**															<20		<50	<100	<100	<100			
MW01	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2						<5	<5	<5
MW02	**1028890**	**Water**	**17 Sep 2023**															<20		<50	<100	<100	<100			
MW02	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2						<5	<5	<5
MW03	**1028890**	**Water**	**17 Sep 2023**															<20		<50	<100	<100	<100			
MW03	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2						<5	<5	<5
MW04	**1028890**	**Water**	**17 Sep 2023**															<20		<50	<100	<100	<100			
MW04	**ES2334633**	**Water**	**08 Oct 2023**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<4	<2						<5	<5	<5

	Lab Report Number		ES2324785	ES2324785		ES2324785	1012534		ES2324980	ES2324980		ES2324980	1012827		ES2325093	ES2324980		ES2325093	1012827		ES2325093	ES2325093		ES2325093	1012531	
	Field ID		BH16_2.0	DUP01		BH16_2.0	TRIP01		BH26_0.1	DUP02		BH26_0.1	TRIP02		BH21_0.5	DUP03		BH21_0.5	TRIP03		TP14_0.1	DUP04		TP14_0.1	TRIP04	
	Matrix Type		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil	
	Date		19 Jul 2023	19 Jul 2023	RPD	19 Jul 2023	19 Jul 2023	RPD	25 Jul 2023	25 Jul 2023	RPD	25 Jul 2023	25 Jul 2023	RPD	26 Jul 2023	26 Jul 2023	RPD	26 Jul 2023	26 Jul 2023	RPD	27 Jul 2023	27 Jul 2023	RPD	27 Jul 2023	27 Jul 2023	RPD
	Unit	EQL																								
BTEX																										
Naphthalene (VOC)	mg/kg	0.5	<1	<1	0	<1	<0.5	0	<1	<1	0	<1	<0.5	0	<1	<1	0	<1	<0.5	0	<1	<1	0	<1	<0.5	0
Benzene	mg/kg	0.1	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0	<0.2	<0.1	0	<0.2	<0.2	0	<0.2	<0.1	0
Toluene	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0
Ethylbenzene	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0
Xylene (m & p)	mg/kg	0.2	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	<0.5	0	<0.5	<0.2	0	<0.5	<0.5	0	<0.5	<0.2	0
Xylene (o)	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0
Xylene Total	mg/kg	0.3	<0.5	<0.5	0	<0.5	<0.3	0	<0.5	<0.5	0	<0.5	<0.3	0	<0.5	<0.5	0	<0.5	<0.3	0	<0.5	<0.5	0	<0.5	<0.3	0
TRH																										
C6-C10 Fraction (F1)	mg/kg	10	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0
C6-C10 (F1 minus BTEX)	mg/kg	10	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0
>C10-C16 Fraction (F2)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
>C10-C16 Fraction (F2 minus Naphthalene)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
>C16-C34 Fraction (F3)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	140	33	<100	<100	0	<100	<100	0
>C34-C40 Fraction (F4)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
>C10-C40 Fraction (Sum)	mg/kg	50	<50	<50	0	<50	<100	0	<50	<50	0	<50	<100	0	<50	<50	0	<50	140	95	<50	<50	0	<50	<100	0
Inorganics																										
Metals																										
Arsenic	mg/kg	2	9	7	25	9	4.4	69	<5	<5	0	<5	4.8	0	5	<5	0	5	4.8	4	8	8	0	8	9.1	13
Cadmium	mg/kg	0.4	<1	<1	0	<1	<0.4	0	<1	<1	0	<1	<0.4	0	<1	<1	0	<1	<0.4	0	<1	<1	0	<1	<0.4	0
Chromium (III+VI)	mg/kg	2	17	18	6	17	14	19	18	16	12	18	17	6	9	9	0	9	9.8	9	34	45	28	34	47	32
Copper	mg/kg	5	32	29	10	32	22	37	27	20	30	27	20	30	22	22	0	22	23	4	16	17	6	16	23	36
Lead	mg/kg	5	25	16	44	25	14	56	48	45	6	48	78	48	84	80	5	84	85	1	24	28	15	24	33	32
Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	0.2	0.2	0	0.2	0.2	0	<0.1	<0.1	0	<0.1	<0.1	0
Nickel	mg/kg	2	36	31	15	36	14	88	25	16	44	25	13	63	7	6	15	7	6.4	9	12	14	15	12	18	40
Zinc	mg/kg	5	78	71	9	78	46	52	65	77	17	65	170	89	83	158	62	83	85	2	38	43	12	38	52	31
PAH																										
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(a) pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Naphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	0.7	33	<0.5	<0.5	0	<0.5	<0.5	0
Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0
Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
PAHs (Sum of total)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	1.2	82	<0.5	<0.5	0	<0.5	<0.5	0
TPH																										
C6-C9 Fraction	mg/kg	10	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0	<10	<10	0	<10	<20	0
C10-C14 Fraction	mg/kg	20	<50	<50	0	<50	<20	0	<50	<50	0	<50	<20	0	<50	<50	0	<50	<20	0	<50	<50	0	<50	<20	0
C15-C28 Fraction	mg/kg	50	<100	<100	0	<100	<50	0	<100	<100	0	<100	<50	0	<100	<100	0	<100	94	0	<100	<100	0	<100	<50	0
C29-C36 Fraction	mg/kg	50	<100	<100	0	<100	<50	0	<100	<100	0	<100	<50	0	<100	<100	0	<100	75	0	<100	<100	0	<100	57	0
C10-C36 Fraction (Sum)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	169	109	<50	<50	0	<50	57	13

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 81 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		Lab Report Number	1028890	1028890		1028890	ES2332797		ES2334633	ES2334633		ES2334633	1035164	
		Field ID	MW04	DUP01		MW04	TRP01		MW04	DUP01		MW04	TRP02	
		Matrix Type	Water	Water		Water	Water		Water	Water		Water	Water	
		Date	17 Sep 2023	17 Sep 2023	RPD	17 Sep 2023	17 Sep 2023	RPD	08 Oct 2023	08 Oct 2023	RPD	08 Oct 2023	08 Oct 2023	RPD
	Unit	EQL												
BTEX														
Naphthalene (VOC)	mg/L	0.005	<0.01	<0.01	0	<0.01	<0.005	0						
Benzene	µg/L	1	2	<1	67	2	<1	67	<1	<1	0	<1	<1	0
Toluene	µg/L	1	<1	<1	0	<1	<2	0	<2	<2	0	<2	<1	0
Ethylbenzene	µg/L	1	<1	<1	0	<1	<2	0	<2	<2	0	<2	<1	0
Xylene (m & p)	µg/L	2	<2	<2	0	<2	<2	0	<2	<2	0	<2	<2	0
Xylene (o)	µg/L	1	<1	<1	0	<1	<2	0	<2	<2	0	<2	<1	0
Xylene Total	µg/L	2	<3	<3	0	<3	<2	0					<3	
Total BTEX	µg/L	1					<1							
TRH														
C6-C10 Fraction (F1)	µg/L	20	<20	<20	0	<20	<20	0						
C6-C10 (F1 minus BTEX)	µg/L	20	<20	<20	0	<20	<20	0						
>C10-C16 Fraction (F2)	µg/L	50	<50	<50	0	<50	<100	0						
>C10-C16 Fraction (F2 minus Naphthalene)	µg/L	50	<50	<50	0	<50	<100	0						
>C16-C34 Fraction (F3)	µg/L	100	<100	<100	0	<100	<100	0						
>C34-C40 Fraction (F4)	µg/L	100	<100	<100	0	<100	<100	0						
>C10-C40 Fraction (Sum)	µg/L	100	<100	<100	0	<100	<100	0						
Halogenated Benzenes														
Hexachlorobenzene	µg/L	4							<4	<4	0	<4	<5	0
Metals														
Arsenic (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0						
Cadmium (filtered)	mg/L	0.0001	0.0004	0.0004	0	0.0004	0.0004	0						
Chromium (III+VI) (filtered)	mg/L	0.001	<0.001	0.001	0	<0.001	<0.001	0						
Copper (filtered)	mg/L	0.001	0.069	0.068	1	0.069	0.074	7						
Lead (filtered)	mg/L	0.001	0.001	0.001	0	0.001	<0.001	0						
Mercury (filtered)	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0						
Nickel (filtered)	mg/L	0.001	0.074	0.072	3	0.074	0.082	10						
Zinc (filtered)	mg/L	0.005	0.23	0.23	0	0.23	0.251	9						
Organochlorine Pesticides														
4,4-DDE	µg/L	2							<2	<2	0	<2	<5	0
a-BHC	µg/L	2							<2	<2	0	<2	<5	0
Aldrin	µg/L	2							<2	<2	0	<2	<5	0
Aldrin + Dieldrin	µg/L	0.1							<4	<4	0	<4	<5	0
b-BHC	µg/L	2							<2	<2	0	<2	<5	0
d-BHC	µg/L	2							<2	<2	0	<2	<5	0
DDD	µg/L	2							<2	<2	0	<2	<5	0
DDT	µg/L	4							<4	<4	0	<4	<5	0
DDT+DDE+DDD	µg/L	0.1							<4	<4	0	<4	<5	0
Dieldrin	µg/L	2							<2	<2	0	<2	<5	0
Endosulfan I	µg/L	2							<2	<2	0	<2	<5	0
Endosulfan II	µg/L	2							<2	<2	0	<2	<5	0
Endosulfan sulphate	µg/L	2							<2	<2	0	<2	<5	0
Endrin	µg/L	2							<2	<2	0	<2	<5	0
Endrin aldehyde	µg/L	5											<5	
Endrin ketone	µg/L	5											<5	
g-BHC (Lindane)	µg/L	2							<2	<2	0	<2	<5	0
Heptachlor	µg/L	2							<2	<2	0	<2	<5	0
Heptachlor epoxide	µg/L	2							<2	<2	0	<2	<5	0
Methoxychlor	µg/L	5											<5	
Organophosphorous Pesticides														
Chlorfenvinphos	µg/L	2							<2	<2	0	<2		
Chlorpyrifos	µg/L	2							<2	<2	0	<2		
Chlorpyrifos-methyl	mg/L	0.002							<0.002	<0.002	0	<0.002		
Diazinon	µg/L	2							<2	<2	0	<2		
Dichlorvos	µg/L	2							<2	<2	0	<2		
Dimethoate	µg/L	2							<2	<2	0	<2		
Ethion	µg/L	2							<2	<2	0	<2		
Fenthion	µg/L	2							<2	<2	0	<2		
Malathion	µg/L	2							<2	<2	0	<2		
Prothiofos	µg/L	2							<2	<2	0	<2		
PAH														
Acenaphthene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Acenaphthylene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Anthracene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Benzo(a)anthracene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Benzo(a) pyrene	µg/L	0.5	<1	<1	0	<1	<0.5	0	<2	<2	0	<2	<1	0
Benzo(b+j)fluoranthene	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.0010	0					<0.001	
Benzo(g,h,i)perylene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Benzo(k)fluoranthene	µg/L	1	<1	<1	0	<1	<1.0	0					<1	
Chrysene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Dibenz(a,h)anthracene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Fluoranthene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Fluorene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Naphthalene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Phenanthrene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Pyrene	µg/L	1	<1	<1	0	<1	<1.0	0	<2	<2	0	<2	<1	0
Benzo(a)pyrene TEQ calc (Zero)	mg/L	0.0005					<0.0005		<0.002	<0.002	0	<0.002		
PAHs (Sum of total)	µg/L	0.5	<1	<1	0	<1	<0.5	0	<2	<2	0	<2	<1	0
Pesticides														
Pirimphos-ethyl	µg/L	2							<2	<2	0	<2		
TPH														
C6-C9 Fraction	µg/L	20	<20	<20	0	<20	<20	0						
C10-C14 Fraction	µg/L	50	<50	<50	0	<50	<50	0						
C15-C28 Fraction	µg/L	100	<100	<100	0	<100	<100	0						
C29-C36 Fraction	µg/L	50	<100	<100	0	<100	<50	0						
C10-C36 Fraction (Sum)	µg/L	50	<100	<100	0	<100	<50	0						

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 81 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

		Lab Report Number	ES2324785	ES2324785	ES2324785	ES2324980	ES2324980	ES2325093	ES2325093	ES2334633	ES2334633	1028890	1028890
		Field ID	TRIP BLANK	TRIP SPIKE -19	TRIP SPIKE - 21	TB02	TS02	TB03	TS03	TRIP BLANK	TRIP SPIKE	TB01	TS01
		Matrix Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Water	Water
		Date	19 Jul 2023	18 Jul 2023	18 Jul 2023	25 Jul 2023	24 Jul 2023	24 Jul 2023	24 Jul 2023	19 Sep 2023	18 Sep 2023	17 Sep 2023	17 Sep 2023
	Unit	EQL											
BTEX													
Naphthalene (VOC)	mg/kg	1	<1	100%	100%	<1	100%	<1	100%	<1	100%	<0.01	88%
Benzene	mg/kg	0.2	<0.2	100%	100%	<0.2	100%	<0.2	100%	<0.2	100%	<1	110%
Toluene	mg/kg	0.5	<0.5	84.88%	98.46%	<0.5	87.67%	<0.5	80.49%	<0.5	57.81%	<1	86%
Ethylbenzene	mg/kg	0.5	<0.5	96.30%	90.66%	<0.5	88.46%	<0.5	88.89%	<0.5	56.76%	<1	86%
Xylene (m & p)	mg/kg	0.5	<0.5	97.73%	88.75%	<0.5	87.65%	<0.5	89.80%	<0.5	56.96%	<2	96%
Xylene (o)	mg/kg	0.5	<0.5	100%	86.48%	<0.5	88.24%	<0.5	95%	<0.5	55.56%	<1	82%
Xylene Total	mg/kg	0.5	<0.5	98.44%	88.03%	<0.5	87.83%	<0.5	91.304%	<0.5	56.52%	<3	87%
Total BTEX	mg/kg	0.2	<0.2	93.27	91.50%	<0.2	87.31%	<0.2	87.74%	<0.2	56.92%	-	-
TRH													
C6-C10 Fraction (F1)	mg/kg	10	<10	-	-	<10	-	<10	-	<10	-	<20	68%
C6-C10 (F1 minus BTEX)	mg/kg	10	<10	-	-	<10	-	<10	-	<10	-	<20	-
TPH													
C6-C9 Fraction	mg/kg	10	<10	-	-	<10	-	<10	-	<10	-	<20	-

		Lab Report Number	1028890	ES2324785	ES2324980	ES2325093	ES2334633
		Field ID	RB01	RB01	RB02	RB03	RB02
		Matrix Type	Water	Water	Water	Water	Water
		Date	17 Sep 2023	19 Jul 2023	25 Jul 2023	27 Jul 2023	08 Oct 2023
	Unit	EQL					
BTEX							
Naphthalene (VOC)	mg/L	0.005	<0.01	<0.005	<0.005	<0.005	
Benzene	µg/L	1	<1	<1	<1	<1	<1
Toluene	µg/L	1	<1	<2	<2	<2	<2
Ethylbenzene	µg/L	1	<1	<2	<2	<2	<2
Xylene (m & p)	µg/L	2	<2	<2	<2	<2	<2
Xylene (o)	µg/L	1	<1	<2	<2	<2	<2
Xylene Total	µg/L	2	<3	<2	<2	<2	
Total BTEX	µg/L	1		<1	<1	<1	
TRH							
C6-C10 Fraction (F1)	µg/L	20	<20	<20	<20	<20	
C6-C10 (F1 minus BTEX)	µg/L	20	<20	<20	<20	<20	
>C10-C16 Fraction (F2)	µg/L	50	<50	<100	<100	<100	
>C10-C16 Fraction (F2 minus Naphthalene)	µg/L	50	<50	<100	<100	<100	
>C16-C34 Fraction (F3)	µg/L	100	<100	<100	<100	<100	
>C34-C40 Fraction (F4)	µg/L	100	<100	<100	<100	<100	
>C10-C40 Fraction (Sum)	µg/L	100	<100	<100	<100	<100	
Phenols							
3&4-Methylphenol (m&p-cresol)	µg/L	4					<4
2,4,5-Trichlorophenol	µg/L	2					<2
2,4,6-Trichlorophenol	µg/L	2					<2
2,4-Dichlorophenol	µg/L	2					<2
2,4-Dimethylphenol	µg/L	2					<2
2,6-Dichlorophenol	µg/L	2					<2
2-Chlorophenol	µg/L	2					<2
2-Methylphenol	µg/L	2					<2
2-Nitrophenol	µg/L	2					<2
4-chloro-3-methylphenol	µg/L	2					<2
Pentachlorophenol	µg/L	4					<4
Phenol	µg/L	2					<2
Amino Aliphatics							
N-nitrosodiethylamine	µg/L	2					<2
N-nitrosodi-n-butylamine	µg/L	2					<2
N-nitrosodi-n-propylamine	µg/L	2					<2
N-Nitrosomethylethylamine	µg/L	2					<2
Amino Aromatics							
1-naphthylamine	µg/L	2					<2
N-Nitrosodiphenyl & Diphenylamine	µg/L	4					<4
Other							
Acetophenone	µg/L	2					<2
Anilines							
2-nitroaniline	µg/L	4					<4
3-nitroaniline	µg/L	4					<4
4-chloroaniline	µg/L	2					<2
4-nitroaniline	µg/L	2					<2
2-methyl-5-nitroaniline	µg/L	2					<2
Aniline	µg/L	2					<2
Chlorinated Hydrocarbons							
1,1,1,2-tetrachloroethane	µg/L	5					<5
1,1,1-trichloroethane	µg/L	5					<5
1,1,2,2-tetrachloroethane	µg/L	5					<5
1,1,2-trichloroethane	µg/L	5					<5
1,1-dichloroethane	µg/L	5					<5
1,1-dichloroethene	µg/L	5					<5
1,1-dichloropropene	µg/L	5					<5
1,2,3-trichloropropane	µg/L	5					<5
1,2-dibromo-3-chloropropane	µg/L	5					<5
1,2-dichloroethane	µg/L	5					<5
1,2-dichloropropane	µg/L	5					<5
1,3-dichloropropane	µg/L	5					<5
2,2-dichloropropane	µg/L	5					<5
Bromodichloromethane	µg/L	5					<5
Bromoform	µg/L	5					<5
Carbon tetrachloride	µg/L	5					<5
Chlorodibromomethane	µg/L	5					<5
Chloroethane	µg/L	50					<50
Chloroform	µg/L	5					<5
Chloromethane	µg/L	50					<50
cis-1,2-dichloroethene	µg/L	5					<5
cis-1,3-dichloropropene	µg/L	5					<5
Dibromomethane	µg/L	5					<5
Hexachlorobutadiene	µg/L	2					<2
Hexachlorocyclopentadiene	µg/L	10					<10
Hexachloroethane	µg/L	2					<2
Trichloroethene	µg/L	5					<5
Tetrachloroethene	µg/L	5					<5
trans-1,2-dichloroethene	µg/L	5					<5
trans-1,3-dichloropropene	µg/L	5					<5
Vinyl chloride	µg/L	50					<50
Explosives							
1,3,5-Trinitrobenzene	mg/L	0.002					<0.002
2,4-Dinitrotoluene	µg/L	4					<4
2,6-dinitrotoluene	µg/L	4					<4
Nitrobenzene	µg/L	2					<2
Halogenated Benzenes							
1,2,3-trichlorobenzene	µg/L	5					<5
1,2,4-trichlorobenzene	µg/L	2					<2
1,2-dichlorobenzene	µg/L	2					<2
1,3-dichlorobenzene	µg/L	2					<2
1,4-dichlorobenzene	µg/L	2					<2
2-chlorotoluene	µg/L	5					<5
4-chlorotoluene	µg/L	5					<5
Bromobenzene	µg/L	5					<5
Chlorobenzene	µg/L	5					<5
Hexachlorobenzene	µg/L	4					<4
Pentachlorobenzene	µg/L	2					<2
Halogenated Hydrocarbons							
1,2-dibromoethane	µg/L	5					<5
Bromomethane	µg/L	50					<50
Dichlorodifluoromethane	µg/L	50					<50
Iodomethane	µg/L	5					<5
Trichlorofluoromethane	µg/L	50					<50
Herbicides							
Pronamide	µg/L	2					<2
Perfluoroalkane Carboxylic Acids							
Perfluorobutanoic acid (PFBA)	µg/L	0.1					<0.1
Perfluorohexanoic acid (PFHxA)	µg/L	0.02					<0.02
Perfluoropentanoic acid (PFPeA)	µg/L	0.02					<0.02
Perfluoroheptanoic acid (PFHpA)	µg/L	0.02					<0.02
Perfluorooctanoic acid (PFOA)	µg/L	0.01					<0.01
(n:2) Fluorotelomer Sulfonic Acids							
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.05					<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.05					<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.05					<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.05					<0.05
Perfluoroalkane Sulfonic Acids							
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.02					<0.02
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01					<0.01
Perfluorooctane sulfonic acid (PFOS)	µg/L	0.01					<0.01
PFAS							
Sum of PFHxS and PFOS	µg/L	0.01					<0.01
Sum of PFAS (WA DER List)	µg/L	0.01					<0.01

		Lab Report Number	1028890	ES2324785	ES2324980	ES2325093	ES2334633
		Field ID	RB01	RB01	RB02	RB03	RB02
		Matrix Type	Water	Water	Water	Water	Water
		Date	17 Sep 2023	19 Jul 2023	25 Jul 2023	27 Jul 2023	08 Oct 2023
	Unit	EQL					
MAH							
1,2,4-trimethylbenzene	µg/L	5					<5
1,3,5-trimethylbenzene	µg/L	5					<5
Isopropylbenzene	µg/L	5					<5
n-butylbenzene	µg/L	5					<5
n-propylbenzene	µg/L	5					<5
p-isopropyltoluene	µg/L	5					<5
sec-butylbenzene	µg/L	5					<5
Styrene	µg/L	5					<5
tert-butylbenzene	µg/L	5					<5
Metals							
Arsenic	mg/L	0.001		<0.001	<0.001	<0.001	
Arsenic (filtered)	mg/L	0.001	<0.001				
Cadmium	mg/L	0.0001		<0.0001	<0.0001	<0.0001	
Cadmium (filtered)	mg/L	0.0001	<0.0002				
Chromium (III+VI)	mg/L	0.001		<0.001	<0.001	<0.001	
Chromium (III+VI) (filtered)	mg/L	0.001	<0.001				
Copper	mg/L	0.001		<0.001	<0.001	<0.001	
Copper (filtered)	mg/L	0.001	<0.001				
Lead	mg/L	0.001		<0.001	<0.001	<0.001	
Lead (filtered)	mg/L	0.001	<0.001				
Mercury	mg/L	0.0001		<0.0001	<0.0001	<0.0001	
Mercury (filtered)	mg/L	0.0001	<0.0001				
Nickel	mg/L	0.001		<0.001	<0.001	<0.001	
Nickel (filtered)	mg/L	0.001	<0.001				
Zinc	mg/L	0.005		<0.005	<0.005	<0.005	
Zinc (filtered)	mg/L	0.005	<0.005				
Nitroaromatics							
2-Picoline	µg/L	2					<2
4-aminobiphenyl	µg/L	2					<2
Pentachloronitrobenzene	µg/L	2					<2
Organochlorine Pesticides							
4,4-DDE	µg/L	2					<2
a-BHC	µg/L	2					<2
Aldrin	µg/L	2					<2
Aldrin + Dieldrin	µg/L	4					<4
b-BHC	µg/L	2					<2
d-BHC	µg/L	2					<2
DDD	µg/L	2					<2
DDT	µg/L	4					<4
DDT+DDE+DDD	µg/L	4					<4
Dieldrin	µg/L	2					<2
Endosulfan I	µg/L	2					<2
Endosulfan II	µg/L	2					<2
Endosulfan sulphate	µg/L	2					<2
Endrin	µg/L	2					<2
g-BHC (Lindane)	µg/L	2					<2
Heptachlor	µg/L	2					<2
Heptachlor epoxide	µg/L	2					<2
Organophosphorous Pesticides							
Chlorfenvinphos	µg/L	2					<2
Chlorpyrifos	µg/L	2					<2
Chlorpyrifos-methyl	mg/L	0.002					<0.002
Diazinon	µg/L	2					<2
Dichlorvos	µg/L	2					<2
Dimethoate	µg/L	2					<2
Ethion	µg/L	2					<2
Fenthion	µg/L	2					<2
Malathion	µg/L	2					<2
Prothiofos	µg/L	2					<2
PAH							
Benzo(b+j+k)fluoranthene	mg/L	0.004					<0.004
2-chloronaphthalene	µg/L	2					<2
2-methylnaphthalene	µg/L	2					<2
3-methylcholanthrene	µg/L	2					<2
7,12-dimethylbenz(a)anthracene	µg/L	2					<2
Acenaphthene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Acenaphthylene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Anthracene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Benzo(a)anthracene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Benzo(a) pyrene	µg/L	0.5	<1	<0.5	<0.5	<0.5	<2
Benzo(b+j)fluoranthene	mg/L	0.001	<0.001	<0.0010	<0.0010	<0.0010	
Benzo(g,h,i)perylene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Benzo(k)fluoranthene	µg/L	1	<1	<1.0	<1.0	<1.0	
Chrysene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Dibenz(a,h)anthracene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Fluoranthene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Fluorene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Naphthalene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Phenanthrene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Pyrene	µg/L	1	<1	<1.0	<1.0	<1.0	<2
Benzo(a)pyrene TEQ calc (Zero)	mg/L	0.0005		<0.0005	<0.0005	<0.0005	<0.002
PAHs (Sum of total)	µg/L	0.5	<1	<0.5	<0.5	<0.5	<2
Pesticides							
Chlorobenzilate	µg/L	2					<2
Carbazole	µg/L	2					<2
Pirimphos-ethyl	µg/L	2					<2
Phthalates							
Bis(2-ethylhexyl) phthalate	µg/L	10					<10
Butyl benzyl phthalate	µg/L	2					<2
Diethylphthalate	µg/L	2					<2
Dimethyl phthalate	µg/L	2					<2
Di-n-butyl phthalate	µg/L	2					<2
Di-n-octyl phthalate	µg/L	2					<2
Solvents							
Methyl Ethyl Ketone	µg/L	50					<50
2-hexanone (MBK)	µg/L	50					<50
4-Methyl-2-pentanone	µg/L	50					<50
Carbon disulfide	µg/L	5					<5
Isophorone	µg/L	2					<2
Vinyl acetate	µg/L	50					<50
SVOCs							
2-(acetylamino) fluorene	µg/L	2					<2
3,3-Dichlorobenzidine	µg/L	2					<2
4-(dimethylamino) azobenzene	µg/L	2					<2
4-bromophenyl phenyl ether	µg/L	2					<2
4-chlorophenyl phenyl ether	µg/L	2					<2
4-Nitroquinoline-N-oxide	µg/L	2					<2
Azobenzene	µg/L	2					<2
Bis(2-chloroethoxy) methane	µg/L	2					<2
Bis(2-chloroethyl)ether	µg/L	2					<2
Dibenzofuran	µg/L	2					<2
Hexachloropropene	µg/L	2					<2
Methapyrilene	µg/L	2					<2
N-nitrosomorpholine	µg/L	2					<2
N-nitrosopiperidine	µg/L	2					<2
N-nitrosopyrrolidine	µg/L	4					<4
Phenacetin	µg/L	2					<2
TPH							
C6-C9 Fraction	µg/L	20	<20	<20	<20	<20	
C10-C14 Fraction	µg/L	50	<50	<50	<50	<50	
C15-C28 Fraction	µg/L	100	<100	<100	<100	<100	
C29-C36 Fraction	µg/L	50	<100	<50	<50	<50	
C10-C36 Fraction (Sum)	µg/L	50	<100	<50	<50	<50	
VOCs							
cis-1,4-Dichloro-2-butene	µg/L	5					<5
trans-1,4-Dichloro-2-butene	µg/L	5					<5
Pentachloroethane	µg/L	5					<5

					Asbestos		
					Asbestos Identification (AS4964-2004)	Bonded (non-friable) Asbestos (>7mm field screen)	Asbestos gravimetric analysis (AF / FA in 500mL Soil)
					g/kg	%w/w	%w/w
EQL					0.1	0.01	0.001
NEPM 2013 Schedule B1, Table 7 HSLs for Asbestos Contamination in Soil - Residential A					ND	0.01	0.001
Field ID	**Laboratory**	**Matrix Description**		**Date Sampled**	**Depth (mBGL)**		
TP01_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**27/07/2023**	**0.1**	-	<0.01	<0.001
TP02_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**27/07/2023**	**0.1**	-	<0.01	<0.001
TP03_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**27/07/2023**	**0.1**	-	<0.01	<0.001
TP04_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**27/07/2023**	**0.1**	-	<0.01	<0.001
TP05_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
TP06_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
TP07_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
BH01_0.1	**ALS**	Soil Sample		**27/07/2023**	**0.1**	NAD	<0.01	-
BH03_0.1	**ALS**	Soil Sample		**27/07/2023**	**0.1**	NAD	<0.01	-
BH05_0.2	**ALS**	Soil Sample		**24/09/2023**	**0.2**	NAD	<0.01	-
BH06_0.2	**ALS**	Soil Sample		**24/09/2023**	**0.2**	NAD	<0.01	-
BH07_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
BH07_0.1	**ALS**	Soil Sample		**26/07/2023**	**0.1**	NAD	<0.01	-
BH09_0.1	**ALS**	Soil Sample		**24/07/2023**	**0.1**	NAD	<0.01	-
BH10_0.1	**ALS**	Soil Sample		**24/07/2023**	**0.1**	NAD	<0.01	-
BH13_0.1	**ALS**	Soil Sample		**24/07/2023**	**0.1**	NAD	<0.01	-
BH18_0.5	**ALS**	Soil Sample		**24/09/2023**	**0.5**	NAD	<0.01	-
BH19_0.3	**ALS**	Soil Sample		**24/09/2023**	**0.3**	NAD	<0.01	-
BH21_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
BH21_0.1	**ALS**	Soil Sample		**26/07/2023**	**0.1**	NAD	<0.01	-
BH23_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**18/07/2023**	**0.1**	-	<0.01	<0.001
BH26_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**25/07/2023**	**0.1**	-	<0.01	<0.001
BH27_0.1	**ALS**	Soil Sample		**25/07/2023**	**0.1**	NAD	<0.01	-
BH30_0.4	**ALS**	**Soil Sample**		**24 Sep 2023**	**0.4**		<0.01	
BH32_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**24/07/2023**	**0.1**	-	<0.01	<0.001
BH35_0.3	**ALS**	**Soil Sample**		**24 Sep 2023**	**0.3**			
BH40_0.2	**ALS**	Soil Sample		**24/07/2023**	**0.1**	NAD	<0.01	-
BH41_0.1	**ALS**	Soil Sample		**24/07/2023**	**0.1**	NAD	<0.01	-
BH42_0.1	**ALS**	Soil Sample		**24/07/2023**	**0.1**	NAD	<0.01	-
BH40_0.2	**ALS**	**Soil Sample**		**24 Jul 2023**	**0.2**			
BH41_0.1	**ALS**	**Soil Sample**		**24 Jul 2023**	**0.1**			
BH46_0.5	**ALS**	**Soil Sample**		**27 Aug 2023**	**0.5**			
BH48_0.3	**ALS**	**Soil Sample**		**27 Aug 2023**	**0.3**			
MS01	**ALS**	One piece of asbestos cement sheeting approximately 20x20x5mm		**18/07/2023**	**0.1 (SURFACE)**	AD	<0.01	-
MS02	**ALS**	One piece of asbestos cement sheeting approximately 25x20x5mm		**19/07/2023**	**0.1 (SURFACE)**	AD	<0.01	-
TP08_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
TP14_0.1	**ALS**	Soil Sample		**27/07/2023**	**0.1**	NAD	<0.01	-
TP15_0.1	**ALS**	Soil Sample		**27/07/2023**	**0.1**	NAD	<0.01	-
TP17_0.1	**ALS**	Soil Sample		**26/07/2023**	**0.1**	NAD	<0.01	-
TP33_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
TP36_0.1	**ALS**	Soil Sample		**26/07/2023**	**0.1**	NAD	<0.01	-
TP37_0.1	**Coffey**	Brown non-homogeneous soil & rocks		**26/07/2023**	**0.1**	-	<0.01	<0.001
TP37_0.2_MS01	**Coffey**	Grey compressed fibre cement sheet material		**26/07/2023**	**0.2**	AD	0.008	-
TP37_0.2_MS02	**Coffey**	Grey compressed fibre cement sheet material		**26/07/2023**	**0.2**	AD		-
TP49_0.1	**ALS**	Soil Sample		**26/07/2023**	**0.1**	NAD	<0.01	-
TP50_0.1	**ALS**	Soil Sample		**26/07/2023**	**0.1**	NAD	<0.01	-

AD - Asbestos Detect
NAD - No Asbestos Detect

Environmental Standards
CRC Care, 2011, CRC Care HSL-A Low Density Residential
NEPM, NEPM 2013 Table 1B(7) Management Limits in Residential A, Fine Soil

Appendix A

LOT SEARCH ENVIRONMENTAL REPORT (2022)

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 18 Jul 2023 16:08:17

Reference: LS045894 EP

Address: 94 Newton Road, Wetherill Park, NSW 2164

Disclaimer:
The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.
You should obtain independent advice before you make any decision based on the information within the report.
The detailed terms applicable to use of this report are set out at the end of this report.

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	17/05/2023	17/05/2023	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	14/06/2023	18/05/2023	Monthly	1000m	0	0	2
Contaminated Land Records of Notice	Environment Protection Authority	28/06/2023	28/06/2023	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	10/05/2023	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority	04/05/2023	04/05/2023	Monthly	1000m	0	2	22
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	1
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	3
EPA PFAS Investigation Program	Environment Protection Authority	14/06/2023	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	09/05/2023	09/05/2023	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	09/05/2023	09/05/2023	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	09/05/2023	09/05/2023	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	16/06/2023	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	09/06/2023	09/06/2023	Monthly	1000m	0	0	21
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	09/06/2023	09/06/2023	Monthly	1000m	0	0	4
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	09/06/2023	09/06/2023	Monthly	1000m	4	5	16
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	45	45
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	24	51
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	2	6
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	4	5
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	11
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	23/05/2023	23/05/2023	Quarterly	1000m	1	4	11
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	09/05/2023	23/02/2018	Annually	1000m	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	18/04/2023	13/07/2022	Annually	2000m	0	0	36
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	2	2	3
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	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	2	2	3
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	02/06/2023	12/05/2023	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	1	1	1
Dryland Salinity Potential of Western Sydney	NSW Department of Planning, Industry and Environment	12/05/2017	01/01/2002	None planned	1000m	1	1	2
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	15/05/2023	15/05/2023	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	10/05/2023	10/05/2023	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	10/05/2023	10/05/2023	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	10/05/2023	10/05/2023	Monthly	1000m	12	12	12
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	02/06/2023	16/12/2022	Monthly	1000m	0	0	1
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	02/06/2023	26/05/2023	Monthly	1000m	1	1	14
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	02/06/2023	26/05/2023	Monthly	1000m	0	0	2
Bush Fire Prone Land	NSW Rural Fire Service	23/06/2023	23/06/2023	Monthly	1000m	1	2	2
NSW Native Vegetation Type Map	NSW Department of Planning and Environment	26/05/2023	12/12/2022	Quarterly	1000m	1	1	3
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	09/05/2023	01/11/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	1
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	13/06/2023	13/06/2023	Weekly	10000m	-	-	-

Site Diagram

94 Newton Road, Wetherill Park, NSW 2164



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 51738m²

Total Perimeter: 944m

Scale: 0 25 50 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

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

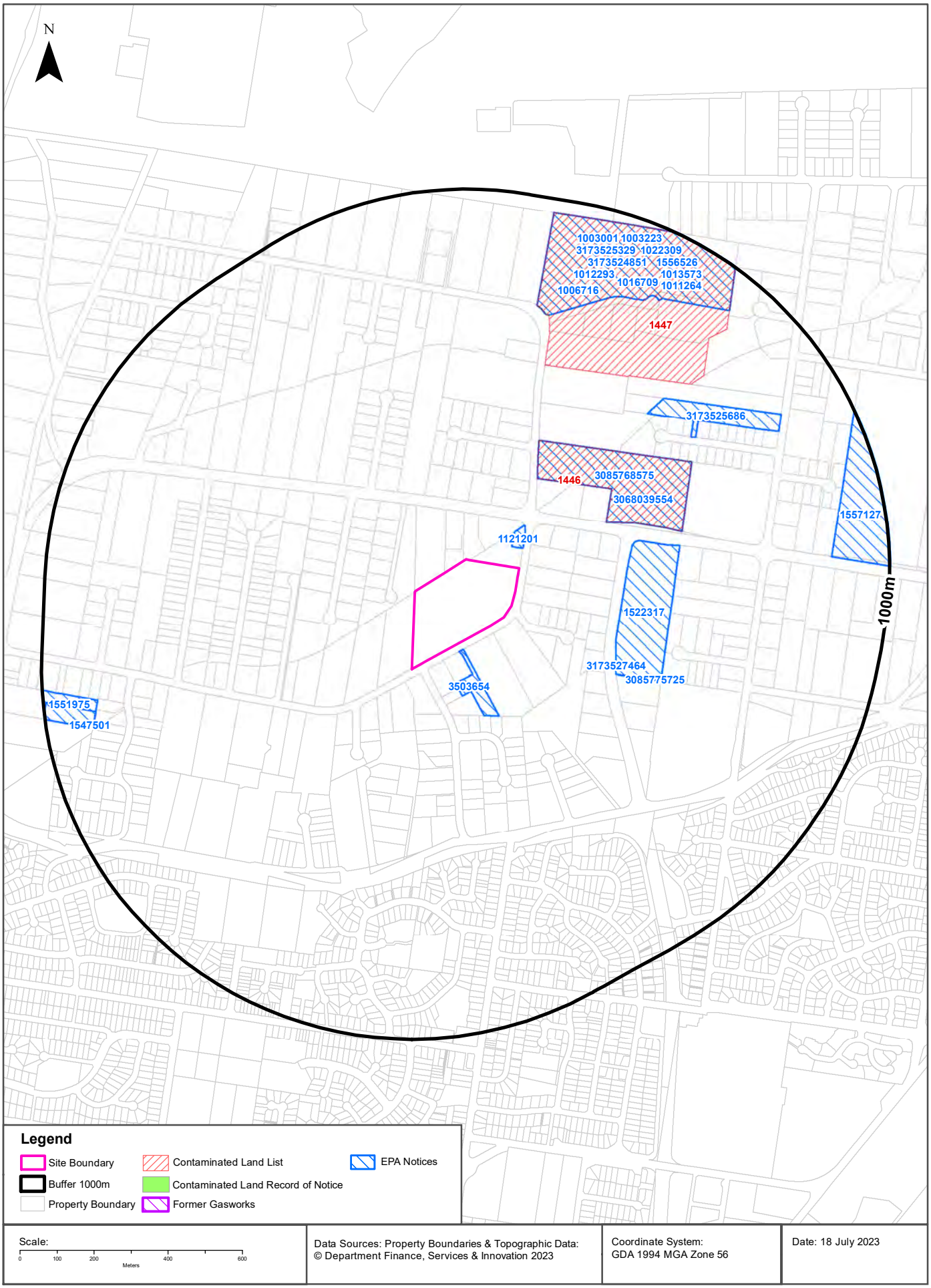
Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 18 July 2023

Contaminated Land

94 Newton Road, Wetherill Park, NSW 2164



Contaminated Land

94 Newton Road, Wetherill Park, NSW 2164

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
1446	BOC Sydney Operations Centre	428-440 Victoria Street	Wetherill Park	Chemical Industry	Regulation being finalised	Current EPA List	Premise Match	247m	North East
1447	Camide Former Landfill	Newton Road	Wetherill Park	Landfill	Regulation under CLM Act not required	Current EPA List	Premise Match	553m	North East

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

© State of New South Wales through the Environment Protection Authority

Contaminated Land

94 Newton Road, Wetherill Park, NSW 2164

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
© State of New South Wales through the 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
© State of New South Wales through the Environment Protection Authority

Contaminated Land

94 Newton Road, Wetherill Park, NSW 2164

EPA Notices

Penalty Notices, s.91 & s.92 Clean up Notices and s.96 Prevention Notices within the dataset buffer:

Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
3503654	s.96 Prevention Notice	AUSCHEM (N.S.W.) PTY LTD	91 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	26/09/2022				Premise Match	21m	South
1121201	s.91 Clean Up Notice	BOUTROS CONSTRUCTIONS PTY LTD		Issued	19/11/2010				Premise Match	53m	North East
3068039554	Penalty Notice	BOC LIMITED	428-440 VICTORIA STREET, WETHERILL PARK, NSW 2164	Issued	26/04/2012	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - Corporation	22/02/2012	Premise Match	247m	North East
3085768575	Penalty Notice	BOC LIMITED	428-440 VICTORIA STREET, WETHERILL PARK, NSW 2164	Issued	05/02/2013	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - Corporation	31/12/2012	Premise Match	247m	North East
3085775725	Penalty Notice	BEGA DAIRY AND DRINKS PTY LTD	433 VICTORIA ST, WETHERILL PARK, NSW 2164	Issued	12/12/2014	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	09/09/2014	Premise Match	286m	East
3173527464	Penalty Notice	BEGA DAIRY AND DRINKS PTY LTD	433 VICTORIA ST, WETHERILL PARK, NSW 2164	Issued	08/03/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	14/11/2018	Premise Match	286m	East
1522317	s.96 Prevention Notice	BEGA DAIRY AND DRINKS PTY LTD	433 VICTORIA ST, WETHERILL PARK, NSW 2164	Issued	24/07/2014				Premise Match	286m	East
3173525686	Penalty Notice	SIKA AUSTRALIA PTY LTD	18 Hargraves Place, WETHERILL PARK, NSW 2164	Issued	28/05/2018	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - not submit annual return - Corporation	14/03/2018	Premise Match	541m	North East
3173524851	Penalty Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	21/02/2018	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	06/09/2017	Premise Match	686m	North East
3173525329	Penalty Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	04/06/2018	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	06/09/2017	Premise Match	686m	North East
1556526	s.96 Prevention Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	29/09/2017				Premise Match	686m	North East

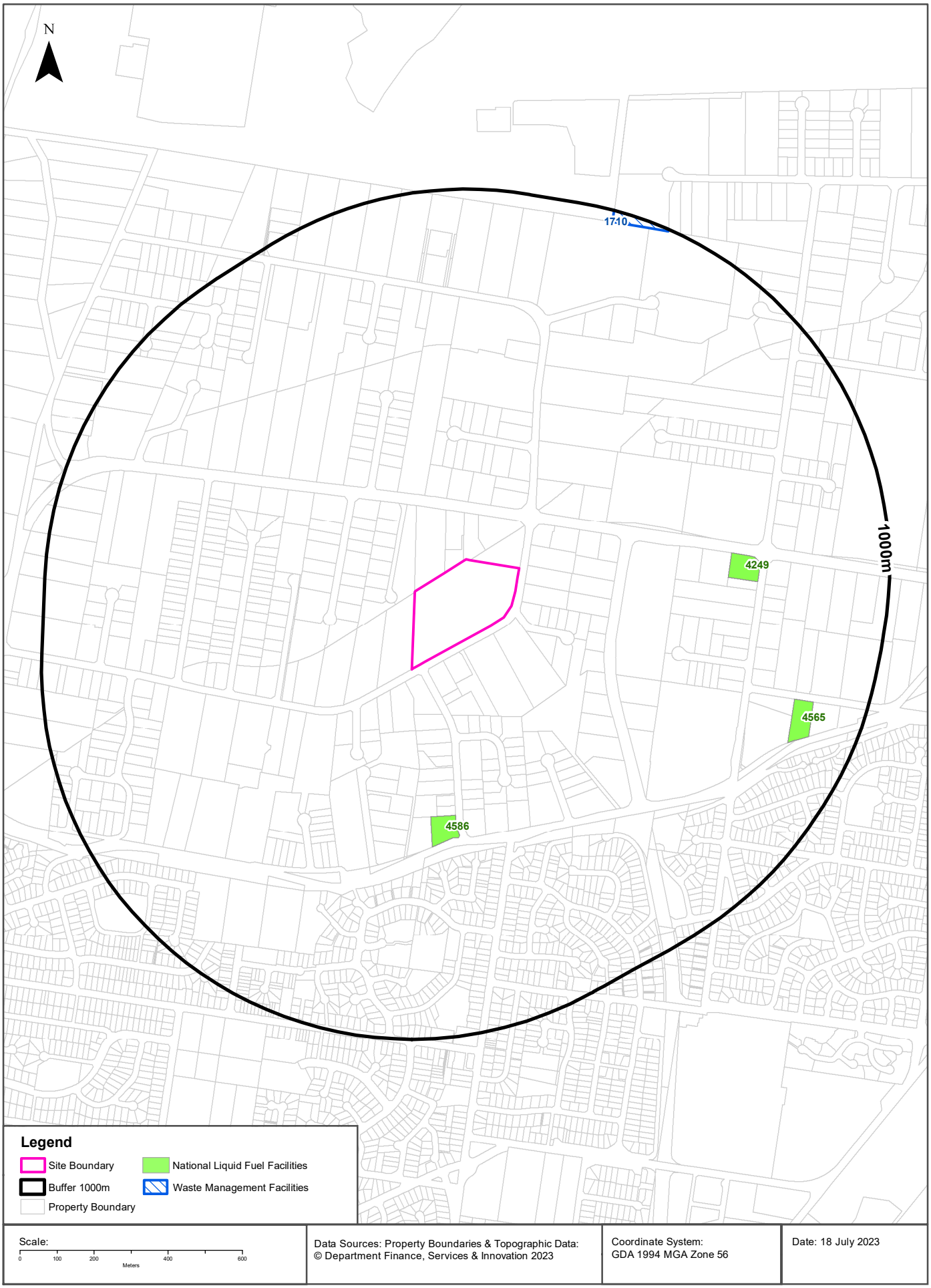
Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
1012293	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	16/11/2001				Premise Match	686m	North East
1013573	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	10/12/2001				Premise Match	686m	North East
1016709	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	03/05/2002				Premise Match	686m	North East
1022309	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	20/12/2002				Premise Match	686m	North East
1003001	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	30/11/2000				Premise Match	686m	North East
1006716	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	30/04/2001				Premise Match	686m	North East
1011264	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD, WETHERILL PARK, NSW 2164	Issued	07/09/2001				Premise Match	686m	North East
1003223	s.91 Clean Up Notice	ECO CYCLE MATERIALS PTY LTD		Issued	12/12/2000				Premise Match	686m	North East
1557127	s.96 Prevention Notice	CSR BUILDING PRODUCTS LIMITED	376 VICTORIA STREET, WETHERILL PARK, NSW 2164	Issued	29/09/2017				Premise Match	842m	East
1551975	s.96 Prevention Notice	HANEY TENN		Issued	01/09/2017				Premise Match	853m	West
1547501	s.91 Clean Up Notice	SSADCO CONTRACTORS PTY LTD	233-241 Cowpasture Road, WETHERILL PARK, NSW 2164	Issued	09/12/2016				Premise Match	861m	West

NSW EPA Notice Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

94 Newton Road, Wetherill Park, NSW 2164



Waste Management & Liquid Fuel Facilities

94 Newton Road, Wetherill Park, NSW 2164

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
1710	Sita Australia Pty Ltd	Davis Road Recycling and Waste Transfer	20 Davis Road	Wetherill Park	Multi-Purpose		Operational	Operational		Premise Match	969 m	North East

Waste Management Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

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
4586	Caltex	Caltex Wetherill Park	32 Mcllwraith Street	Wetherill Park	Petrol Station	Operational		25/07/2011	Premise Match	401m	South
4249	Shell	Coles Express Wetherill Park Elizabeth	413 Victoria Street	Wetherill Park	Petrol Station	Operational		25/07/2011	Premise Match	563m	East
4565	BP	BP Wetherill Park	1181 The Horsley Drive	Wetherill Park	Petrol Station	Operational		25/07/2011	Premise Match	801m	East

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

PFAS Investigation & Management Programs

94 Newton Road, Wetherill Park, NSW 2164

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
© State of New South Wales through the 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

94 Newton Road, Wetherill Park, NSW 2164

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

94 Newton Road, Wetherill Park, NSW 2164

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

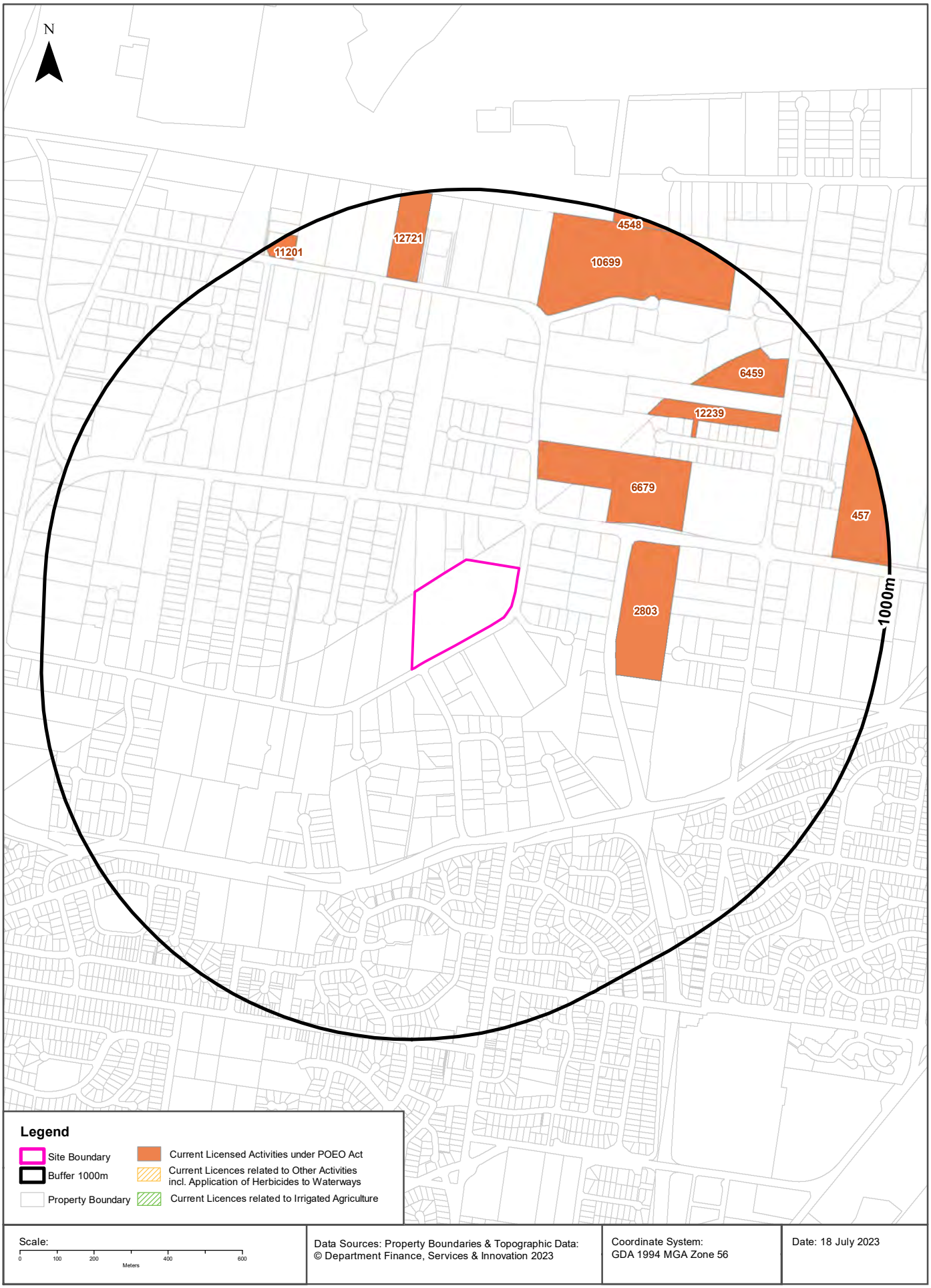
Sites within the dataset buffer:

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
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

94 Newton Road, Wetherill Park, NSW 2164



EPA Activities

94 Newton Road, Wetherill Park, NSW 2164

Licensed Activities under the POEO Act 1997

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

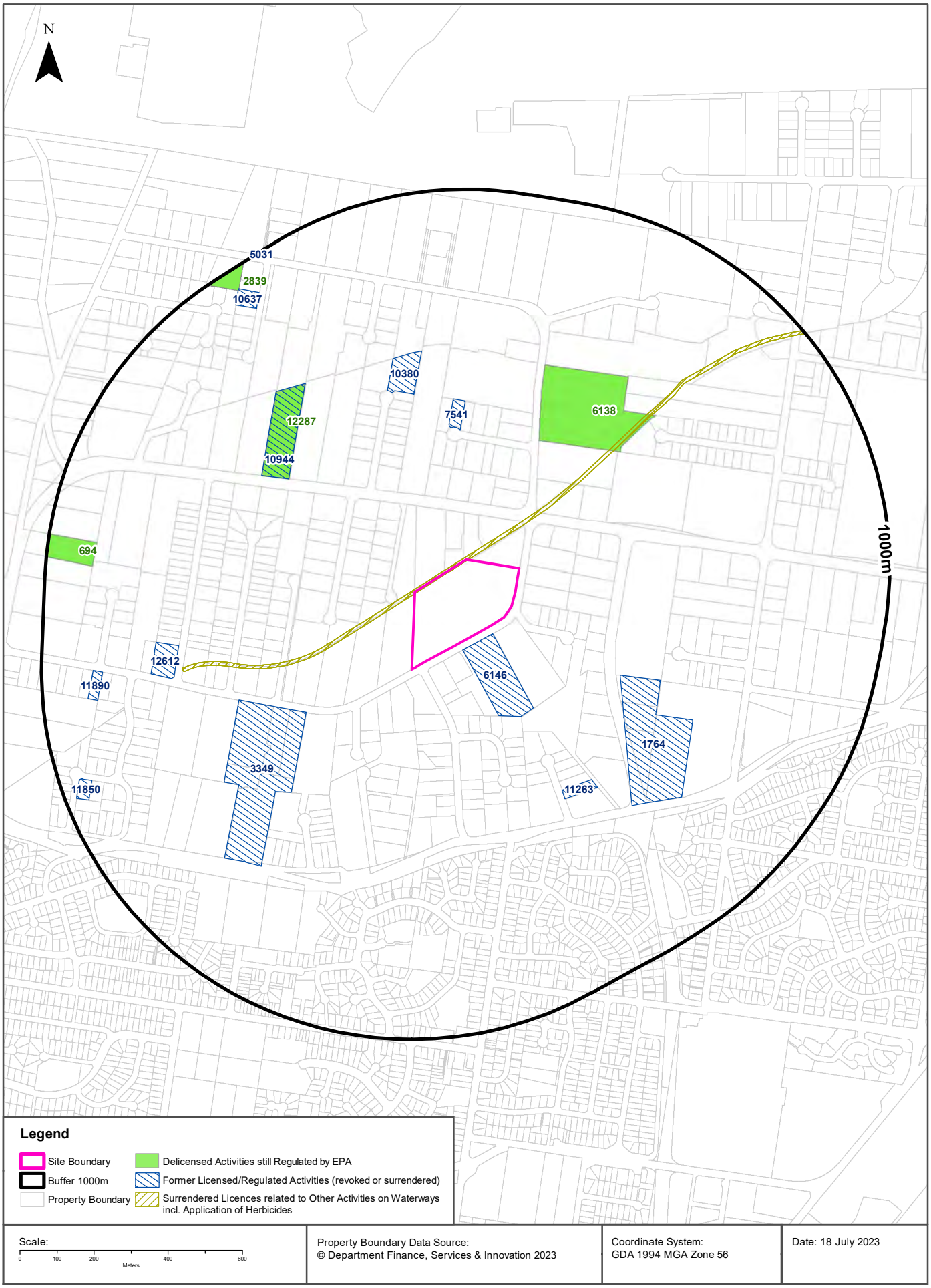
EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
6679	BOC LIMITED	SYDNEY OPERATIONS CENTRE	428-440 VICTORIA STREET	WETHERILL PARK	Chemical production waste generation	Premise Match	247m	North East
6679	BOC LIMITED	SYDNEY OPERATIONS CENTRE	428-440 VICTORIA STREET	WETHERILL PARK	Pesticides and related products (toxic substances) production	Premise Match	247m	North East
6679	BOC LIMITED	SYDNEY OPERATIONS CENTRE	428-440 VICTORIA STREET	WETHERILL PARK	Pesticides and related products production	Premise Match	247m	North East
6679	BOC LIMITED	SYDNEY OPERATIONS CENTRE	428-440 VICTORIA STREET	WETHERILL PARK	Dangerous goods production	Premise Match	247m	North East
6679	BOC LIMITED	SYDNEY OPERATIONS CENTRE	428-440 VICTORIA STREET	WETHERILL PARK	General chemicals storage	Premise Match	247m	North East
6679	BOC LIMITED	SYDNEY OPERATIONS CENTRE	428-440 VICTORIA STREET	WETHERILL PARK	Toxic substances production	Premise Match	247m	North East
2803	BEGA DAIRY AND DRINKS PTY LTD	DAIRY FARMERS WETHERILL PARK	433 VICTORIA ST	WETHERILL PARK	Dairy processing	Premise Match	286m	East
12239	SIKA AUSTRALIA PTY LTD	SIKA AUSTRALIA	18 Hargraves Place	WETHERILL PARK	Petrochemical production	Premise Match	541m	North East
6459	PAREXGROUP PTY LIMITED	DAVCO CONSTRUCTION MATERIALS PTY LTD	67 ELIZABETH STREET	WETHERILL PARK	Paints/polishes/adhesives production	Premise Match	679m	North East
6459	PAREXGROUP PTY LIMITED	DAVCO CONSTRUCTION MATERIALS PTY LTD	67 ELIZABETH STREET	WETHERILL PARK	Cement or lime handling	Premise Match	679m	North East
6459	PAREXGROUP PTY LIMITED	DAVCO CONSTRUCTION MATERIALS PTY LTD	67 ELIZABETH STREET	WETHERILL PARK	Chemical production waste generation	Premise Match	679m	North East
10699	ECO CYCLE MATERIALS PTY LTD	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD	WETHERILL PARK	Waste storage - other types of waste	Premise Match	686m	North East
10699	ECO CYCLE MATERIALS PTY LTD	ECO CYCLE MATERIALS PTY LTD	155 NEWTON ROAD	WETHERILL PARK	Non-thermal treatment of general waste	Premise Match	686m	North East
12721	PRIMARY FLOORING PTY LTD	DUNLOP FLOORING	183-187 NEWTON ROAD	WETHERILL PARK	Plastic resins production	Premise Match	762m	North
457	CSR BUILDING PRODUCTS LIMITED	CSR BUILDING PRODUCTS, WETHERILL PARK	376 VICTORIA STREET	WETHERILL PARK	Cement or lime handling	Premise Match	842m	East
457	CSR BUILDING PRODUCTS LIMITED	CSR BUILDING PRODUCTS, WETHERILL PARK	376 VICTORIA STREET	WETHERILL PARK	Crushing, grinding or separating	Premise Match	842m	East
11201	UNIVERSAL ALUMINIUM CO PTY LTD	UNIVERSAL ANODISERS	207 Newton Road	WETHERILL PARK	Metal waste generation	Premise Match	933m	North West
11201	UNIVERSAL ALUMINIUM CO PTY LTD	UNIVERSAL ANODISERS	207 Newton Road	WETHERILL PARK	Metal coating	Premise Match	933m	North West

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
4548	VEOLIA RECYCLING & RECOVERY PTY LTD	WETHERILL PARK RESOURCE RECOVERY FACILITY	20 DAVIS ROAD	WETHERILL PARK	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Premise Match	969m	North East
4548	VEOLIA RECYCLING & RECOVERY PTY LTD	WETHERILL PARK RESOURCE RECOVERY FACILITY	20 DAVIS ROAD	WETHERILL PARK	Non-thermal treatment of hazardous and other waste	Premise Match	969m	North East
4548	VEOLIA RECYCLING & RECOVERY PTY LTD	WETHERILL PARK RESOURCE RECOVERY FACILITY	20 DAVIS ROAD	WETHERILL PARK	Waste storage - other types of waste	Premise Match	969m	North East

POEO Licence Data Source: Environment Protection Authority
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Delicensed & Former Licensed EPA Activities

94 Newton Road, Wetherill Park, NSW 2164



EPA Activities

94 Newton Road, Wetherill Park, NSW 2164

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
6138	CSR VIRIDIAN LIMITED	CSR VIRIDIAN LIMITED	139 - 145 NEWTON ROAD	WETHERILL PARK	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	348m	North East
12287	CUMMINS SOUTH PACIFIC PTY. LTD.	Cummins	492-494 Victoria Street	WETHERILL PARK	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	458m	North West
694	HYMIX AUSTRALIA PTY LIMITED	HYMIX AUSTRALIA PTY LTD	173-179 COWPASTURE ROAD	WETHERILL PARK	Concrete works	Premise Match	870m	West
2839	SASSO READYMIX CONCRETE PTY LTD	SASSO CONCRETE PTY LTD	176 NEWTON ROAD	WETHERILL PARK	Concrete works	Premise Match	943m	North West

Delicensed Activities Data Source: Environment Protection Authority
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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	0m	On-site
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	0m	On-site
5150	FAIRFIELD CITY COUNCIL	WATERWAYS OF FAIRFIELD CITY COUNCIL - FAIRFIELD NSW 2165	Surrendered	17/08/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
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	0m	On-site
6146	SAMSON HYGIENE SERVICES PTY LIMITED	UNIT 26/93-97 NEWTON ROAD, WETHERILL PARK, NSW 2164	Surrendered	24/03/2000	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	21m	South East
3349	SILK CONTRACT LOGISTICS PTY LTD	1333 THE HORSLEY DRIVE, WETHERILL PARK, NSW 2164	Surrendered	31/03/2000	Hazardous, Industrial or Group A Waste Generation or Storage; General chemicals storage	Premise Match	309m	South West
1764	LAUREN LOUISE CONLAN	1191 THE HORSLEY DRIVE, WETHERILL PARK, NSW 2164	Surrendered	18/09/2000	Bird accommodation	Premise Match	348m	South East
7541	DOLOMATRIX AUSTRALIA PTY LIMITED	12 BUSHELLS PLACE, WETHERILL PARK, NSW 2164	Surrendered	28/04/2000	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	350m	North

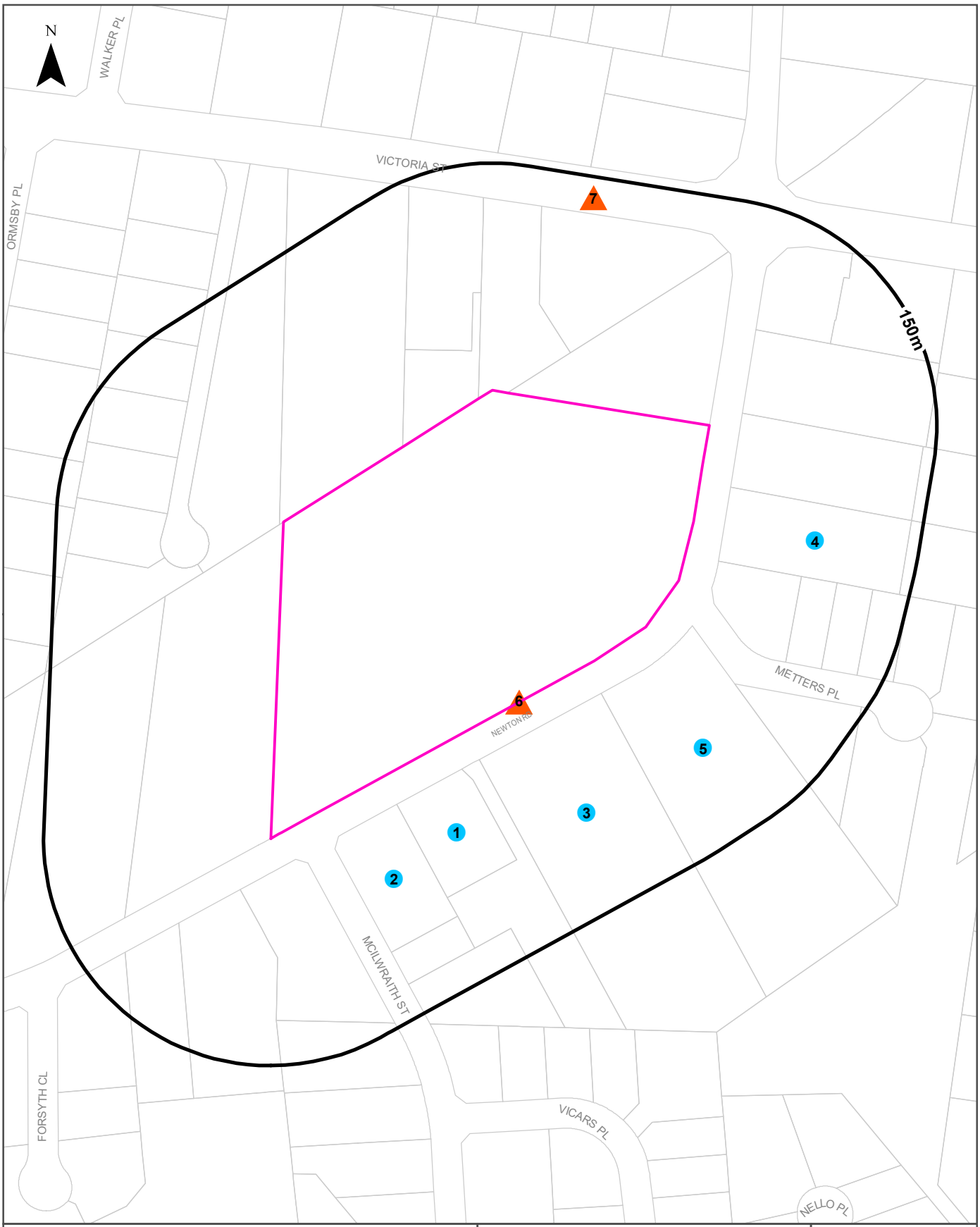
Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
10944	CUMMINS SOUTH PACIFIC PTY. LTD.	492-494 Victoria Street, WETHERILL PARK, NSW 2164	Surrendered	21/07/2000	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	458m	North West
10380	BERENDSEN FLUID POWER PTY LIMITED	10 WALKER PLACE, WETHERILL PARK, NSW 2164	Surrendered	20/12/1999	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	469m	North
11263	SAMSON HYGIENE SERVICES PTY LIMITED	UNIT 2/14 NELLO PLACE, WETHERILL PARK, NSW 2164	Surrendered	15/11/2000	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	481m	South East
12612	MRI (AUST) PTY LTD	MRI (AUST) PTY LTD, 1-5 Bentley Street, WETHERILL PARK	Surrendered	15/01/2007	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	631m	West
11890	DURAM INDUSTRIES PTY. LIMITED	21 Newton Road, WETHERILL PARK, NSW 2164	Surrendered	05/05/2003	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	835m	West
10637	CENTURY YUASA BATTERIES PTY. LIMITED	3 Coates Place, WETHERILL PARK, NSW 2164	Surrendered	06/04/2000	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	876m	North West
11850	CENTURY YUASA BATTERIES PTY. LIMITED	6 BOND CRESCENT, WETHERILL PARK, NSW 2164	Surrendered	16/04/2003	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	915m	South West
5031	GEORGE WESTON FOODS LIMITED	213-217 NEWTON ROAD, WETHERILL PARK, NSW 2164	Surrendered	25/01/2001	General animal products production	Premise Match	990m	North West

Former Licensed Activities Data Source: Environment Protection Authority

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Historical Business Directories

94 Newton Road, Wetherill Park, NSW 2164



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: 18 July 2023

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

Historical Business Directories

94 Newton Road, Wetherill Park, NSW 2164

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 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	Furniture Mfrs &/or W/salers Built In	Santa Furniture Design, 2/87 Newton Rd., Wetherill Park. 2164	46919	1991	Premise Match	20m	South
	Food Wrapping &/or Packing Machinery	Trigon Packaging Systems Pty. Ltd., 4/87 Newton Rd. Wetherill Park 2164	46216	1991	Premise Match	20m	South
	Packaging Materials Mfrs &/or Dists	Trigon Packaging Systems Pty. Ltd., 4/87 Newton Rd., Wetherill Park. 2164	56399	1991	Premise Match	20m	South
2	Signs General	Sign Concepts Pty Ltd, 5/85 Newton Rd Wetherill Park 2164	62551	1991	Premise Match	20m	South
3	Printers Lithographic (Offset)	Aircon Graphics Pty. Ltd., Unit 30/93 Newton Rd., Wetherill Park 2164	59008	1991	Premise Match	21m	South East
	Food Products Frozen Mfrs &/or Processors	Alfred Food Supplies, Unit 38/93 Newton Rd., Wetherill Park 2164	46036	1991	Premise Match	21m	South East
	Cabinet Makers	Austin, John, Unit 9/93 Newton Rd., Wetherill Park 2164	37825	1991	Premise Match	21m	South East
	Belting Mfrs &/or Imps &/or Merchants	Australian Belt & Hose Pty Ltd, Unit 1/93 Newton Rd, Wetherill Park 2164	35885	1991	Premise Match	21m	South East
	Energy Management Systems & Consultant	Bright Lights Co., Unit 2/93 Newton Rd, Wetherill Park 2164	43220	1991	Premise Match	21m	South East
	Lighting Equipment Industrial Mfrs &/or Imps &/or Dists	Brightlights Co., Unit 2/93 Newton Rd., Wetherill Park. 2164	50812	1991	Premise Match	21m	South East
	Motor Engineers	Concord Mechanical Repairs Pty Ltd, Unit 22/93 Newton Rd, Wetherill Park 2164	53099	1991	Premise Match	21m	South East
	Saw &/or Knife &/or Tool Sharpener	Denida Tooling, Unit 12/93 Newton Rd Wetherill Park 2164	61519	1991	Premise Match	21m	South East
	Knitting Mills	Dupond Industries, Unit 41/93 Newton Rd., Wetherill Park. 2164	50384	1991	Premise Match	21m	South East
	Balancing Dynamic	Dyamic Balancing Services, Unit 14/93 Newton Rd, Wetherill Park 2164	35408	1991	Premise Match	21m	South East
	Refrigeration Equipment Mfrs &/or Dists	Freds Service, Unit 43/93 Newton Rd Wetherill Park 2164	60996	1991	Premise Match	21m	South East
	Sheet Metal Workers	J & S Sheet Metal Engineering Pty Ltd, Unit 35/93 Newton Rd Wetherill Park 2164	62100	1991	Premise Match	21m	South East
	Engineers General	J & S Sheet Metal Engineering Pty Ltd, Unit 35/93 Newton Rd., Wetherill Park 2164	44141	1991	Premise Match	21m	South East
	Engineers General	Kenessey Engineering, Unit 36/93 Newton Rd., Wetherill Park 2164	44161	1991	Premise Match	21m	South East
	Kitchen Units Mfrs &/or Dists &/or Installers	Niaz Kitchens Pty. Ltd., 49/93 Netwon Rd., Wetherill Park. 2164	50248	1991	Premise Match	21m	South East
	Motor Brake Specialists	P & R Automative Services, Unit 46/93 Newton Rd., Wetherill Park 2164	52301	1991	Premise Match	21m	South East
	Motor Engineers	P & R Automotive Services, Unit 46, 93-97 Newton Rd, Wetherill Park 2164	53367	1991	Premise Match	21m	South East
	Motor Clutch Specialists	P & R Automotive Services, Unit 46/93 Newton Rd, Wetherill Park 2164	52879	1991	Premise Match	21m	South East
	Motor Engineers	P & R Automotive Services, Unit 46/93 Newton Rd, Wetherill Park 2164	53368	1991	Premise Match	21m	South East
	Motor Transmission Specialists	P & R Automotive Services, Unit 46/93 Newton Rd, Wetherill Park 2164	55364	1991	Premise Match	21m	South East
	Motor Garages & Service Stations	P & R Automotive Services, Unit 46/93 Newton Rd., Wetherill Park 2164	97797	1991	Premise Match	21m	South East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
3	Motor Tuning Specialists	P & R Automotive Services, Unit 46/93 Newton Rd., Wetherill Park 2164	55542	1991	Premise Match	21m	South East
	Seals - Oil &/or Mechanical	Plastic Manufacture Pronducts, Unit 8/93 Newton Rd., Wetherill Park. 2164	97170	1991	Premise Match	21m	South East
	Plastic Goods Mfrs &/or Imps &/or Dists	PLASTIC MANUFACTURED PRODUCTS, Unit 8, 93-97 Newton Road, Wetherill Park. 2164	57942	1991	Premise Match	21m	South East
	Washer Mfrs &/or Dists	Plastic Manufactured Products, Unit 8/93 Newton Rd Wetherill Park 2164	65858	1991	Premise Match	21m	South East
	Fork Lift Truck Parts & Attachments Mfrs &/or Dist	Plastic Manufactured Products, Unit 8/93 Newton Rd., Wetherill Park 2164	46346	1991	Premise Match	21m	South East
	Plastic Goods Mfrs &/or Imps &/or Dists	Plastic Manufactured Products, Unit 8/93 Newton Rd., Wetherill Park. 2164	57943	1991	Premise Match	21m	South East
	Ceiling Systems &/or Ceilings Domestic &/or Industrial Mfrs &/or Contractors	Prompt Office Partitions Pty. Ltd., Unit 3/93 Newton Rd., Wetherill Park 2164	38694	1991	Premise Match	21m	South East
	Kitchen Units Mfrs &/or Dists &/or Installers	Prompt Office Partitions Pty. Ltd., Unit 3/93 Newton Rd., Wetherill Park. 2164	50274	1991	Premise Match	21m	South East
	Partition Mfrs &/or Dists	Prompt Office Partitions Pty. Ltd., Unit 3/93 Newton Rd., Wetherill Park. 2164	56892	1991	Premise Match	21m	South East
	Partition Mfrs &/or Dists	PROMPT OFFICE PARTITIONS PTY.LTD., Unit 3, 93-97 Newton Rd., Wetherill Park. 2164	56891	1991	Premise Match	21m	South East
	Joinery Manufacturers &/or Merchants	Prompt Office Pastiness Pty. Ltd., Unit 3/93 Newton Rd., Wetherill Park. 2164	50017	1991	Premise Match	21m	South East
	Air Conditioning Sales &/or Service	Rainer & Leach Air Conditioning Pty. Ltd., Unit 39/93 Newton Rd, Wetherill Park 2164	34028	1991	Premise Match	21m	South East
	Stainless Steel Fabricators	Sepak Pty Ltd, Unit 23/93 Newton Rd Wetherill Park 2164	63073	1991	Premise Match	21m	South East
	Heat Exchanger Mfrs &/or Dists	Sepak Pty. Ltd., Unit 23/93 Newton Rd., Wetherill Park. 2164	48307	1991	Premise Match	21m	South East
	Signs General	Sign Magic Pty Ltd, Unit 15/93 Newton Rd Wetherill Park 2164	62553	1991	Premise Match	21m	South East
	Communication Systems Mfrs &/or Imps &/or Dists	Summit Communications, Unit 31/93 Newton Rd., Wetherill Park 2164	39782	1991	Premise Match	21m	South East
4	Security Doors &/or Windows &/or Grilles	Aluminium Alloy Products Pty. Ltd, 107 Newton Rd., Wetherill Park. 2164	61848	1991	Premise Match	21m	East
	Aluminum Fabricators	Aluminum Alloy Products Pty. Ltd, 107 Newton Rd., Wetherill Park 2164	34334	1991	Premise Match	21m	East
5	Waste Collection & Disposal Contractors	Pacific Waste Management Pty Ltd, 99 Newton Rd Wetherill Park 2164	65888	1991	Premise Match	21m	South East
	Waste Collection & Disposal Contractors	Pacific Waste Management, 99 Newton Rd Wetherill Park 2164	65886	1991	Premise Match	21m	South East

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Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 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:

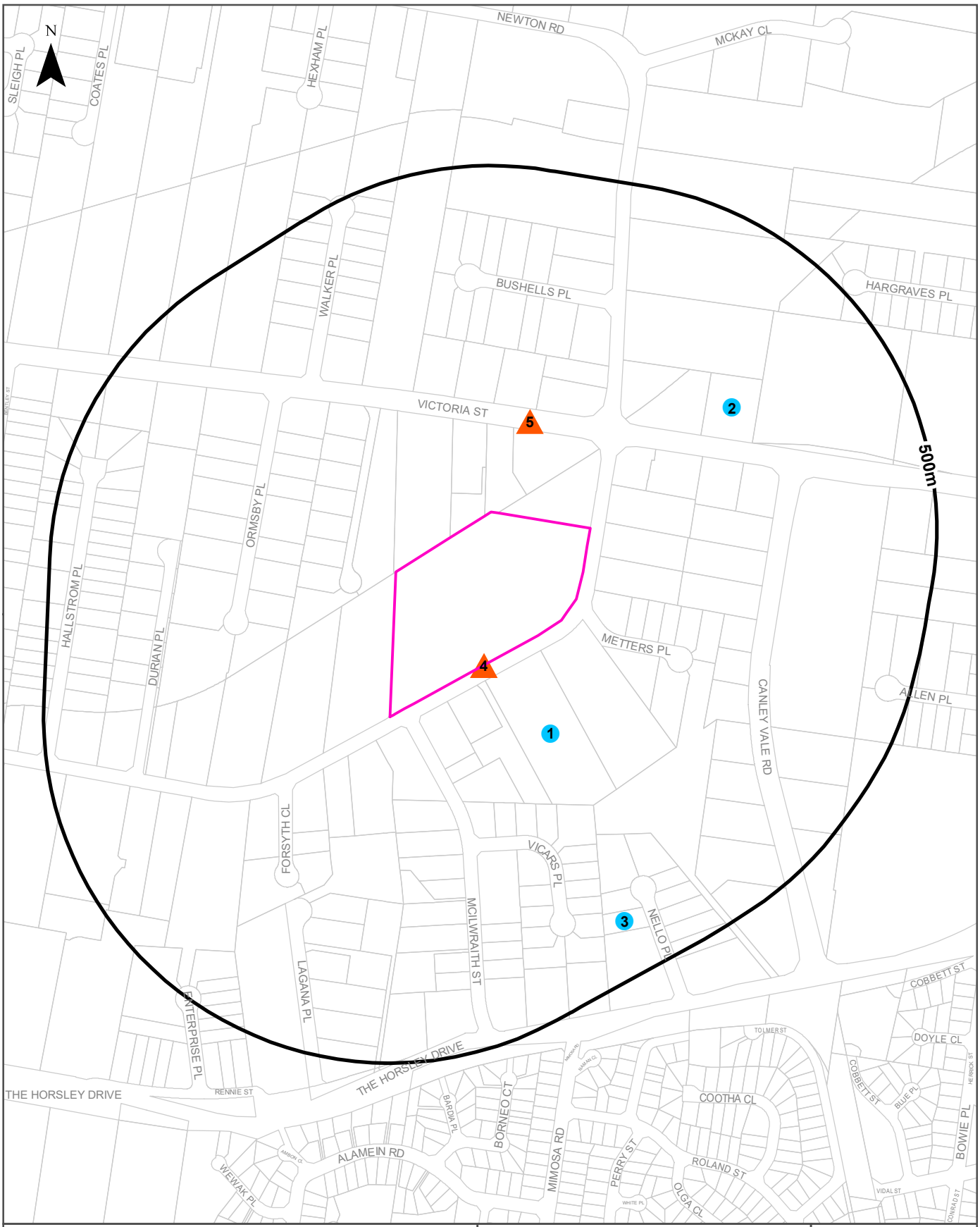
Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
6	Road Transport Services Intrastate	Brambles Heavy Haulage, Newton Rd Wetherill Park 2164	61133	1991	Road Match	0m
	Carriers &/or Cartage Contractors	Brambles Heavy Haulage., Newton Rd., Wetherill Park 2164	38322	1991	Road Match	0m
	Earth Moving Equipment Mfrs &/or Imps &/or Dists	Morgan Equipment (Aust.) Pty. Ltd., 210 Newton Rd., Wetherill Park 2164	41885	1991	Road Match	0m
	Carriers &/or Cartage Contractors	Shaws Darwin Transport, Lot 1, Newton Rd., Wetherill Park 2164	38489	1991	Road Match	0m
	Concrete Formwork, Form Ties & Accessories Mfrs &/or Suppliers	Tarot Pty Ltd, Lot 24, Newton Rd, Wetherill Park 2164	40488	1991	Road Match	0m
	MATTRESS &/OR BEDDING MFRS. &/OR DISTS.	Australian Feather Mills Pty. Ltd., Lot 17 Newton Rd., Wetherill Park. 2164	53188	1986	Road Match	0m
	QUILT MFRS, &/OR W/SALERS.	Australian Feather Mills Pty. Ltd., Lot 17 Newton Rd., Wetherill Park. 2164	78642	1986	Road Match	0m
	VEE-BELT DRIVE SPECIALISTS.	D.G.P. Industrial, 2/64 Newton Rd. Wetherill Park. 2164	97077	1986	Road Match	0m
	PLASTIC EXTRUDERS.	D.G.P. Industrial, 2/64 Newton Rd., Wetherill Park. 2164	74299	1986	Road Match	0m
	TUBE MFRS. &/OR DISTS.	D.G.P. Industrial, 2/64 Newton Rd., Wetherill Park. 2164	95957	1986	Road Match	0m
	METAL MERCHANTS.	D.J.Q. Industries Pty. Ltd., 1/64 Newton Rd., Wetherill Park. 2164	58653	1986	Road Match	0m
	STAINLESS STEEL FABRICATORS.	D.J.Q. Industries Pty. Ltd., 1/64 Newton Rd., Wetherill Park. 2164	87994	1986	Road Match	0m
	PAINT – INDUSTRIAL PROTECTIVE COATING.	Emjay Powder Coolers, Lot 5 Newton Rd., Wetherill Park. 2164	71576	1986	Road Match	0m
	CEMENT &/OR LIME MERCHANTS &/OR DISTS.	Eram Pty. Ltd., Newton Rd., Wetherill Park. 2164	13336	1986	Road Match	0m
	GRAVEL, SAND &/OR SOIL SUPPLIES.	Eram Pty. Ltd., Newton Rd., Wetherill Park. 2164	40226	1986	Road Match	0m
	WATER BEDS.	Mo-Sur Waterbeds, Lot 16 Newton Rd., Wetherill Park. 2164	98388	1986	Road Match	0m
	MOTOR GARAGES & SERVICE STATIONS.	Partletts, Ron Auto Repair Centre, 64 Newton Rd., Wetherill Park. 2164	65241	1986	Road Match	0m
	MOTOR PANEL BEATERS &/OR SPRAY PAINTERS.	Partletts, Ron Auto Repair Centre, 64 Newton Rd., Wetherill Park. 2164	66627	1986	Road Match	0m
	WASTE COLLECTION & DISPOSAL.	Ridwaste Industrial Pty. Ltd., Newton Rd., Wetherill Park. 2164	98290	1986	Road Match	0m
	FURNITURE REMOVALISTS &/OR STORAGE.	Son Bros. Vanlines Pty. Ltd., Unit 4, 64 Newton Rd., Wetherill Park. 2164	38085	1986	Road Match	0m
	MINING COMPANIES.	Thyssen Mining Construction of Australia Pty. Ltd., Lot 13 Newton Rd., Wetherill Park. 2164	59586	1986	Road Match	0m
	WASTE COLLECTION & DISPOSAL.	Tiger Waste Control Newton Road, Smithfield. 2164	98259	1986	Road Match	0m
	WASTE COLLECTION & DISPOSAL.	Tiger Waste Control, Newton Rd., Smithfield. 2164	98300	1986	Road Match	0m
	STEEL ERECTORS.	Universal Steel Constructions Pty. Ltd., Lot 27 Newton Rd., Wetherill Park. 2164	88827	1986	Road Match	0m
7	Aluminum &/or Aluminum Alloy Mfrs &/or Dists	A & P Aluminum Pty. Ltd., Lot 412 Victoria St., Wetherill Park 2164	34292	1991	Road Match	125m
	Dairy Product Mfrs &/or W/salers	Australian Co-operative Foods Limited, The, Victoria St., Wetherill Park 2164	41235	1991	Road Match	125m
	Gas Industrial &/or Medical Mfrs &/or Dists	C.I.G., Victoria St., Wetherill Park. 2164	47498	1991	Road Match	125m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
7	Spa Baths &/or Hot Tubs &/or Equipment Mfrs &/or Dists &/or Installers	Spa Serve, Unit 2 Lot 202 Victoria St Wetherill Park 2164	62875	1991	Road Match	125m
	Timber Merchants &/or Sawmillers	Taylor Allen & Co., Victoria St Wetherill Park 2164	64404	1991	Road Match	125m
	Stainless Steel Mfrs &/or Suppliers	Tubemakers Metal Centre, Victoria St Wetherill Park 2164	63106	1991	Road Match	125m
	Aluminum &/or Aluminum Alloy Mfrs &/or Dists	Tubemakers Metal Centre, Victoria St., Wetherill Park 2164	34323	1991	Road Match	125m
	CLUTCH MFRS. &/OR DISTS.-INDUSTRIAL.	Tubemakers William Adams Metal Centre, Victoria St, Wetherill Park. 2164	19033	1986	Road Match	125m
	COUNTING MACHINES &/OR DEVICES MFRS.	Tubemakers William Adams Metal Centre, Victoria St, Wetherill Park. 2164	20591	1986	Road Match	125m
	CHAIN-HEAVY-MFRS. &/OR IMPS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St, Wetherill Park.2164	13452	1986	Road Match	125m
	AUTOMATIC CONTROL EQUIPMENT IMPS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	4764	1986	Road Match	125m
	DATA PROCESSING EQUIPMENT MFRS. &/OR DISTS. &/ OR HIRERS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	21364	1986	Road Match	125m
	ELECTRIC SWITCH & CONTROL GEAR MFRS. &/OR IMPS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	26842	1986	Road Match	125m
	ELECTRONIC EQUIPMENT MFRS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	28032	1986	Road Match	125m
	ELECTRONIC EQUIPMENT REPAIRS &/OR SERVICING.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	28071	1986	Road Match	125m
	GEAR BOX MFRS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	38624	1986	Road Match	125m
	GRINDING MACHINES ¬PRECISION MFRS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	40398	1986	Road Match	125m
	INSTRUMENT-INDUSTRIAL-MFRS. &/OR IMPS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	48317	1986	Road Match	125m
	INSTRUMENT-MEASURING-MFRS, &/OR IMPS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	48414	1986	Road Match	125m
	LATHE MFRS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	51059	1986	Road Match	125m
	MACHINE TOOL MFRS. &/OR IMPS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	51996	1986	Road Match	125m
	MANUFACTURERS AGENTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	52676	1986	Road Match	125m
	MILLING MACHINE MFRS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	59492	1986	Road Match	125m
	POWER TRANSMISSION EQUIPMENT MFRS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	75791	1986	Road Match	125m
	SAW BLADES - BAND, CIRCULAR, - MFRS. &/OR IMPS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	84533	1986	Road Match	125m
	STEEL MERCHANTS - GENERAL.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164	89201	1986	Road Match	125m
	TRANSMISSION EQUIPMENT MFRS. &/OR DISTS.	Tubemakers William Adams Metal Centre, Victoria St., Wetherill Park. 2164.	95120	1986	Road Match	125m

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Dry Cleaners, Motor Garages & Service Stations

94 Newton Road, Wetherill Park, NSW 2164



Legend

- Site Boundary
- Buffer 500m
- 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: 0 100 200 300 400 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 18 July 2023

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

Historical Business Directories

94 Newton Road, Wetherill Park, NSW 2164

Dry Cleaners, Motor Garages & Service Stations 1948-1993 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.

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Motor Garages & Service Stations	P & R Automotive Services, Unit 46/93 Newton Rd., Wetherill Park 2164	97797	1991	Premise Match	21m	South East
	MOTOR GARAGES & SERVICE STATIONS.	P & R Automotive Services, Unit 46/93 Newton Rd., Wetherill Park. 2164	11956	1990	Premise Match	21m	South East
2	MOTOR GARAGES & SERVICE STATIONS.	T. & S Auto Repair, Unit 11/442 Victoria St., Wetherill Park. 2164	18314	1990	Premise Match	208m	North East
3	MOTOR GARAGE & SERVICE STATIONS.	Hi-Glass Mechanical Repairs, Lot 2, 5 Nello Pl., Wetherill Park. 2164	5086	1989	Premise Match	398m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Hi-Glass Mechanical Repairs, Lot 2, 5 Nello Pl., Wetherill Park. 2164	59423	1988	Premise Match	398m	South East
	MOTOR GARAGES & SERVICE STATIONS.	Hi-Glass Mechanical Repairs, Lot 2, 5 Nello Pl., Wetherill Park. 2164	64863	1986	Premise Match	398m	South East

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Dry Cleaners, Motor Garages & Service Stations 1948-1993 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.

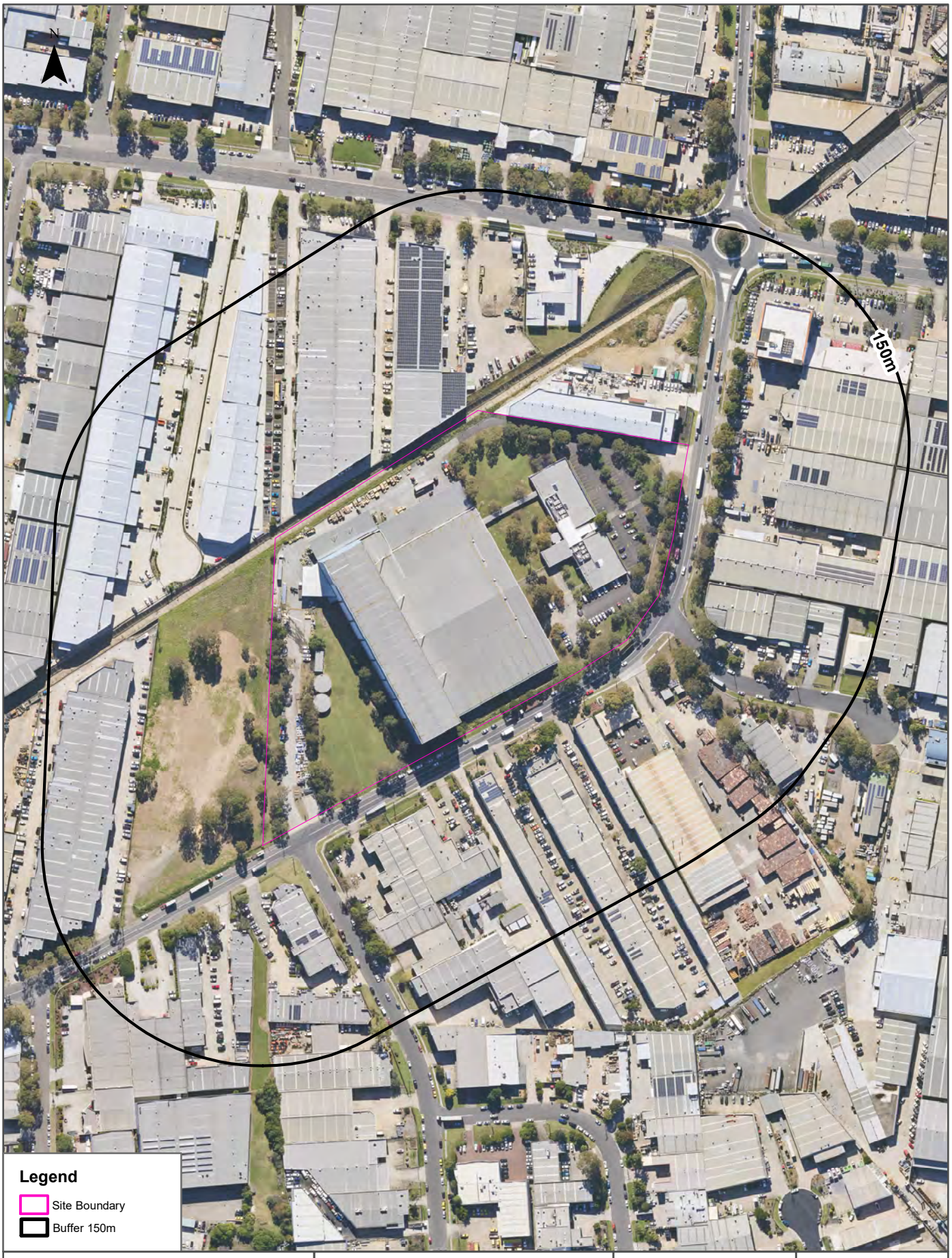
Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	MOTOR GARAGES & SERVICE STATIONS.	Partletts, Ron Auto Repair Centre, 64 Newton Rd., Wetherill Park. 2164	11972	1990	Road Match	0m
	MOTOR GARAGE & SERVICE STATIONS.	Partletts, Ron Auto Repair Centre, 64 Newton Rd., Wetherill Park. 2164	5388	1989	Road Match	0m
	MOTOR GARAGES & SERVICE STATIONS.	Partletts Ron Auto Repair Centre, 64 Newton Rd., Wetherill Park. 2164	59764	1988	Road Match	0m
	MOTOR GARAGES & SERVICE STATIONS.	Partletts, Ron Auto Repair Centre, 64 Newton Rd., Wetherill Park. 2164	65241	1986	Road Match	0m
5	MOTOR GARAGE & SERVICE STATIONS.	T & S Auto Repair Unit 11, Lot 202, Victoria St., Wetherill Park. 2164	5638	1989	Road Match	125m

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Aerial Imagery 2023

94 Newton Road, Wetherill Park, NSW 2164



Data Source Aerial Imagery:	Coordinate System:	Date: 18 July 2023
© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2020

94 Newton Road, Wetherill Park, NSW 2164



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 18 July 2023
0 40 80 120 160 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2016

94 Newton Road, Wetherill Park, NSW 2164



Aerial Imagery 2011

94 Newton Road, Wetherill Park, NSW 2164



Aerial Imagery 2007

94 Newton Road, Wetherill Park, NSW 2164



Aerial Imagery 2000

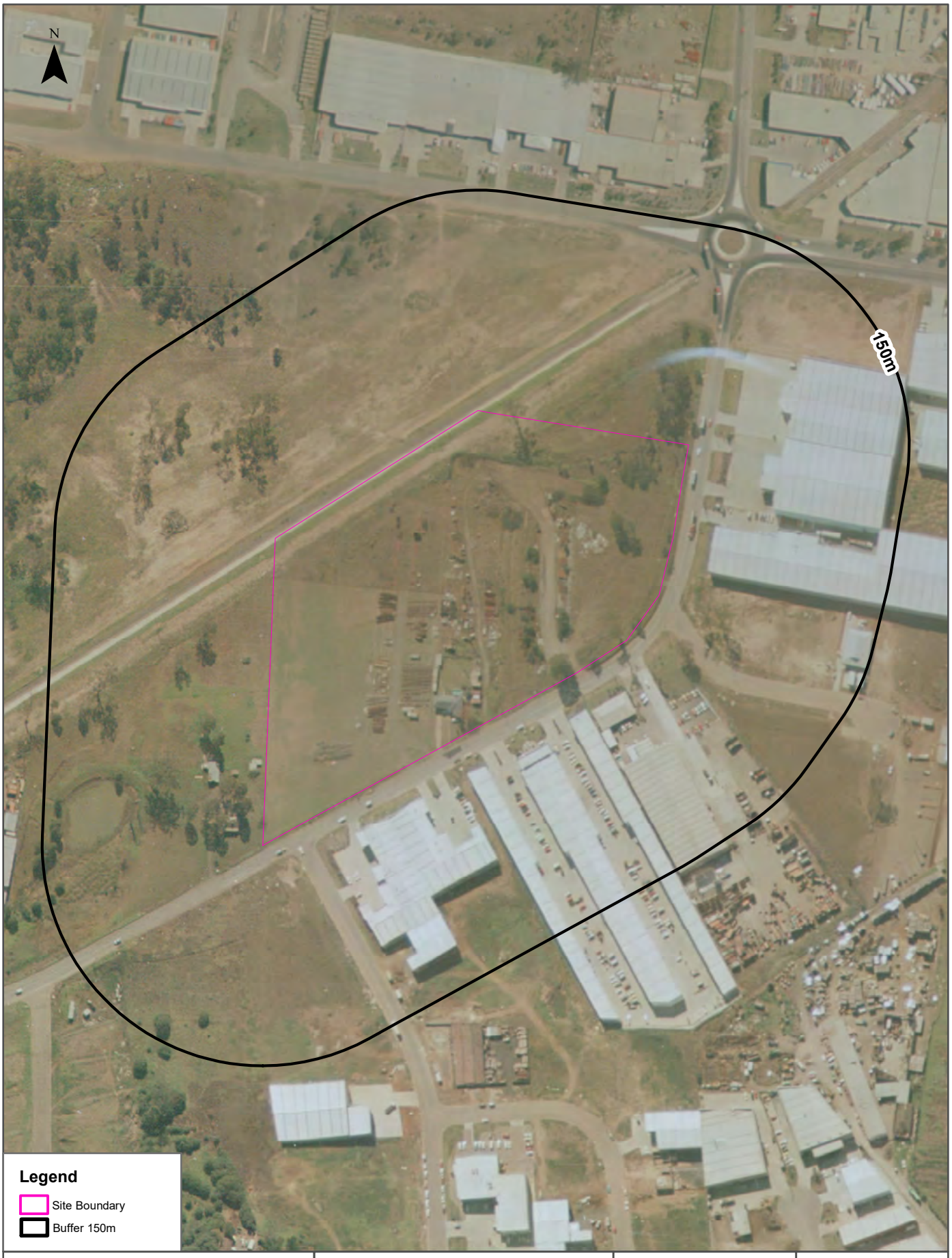
94 Newton Road, Wetherill Park, NSW 2164



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 18 July 2023
0 40 80 120 160 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 1991

94 Newton Road, Wetherill Park, NSW 2164



Aerial Imagery 1982

94 Newton Road, Wetherill Park, NSW 2164



Aerial Imagery 1970

94 Newton Road, Wetherill Park, NSW 2164



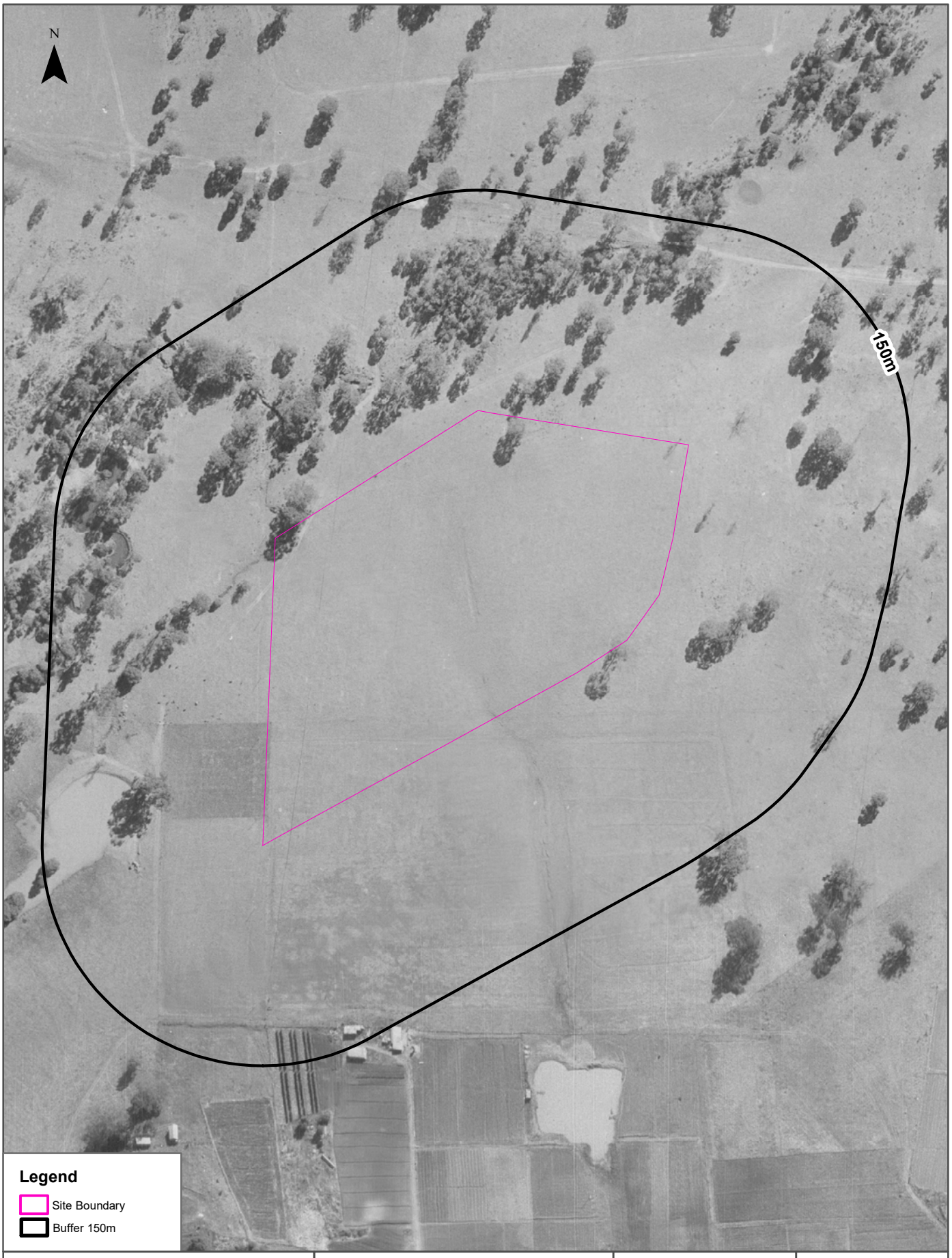
Aerial Imagery 1961

94 Newton Road, Wetherill Park, NSW 2164



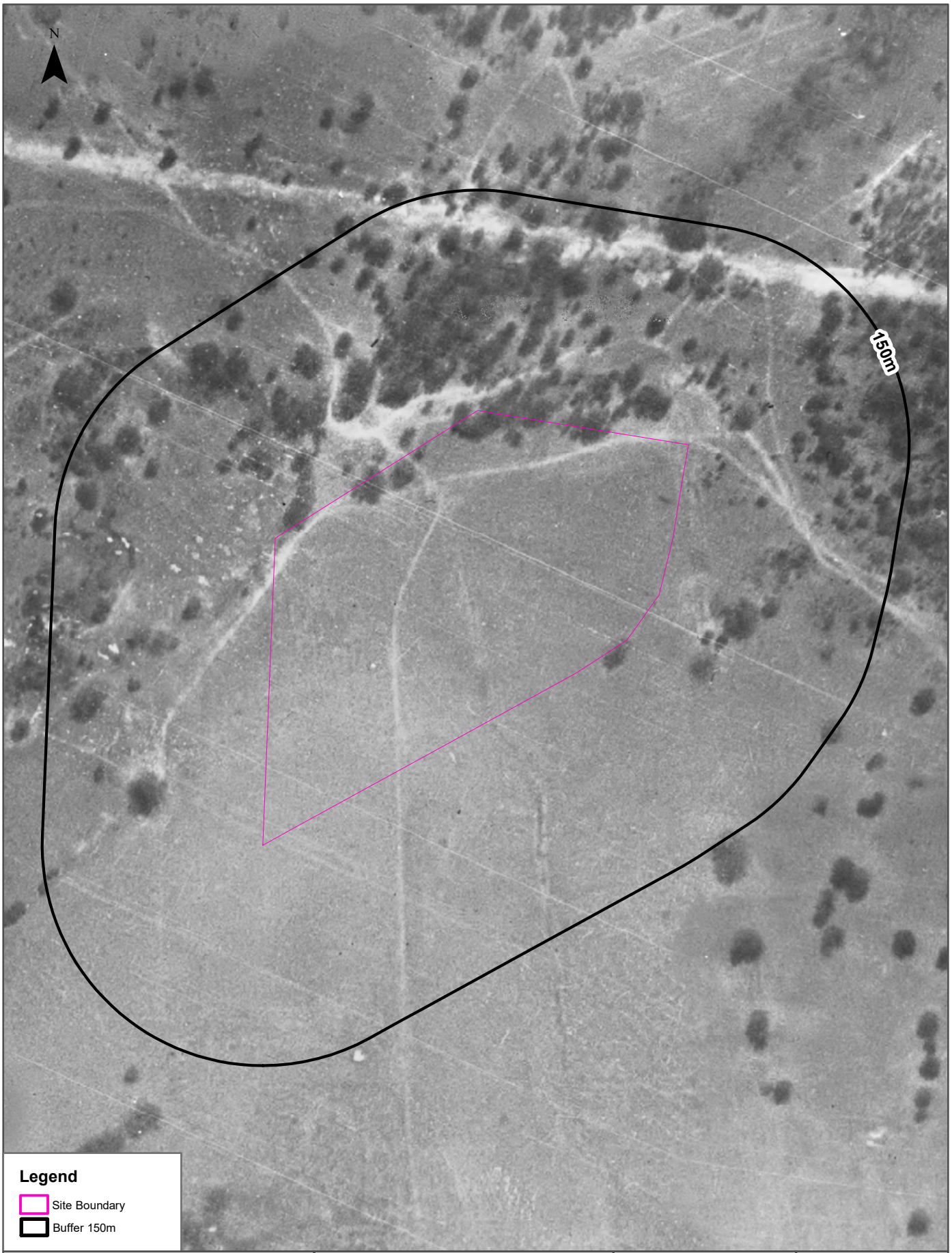
Aerial Imagery 1955, 1956

94 Newton Road, Wetherill Park, NSW 2164



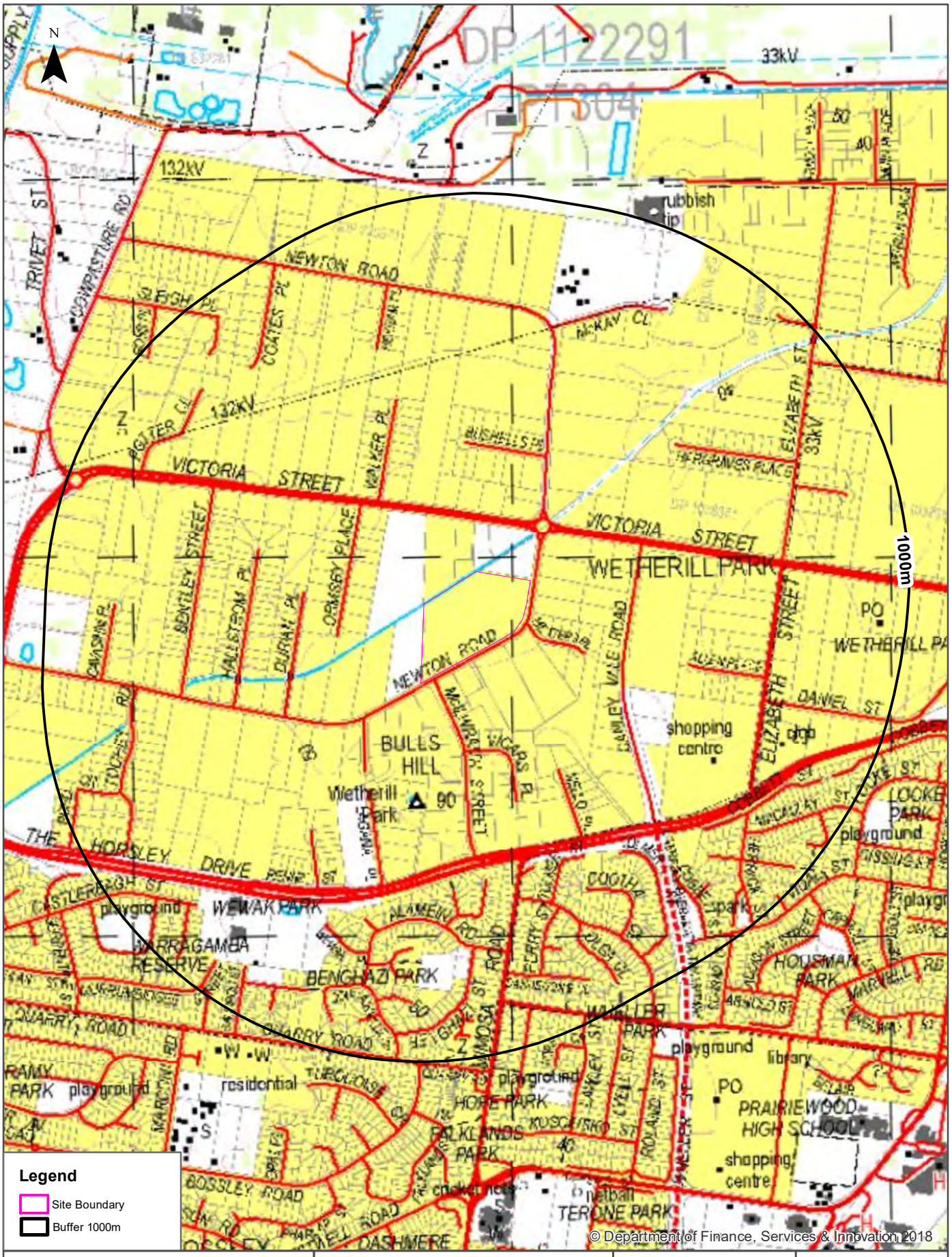
Aerial Imagery 1930

94 Newton Road, Wetherill Park, NSW 2164



Topographic Map 2015

94 Newton Road, Wetherill Park, NSW 2164



Scale: 0 160 320 480 640 Meters	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 July 2023

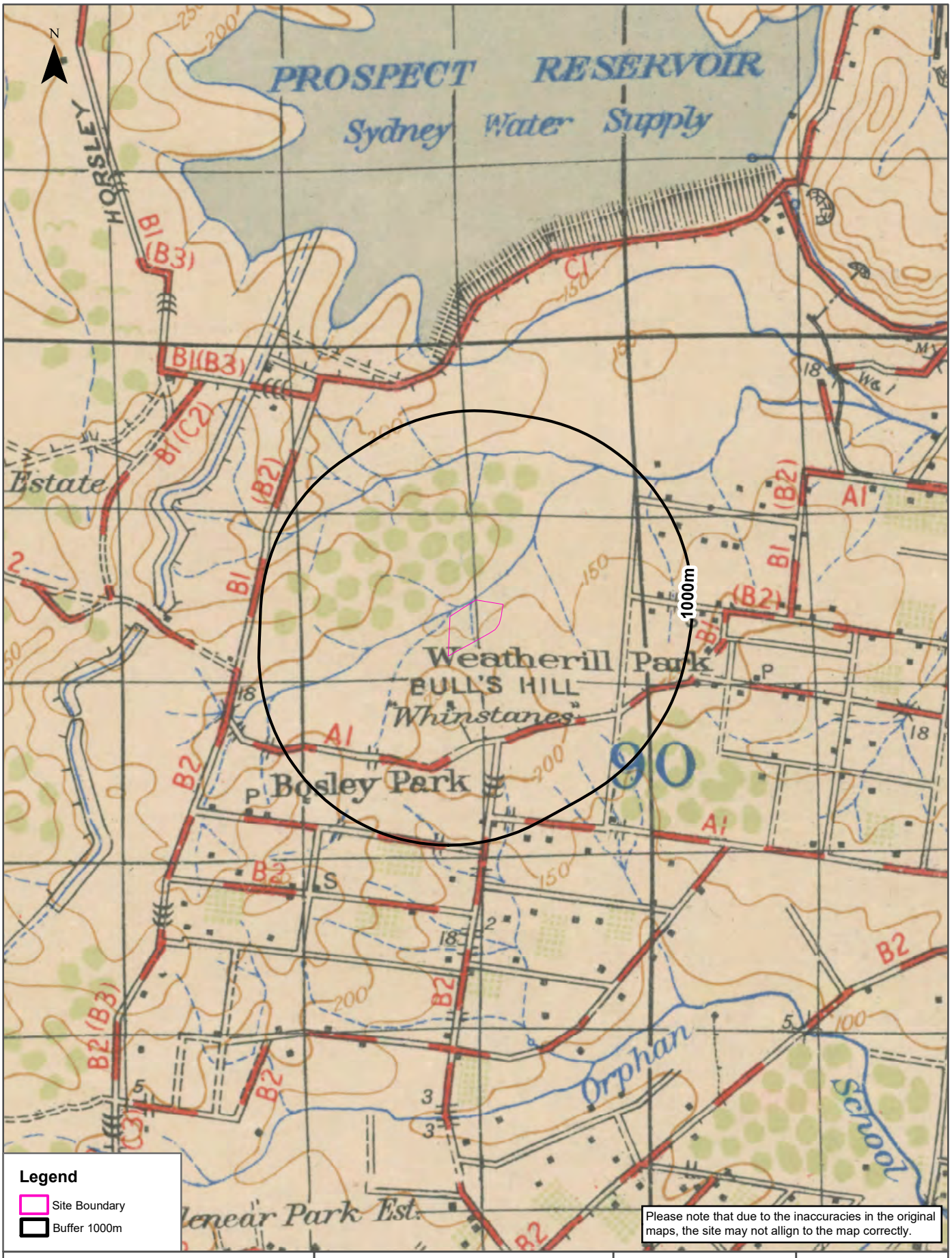
Historical Map 1975

94 Newton Road, Wetherill Park, NSW 2164



Historical Map c.1942

94 Newton Road, Wetherill Park, NSW 2164



Legend

- Site Boundary
- Buffer 1000m

Scale: 0 320 640 960 1,280 Meters

Data Sources: Australia 1:63360
Produced by Australian Section Imperial General Staff

Coordinate System:
GDA 1994 MGA Zone 56

Date: 18 July 2023

Historical Map c.1929

94 Newton Road, Wetherill Park, NSW 2164

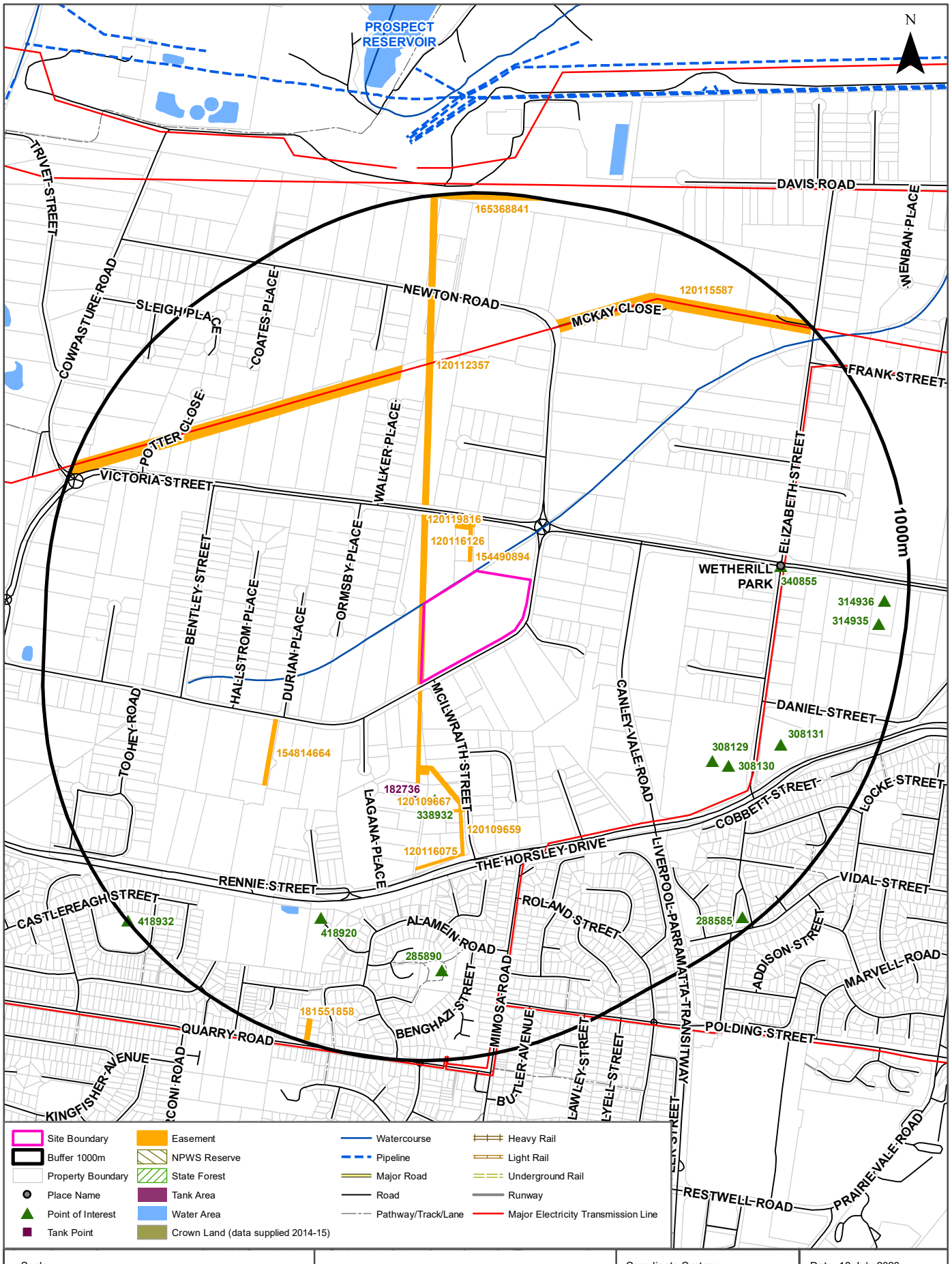


Scale:	Data Sources: Australia 1:63360 Produced by Australian Section Imperial General Staff	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 July 2023

0 320 640 960 1,280
Meters

Topographic Features

94 Newton Road, Wetherill Park, NSW 2164



Topographic Features

94 Newton Road, Wetherill Park, NSW 2164

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
338932	Mountain Like	BULLS HILL	313m	South
308129	Shopping Centre	GREENWAY PLAZA	627m	South East
340855	Suburb	WETHERILL PARK	663m	East
308130	Parking Area	Parking Area	669m	South East
418920	Park	WEWAK PARK	676m	South West
308131	Club	SLOVENIAN SOCIAL CLUB	760m	East
285890	Park	BENGHAZI PARK	763m	South
314935	Post Office	WETHERILL PARK POST BUSINESS CENTRE	928m	East
314936	Parking Area	Parking Area	937m	East
288585	Park	Park	970m	South East
418932	Park	PLAYGROUND	999m	South West

Topographic Data Source: © Land and Property Information (2015)
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Topographic Features

94 Newton Road, Wetherill Park, NSW 2164

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
182736	Water	Operational		22/07/2018	313m	South

Tanks Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

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
120116126	Primary	Undefined		0m	On-site
120119816	Primary	Undefined		4m	South West
120112357	Primary	Undefined		22m	North
154490894	Primary	Right of way	6.5m and Var.	29m	North
120109659	Primary	Undefined		225m	South
120109667	Primary	Undefined		341m	South
120116075	Primary	Undefined		355m	South
154814664	Primary	Right of way	8.5m	392m	South West
120115587	Primary	Undefined		548m	North
181551858	Primary	Right of way	11m	937m	South
165368841	Primary	Electricity	60m	984m	North

Easements Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Topographic Features

94 Newton Road, Wetherill Park, NSW 2164

State Forest

What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

National Parks and Wildlife Service Reserves

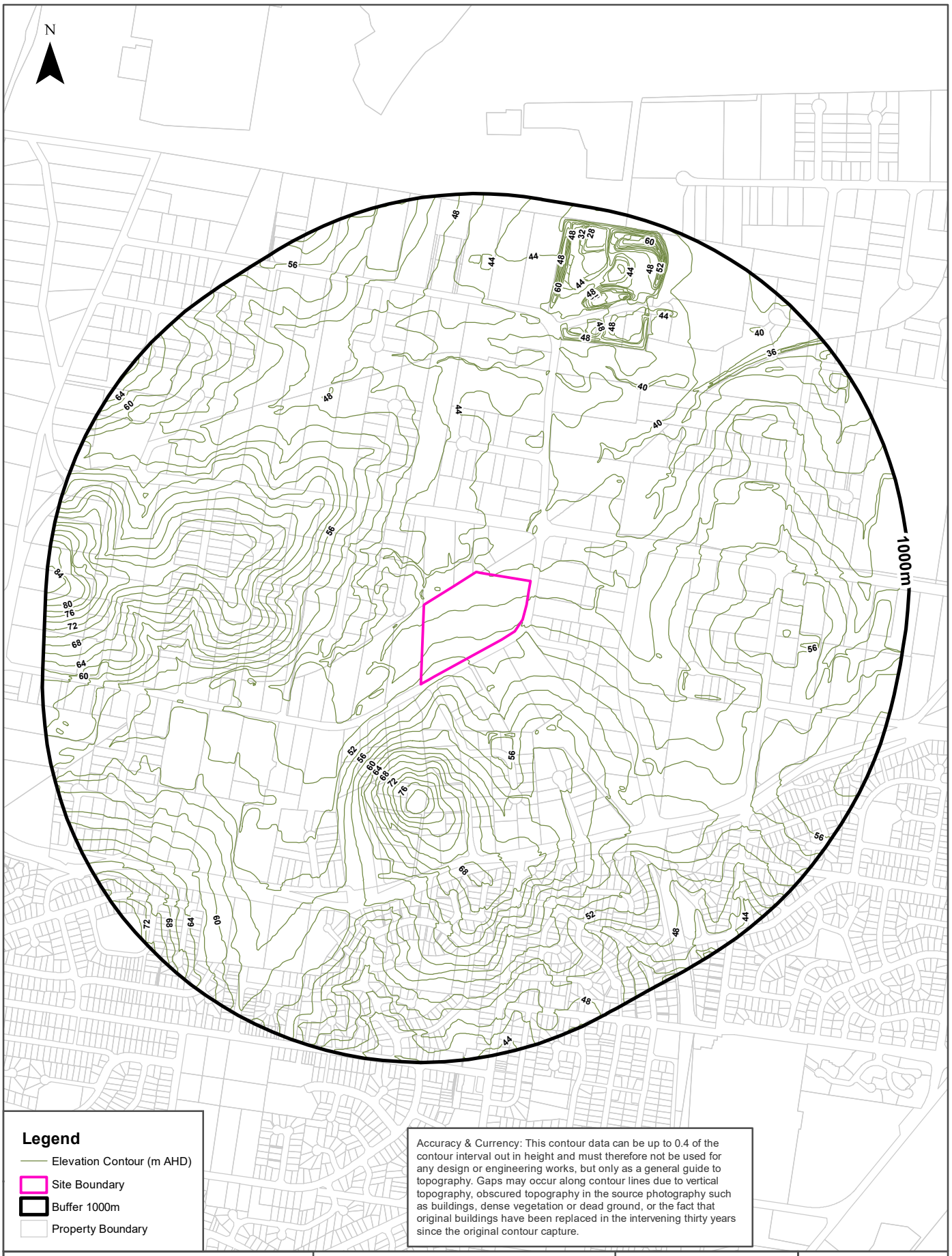
What NPWS Reserves exist within the dataset buffer?

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

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Elevation Contours (m AHD)

94 Newton Road, Wetherill Park, NSW 2164



Hydrogeology & Groundwater

94 Newton Road, Wetherill Park, NSW 2164

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)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

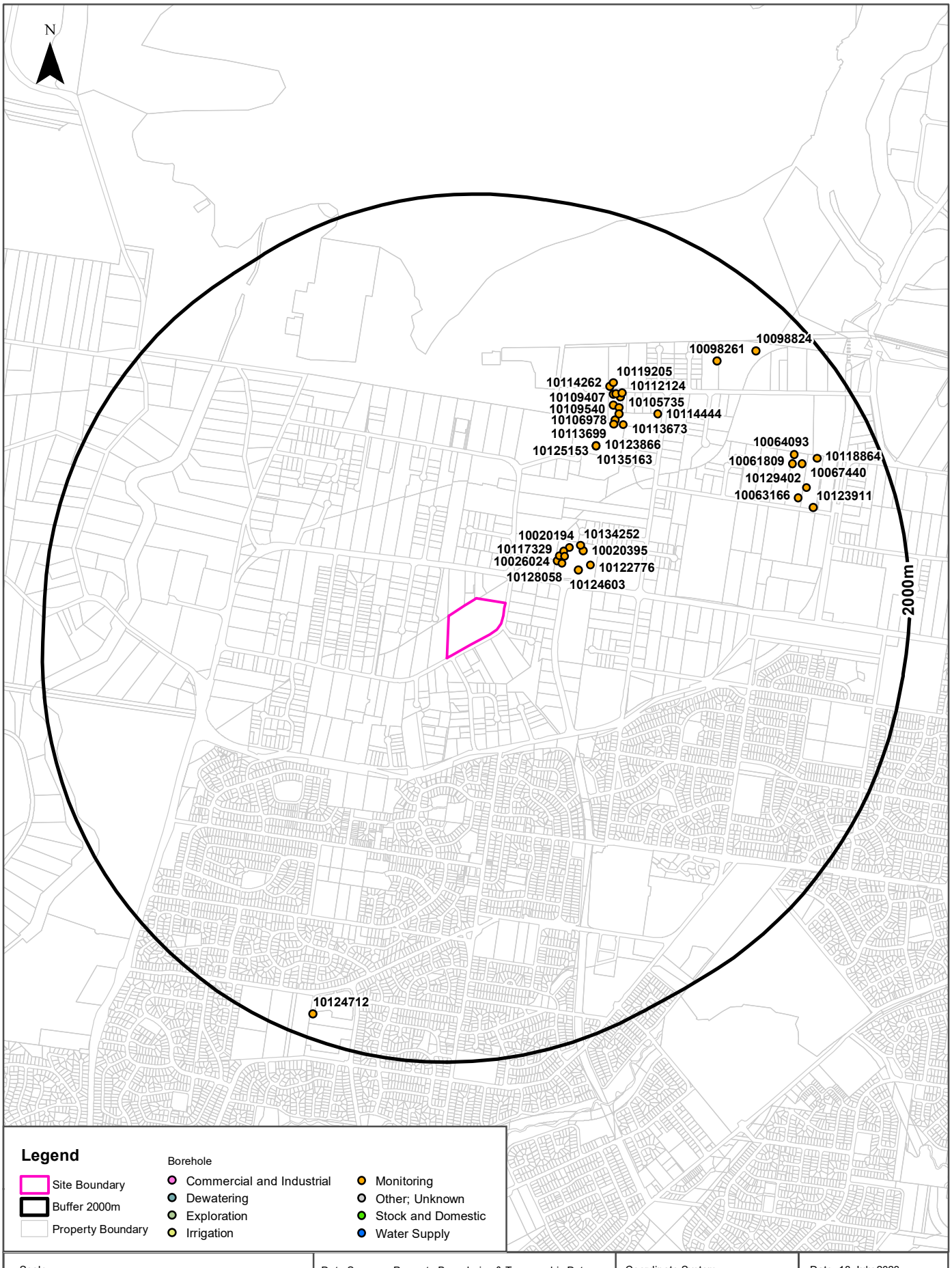
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

94 Newton Road, Wetherill Park, NSW 2164



Hydrogeology & Groundwater

94 Newton Road, Wetherill Park, NSW 2164

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
10026024	GW110070	Monitoring	Unknown	21/04/2009	5.10		AHD				332m	North East
10128058	GW110068	Monitoring	Unknown	10/01/2006	5.00		AHD				343m	North East
10117329	GW110069	Monitoring	Unknown	10/01/2006	3.90		AHD				354m	North East
10124729	GW110066	Monitoring	Unknown	09/01/2006	4.20		AHD				374m	North East
10120837	GW110067	Monitoring	Unknown	09/01/2006	4.20		AHD				387m	North East
10124603	GW110063	Monitoring	Unknown	09/01/2006	5.00		AHD				397m	North East
10020194	GW110071	Monitoring	Unknown	10/01/2006	5.10		AHD				419m	North East
10122776	GW110064	Monitoring	Unknown	10/01/2006	1.10		AHD				461m	North East
10020395	GW110072	Monitoring	Unknown	10/01/2006	4.00		AHD				463m	North East
10134252	GW110065	Monitoring	Unknown	09/01/2006	4.90		AHD				467m	North East
10123866	GW103824	Monitoring	Unknown	31/05/1993	15.00		AHD				898m	North East
10125153	GW103823	Monitoring	Unknown	31/05/1993	15.00		AHD				898m	North East
10135163	GW103822	Monitoring	Unknown	30/01/1993	9.00		AHD				898m	North East
10113699	GW115363	Monitoring	Functional	28/07/2005	7.00		AHD				1033m	North East
10106978	GW115364	Monitoring	Functional	01/08/2005	7.00		AHD				1054m	North East
10113673	GW115362	Monitoring	Functional	28/07/2005	6.00		AHD				1057m	North East
10120211	GW115366	Monitoring	Functional	28/07/2005	7.00		AHD				1092m	North East
10109540	GW115368	Monitoring	Functional	29/07/2005	7.20		AHD				1115m	North East
10112758	GW115367	Monitoring	Functional	29/07/2005	7.20		AHD				1118m	North East
10109407	GW115370	Monitoring	Functional	27/07/2005	10.20		AHD				1163m	North East
10105735	GW115369	Monitoring	Functional	01/08/2005	7.50		AHD				1165m	North East
10109623	GW115371	Monitoring	Functional	27/07/2005	10.20		AHD				1170m	North East
10112124	GW115372	Monitoring	Functional	27/07/2005	10.20		AHD				1189m	North East
10114262	GW115373	Monitoring	Functional	22/07/2005	10.00		AHD				1190m	North East
10114444	GW115365	Monitoring	Functional	28/07/2005	7.20		AHD				1202m	North East
10119205	GW115374	Monitoring	Functional	26/07/2005	5.50		AHD				1213m	North East
10063166	GW111880	Monitoring	Functional	23/04/2009	6.20		AHD				1540m	East
10061809	GW111879	Monitoring	Functional	23/04/2009	5.80		AHD				1579m	North East
10098261	GW111392	Monitoring	Functional	06/10/2010	6.00		AHD				1590m	North 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
10123911	GW105474	Monitoring	Unknown	10/06/2003	9.30		AHD				1596m	East
10129402	GW105475	Monitoring	Unknown	10/06/2003	9.50		AHD				1596m	East
10064093	GW111881	Monitoring	Functional	27/04/2009	6.50		AHD				1609m	North East
10067440	GW111878	Monitoring	Functional	23/04/2009	5.50		AHD				1624m	North East
10118864	GW105476	Monitoring	Unknown	10/06/2003	9.50		AHD				1700m	North East
10098824	GW111391	Monitoring	Functional	06/10/2010	6.00		AHD				1759m	North East
10124712	GW109046	Monitoring	Unknown	15/07/2008	240.00		AHD	8750	0.050		1883m	South

Borehole Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Hydrogeology & Groundwater

94 Newton Road, Wetherill Park, NSW 2164

Driller's Logs

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

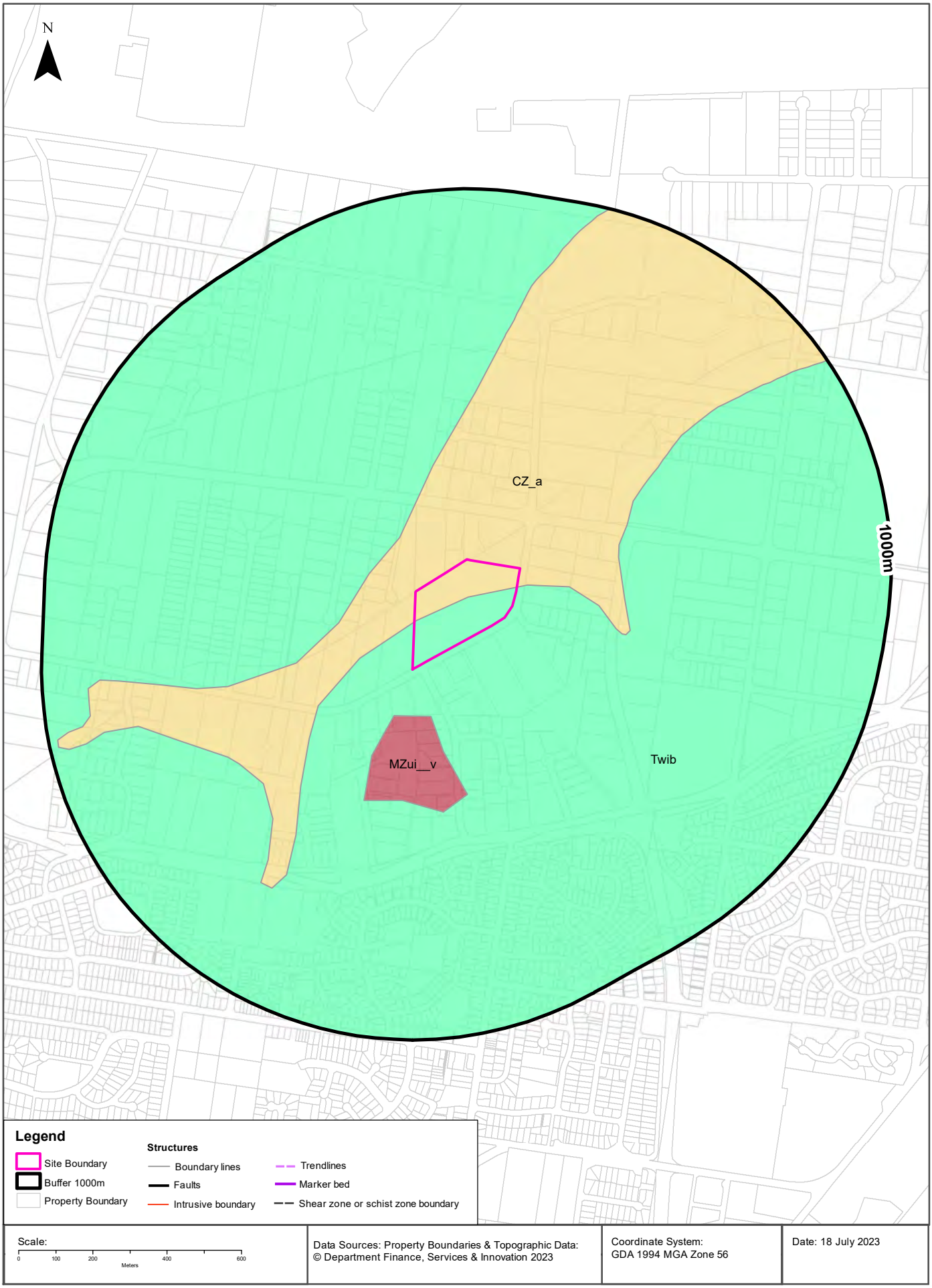
NGIS Bore ID	Drillers Log	Distance	Direction
10026024	0.00m-0.40m FILL,CRUSHED ROCK SHALE,SANDSTONE AND SOME CLAY, BROWN 0.40m-1.30m SANDY SILT (ALLUVIUM) BROWN,LOOSE,GRAVEL, DRY 1.30m-4.00m SILTY CLAY,BROWN,PLASTIC,FIRM,HOMOGENOUS,MOIST 4.00m-5.10m WEATHERED SHALE.CLAY,BROWN,HARD AND SOFT SECTIONS,MUDDY.	332m	North East
10128058	0.00m-1.50m SANDY SILT (ALLUVIUM) BROWN,WHITE GRAVEL,LOOSE,DRY 1.50m-3.00m SILTY CLAY BROWN,PLASTIC,FIRM, HOMOGENOUS,MOIST 3.00m-4.40m MATERIAL BECOMING FIRM,TRACE OF GRIT,L/BROWN,GREY 4.40m-5.00m WEATHERED SHALE,CLAY,BROWN,FIRM,BROWN-GREY,MOIST	343m	North East
10117329	0.00m-0.40m FILL,CRUSHED ROCK-SHALE,SANDSTONE,SOME CLAY BROWN 0.40m-3.00m SILTY CLAY,BROWN,PLASTIC,FIRM,HOMOGENOUS,MOIST 3.00m-3.80m MOIST,LIGHT BROWN SILTY CLAY,WET,MUDDY 3.80m-3.90m WEATHERED SHALE,CLAY,BROWN	354m	North East
10124729	0.00m-0.40m FILL,SANDY GRAVEL AND LOAM,BROWN,LOOSE,ROCK FRAGS.DRY 0.40m-1.50m SILTY CLAY BROWN,PLASTIC,FIRM HOMOGENOUS,DRY 1.50m-3.60m MATERIAL BECOMING VERY HARD,L/BROWN,GREY 3.60m-3.70m SOME IRONSTONE GRAVEL IN CLAY L/BROWN,MOIST 3.70m-4.20m WEATHERED SHALE,CLAY,BROWN HARD MOIST	374m	North East
10120837	0.00m-0.50m FILL,(ALLUVIUM) SANDY GRAVEL AND LOAM LOOSE,DRY,BROWN 0.50m-3.50m SANDY SILT,BROWN,SPECS,WHITE MEDIUM BROWN,DRY 3.50m-4.20m SILTY CLAY,BROWN,PLASTIC,FIRM,HOMOGENOUS,MOIST,IRONS./GRAVEL	387m	North East
10124603	0.00m-0.40m FILL, CRUSHED ROCK,SHALE,SANDSTONE,SOME CLAY,BROWN 0.40m-3.50m SILTY CLAY,BROWN,PLASTIC,FIRM HOMOGENOUS,MOIST 3.50m-4.50m MATERIAL BECOMING VERY HARD,NO ODOUR 4.50m-5.00m WEATHERED SHALE,CLAY,BROWN,SOME GREY WEAT.SHALE,GREY,	397m	North East
10020194	0.00m-0.20m FILL, CRUSHED ROCK-SHALE,SANDSTONE AND SOME CLAY.BROWN 0.20m-3.00m SANDY SILT,(ALLUVIUM) BROWN,LOOSE GRAVEL,LOOSE,DRY 3.00m-3.90m SILTY CLAY,BROWN,PLASTIC,FIRM, HOMOGENOUS,MOIST 3.90m-5.10m WEATHERED SHALE/CLAY,BROWN,HARD AND SOFT SECTIONS,MUDDY	419m	North East
10122776	0.00m-1.10m FILL,GRAVEL,LOAM,SAND,SOME CLAY BROWN,FIRM,MOIST	461m	North East
10020395	0.00m-0.10m FILL,CRUSHED ROCK,SHALE,SANDSTONE 0.10m-1.50m SILTY CLAY,BROWN PLASTIC,FIRM,HOMOGENOUS,MOIST 1.50m-2.60m MATERIAL BECOMING VERY HARD 2.60m-3.80m MINOR STONE GRAVEL 3.80m-4.00m WEATHERED SHALE/CLAY,BROWN,HARD,MOIST.	463m	North East
10134252	0.00m-0.60m FILL,SANDY LOAM,BROWN,SOME GRAVEL AND ROCK 0.60m-1.50m SILTY CLAY,BROWN,PLASTIC,FIRM,HOMOGENOUS,MOIST 1.50m-3.50m MATERIAL BECOMING VERY HARD,L/BROWN GREY 3.50m-4.90m SOME IRONSTONE GRAVEL,L/BROWN,WEATHERED SHALE,CLAY BROWN	467m	North East
10063166	0.00m-0.70m SILTY CLAY PALE BROWN 0.70m-1.20m SILTY CLAY,GREY 1.20m-2.00m BEDROCK WEATHERED,SILTY CLAY PURPLE/BROWN 2.00m-6.20m BEDROCK,CLAY,BROWN	1540m	East
10061809	0.00m-0.30m FILL,SAND PALE YELLOW/BROWN 0.30m-0.50m SILTY CLAY,PALE BROWN,WITH MINOR GREY,PLASTIC 0.50m-0.70m IRONSTONE LAYER,DARK RED,DRY 0.70m-2.00m SILTY CLAY,PALE BROWN,PLASTIC 2.00m-3.00m BEDROCK WEATHERED,GREY,VERY HARAD 3.00m-4.50m BEDROCK,SHALE,MEDIUM BROWN AND GREY 4.50m-5.70m BEDROCK SHALE,VERY HARD	1579m	North East
10098261	0.00m-1.00m FILL 1.00m-3.50m CLAY,RED BROWN,FIRM 3.50m-4.00m SAND,CLAYEY 4.00m-5.00m CLAY GRAVELLY,BROWN 5.00m-6.00m CLAY AND SHALE INTERBEDDED	1590m	North East
10123911	0.00m-9.30m SHALE, BROWN	1596m	East
10129402	0.00m-9.50m SHALE, BROWN	1596m	East
10064093	0.00m-0.50m FILL,SILTY LOAM,MINOR SILTY CLAY 0.50m-1.20m FILL,NO SILTY CLAY 1.20m-2.00m SILTY CLAY,RED/BROWN,PLASTIC,FIRM 2.00m-3.00m SILTY CLAY,RED/BROWN,STIFF,NO ODOUR 3.00m-5.00m BEDROCK WEATHERED,SILTY CLAY,LILGHT M/BROWN 5.00m-6.50m BEDROCK,SHALE,SILTY CLAY,BROWN/GREY	1609m	North East

NGIS Bore ID	Drillers Log	Distance	Direction
10067440	0.00m-0.20m FILL,DARK BROWN 0.20m-0.50m SILTY CLAY,RD/BROWN 0.50m-0.70m SILTY CLAY,DARK BROWN 0.70m-2.00m SILTY CLAY PALE BROWN/YELLOW 2.00m-3.00m CLAY GREY STIFF,DENSE 3.00m-5.00m SHALE/CLAY,WEATHERED BEDROCK,FREY 5.00m-5.50m BEDROCK SHALE,VERY HARD	1624m	North East
10098824	0.00m-1.40m FILL 1.40m-1.90m GRAVELLY CLAY ,BROWN 1.90m-3.50m CLAY,ORANGE,BROWN 3.50m-6.00m CLAY,BROWN,FIRM	1759m	North East
10124712	0.00m-2.00m CLAY 2.00m-4.50m SHALE BROWN 4.50m-15.00m SHALE GREY 15.00m-39.50m SHALE HARD 39.50m-40.00m SHALE SOFT 40.00m-58.10m SHALE FRACTURED 58.10m-111.00m SHALE HARD 111.00m-112.50m SANDSTONE SHALE BED. 112.50m-115.00m SHALE HARD 115.00m-130.00m SANDSTONE GREY 130.00m-130.50m SANDSTONE FINE QUARTZ 130.50m-136.00m SANDSTONE GREY 136.00m-139.00m SANDSTONE SHALE BED. 139.00m-172.00m SANDSTONE GREY 172.00m-172.40m SANDSTONE FINE QUARTZ 172.40m-182.00m SANDSTONE GREY 182.00m-182.50m SANDSTONE SHALE BED 182.50m-201.00m SANDSTONE GREY 201.00m-206.00m SANDSTONE SHALE BED 206.00m-224.50m SANDSTONE GREY 224.50m-225.00m SANDSTONE FINE QUARTZ 225.00m-240.00m SANDSTONE GREY	1883m	South

Drill Log Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Geology

94 Newton Road, Wetherill Park, NSW 2164



Geology

94 Newton Road, Wetherill Park, NSW 2164

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Twib	Bringelly Shale	Shale, carbonaceous claystone, laminite, lithic sandstone, rare coal.	/Wianamatta Group//Bringelly Shale//	Middle Triassic (base) to Middle Triassic (top)	Shale	0m
CZ_a	Alluvium	Unconsolidated alluvial clay, silt, sand, and gravel deposits.	/Alluvium////	Cenozoic (base) to Now (top)	Clastic sediment	0m
MZui__v	Ungrouped Mesozoic igneous units - breccia	Volcanic breccia, varying amounts of sedimentary breccia, and basalt.	/Ungrouped Mesozoic igneous units//Ungrouped Mesozoic igneous units - breccia//	Jurassic (base) to Cretaceous (top)	Undifferentiated breccia	126m

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				

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW
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Naturally Occurring Asbestos Potential

94 Newton Road, Wetherill Park, NSW 2164

Naturally Occurring Asbestos Potential

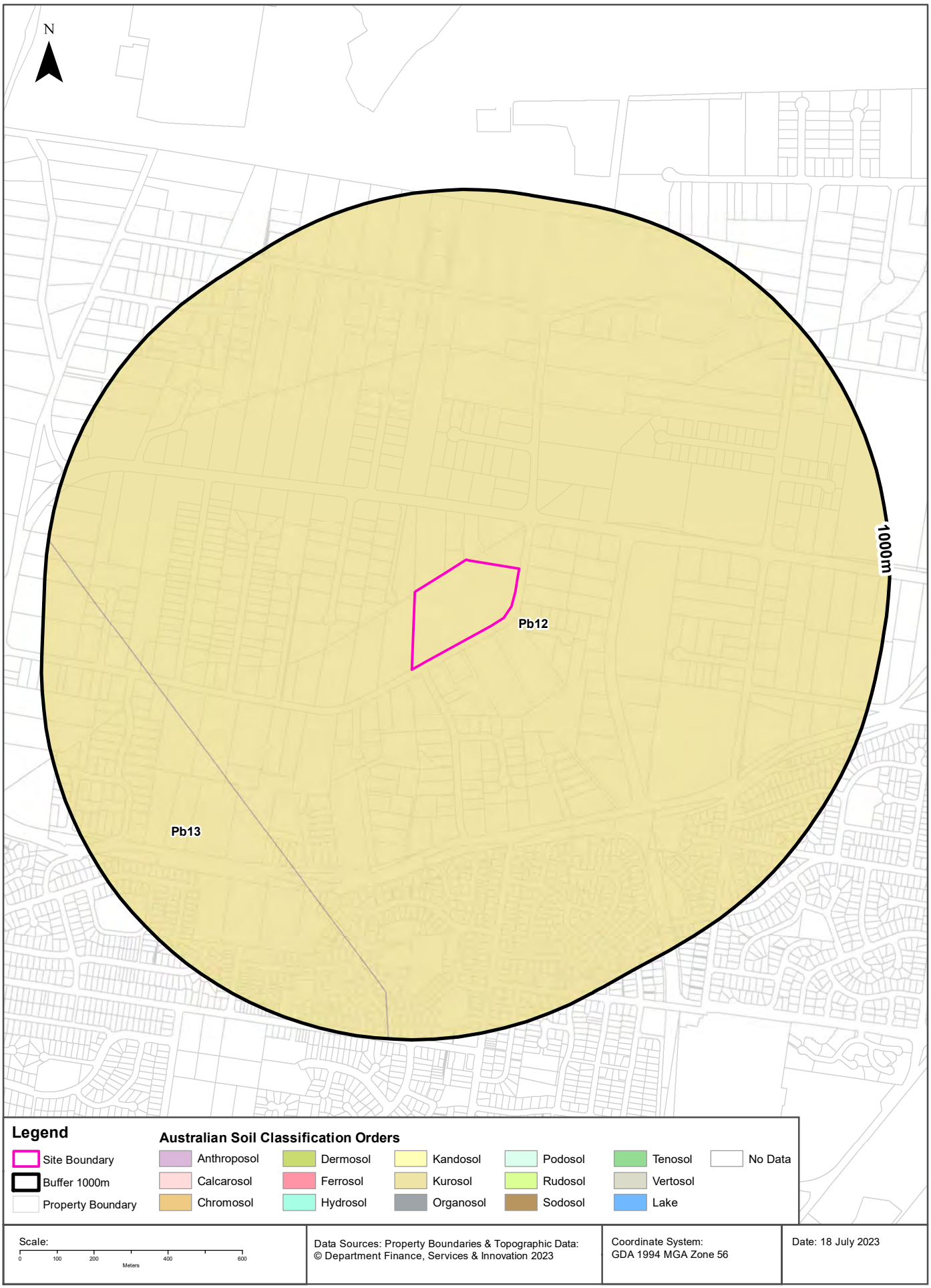
Naturally Occurring Asbestos Potential within the dataset buffer:

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

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

94 Newton Road, Wetherill Park, NSW 2164



Soils

94 Newton Road, Wetherill Park, NSW 2164

Atlas of Australian Soils

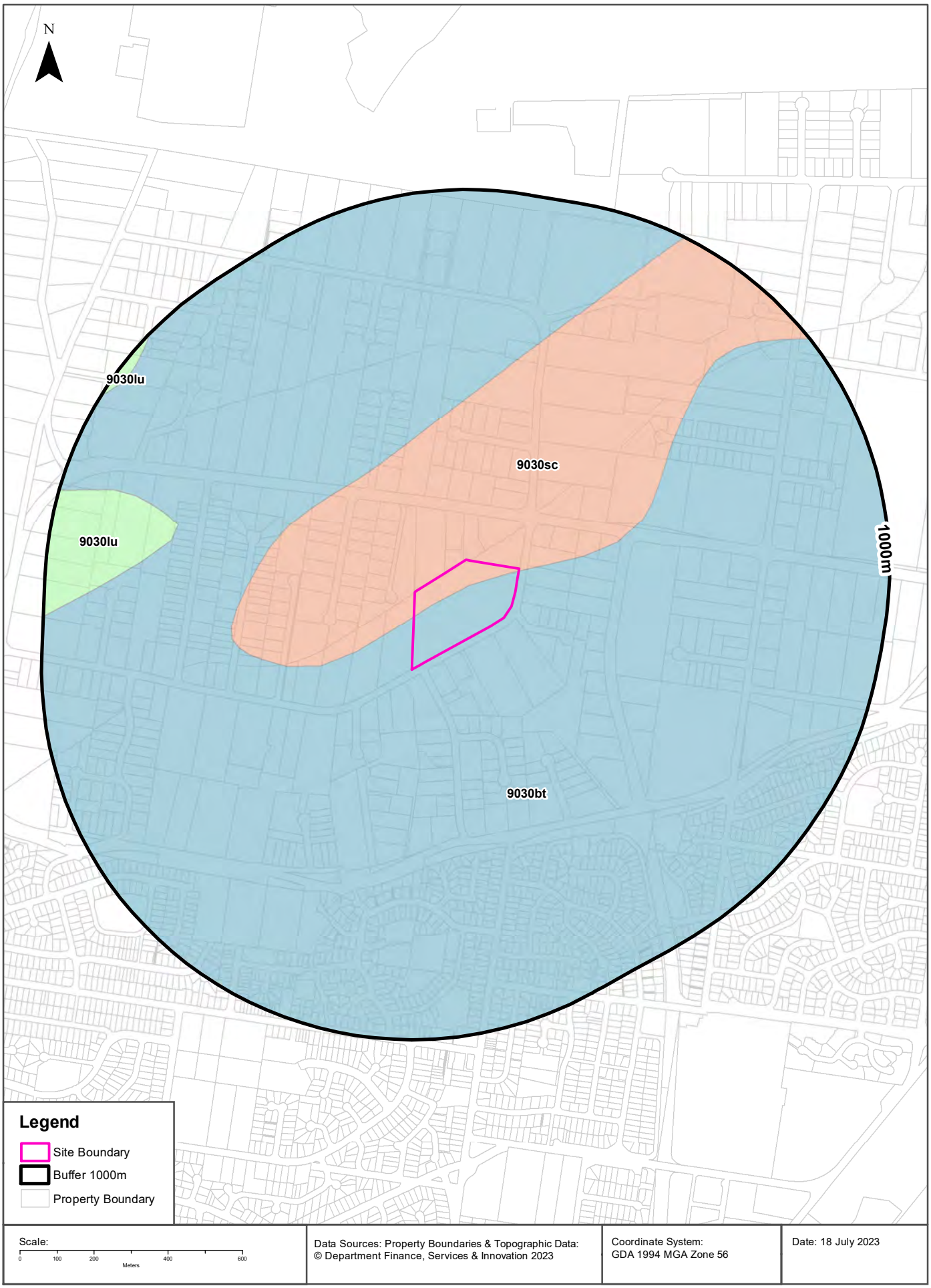
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Pb12	Kurosol	Gently rolling to rounded hilly country with some steep slopes and broad valleys: chief soils are hard acidic red soils (Dr2.21) with hard neutral and acidic yellow mottled soils (Dy3.42 and Dy3.41) on lower slopes and in valleys. Associated are small areas of various soils including (Gn3.54) on some ridges, (Dr3.31) on some slopes; (Dr2.23) in saddles and some mid-slope positions, and some low- lying swampy areas of (Uf6) soils and (Uc1.2) soils with peaty surfaces. Small areas of other soils such as (Db1.2) are likely throughout.	0m	On-site
Pb13	Kurosol	Ridge and valley country of gently undulating ridge tops and steep side slopes often with slumping, also rounded hilly to steep hilly areas and relatively narrow valleys: chief soils are hard acidic red soils (Dr2.21) with hard acidic yellow mottled soils (Dy3.41); in places some ironstone gravels occur in both these soils. Associated are hard neutral and alkaline red soils (Dr2.22 and Dr2.23) in saddles and some mid-slope positions; (Dy3.42 and Dy3.43) soils, usually in depressions; and small areas of undescribed soils in wet soaks and valley areas. Small areas of other soils are likely throughout.	578m	South West

Atlas of Australian Soils Data Source: CSIRO
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Soil Landscapes of Central and Eastern NSW

94 Newton Road, Wetherill Park, NSW 2164



Soils

94 Newton Road, Wetherill Park, NSW 2164

Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9030bt	Blacktown	0m	On-site
9030sc	South Creek	0m	On-site
9030lu	Luddenham	666m	West

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
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Acid Sulfate Soils

94 Newton Road, Wetherill Park, NSW 2164

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		

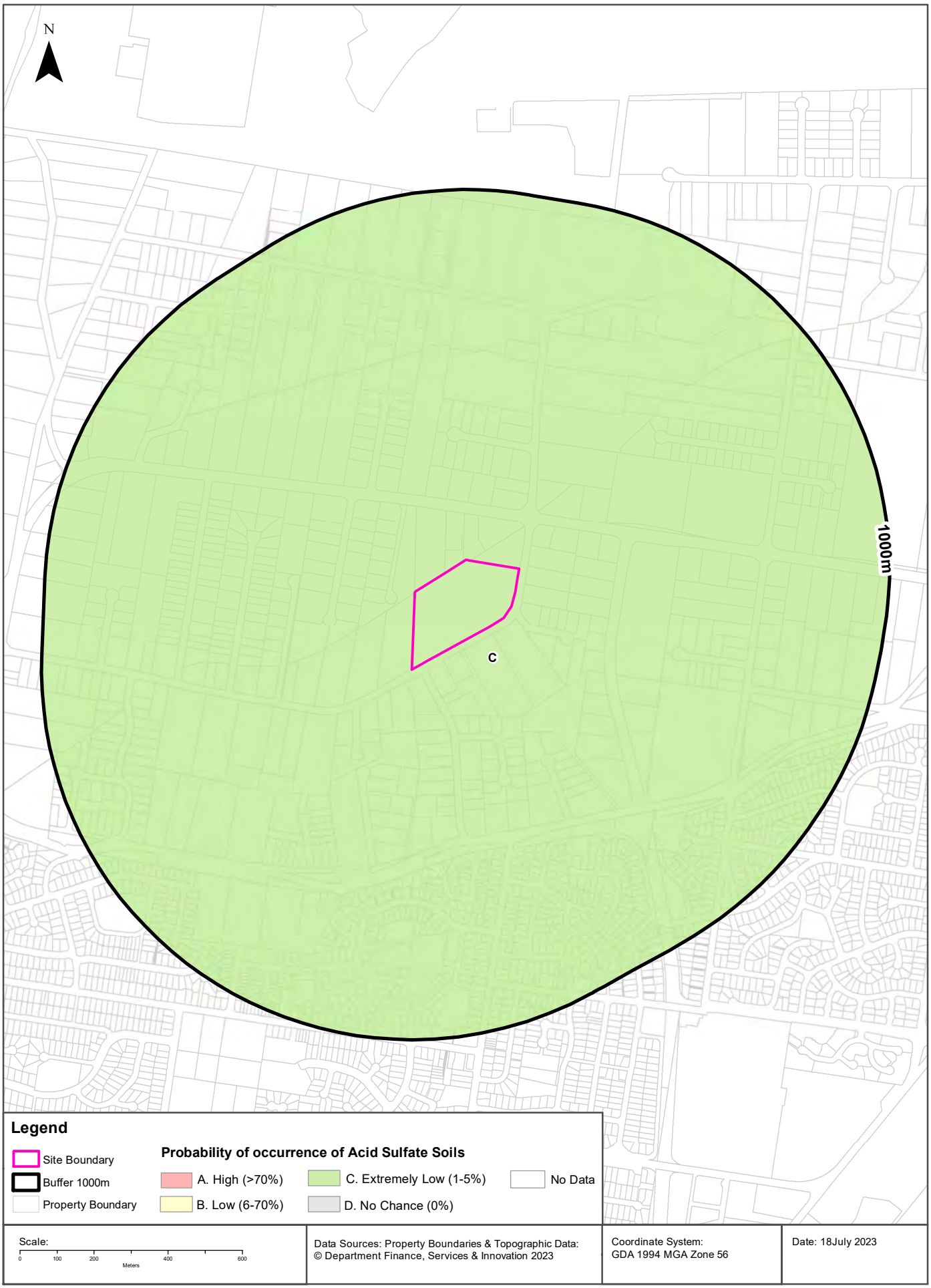
If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Atlas of Australian Acid Sulfate Soils

94 Newton Road, Wetherill Park, NSW 2164



Acid Sulfate Soils

94 Newton Road, Wetherill Park, NSW 2164

Atlas of Australian Acid Sulfate Soils

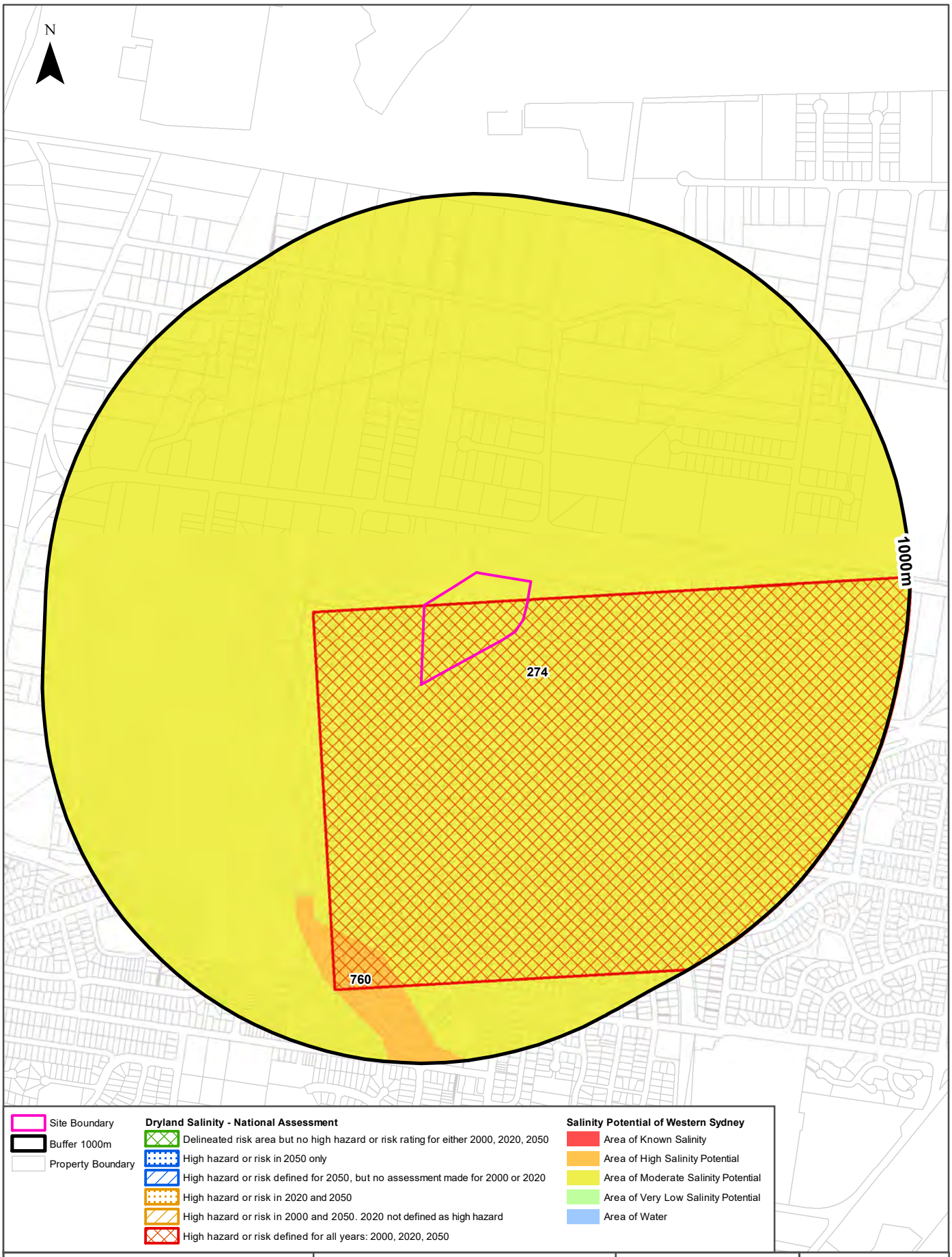
Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Dryland Salinity

94 Newton Road, Wetherill Park, NSW 2164



Dryland Salinity

94 Newton Road, Wetherill Park, NSW 2164

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.

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
274	MODERATE	Area of Moderate Salinity Potential	0m	On-site
760	HIGH	Area of High Salinity Potential	627m	South

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage
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Mining

94 Newton Road, Wetherill Park, NSW 2164

Mining Subsidence Districts

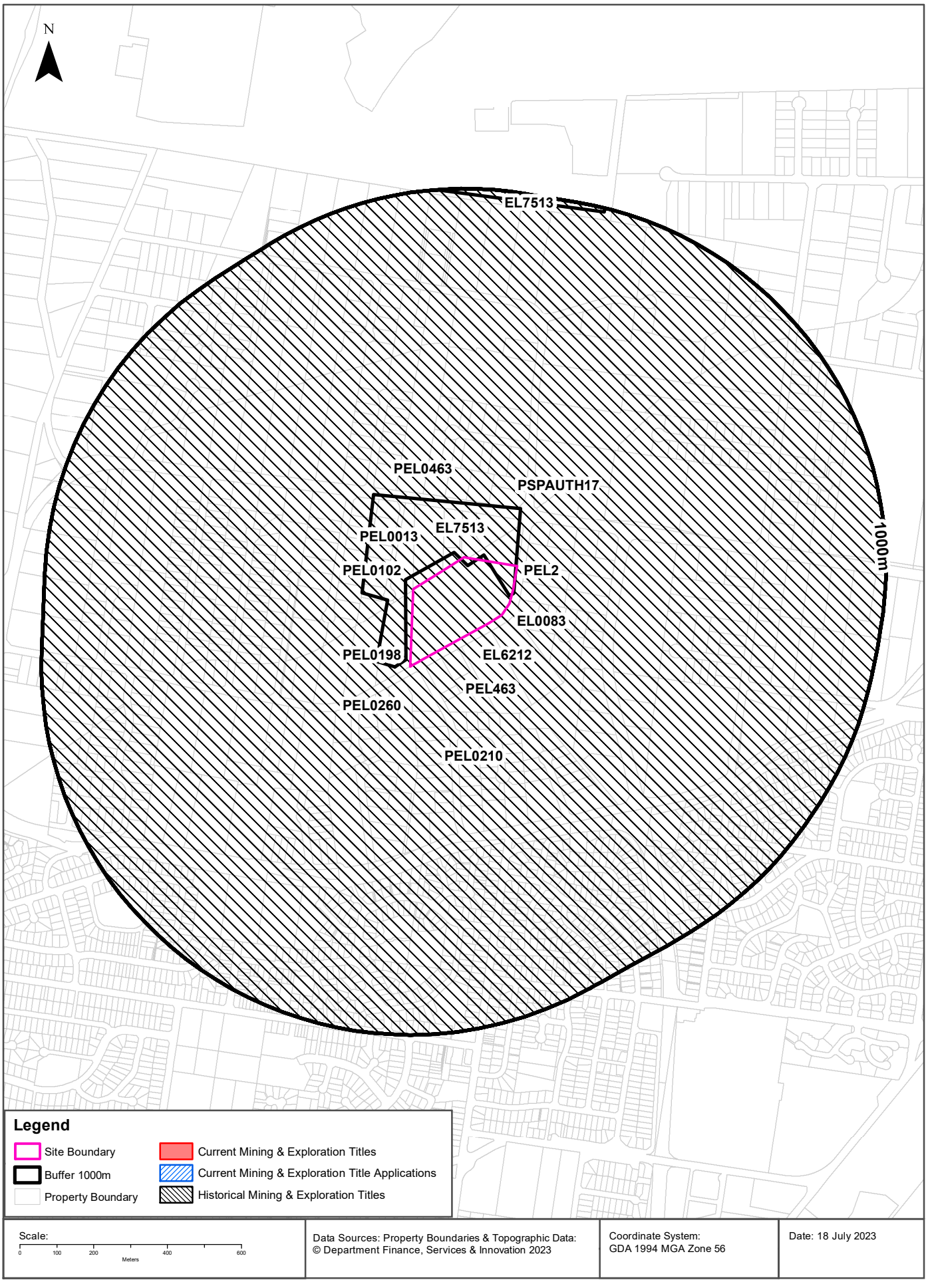
Mining Subsidence Districts within the dataset buffer:

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

Mining Subsidence District Data Source: © Land and Property Information (2016)
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Mining & Exploration Titles

94 Newton Road, Wetherill Park, NSW 2164



Mining

94 Newton Road, Wetherill Park, NSW 2164

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

94 Newton Road, Wetherill Park, NSW 2164

Historical Mining & Exploration Titles

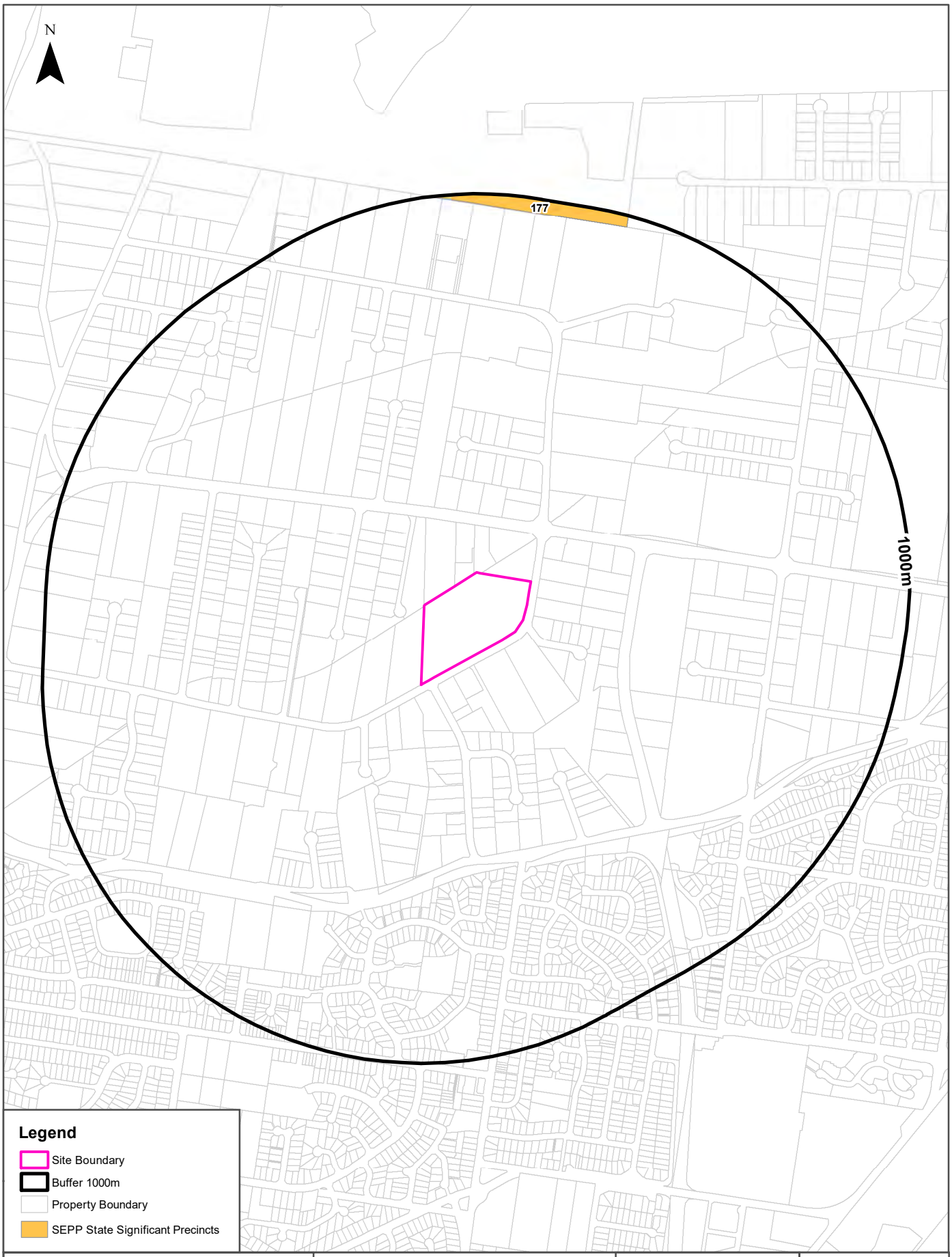
Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PSPAUTH17	MACQUARIE ENERGY PTY LTD	20070803	20080703	PETROLEUM	Petroleum	0m	On-site
PEL0198	JOHN STREVENS (TERRIGAL) NL			PETROLEUM	Petroleum	0m	On-site
PEL0210	THE AUSTRALIAN GAS LIGHT COMPANY (AGL), NORTH BULLI COLLIERIES PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL2	AGL UPSTREAM INVESTMENTS PTY LIMITED	20000120	20001108	MINERALS		0m	On-site
PEL0260	NORTH BULLI COLLIERIES PTY LTD, AGL PETROLEUM OPERATIONS PTY LTD, THE AUSTRALIAN GAS LIGHT CO.	19810909	19930803	PETROLEUM	Petroleum	0m	On-site
PEL0463	DART ENERGY (APOLLO) PTY LTD	20091010	20150603	PETROLEUM	Petroleum	0m	On-site
PEL0013	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0102	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
EL0083	CONTINENTAL OIL CO OF AUSTRALIA LIMITED	19670201	19680201	MINERALS		0m	On-site
PEL463	DART ENERGY (APOLLO) PTY LTD	20081022	20130227	MINERALS		0m	On-site
EL6212	HOT ROCK ENERGY PTY LTD,LONGREACH OIL LIMITED	20040304	20130303	MINERALS	Geothermal	0m	On-site
EL7513	GRADIENT ENERGY LIMITED	20100407	20110415	MINERALS	Geothermal	0m	On-site

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

SEPP State Significant Precincts

94 Newton Road, Wetherill Park, NSW 2164



State Environmental Planning Policy

94 Newton Road, Wetherill Park, NSW 2164

State Significant Precincts

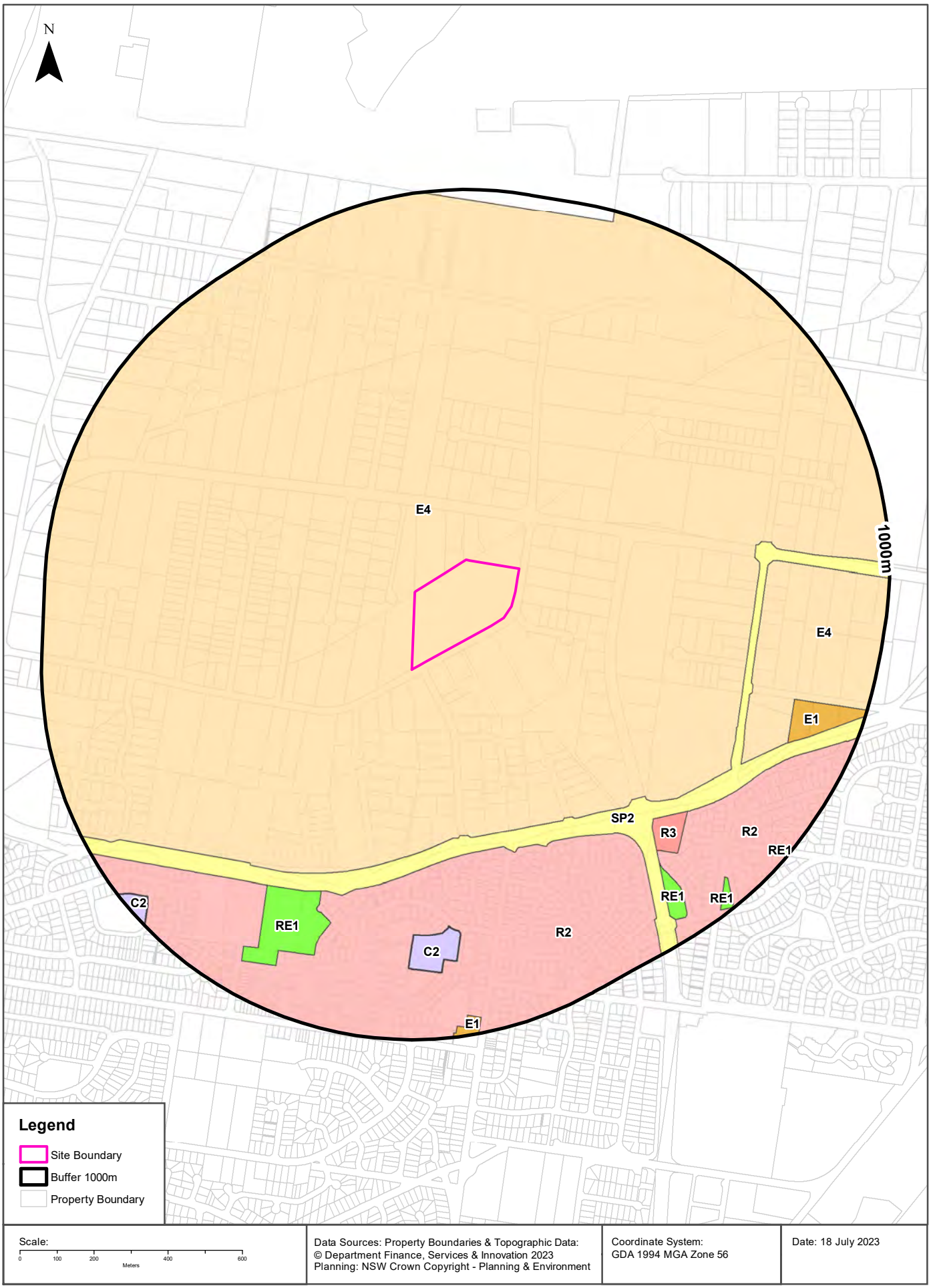
What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
177		State Environmental Planning Policy (Precincts - Western Parkland City) 2021	02/12/2021	01/03/2022	25/03/2022		962m	North

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment
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EPI Planning Zones

94 Newton Road, Wetherill Park, NSW 2164



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023
Planning: NSW Crown Copyright - Planning & Environment

Coordinate System:
GDA 1994 MGA Zone 56

Date: 18 July 2023

Environmental Planning Instrument

94 Newton Road, Wetherill Park, NSW 2164

Land Zoning

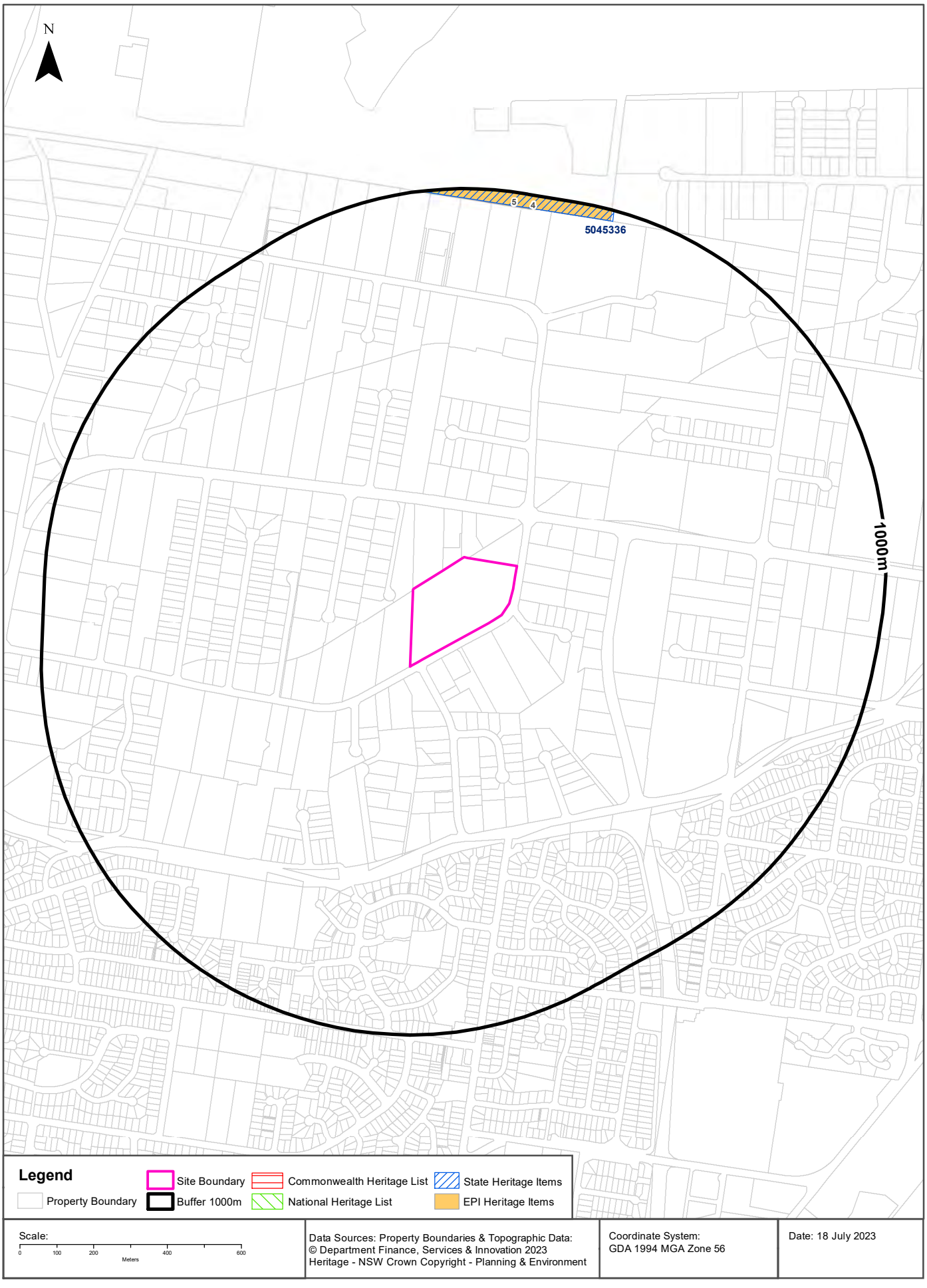
What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
E4	General Industrial		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	0m	On-site
SP2	Infrastructure	Classified Road	Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	468m	South East
R2	Low Density Residential		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	519m	South
RE1	Public Recreation		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	647m	South West
E4	General Industrial		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	661m	East
R3	Medium Density Residential		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	675m	South East
C2	Environmental Conservation		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	699m	South
R2	Low Density Residential		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	720m	South East
RE1	Public Recreation		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	773m	South East
E1	Local Centre		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	801m	East
RE1	Public Recreation		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	919m	South East
C2	Environmental Conservation		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	942m	South West
E1	Local Centre		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	946m	South
RE1	Public Recreation		Fairfield Local Environmental Plan 2013	28/04/2023	28/04/2023	28/04/2023	Map Amendment No 5	968m	South East

Environmental Planning Instrument Data Source: NSW Crown Copyright - Planning & Environment
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Heritage Items

94 Newton Road, Wetherill Park, NSW 2164



Heritage

94 Newton Road, Wetherill Park, NSW 2164

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
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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
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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
5045336	Prospect Reservoir and surrounding area	Reservoir Road, Prospect	BLACKTOWN	18/11/1999	01370	2144	963m	North

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

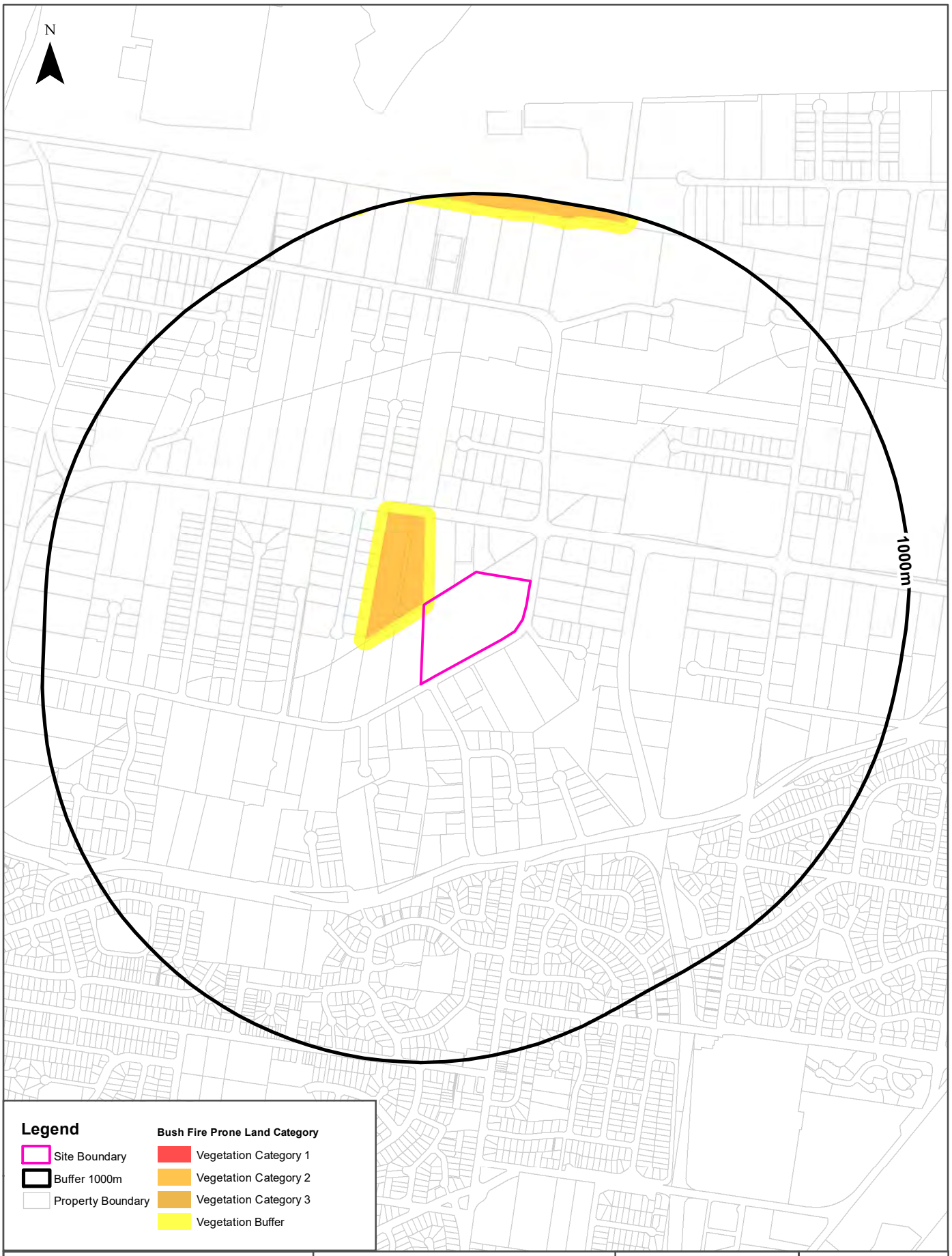
What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
5	Spotted Gum forest	Conservation Area - General	Local	State Environmental Planning Policy (Precincts?Western Parkland City) 2021	02/12/2021	01/03/2022	25/03/2022	962m	North
4	Prospect Reservoir and surrounding area	Item - Landscape	State	State Environmental Planning Policy (Precincts?Western Parkland City) 2021	02/12/2021	01/03/2022	25/03/2022	962m	North

Heritage Data Source: NSW Crown Copyright - Planning & Environment
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Natural Hazards - Bush Fire Prone Land

94 Newton Road, Wetherill Park, NSW 2164



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2023. Property Boundaries: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 18 July 2023

Natural Hazards

94 Newton Road, Wetherill Park, NSW 2164

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
Vegetation Buffer	0m	On-site
Vegetation Category 2	7m	North West

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints - Vegetation & Ramsar Wetlands

94 Newton Road, Wetherill Park, NSW 2164



Site Boundary
ReportBuffer
Property Boundary
Ramsar Wetland

Native Vegetation

Alpine Complex
Arid Shrublands (Acacia sub-formation)
Arid Shrublands (Chenopod sub-formation)
Dry Sclerophyll Forests (Shrub/grass sub-formation)
Dry Sclerophyll Forests (Shrubby sub-formation)
Forested Wetlands
Freshwater Wetlands
Grasslands
Grassy Woodlands
Heathlands
Rainforests
Saline Wetlands
Semi-arid Woodlands (Grassy sub-formation)
Semi-arid Woodlands (Shrubby sub-formation)
Wet Sclerophyll Forests (Grassy sub-formation)
Wet Sclerophyll Forests (Shrubby sub-formation)
Non vegetated
Unattributed
Not classified
Other

Scale: 0 100 200 400 600 Meters

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

Coordinate System: GDA 1994 MGA Zone 56

Date: 18 July 2023

Ecological Constraints

94 Newton Road, Wetherill Park, NSW 2164

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
2963952	Not classified	(Not classified) Not classified	Not classified	0m	On-site
2849527	Grassy Woodlands	(Grassy Woodlands) Cumberland Shale Plains Woodland	Coastal Valley Grassy Woodlands	142m	South West
3112509	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Castlereagh Ironbark Forest	Cumberland Dry Sclerophyll Forests	705m	North

Native Vegetation Type Map : NSW Department of Planning and Environment 2022
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Ramsar Wetlands

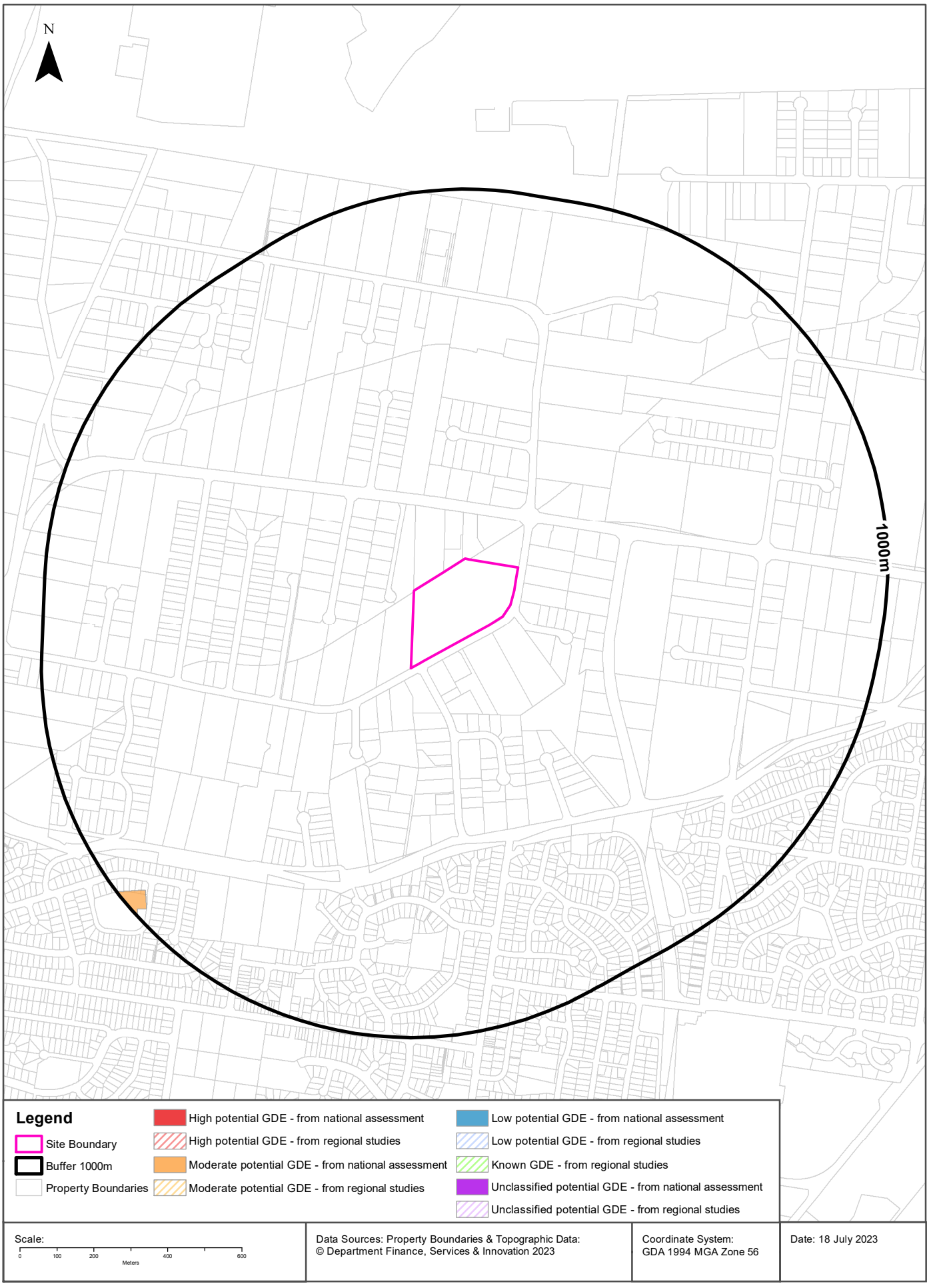
What Ramsar Wetland areas exist within the dataset buffer?

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

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

94 Newton Road, Wetherill Park, NSW 2164



Ecological Constraints

94 Newton Road, Wetherill Park, NSW 2164

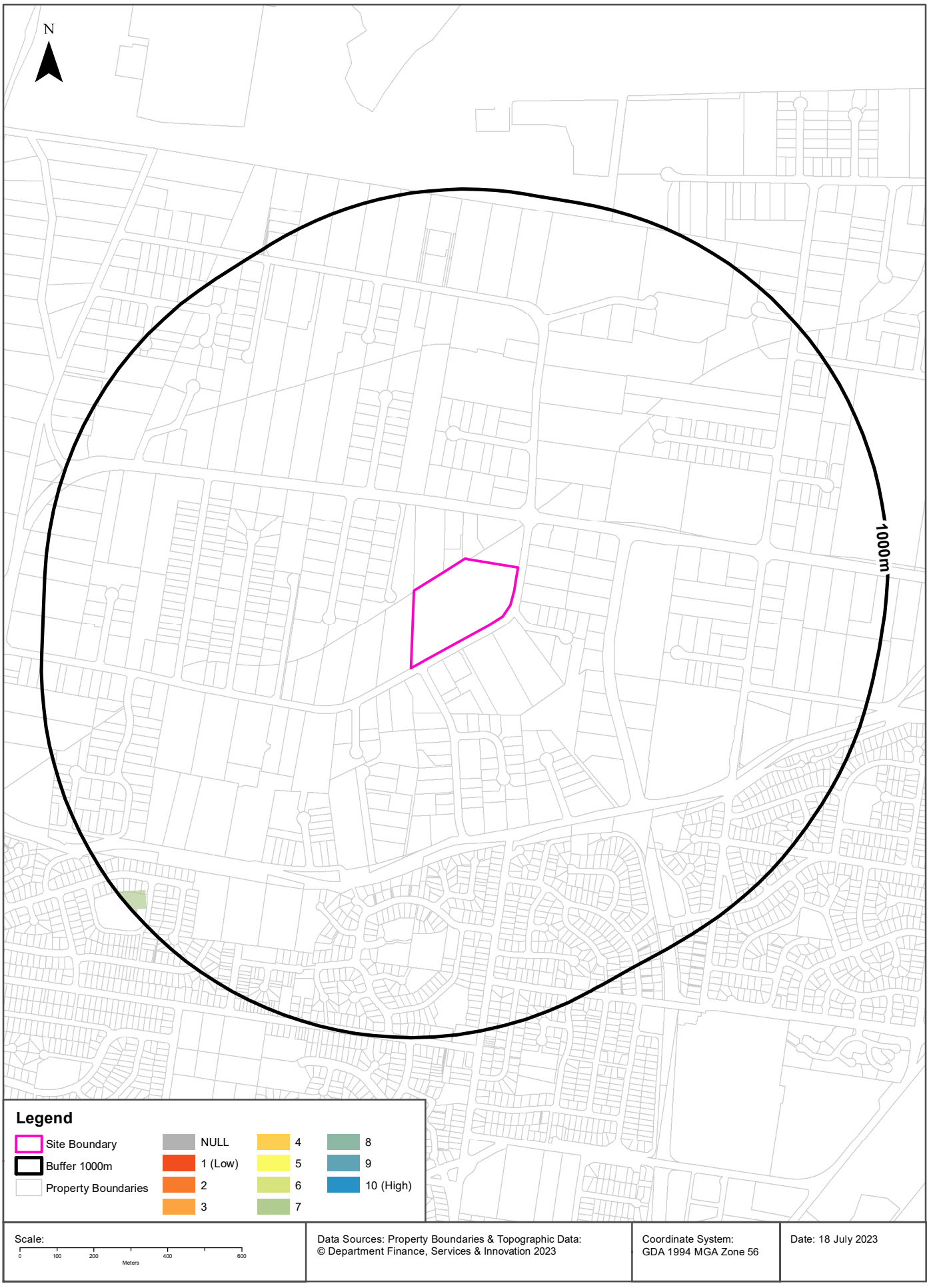
Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Moderate potential GDE - from national assessment	Undulating to low hilly country, mainly on shale.	Vegetation	Consolidated sedimentary	937m	South West

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints - Inflow Dependent Ecosystems Likelihood

94 Newton Road, Wetherill Park, NSW 2164



Ecological Constraints

94 Newton Road, Wetherill Park, NSW 2164

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	7	Undulating to low hilly country, mainly on shale.	Vegetation	Consolidated sedimentary	937m	South West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Ecological Constraints

94 Newton Road, Wetherill Park, NSW 2164

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	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Category 2	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Endangered	
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	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	Geophaps scripta scripta	Squatter Pigeon (southern subspecies)	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
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	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Todiramphus chloris	Collared Kingfisher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Gastropoda	Meridolum corneovirens	Cumberland Plain Land Snail	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aspidites ramsayi	Woma	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Argyrotegium nitidulum	Shining Cudweed	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Cynanchum elegans	White-flowered Wax Plant	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Dillwynia tenuifolia		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Dillwynia tenuifolia		Endangered Population, Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Diuris aequalis	Buttercup Doubletail	Endangered	Category 2	Vulnerable	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Marsdenia viridiflora subsp. viridiflora	Native Pear	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Persoonia nutans	Nodding Geebung	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Pilularia novae-hollandiae	Austral Pillwort	Endangered	Category 3	Not Listed	
Plantae	Flora	Pimelea curviflora var. curviflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Pimelea spicata	Spiked Rice-flower	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Pomaderris brunnea	Brown Pomaderris	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Pterostylis saxicola	Sydney Plains Greenhood	Endangered	Category 2	Endangered	
Plantae	Flora	Pultenaea parviflora		Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Pultenaea pedunculata	Matted Bush-pea	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

NSW BioNet: © State of NSW and Office of Environment and Heritage

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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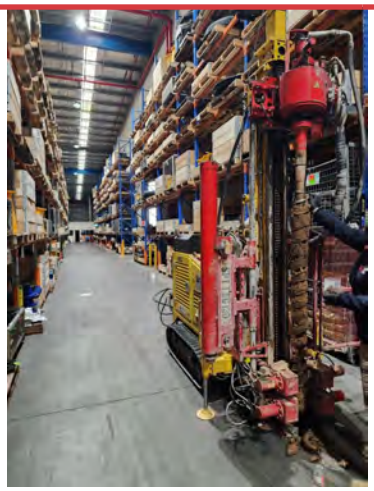
Appendix B
SITE PHOTOGRAPHS

Privileged and Confidential
EP Risk Management Pty Ltd

EP3206 - WETHERILL PARK DSI

Tuesday, 31 October 2023

5 photos taken



INSIDE WAREHOUSE BOREHOLE LOCATION BH28



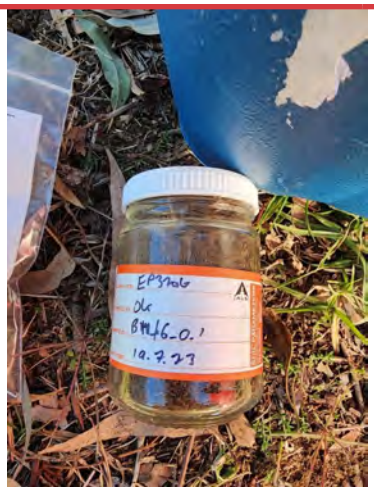
SAMPLE LOCATION BH02_5.0



SITE WESTERN EXTENT - FACING NORTH



SOUTH EASTERN PORTION OF THE SITE. BONDED NON FRIABLE ACM IDENITFIED AT THE SURFACE



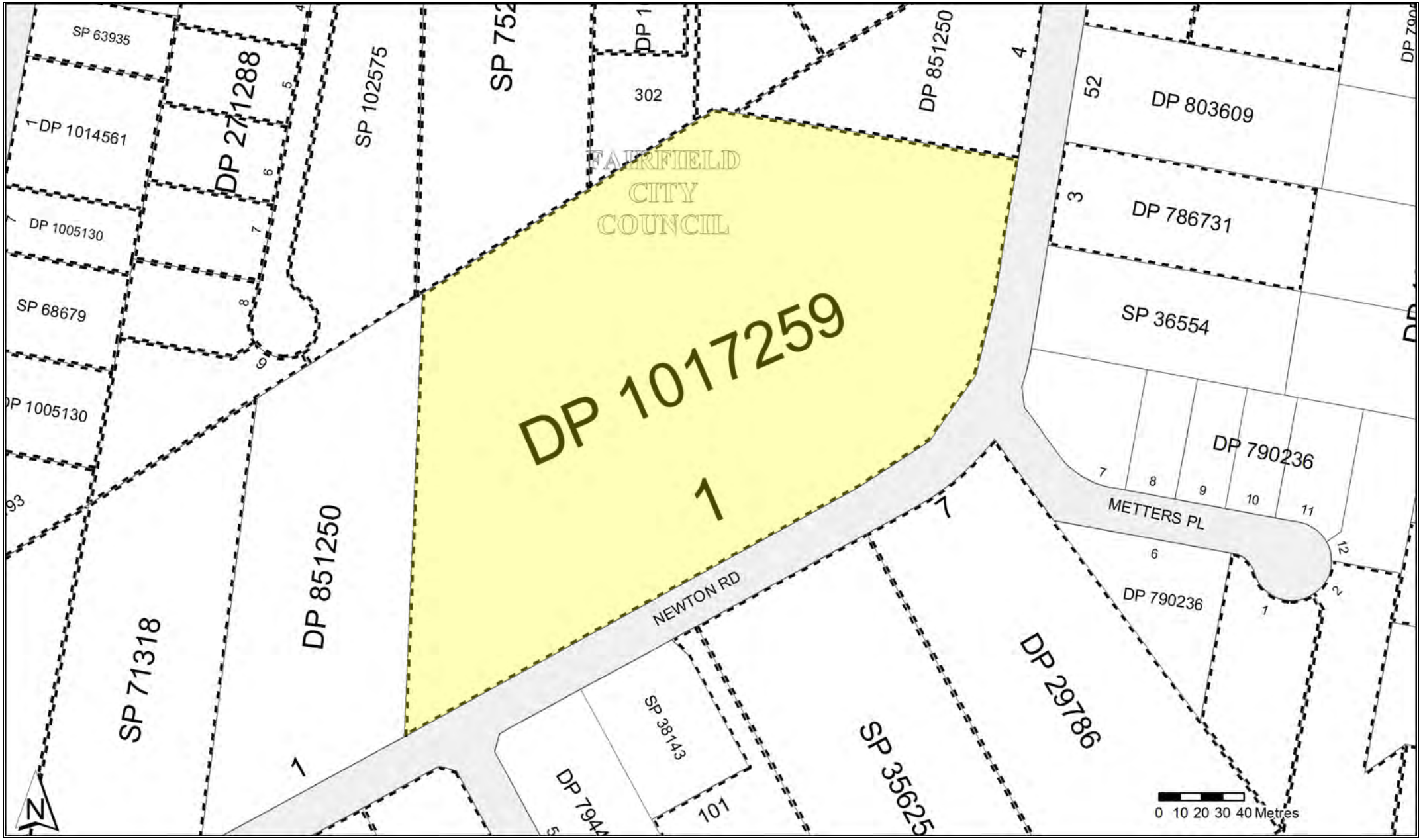
SAMPLE LOCATION BH16_0.1

Appendix C
HISTORICAL TITLE SEARCH

Cadastral Records Enquiry Report : Lot 1 DP 1017259

Ref : 94 Newton Road, Wetherill Park

Locality : WETHERILL PARK
Parish : ST LUKE
LGA : FAIRFIELD
County : CUMBERLAND



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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 AND SEALS ONLY.

COMMON SEAL — CONSOLIDATED PAPER INDUSTRIES PTY. LTD. A.C.N. 005 190 036

Signed by Australia and New Zealand Banking Group Limited by its Attorney

Brian Mills.

Who hereby states at the time of execution, has no notice of revocation of the Power of Attorney Registered 9/10/1992 Page 279 Bk 4615

Witnessed by Joanne Edmonds

EXECUTED PURSUANT TO THE CORPORATIONS LAW BY SHELLEY-ANN PEARCE AND NOMINEES LTD (ACN 091336793)

(DIRECTOR)

(SECRETARY)

Signed for SYDNEY WATER CORPORATION by its Attorneys

Stephen Raymond Cox

Jeffrey Francis Colonso

who hereby state at the time of executing this instrument have no notice of revocation of the Power of Attorney Registered No.116 Book 4271 under the Authority of which this instrument has been executed.

Attorney

Attorney

Signature of witness

KENNETH JOHN WHITE

Name of witness

C/- SYDNEY WATER

115-123 BATHURST STREET

Address of witness SYDNEY

Crown Lands Office Approval

PLAN APPROVED .....

Authorised Officer

Land District .....

Paper No. .....

Field Book ..... pages .....

SUBDIVISION CERTIFICATE

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

..... set out herein

..... * (insert "subdivision" or "new road")

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

Consent Authority: .....

Date of Endorsement: .....

Accreditation No. .....

Subdivision Certificate No. .....

File No. .....

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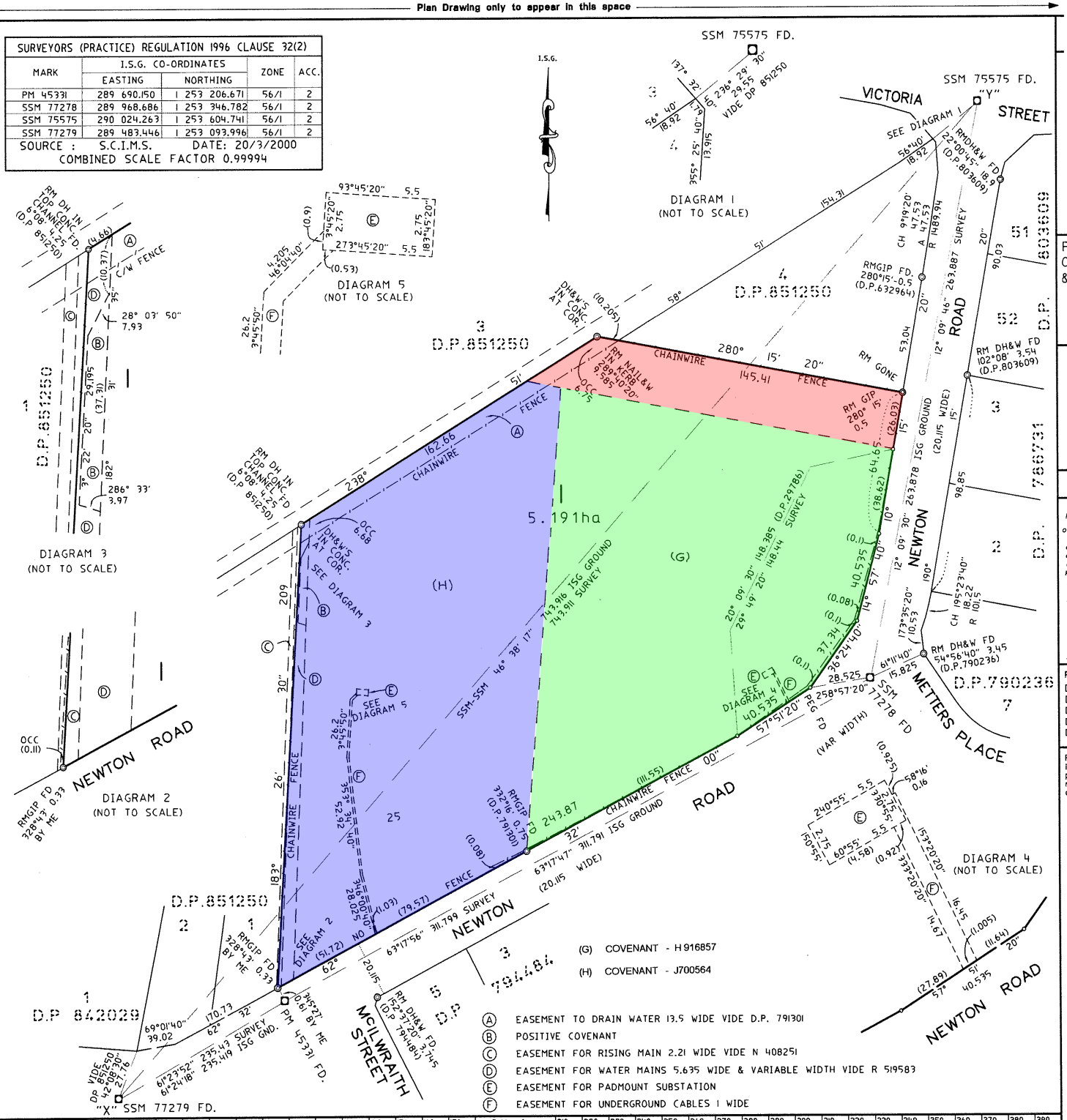
* Delete whichever is inapplicable.

SURVEYOR'S REFERENCE: 27603DP1/2 CHECKLIST REPORT

SURVEYORS (PRACTICE) REGULATION 1996 CLAUSE 32(2)				
MARK	I.S.G. CO-ORDINATES EASTING	I.S.G. CO-ORDINATES NORTHING	ZONE	ACC.
PM 45331	289 690.150	1 253 206.671	56/1	2
SSM 77278	289 968.686	1 253 346.782	56/1	2
SSM 75575	290 024.263	1 253 604.741	56/1	2
SSM 77279	289 483.446	1 253 093.996	56/1	2

SOURCE : S.C.I.M.S. DATE: 20/3/2000

COMBINED SCALE FACTOR 0.99994



- (A) EASEMENT TO DRAIN WATER 13.5 WIDE VIDE D.P. 791301
- (B) POSITIVE COVENANT
- (C) EASEMENT FOR RISING MAIN 2.2I WIDE VIDE N 408251
- (D) EASEMENT FOR WATER MAINS 5.635 WIDE & VARIABLE WIDTH VIDE R 519583
- (E) EASEMENT FOR PADMOUNT SUBSTATION
- (F) EASEMENT FOR UNDERGROUND CABLES 1 WIDE

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ORIGINAL

DP1017259

Registered: 7-9-2001

C.A: .....

Title System : TORRENS

Purpose : CONSOLIDATION

Ref. Map : U 8252 - 9 #

Last Plan : DP 29786 , DP 791301

PLAN OF CONSOLIDATION OF LOT 2 IN D.P. 791301 & LOT 32 IN D.P. 29786

Lengths are in metres. Reduction Ratio 1: 1250

L.G.A. FAIRFIELD

Locality WETHERILL PARK

Parish ST.LUKE

County CUMBERLAND

This is sheet 1 of my plan in 2 sheets (Delete if inapplicable)

Surveyors (Practice) Regulation 1996

I, PAUL LEONARD GARRETT

of DEGOTARDI SMITH AND PARTNERS 11/19-23 BRIDGE STREET, PYMBLE

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 12 APRIL 2000

This survey relates to LOT 1

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

Datum Line : "X"-"Y"

(Signature) Paul Garrett

Zone: Suburban/Country

Surveyor registered under the Surveyors Act, 1929.

Plans used in preparation of survey/compilation

DP 29786	DP 791301	DP 870406
DP 220972	DP 794484	DP 883433
DP 556397	DP 803609	
DP 786731	DP 842029	
DP 790236	DP 851250	

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. POSITIVE COVENANT
2. EASEMENT FOR PADMOUNT SUBSTATION
3. EASEMENT FOR UNDERGROUND CABLES 1 WIDE

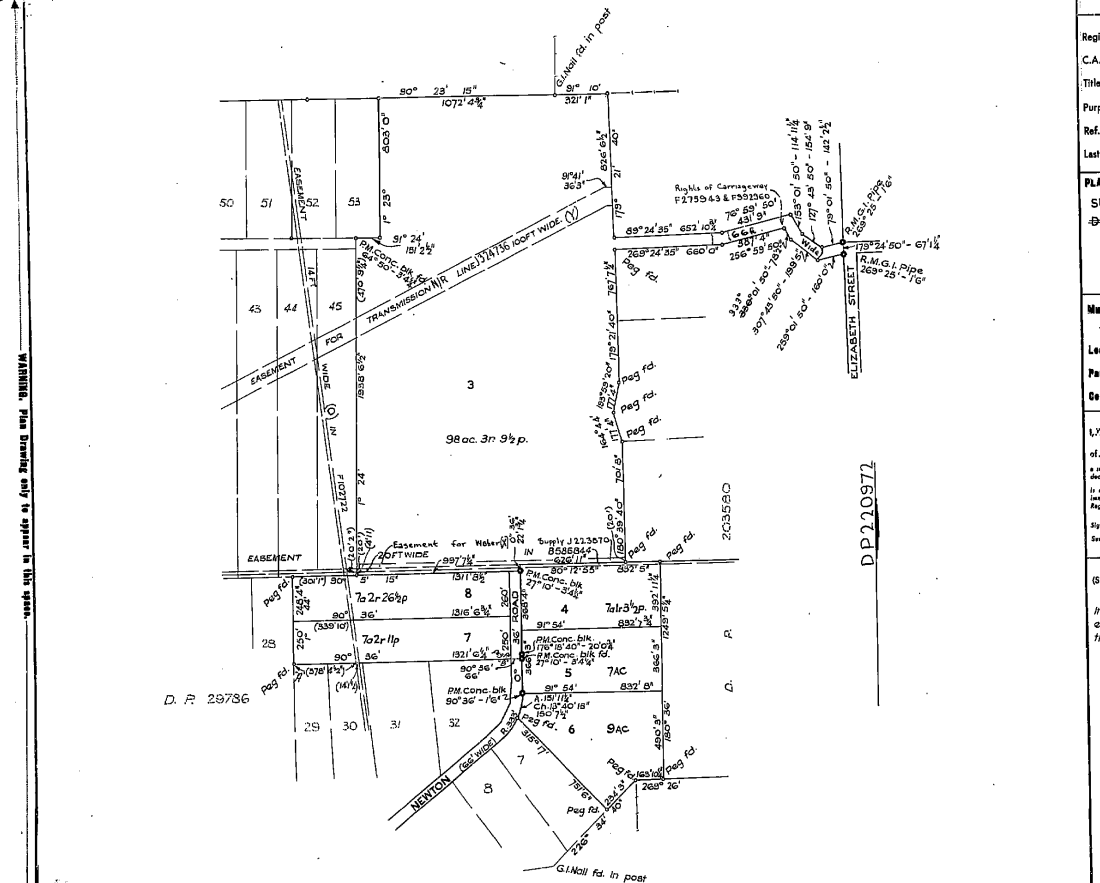
COPY OF REPORT FILED WITH PAPERS

InfoTrack
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Form 3 — TO BE USED WHERE DEDICATIONS, DRAINAGE RESERVES AND PUBLIC GARDEN AND RECREATION SPACES ARE PROVIDED.

WARNING: Plan Drawing only to appear in this space.


90° 23' 15"
1072' 4½"
G.I.Nail fd. in post
9° 10'
321' 1"
603' 0"
1° 23'
826' 6½"
21' 40"
91° 41'
363' 1"
179°
Rights of Carriageway F279543 & F592160
89° 24' 35" 652' 10"
269° 24' 35" 660' 0"
Peg fd.
767' 7½"
732' 21' 40"
Peg fd.
Peg fd.
Peg fd.

PLAN FORM 2

Plan Drawing only to appear in this space

SIGNATURES AND SEALS ONLY.

COMMON SEAL — CONSOLIDATED PAPER INDUSTRIES PTY. LTD. A.C.N. 005 190 036

Signed by Australia and New Zealand Banking Group Limited by its Attorney

Brian Mills.

Who hereby states at the time of execution, has no notice of revocation of the Power of Attorney Registered 9/10/1992 Page 279 Bk 4615

Witnessed by Joanne Edmonds

EXECUTED PURSUANT TO THE DOCUMENTS LAW BY SHELLEVER PROPERTY NOMINEES LTD (ACN 091336793)

(DIRECTOR)

(SECRETARY)

Signed for SYDNEY WATER CORPORATION by its Attorneys

Stephen Raymond Cox

Jeffrey Francis Colonso

who hereby state at the time of executing this instrument have no notice of revocation of the Power of Attorney Registered No.116 Book 4271 under the Authority of which this instrument has been executed.

Attorney

Attorney

Signature of witness

KENNETH JOHN WHITE

Name of witness

C/- SYDNEY WATER 115-123 BATHURST STREET SYDNEY

Address of witness

Crown Lands Office Approval

PLAN APPROVED .....

Authorised Officer

Land District .....

Paper No. .....

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Date of Endorsement: .....

Accreditation No. .....

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File No. .....

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

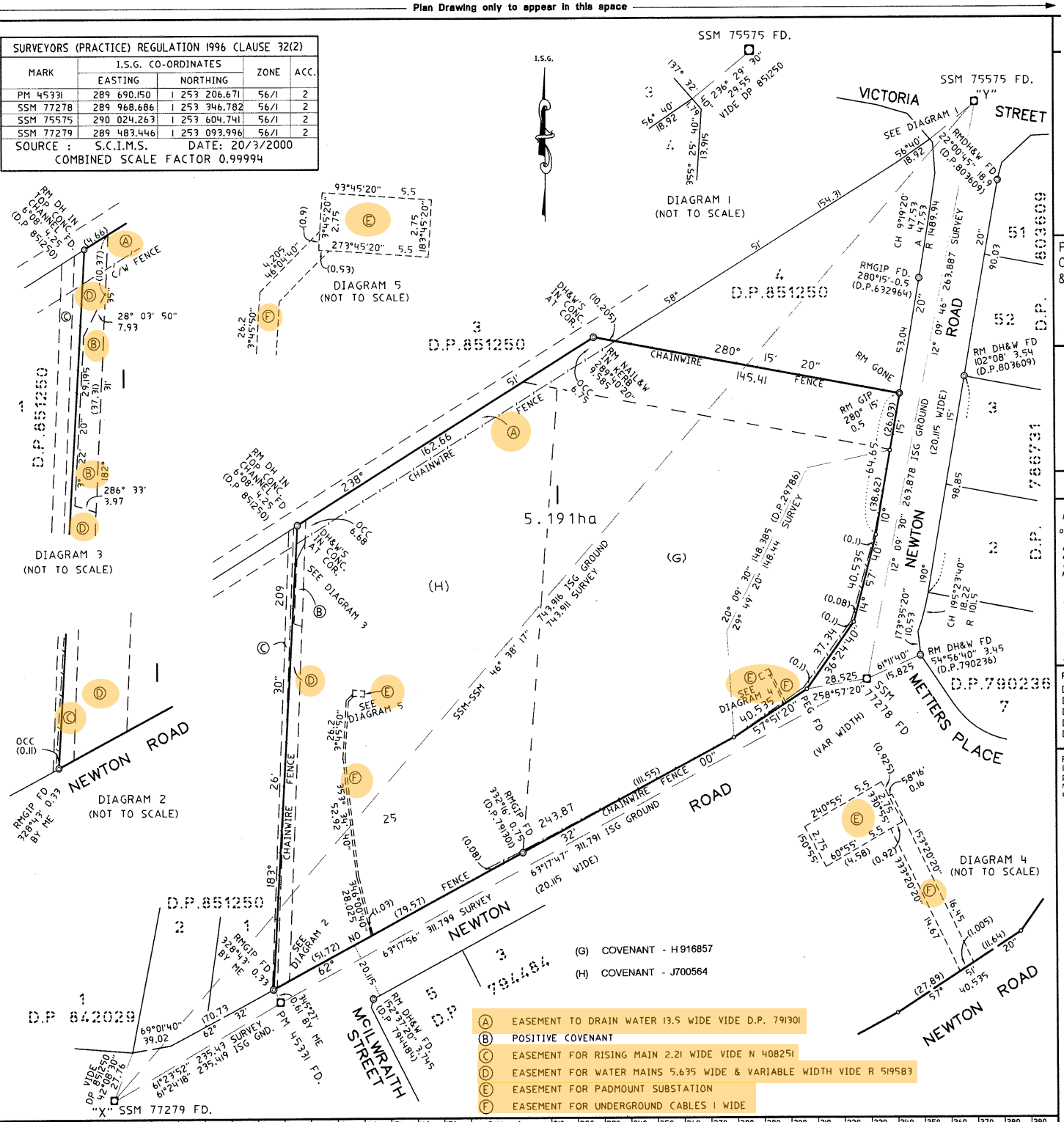
* Delete whichever is inapplicable.

SURVEYOR'S REFERENCE: 27603DP1/2 CHECKLIST REPORT

SURVEYORS (PRACTICE) REGULATION 1996 CLAUSE 32(2)				
MARK	I.S.G. CO-ORDINATES EASTING	I.S.G. CO-ORDINATES NORTHING	ZONE	ACC.
PM 45331	289 690.150	1 253 206.671	56/1	2
SSM 77278	289 968.686	1 253 346.782	56/1	2
SSM 75575	290 024.263	1 253 604.741	56/1	2
SSM 77279	289 483.446	1 253 093.996	56/1	2

SOURCE : S.C.I.M.S. DATE: 20/3/2000

COMBINED SCALE FACTOR 0.99994



DP1017259

Registered: 7-9-2001

C.A: .....

Title System : TORRENS

Purpose : CONSOLIDATION

Ref. Map : U 8252 - 9 #

Last Plan : DP 29786 , DP 791301

PLAN OF CONSOLIDATION OF LOT 2 IN D.P. 791301 & LOT 32 IN D.P. 29786

Lengths are in metres. Reduction Ratio 1: 1250

L.G.A. FAIRFIELD

Locality WETHERILL PARK

Parish ST.LUKE

County CUMBERLAND

This is sheet 1 of my plan in 2 sheets (Delete if inapplicable)

Surveyors (Practice) Regulation 1996

I, PAUL LEONARD GARRETT

of DEGOTARDI SMITH AND PARTNERS 11/19-23 BRIDGE STREET, PYMBLE

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 12 APRIL 2000

This survey relates to LOT 1

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

Datum Line : "X"-"Y"

(Signature) Paul Garrett

Zone: Suburban/Country

Surveyor registered under the Surveyors Act, 1929.

Plans used in preparation of survey/compilation

DP 29786	DP 791301	DP 870406
DP 220972	DP 794484	DP 883433
DP 556397	DP 803609	
DP 786731	DP 842029	
DP 790236	DP 851250	

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. POSITIVE COVENANT
2. EASEMENT FOR PADMOUNT SUBSTATION
3. EASEMENT FOR UNDERGROUND CABLES 1 WIDE

COPY OF REPORT FILED WITH PAPERS

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

ORIGINAL

InfoTrack
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park /Doc:DP 1017259 P /Rev:10-Sep-2001 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:23 /Seq:1 of 2 Req:R917738

PLAN FORM 2

Plan Drawing only to appear in this space

SIGNATURES AND SEALS ONLY.

COMMON CONSOLIDATED PAPER INDUSTRIES PTY. LTD. A.C.N. 005 190 036 SEAL

Signed for Australia and New Zealand Banking Group Limited by its Attorney

who hereby states at the time of execution has no notice of revocation of the power of attorney registered 9/10/1992 page 277 exists.

Witnessed by Joanne Edmonds

EXECUTED PURSUANT TO THE CORPORATIONS LAW BY CHALLENGER PROPERTY NOMINEES LIMITED (ACN 091 336 797)

(DIRECTOR)

(SECRETARY)

Signed for SYDNEY WATER CORPORATION by its Attorneys

IVANHOE FREDERICK WATKINS

JEFFREY FRANCIS CORENSO

who hereby state at the time of executing this instrument have no notice of revocation of the power of Attorney Registered No. [illegible] Book [illegible] under the Authority of which this instrument has been executed.

Attorney

Attorney

Signature of witness

KENNETH JOHN WHITE

Name of witness

1 SYDNEY WATER 115-123 BATHURST STREET SYDNEY

Address or witness

Crown Lands Office Approval

PLAN APPROVED .....
Authorised Officer

Land District .....
Paper No. .....
Field Book ..... pages .....

SUBDIVISION CERTIFICATE

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

..... set out herein
* (insert "subdivision" or "new road")

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

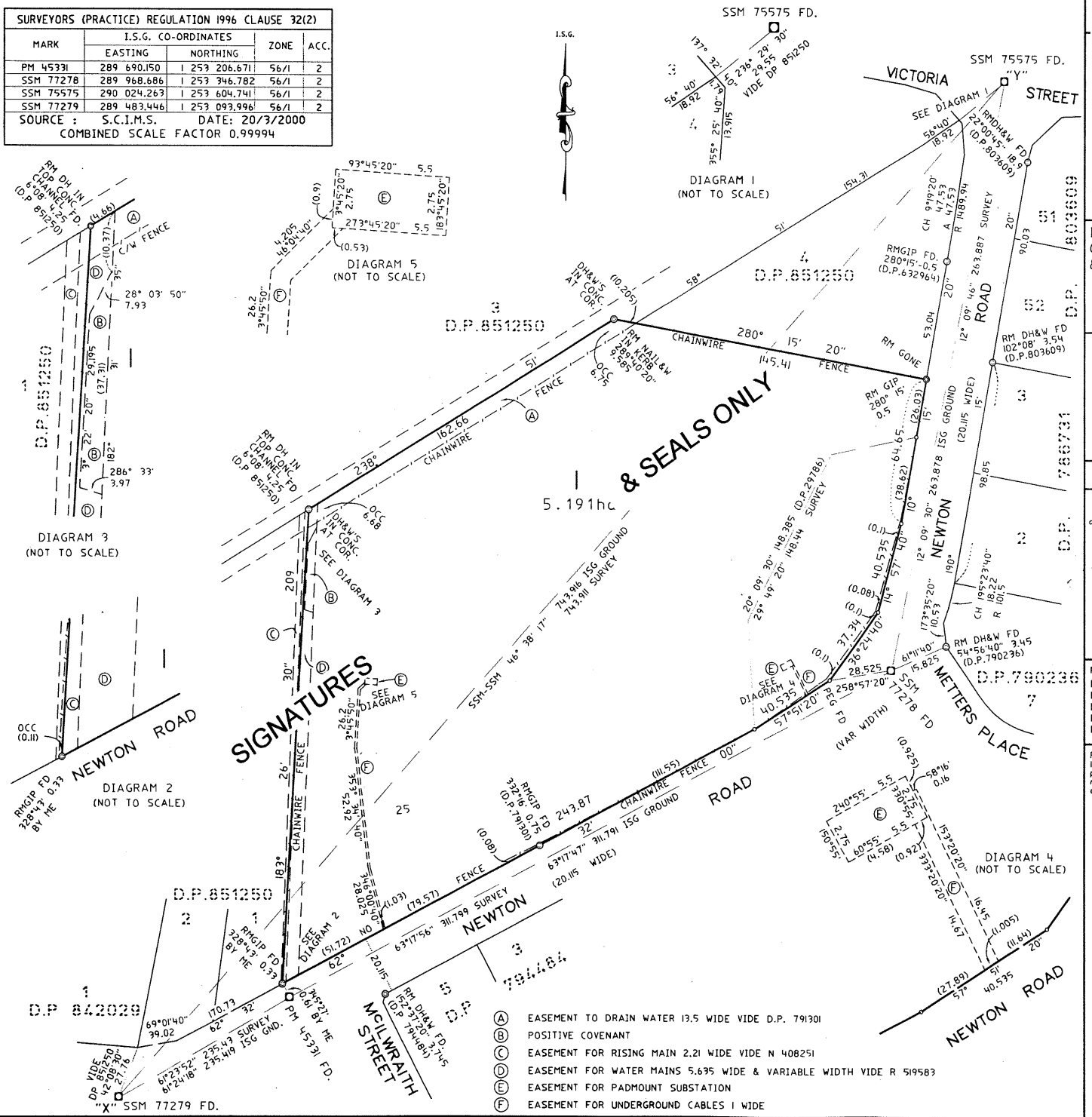
Consent Authority: .....
Date of Endorsement: .....
Accreditation No. .....
Subdivision Certificate No. .....
File No. .....

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

* Delete whichever is inapplicable.

SURVEYORS (PRACTICE) REGULATION 1996 CLAUSE 32(2)				
MARK	I.S.G. CO-ORDINATES EASTING	I.S.G. CO-ORDINATES NORTHING	ZONE	ACC.
PM 45331	289 690.150	1 253 206.671	56/1	2
SSM 77278	289 968.686	1 253 346.782	56/1	2
SSM 75575	290 024.263	1 253 604.741	56/1	2
SSM 77279	289 483.446	1 253 093.996	56/1	2

SOURCE : S.C.I.M.S. DATE: 20/3/2000
COMBINED SCALE FACTOR 0.99994



DP1017259

Registered: 17-9-2001

C.A: .....

Title System : TORRENS

Purpose : CONSOLIDATION

Ref. Map : U 8252 - 9#

Last Plan : DP29786, DP 791301

PLAN OF CONSOLIDATION OF LOT 2 IN D.P. 791301 & LOT 32 IN D.P. 29786

Lengths are in metres. Reduction Ratio 1: 1250

L.G.A. FAIRFIELD

Locality WETHERILL PARK

Parish ST.LUKE

County CUMBERLAND

This is sheet 2 of my plan in 2 sheets
(Delete if inapplicable)

Surveyors (Practice) Regulation 1996

I, PAUL LEONARD GARRETT
of DEGOTARDI SMITH AND PARTNERS
11/19-23 BRIDGE STREET, PYMBLE

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 12 APRIL 2000

This survey relates to LOT 1

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

Datum Line : "X"-"Y"

(Signature) Paul Garrett

Zone: Suburban/Country

Surveyor registered under the Surveyors Act, 1929.

Plans used in preparation of survey/compilation

DP 29786	DP 791301	DP 870406
DP 220972	DP 794484	DP 883433
DP 556397	DP 803609	
DP 786731	DP 842029	
DP 790236	DP 851250	

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. POSITIVE COVENANT
2. EASEMENT FOR PADMOUNT SUBSTATION
3. EASEMENT FOR UNDERGROUND CABLES 1 WIDE

SURVEYOR'S REFERENCE: 27603DP1/2 CHECKLIST REPORT

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Req:R917738 /Doc:DP 1017259 P /Rev:10-Sep-2001 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:23 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

Req:R918018 /Doc:CT 09374-193 CT /Rev:10-Jan-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:54 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

09374193

M

NEW SOUTH WALES

(For Grant and title reference prior to first edition see Deposited Plan.)

TIFICATE OF TITLE

PERTY ACT, 1900, as amended.

Vol. 9374 Fol. 193

CANCELLED

1st Edition issued 18-2-1963.

Vol. 9374 Fol. 193

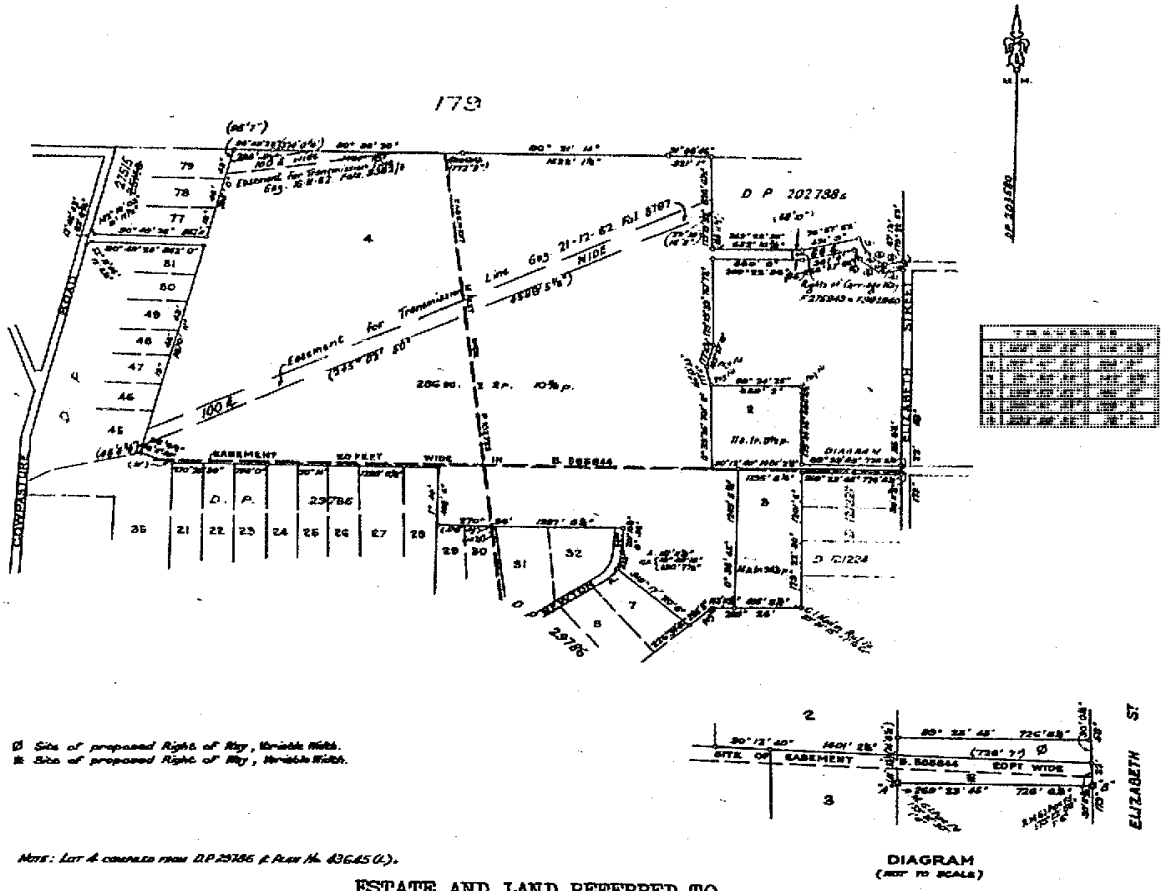
(Page 1)

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness B Bailey

Registrar-General.

PLAN SHOWING LOCATION OF LAND



Ø Side of proposed Right of Way, Variable Width.
⊠ Side of proposed Right of Way, Variable Width.

Note: Lot 4 comprises from D.P. 29786 & Plan No. 43645 (L).

ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 4 in Deposited Plan 203580 at Bossley Park in the Municipality of Fairfield Parish of St. Luke and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

JACK LEITZ, of Bellevue Hill, Company Director and LILY LEITZ, his wife, as Joint Tenants.

Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. Easement for Drainage created by Transfer No. ~~B585884~~ B585844 affecting the part of the land above described shown as Easement 20 feet wide in the plan hereon.
3. Easement for Drainage created by Transfer No. F102722 affecting the part of the land above described shown as Easement 14 feet wide in the plan hereon.
4. Rights of Carriageway created by Transfers Nos. F275943 and F992960 affecting the part of the land above described shown as Rights of Carriageway 66 feet wide in the plan hereon.
5. Easement for Transmission Line created by notification in Government Gazette dated 16th November 1962 Folios 3382 and 3383 affecting the part of the land above described shown as Easement for Transmission Line 100 feet wide in the plan hereon.
6. Easement for Transmission Line created by notification in Government Gazette dated 21st December 1962 Folio 3797 affecting the part of the land above described shown as Easement for Transmission Line 100 feet wide in the plan hereon.

1979M7

Reg. Gen. 6-8-1980

Registrar General.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

Req:R918018 /Doc:CT 09374-193 CT /Rev:10-Jan-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:54 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

ST 1608 V. C. N. BLIGHT, GOVERNMENT PRINTER

Vol. 9374 Fol. 193

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
This deed is cancelled as to part. New Certificates of Title have issued for lots in Deposited Plan No. 220971 as follows:- Lots 36 to 53 Vol. 9873 Fol. 151 to 168 respectively. Jawatson REGISTRAR GENERAL					
This deed is cancelled as to the residue (ex. road). New Certificates of Title have issued for lots in Deposited Plan No. 220972 as follows:- Lots 2 to 7 Vol. 9873 Fol. 145 ~~to 149~~ 150 respectively. Jawatson REGISTRAR GENERAL					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
Transfer	J223870	22.11.1962	Easement for water supply (as more fully set out in the said instrument) affecting the proposed easement 20 feet wide shown in Dep. Plans 213980.	16.7.1963	Jawatson	
			The interest of the Council of the Municipality of Fairfield in the new road shown on DP 220971	10.11.1964	Jawatson	
			The interest of the Council of the Municipality of Fairfield in the New road shown on DP220972	10.11.1964	Jawatson	

(Page 2 of 2 pages)

FORM No. 184A

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

Req:R918012 /Doc:CT 09873-149 CT /Rev:11-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:53 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

[redacted]FICATE OF TITLE

[redacted]ERTY ACT, 1900, as amended.

09873149

NEW SOUTH WALES

Vol. 9873 Fol. 149

Appln. No. 21604
Prior Title Vol. 9374 Fol. 193

1st Edition issued 23-11-1964.

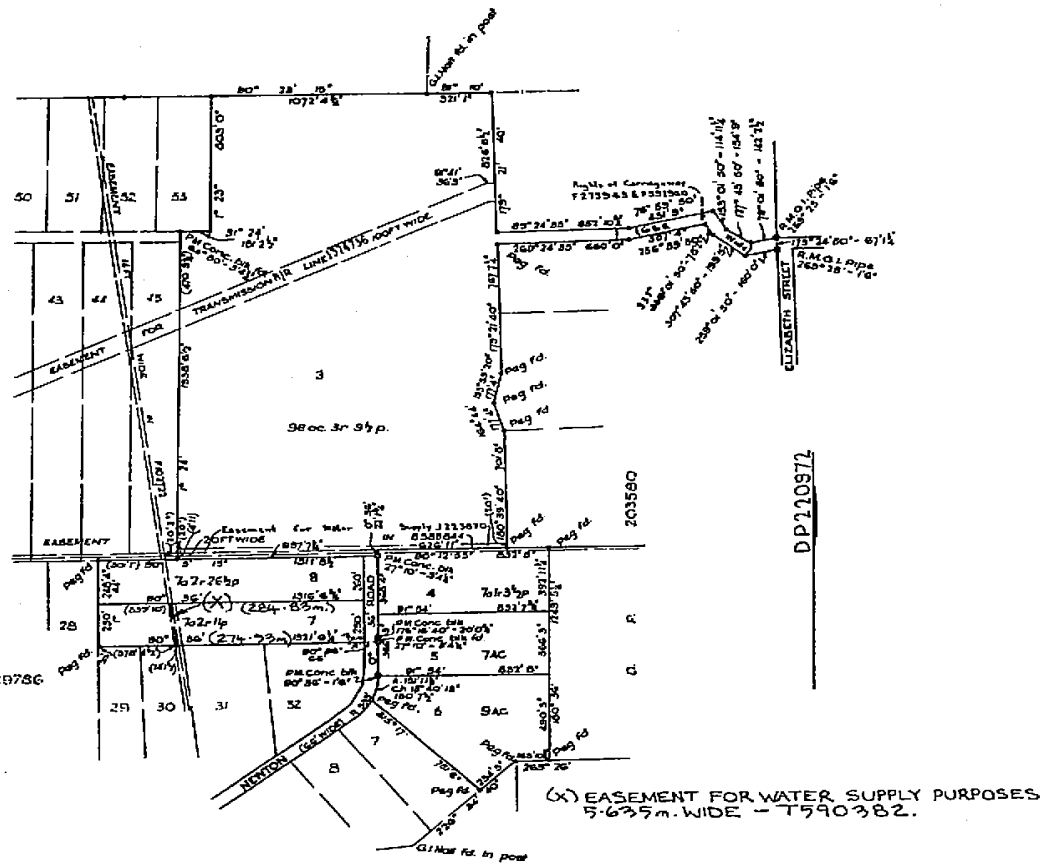
(Page 1) Vol. 9873 Fol. 149

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness A Bohen

CANCELLED
Registrar General.

PLAN SHOWING LOCATION OF LAND



S

ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 7 in Deposited Plan 220972 at Bossley Park in the Municipality of Fairfield Parish of St. Luke and County of Cumberland being part of Portion 74 granted to William Lawson on 14-5-1855.

FIRST SCHEDULE (Continued overleaf)

~~JACK LEITZ, of Belleyue Hill, Company Director and LILY LEITZ, his wife, as Joint Tenants.~~

Registrar General.

GRY

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
ED 2. Easement for Drainage created by Transfer No. F102722 affecting the piece of land shown as Easement 14 feet wide in the plan hereon. Title Diagram

Registrar General.

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.
PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON
NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

ST 1808 V. C. N. BLIGHT, GOVERNMENT PRINTER

Vol. 9873 Fol. 149

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
~~Ivan Viskovich of Drummoyne Plasterer~~	~~Transfer~~	~~K583896~~	~~3-2-1967~~	~~16-2-1967~~	
~~Loretta Constructions and Investments Pty. Limited~~	~~Transfer~~	~~M755514~~	~~20-5-1972~~	~~15-6-1972~~	
~~Yanrik Developments Pty. Limited~~	~~Transfer~~	~~M755515~~	~~26-5-1972~~	~~15-6-1972~~	
~~Dolso Properties Pty. Limited by Transfer S432650 Registered 4-5-1981~~					
Fulvio Dolso, Laurie John Dolso and Mario Dolso as tenants in common in equal shares by Transfer W213718. Registered 3-3-1986					

CANCELLED

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	~~K583897~~	~~3-2-1967~~	~~to Jack Leitz of Bellevue Darling Point Company~~					
			~~Director and Lily Leitz Wife~~	~~16-2-1967~~		~~Discharged~~	~~M755513~~	
~~Mortgage~~	~~M755516~~	~~26-5-1972~~	~~to Deposit and Investment Company Limited~~	~~15-6-1972~~		~~Discharged~~	~~S432649~~	
~~Mortgage~~	~~P416452~~	~~——~~	~~to Deposit and Investment Company Limited~~	~~18-9-1975~~		~~Discharged~~	~~S432649~~	
Transfer	P572260	——	of an Easement for Water Supply... (as more fully set out in the said instrument) affecting that part of the land within described shown as "Proposed Easement 7'3" Wide" in DP 556397 with consent of Mortgagee	9-2-1976				
~~Mortgage~~	~~P879245~~	~~——~~	~~to Deposit and Investment Company Limited~~	~~9-9-1976~~		~~Discharged~~	~~S432649~~	
~~Mortgage~~	~~M722449~~	——	~~Q722449 Variations~~	~~9-6-1978~~		~~Cancelled~~	~~S432649~~	
~~Mortgage~~	~~M755516~~	——	~~Q722449 Further Variation~~	~~9-6-1978~~		~~Cancelled~~	~~S432649~~	
~~Mortgage~~	~~P416452~~	——	~~Q763564 Variation~~			~~Cancelled~~	~~S432649~~	
~~Mortgage~~	~~P416452~~	——	~~Q722450 Variation~~	~~9-6-1978~~		~~Cancelled~~	~~S432649~~	
~~Mortgage~~	~~P879245~~	——	~~Q763565 Variation~~			~~Cancelled~~	~~S432649~~	
~~Mortgage~~	~~P879245~~	——	~~Q722451 Variation~~	~~9-6-1978~~		~~Cancelled~~	~~S432649~~	
T590382 Transfer	Easement for water supply purposes affecting the land shown so burdened in the plan hereon. Registered 10-8-1988.			DP 591444				

(Page 2 of 2 pages)

FORM No. 62 — NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Req:R918012 /Doc:CT 09873-149 CT /Rev:11-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:53 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

LAND REGISTRY SERVICES

Historical Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
21/7/2023 9:52AM

FOLIO: 7/220972

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 9873 FOL 149

Recorded	Number	Type of Instrument	C.T. Issue
4/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
25/5/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
15/8/1989	DP791301	DEPOSITED PLAN	FOLIO CANCELLED
15/4/1994		AMENDMENT: LOCAL GOVT AREA	
30/8/1999	6142651	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

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Received: 21/07/2023 09:52:42

Req:R918003 /Doc:CT 09793-012 CT /Rev:02-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:52 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

09793012

[redacted]TIFICATE OF TITLE

NEW SOUTH WALES — [redacted]OPERTY ACT, 1900, as amended.

Application No. 21604
Prior Title Vol. 8466 Fol. 240

PR

Vol. 9793 Fol. 12

1st Edition issued 1-9-1964

J700564

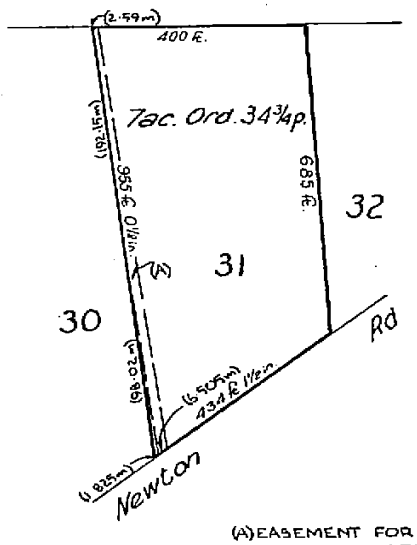
Fol. 12 9793 (Page 1) Vol.

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness

Registrar General.

PLAN SHOWING LOCATION OF LAND



(A) EASEMENT FOR WATERMAINS 5.635 METRES WIDE & VARIABLE WIDTH - R519583

J700564 7 of A

Scale: 300 feet to one inch.

S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 31 in Deposited Plan 29786 in the Municipality of Fairfield, Parish of St. Luke and County of Cumberland being part of Portion 74 granted to William Lawson on 14-5-1855.

Registrar General.

FIRST SCHEDULE (Continued overleaf)

~~KLAUS NICOLAI of Macquarie Fields, Fitter and ELSA NICOLAI his wife, as Joint Tenants.~~

Registrar General.

SECOND SCHEDULE (Continued overleaf)

GRY
1. Reservations and conditions, if any, contained in the Crown Grant(s) above referred to
CV 2. Covenant created by Transfer No. J700564.P

Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

ST 1609 V. C. N. BLIGHT, GOVERNMENT PRINTER

FIRST SCHEDULE (continued)

Vol. 9793 Fol 12

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Joseph Attard of Bossley Park, Farmer	Transfer	J998024	20.5.1965	4.6.1965	
~~Dikey Development Corporation Pty. Limited.~~	~~Transfer~~	~~N556234~~	~~1.11.1973~~	~~19.11.1973~~	
Towitta Pty. Limited in ½ share and Zeenan Pty. Limited in ½ share as Tenants in common	Transfer	R966080	—	6-9-1980	

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	~~J700565~~	~~26.6.1964~~	~~to Carnegie Investments Pty. Limited.~~	~~8.9.1964~~		Cancelled	J998024	
EA Transfer	N408251 P	1-8-1973	Easement for Rising Main (as more fully set out in the said instrument) affecting that part of the land within described 2.21 metres wide shown as "Proposed Easement 7'3" wide" in DP 556397	26-9-1973				
~~Mortgage~~	~~N556235~~	~~31.10.1973~~	~~to Lombard Australia Limited.~~	~~19.11.1973~~		Cancelled	R966080	
Mortgage	P95105	25-11-1974.	to The Mutual Home Loans Fund of Australia Limited.	9-12-1974.		Cancelled	R966080	
EA Transfer	R519528 P	—	Easement for water mains affecting the land shown to burdened in the plan hereon	DP 591444 13-12-1979				
M Mortgage	S300143 P	—	to Commonwealth Trading Bank of Australia	13-2-1981				

(Page 2 of 2 pages)

FORM No. 62

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

J700565 C to 1-73 N408251T N556234 C — 35 MA CT 7/11/74 P95105 M P933757 M/E - (N556235) DP591444 CT-30.10.7 R966080 T P S300143 M

Req:R918003 /Doc:CT 09793-012 CT /Rev:02-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:52 /Seq:2 of 2
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NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
21/7/2023 9:52AM

FOLIO: 31/29786

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 9793 FOL 12

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
15/11/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
15/8/1989	Y533264	DISCHARGE OF MORTGAGE	
15/8/1989	DP791301	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Received: 21/07/2023 09:52:42

LAND REGISTRY SERVICES Historical Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

21/7/2023 9:24AM

FOLIO: 2/791301

First Title(s): OLD SYSTEM
Prior Title(s): 31/29786 7/220972

Recorded	Number	Type of Instrument	C.T. Issue
15/8/1989	DP791301	DEPOSITED PLAN	FOLIO CREATED EDITION 1
6/3/1990	Y852555	TRANSFER	EDITION 2
4/12/1998	5443762	CAVEAT	
28/10/1999	6302029	WITHDRAWAL OF CAVEAT	
28/10/1999	6302030	TRANSFER	EDITION 3
20/10/2000	7164224	TRANSFER	EDITION 4
7/9/2001	DP1017259	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Received: 21/07/2023 09:24:29

Req:R917993 /Doc:DL Y852555 /Rev:11-Aug-2010 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:52 /Seq:1 of 1
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RP 13 STAMP DUTY [redacted] OFFICE USE ONLY

$1

Y852555

TRANSFER

REAL PROPERTY ACT

CA 1 of 1 X R 1/1

$ 44

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 83 S3 ALTERATION NOTED

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 83 S3 ALTERATION NOTED

Torrens Title Particulars	If Part Only, Delete Whole Details	Location
DESCRIPTION OF LAND Note (a) 131289 9425 04 2000031132/02 2/791301	PART ~~WHOLE~~ Being that part as was formerly in 7/220972.	at Wetherill Park

TRANSFEROR Note (b)

FULVIO DOLSO, LAURIE JOHN DOLSO and MARIO DOLSO

ESTATE Note (c)

in consideration of the transfer by the Transferee to the Transferor of that part of 2/791301 as was formerly in 31/29786

(the abovenamed TRANSFEROR) ~~hereby acknowledges receipt of the consideration of $~~ and transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (d)

TOWITTA PTY LIMITED and ZEENAN PTY LIMITED

OFFICE USE ONLY TC2

TENANCY Note (e) $1.00

as ~~joint tenants~~/tenants in common in equal shares

PRIOR ENCUMBRANCES Note (f)

subject to the following PRIOR ENCUMBRANCES 1. ..... 2. ..... 3. .....

DATE 30 January 1990

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION Note (g)

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

Julie Hamilton
Signature of Witness

JULIE HAMILTON
Name of Witness (BLOCK LETTERS)

20/15 WALTON CRES; ABBOTSFORD
Address and occupation of Witness Conveyancer

Signature of Transferor

Note (g)

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

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

Signature of Transferor's Solicitor
JOHN MICHAEL CONLON

TO BE COMPLETED BY LODGING PARTY Notes (h) and (i)

LODGED BY W P McELHONE & CO
Solicitors
66 King Street Sydney
DX 689 Sydney

Ref. JMC
Delivery Box Number 525K

LOCATION OF DOCUMENTS	CT	OTHER
Herewith.	/	
In L.T.O. with		
Produced by		

OFFICE USE ONLY

Checked	Passed	REGISTERED - -19
STG1		
Signed	Extra Fee	- 6 MAR 1990

Secondary Directions		
Delivery Directions	CT	525K

Req:R917994 /Doc:DL 7164224 /Rev:26-Oct-2000 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:52 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

Form: 97-01T
Licence: LAW/0526/98

TRANSFER

New South Wales

Real Property Act 1900

Office of State Revenue use only

NEW SOUTH WALES DUTY
28-09-2000 0000425326-001
SECTION 54(3)
DUTY $ **********10.00

(A) **LAND TRANSFERRED**
If appropriate, specify the share or part transferred.

2/791301

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
74S	**ALLEN ALLEN & HEMSLEY** **DX 105 SYDNEY** **9230 4000** REFERENCE (optional): YNKS 201371045

(C) **TRANSFEROR** Guardian Trust Australia Limited (ACN 050 294 052), as tenant in common in equal share

(D) acknowledges ~~receipt of the consideration of~~ pursuant to a Deed of Retirement and Appointment of Trustee and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable) 1. 2. 3.

(F) **TRANSFEREE**

T **TS** (s713 LGA) **TW** (Sheriff)	**Challenger Property Nominees Pty Limited (ACN 091 336 793)**

(G) **TENANCY:** Tenant in common in equal share

(H) We certify this dealing correct for the purposes of the Real Property Act 1900. **DATE** 22 August 2000

THE COMMON SEAL of **GUARDIAN TRUST AUSTRALIA LIMITED** (A.C.N. 050 294 052) is affixed in accordance with its Articles of Association:

GUARDIAN TRUST AUSTRALIA LTD A.C.N. 050 294 052 THE Common Seal OF C9922

Signature of authorised person
Catherine Margaret Maddox
Print Name of authorised person
Assistant Manager, Corporate Services
Office held

Signature of authorised person
Philip John Walter Joseph
Print Name of authorised person
National Manager, Corporate Services
Office held

CT 205

CHECKED BY (LTO use).....

Req:R917994 /Doc:DL 7164224 /Rev:26-Oct-2000 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:52 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

EXECUTED BY
~~THE COMMON SEAL of~~ **CHALLENGER PROPERTY NOMINEES PTY LIMITED** (A.C.N. 091 336 793) ~~is affixed~~ in accordance with its ~~Articles of Association~~: CONSTITUTION & PURSUANT TO THE CORPORATIONS LAW:

.....
Signature of authorised person

John Barry
.....
Print Name of authorised person

Director
.....
Office held

.....
Signature of authorised person

DAVID H. SLATYER
.....
Print Name of authorised person

COMPANY SECRETARY
.....
Office held

Req:R917957 /Doc:CT 09092-129 CT /Rev:04-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:3 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

H.2

NEW SOUTH WALES
(For Grant and title reference prior to first edition see Deposited Plan.)

CERTIFICATE OF TITLE
REAL PROPERTY ACT, 1900, as amended.

TORRENS TITLE
Register Book

Vol. 9092 Fol. 129A
CANCELLED
1st Edition Issued 3-1-1962.
H916857
See new edition

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness E E Galledge

Registrar-General.

Vol. 9092 Fol. 129 A

(Page 1)

ESTATE AND LAND REFERRED TO

(For location and dimensions of land see plan filed in the Land Titles Office)

Estate in Fee Simple, in an undivided one half share in Lot 32 Deposited Plan 29786 Municipality Fairfield Parish St. Luke County Cumberland.

RegistrarGeneral.

FIRST SCHEDULE (continued overleaf)

~~GIUSEPPE CIPRESSI, of Hornsley Park, Ploughing Contractor.~~

Registrar General.

SECOND SCHEDULE (continued overleaf)

AW

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. Covenant created by Transfer No. H916857.

Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED.

25031 11.60 St 1609 V. C. N. Blight, Government Printer

Vol. 9092 Fol. 129 A

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Dezso Szucs of Wentworthville, Bread Vendor and Martha Maria Szucs his wife as joint tenants CANCELLED See new edition issued 24-8-1966 J. Watson REGISTRAR GENERAL	Transfer	K379356	1-7-1966	22-7-1966	J. Watson

K379356 -357

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
~~Mortgage~~	~~H916858~~	~~27-10-1961~~	~~to J & L Leitz Pty Limited~~	15-1-1962	J. Watson	Discharged	I910902	J. Watson
Mortgage	K379387	1-7-1966	to Giuseppe Cipressi, Ploughing Contractor and Teodoro Cipressi Labourer both of Horsley Park	22-7-1966	J. Watson			

(Page 2 of 2 pages)

FORM No. 184

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

Req:R917957 /Doc:CT 09092-129 CT /Rev:04-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:4 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

Req:R917957 /Doc:CT 09092-129 CT /Rev:04-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:5 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

H.2

NEW SOUTH WALES
(For Grant and title reference prior to first edition see Depositied Plan.)

CERTIFICATE OF TITLE
REAL PROPERTY ACT, 1900, as amended.

TORRENS TITLE
Register Book

Vol. 9092 Fol. 129 B

CANCELLED
1st Edition issued 3-1-1962.
H916857
See new edition

Vol. 9092 Fol. 129 B

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness C E Golledge

Registrar-General.

ESTATE AND LAND REFERRED TO

(For location and dimensions of land see plan filed in the Land Titles Office)

Estate in Fee Simple, in an undivided one half share in Lot 32 Deposited Plan 29786 Municipality Fairfield Parish St. Luke County Cumberland.

Registrar General.

FIRST SCHEDULE (continued overleaf)

~~TEODORO CIPRESSI, of Hornsby Park, Labourer.~~

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. Covenant created by Transfer No. H916857.

Registrar General.

(Page 1) Vol. 9092 Fol. 129 B

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED.

25031 11.60 St 1609 V. C. N. Blight, Government Printer

Vol. 9092 Fol. 129 B

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Pepo Sgues of Wentworthville, Braid Vendor and Maria Sgues his wife as joint tenants CANCELLED See new edition issued 24-8-1966	Transfer	K 379386	1-7-1966	22-7-1966	

K379386
-387

Jawkatson
REGISTRAR GENERAL

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
~~Mortgage~~	~~49,6858~~	~~27-10-1961~~	~~to J & L Leita Pty Limited~~	~~15-1-1962~~		Discharged	19/0902	
Mortgage	K379387	1-7-1966	P/ Giuseppe Cifresai Ploughing Contractor and Teodoro Cifresai Labourer both of Horsley Park.	22-7-1966				

(Page 2 of 2 pages)

FORM No. 184

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

Req:R917957 /Doc:CT 09092-129 CT /Rev:04-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:6 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

Req:R917957 /Doc:CT 09092-129 CT /Rev:04-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:1 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

[redacted]TIFICATE OF TITLE

NEW SOUTH WALES [redacted]PERTY ACT, 1900, as amended.

Appln. No.21604

Prior Title Vol.7482 Fol. 236

Vol. 9092 Fol. 129

Edition issued 24-8-1966

AS K379386

Fol. 129 Vol. 9092 (Page 1)

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

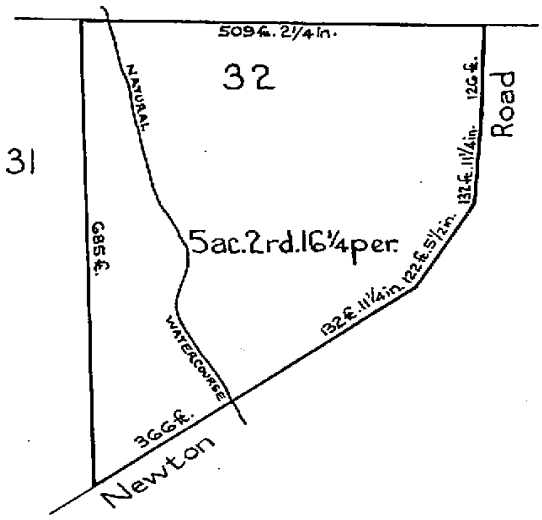
Witness S. Vandine

Registrar General.

CANCELLED

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND



K. 379386 RD. Scale: 200 feet to one inch.

S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 32 in Deposited Plan 29786 in the Municipality of Fairfield Parish of St. Luke and County of Cumberland being part of Portion 74 granted to William Lawson on 14-5-1855.

Registrar General

FIRST SCHEDULE (Continued overleaf)

~~DEZSO SZUCS of Wentworthville, Bread Vendor and MARIA SZUCS, his wife as Joint Tenants.~~

Registrar General

SECOND SCHEDULE (Continued overleaf)

GRY CV
1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Covenant created by Transfer No.H916857.P
3. ~~Mortgage No.K379387 to Giuseppe Cipressi, Ploughing Contractor and Teodoro Cipressi, Labourer both of Horsley Park. Entered 22-7-1966.~~ discharged K973548

Registrar General

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

PT 1, 17 V.C.N. Blight, Government Printer

Vol. 9092 Fol 129

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
Agostino Santarossa of Horsley Park, Contractor	Transfer	M 973 649	1-3-1968	14-3-1968	
Edenbri Pty Limited	Transfer	M134935	16-5-1972	29-5-1972	
Edenbri Pty. Limited	Transfer	R874002	------	25-6-1980	

SEE AUTO FOLIO

CANCELLED

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

Req:R917957 /Doc:CT 09092-129 CT /Rev:04-Feb-2011 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:2 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

LAND REGISTRY SERVICES Historical Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

21/7/2023 9:24AM

FOLIO: 32/29786

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 9092 FOL 129

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
30/9/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
4/12/1998	5443783	CAVEAT	
28/10/1999	6302084	WITHDRAWAL OF CAVEAT	
28/10/1999	6302085	TRANSFER	EDITION 1
24/5/2001	7637422	DEPARTMENTAL DEALING TO UPLIFT CT	EDITION 2
15/6/2001	7691142	TRANSFER	EDITION 3
27/7/2001	7810944	DEPARTMENTAL DEALING	EDITION 4
7/9/2001	DP1017259	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Received: 21/07/2023 09:24:24

Req:R917958 /Doc:DL 6302085 /Rev:03-Nov-1999 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:1 of 1
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

Form: 97-01TP
Licence: 27C/0042/95

TRANSFER

6302085D

New South Wales
Real Property Act 1900

Office of State Revenue use only

NEW SOUTH WALES DUTY
22-10-1999 0000133725-002
TRANSFER - AGT FOR SALE OF LAND
DUTIABLE AMOUNT $ ******3,330,796.00
DUTY $ **************10.00

(A) **LAND TRANSFERRED**
If appropriate, specify the share transferred.

Folio Identifier 32/29786 (Volume 9092 Folio 129)

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
	Freehill Hollingdale & Page MLC Centre Martin Place SYDNEY NSW 2000 REFERENCE (15 character maximum): BJMcF:1957884

(C) **TRANSFEROR** **EDENBRI PTY LIMITED ACN 001 414 035**

(D) acknowledges receipt of the consideration of $3,330,796 and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable) 1. ..... 2. ..... 3. .....

(F) **TRANSFEREE**

T TS (s713 LGA) TW (Sheriff)	**Consolidated Paper Industries Pty Limited ACN 005 190 036** and **Guardian Trust Australia Limited ACN 050 294 052**

(G) **TENANCY:** TENANTS IN COMMON IN EQUAL SHARES

(H) We certify this dealing correct for the purposes of the Real Property Act 1900 **DATE** 27 October 1999

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

The common seal of
Edenbri Pty Limited
is fixed to this document
in the presence of:

EDENBRI PTY. LIMITED A.C.N. 001 414 035 Common Seal

F. Mac Donald
Secretary/Director

K. B. Raymond
Director

F. MacDONALD
Name (please print)

K. B. RAYMOND
Name (please print)

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

.....
Signature of Witness

.....
Name of Witness (BLOCK LETTERS)

.....
Address of Witness

.....
Brian John McFadyen
Solicitor for Transferee
20/10/99

FREEHILL HOLLINGDALE & PAGE

FHPSYDCD\SLT000013\99224010.3

CHECKED BY (LTO use) .....

Req:R917983 /Doc:DL 7691142 /Rev:20-Jun-2001 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:50 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

Form: 97-01T

Licence: LAW/0526/98

TRANSFER

New South Wales

Real Property Act 1900

Office of State Revenue use only

NEW SOUTH WALES DUTY
17-04-2001 0000589356-001
SECTION 54(3)
DUTY $ **********10.00

(A) **LAND TRANSFERRED**
If appropriate, specify the share or part transferred.

32/29786

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
74S	**ALLEN ALLEN & HEMSLEY** **DX 105 SYDNEY** **9230 4000** REFERENCE (optional): YNKS

(C) **TRANSFEROR** Guardian Trust Australia Limited (ACN 050 294 052), as tenant in common in equal share

(D) acknowledges ~~receipt of the consideration of~~ pursuant to a Deed of Retirement and Appointment of Trustee and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable) 1. 2. 3.

(F) **TRANSFEREE**

(G)

T **TS** (s713 LGA) **TW** (Sheriff)	**Challenger Property Nominees Pty Limited (ACN 091 336 793)** **TENANCY:** Tenant in common in equal share

(H) We certify this dealing correct for the purposes of the Real Property Act 1900. **DATE** 28 March 2001

GUARDIAN TRUST AUSTRALIA LIMITED

Signature of authorised person

Leonard Chersky

Print Name of authorised person

Manager, Legal and Compliance

Office held

Signature of authorised person

DAVID O'BRIEN

Print Name of authorised person

SECRETARY

Office held

CT PROD BY 205 ON 28/5/01

ynks S0110638290v1 201371045

CHECKED BY (LTO use).....

Req:R917983 /Doc:DL 7691142 /Rev:20-Jun-2001 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:50 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

CHALLENGER PROPERTY NOMINEES PTY LIMITED)
)
)
)

.....
Signature of authorised person

DAVID SLATTERY
.....
Print Name of authorised person

COMPANY SECRETARY
.....
Office held

.....
Signature of authorised person

John Barry
.....
Print Name of authorised person

Director
.....
Office held

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

21/7/2023 9:23AM

FOLIO: 1/1017259

First Title(s): OLD SYSTEM
Prior Title(s): 32/29786 2/791301

Recorded	Number	Type of Instrument	C.T. Issue
7/9/2001	DP1017259	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
27/11/2001	7900591	MORTGAGE	EDITION 1
19/6/2002	8695595	LEASE	EDITION 2
3/6/2004	AA690794	DISCHARGE OF MORTGAGE	EDITION 3
3/6/2004	AA690795	CAVEAT	
16/11/2005	AB787744	TRANSFER	
16/11/2005	AB787745	TRANSFER OF LEASE	
16/11/2005	AB787746	VARIATION OF LEASE	
16/11/2005	AB787747	MORTGAGE	EDITION 4
8/7/2009	AD941166	REJECTED - SUB-LEASE	
9/10/2009	AE949041	SUB-LEASE	
26/7/2013	AH867958	SUB-LEASE	
16/12/2013	AI136346	DISCHARGE OF MORTGAGE	
16/12/2013	AI136347	TRANSFER	
16/12/2013	AI146534	MORTGAGE	
16/12/2013	AI136348	VARIATION OF LEASE	EDITION 5
21/4/2016	AK373784	DISCHARGE OF MORTGAGE	
21/4/2016	AK373793	MORTGAGE	EDITION 6
19/9/2016	AK767193	LEASE	EDITION 7
23/6/2017	AM502881	DISCHARGE OF MORTGAGE	
23/6/2017	AM502890	MORTGAGE	EDITION 8
10/9/2018	AN529451	LEASE	
10/9/2018	AN529452	LEASE	EDITION 9
17/5/2019	AP210736	LEASE	EDITION 10
15/11/2021	AR614003	DISCHARGE OF MORTGAGE	EDITION 11

END OF PAGE 1 - CONTINUED OVER

SEARCH DATE
21/7/2023 9:23AM

FOLIO: 1/1017259 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue
22/6/2022	AS237516	LEASE	
22/6/2022	AS237517	LEASE	EDITION 12
28/12/2022	AS759686	VARIATION OF LEASE	EDITION 13

*** END OF SEARCH ***

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Received: 21/07/2023 09:23:58

Req:R917955 /Doc:DL AB787744 /Rev:24-Nov-2005 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:1 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

Form: 01T
Licence: 03-11-027
Licensee: Blake Dawson Waldron

TRANSFER

New South Wales
Real Property Act 1900

AB787744D

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required 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.

NEW SOUTH WALES DUTY

STAMP DUTY

Office of State Revenue use only

NSW Treasury
PA 7
VENDOR DUTY ENDORSED
ID:: NOT LIABLE

25-08-2005 0002061810-013
TRANSFER - AGT FOR SALE OF LAND
DUTIABLE AMOUNT $ *****23,375,000.00
DUTY $ ******1,271,115.00

(A) **TORRENS TITLE**

If appropriate, specify the part transferred
1/1017259

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODES
~~238N~~ 22N	~~Blake Dawson Waldron~~ ~~DX 355 Sydney~~ ~~Tel: 02 9258 6000~~ Commonwealth Bank Level 5, 48 Martin Place SYDNEY NSW 2000 Tel: (02) 9378 3078 Reference (optional): LLPN - 123834J	T TW (Sheriff)

(C) **TRANSFEROR**

Consolidated Paper Industries Pty Limited ACN 005 190 036

(D) **CONSIDERATION**

The transferor acknowledges receipt of the consideration referred to in the Business Sale Agreement between Consolidated Paper Industries Pty Limited, CPI Group Limited and Australian Postal Corporation dated 31 MAY 2004 and as regards

(E) **ESTATE**

the land specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

That share of the land held by the Transferor as tenant in common

(G) Encumbrances (if applicable): 1. 2. 3.

(H) **TRANSFEREE**

Australian Postal Corporation ABN 28 864 970 579

(I) **TENANCY:**

(12)

DATE 31 / 05 / 2004
dd mm yyyy

(J) See annexure for execution.

Req:R917955 /Doc:DL AB787744 /Rev:24-Nov-2005 /NSW LRS /Pgs:ALL /Prt:21-Jul-2023 09:48 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:94 Newton Road? Wetherill Park

ANNEXURE TO TRANSFER DATED 31/5/04 BETWEEN CONSOLIDATED PAPER INDUSTRIES PTY LIMITED AND AUSTRALIAN POSTAL CORPORATION IN RELATION TO FOLIO IDENTIFIER 1/1017259

Execution by Australian Postal Corporation

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness: .....

Name of Witness: CAMERON THOMSON

Address of Witness: L35, 225 George St, Sydney

Certified correct for the purposes of the Real Property Act by the person(s) named below who signed this instrument pursuant to the power of attorney specified.

Signature of attorney: .....

Attorney's name: WILLIAM WALTER BRUCE RICHARDS

Signing on behalf of: AUSTRALIAN POSTAL CORPORATION.

Power of attorney -Book: 4360

-No: 241.

Execution by Consolidated Paper Industries Pty Limited

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: Consolidated Paper Industries Pty Limited

Authority: Section 127 of the Corporations Act

Signature of authorised person

Name of authorised person: B.P. CASSELL

Office held: DIRECTOR

Signature of authorised person

Name of authorised person: M.B. AHOGAN

Office held: SECRETARY.

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/1017259

SEARCH DATE	TIME	EDITION NO	DATE
21/7/2023	9:23 AM	13	28/12/2022

LAND

LOT 1 IN DEPOSITED PLAN 1017259
AT WETHERILL PARK
LOCAL GOVERNMENT AREA FAIRFIELD
PARISH OF ST LUKE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1017259

FIRST SCHEDULE

THE TRUST COMPANY (AUSTRALIA) LIMITED (T AI136347)

SECOND SCHEDULE (10 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

2 EASEMENT(S) AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM CREATED BY:
R519583 -FOR WATER MAINS 5.635 WIDE AND VARIABLE WIDTH
DP791301 -TO DRAIN WATER
N408251 -FOR RISING MAIN

3 H916857 COVENANT AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

4 J700564 COVENANT AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM.

5 DP1017259 POSITIVE COVENANT

6 DP1017259 EASEMENT FOR PADMOUNT SUSTATION AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

7 DP1017259 EASEMENT FOR UNDERGROUND CABLES 1 WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

8 AP210736 LEASE TO ITW AUSTRALIA PTY LTD OF OFFICE 1, 74-79 NEWTON ROAD, WETHERILL PARK. COMMENCES: 1/7/2019. EXPIRES: 30/6/2022.
AS759686 VARIATION OF LEASE AP210736 EXPIRY DATE NOW 30/6/2023. OPTION OF RENEWAL: 1 YEAR AND 6 MONTHS.

9 AS237516 LEASE TO WEIR MINERALS AUSTRALIA LTD OF OFFICE 2, OFFICE AND AMENITIES 3, SHED 1, LOW RISE WAREHOUSE 1, 74-94 NEWTON ROAD, WETHERILL PARK. EXPIRES: 21/12/2026.

10 AS237517 LEASE TO WEIR MINERALS AUSTRALIA LTD OF HIGH RISE WAREHOUSE 1, 74-94 NEWTON ROAD, WETHERILL PARK. EXPIRES: 21/12/2026.

END OF PAGE 1 - CONTINUED OVER

FOLIO: 1/1017259 PAGE 2

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 21/07/2023 09:23:26

Appendix D

SOIL LOGS

ENVIRONMENTAL SOIL BORE - BH11

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 08/10/2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Direct Push / Solid Auger
SAMPLING METHOD Push tube / Grab sample
TOTAL DEPTH 6.0 m BGL

LOGGED BY OG
CHECKED BY OG
LOCATION BH11

COMMENTS Asphalt surface

Depth (m)	Samples	PID Reading (ppm)	Graphic Log	USCS	Material Description	Additional Observations
					Concrete core.	
	BH11_0.3	0.0		CLS	Sandy gravelly CLAY. Low plasticity, fine to medium-grained sand, dry to slightly moist.	
1	BH11_1.0	0.1				
2						
3				CL	CLAY. Gravel inclusions, low plasticity, dry to slightly moist.	
4	BH11_4.0	0.0			SHALE. Clay inclusions.	
5						
6					End of Borehole at 6.0 m BGL	

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ENVIRONMENTAL SOIL BORE - BH20

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 08/10/2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Direct Push / Solid Auger
SAMPLING METHOD Push tube / Grab sample
TOTAL DEPTH 6.0 m BGL

LOGGED BY OG
CHECKED BY OG
LOCATION BH20

COMMENTS Asphalt surface

Depth (m)	Samples	PID Reading (ppm)	Graphic Log	USCS	Material Description	Additional Observations
					Concrete core.	
	BH20_0.3	0.1			FILL. Sandy clay, low plasticity, coarse-grained sand, dark brown, dry to slightly moist, firm.	
				CL	CLAY. Low plasticity, red, firm, dry.	
1						Red with grey mottling at 1.0 mBGL
2						
3	BH20_3.0	0.0				Gravel inclusions at 3.0 mBGL
					CLAY. Low plasticity, light brown , firm dry.	
4	BH20_4.0	0.1			CLAY. Weathered shale, light brown, firm, dry.	
5					SHALE. Grey, dry	
6	BH20_6.0	0.0				
					End of Borehole at 6.0 m BGL	

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ENVIRONMENTAL SOIL BORE - BH28

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 08/10/2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Direct Push / Solid Auger
SAMPLING METHOD Push tube / Grab sample
TOTAL DEPTH 6.0 m BGL

LOGGED BY OG
CHECKED BY OG
LOCATION BH28

COMMENTS Asphalt surface

Depth (m)	Samples	PID Reading (ppm)	Graphic Log	USCS	Material Description	Additional Observations
					Concrete core.	
	BH28_0.3	0.0			FILL. Sandy gravelly clay, low plasticity, fine to medium-grained sand, dry to slightly moist.	
				CL	CLAY. Brown, dry, firm.	
1						
	BH28_1.5 DUP05 TRP05	0.0				
2						
3					CLAY. Dark brown, dry, firm.	
4					CLAY. Light brown, dry, firm.	
5						
	BH28_5.5	0.0				
					SHALE.	
6					End of Borehole at 6.0 m BGL	

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ENVIRONMENTAL SOIL BORE - BH29

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 08/10/2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Direct Push / Solid Auger
SAMPLING METHOD Push tube / Grab sample
TOTAL DEPTH 6.0 m BGL

LOGGED BY OG
CHECKED BY OG
LOCATION BH29

COMMENTS Asphalt surface

Depth (m)	Samples	PID Reading (ppm)	Graphic Log	USCS	Material Description	Additional Observations
	BH29_0.3	0.3			Concrete core.	
1				CLS	Sandy CLAY. Low plasticity, fine to medium-grained sand, dry, firm, brown.	
	BH29_1.5	0.0				
2					Sandy CLAY. Low plasticity, fine to medium-grained sand, dry, firm, light brown.	
	BH29_3.0	0.0				
3						
4						
	BH29_5.0	0.1			SHALE. Grey, dry.	
5						
6					End of Borehole at 6.0 m BGL	

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ENVIRONMENTAL SOIL BORE - BH43

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 08/10/2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Direct Push / Solid Auger
SAMPLING METHOD Push tube / Grab sample
TOTAL DEPTH 6.0 m BGL

LOGGED BY OG
CHECKED BY OG
LOCATION BH43

COMMENTS Asphalt surface

Depth (m)	Samples	PID Reading (ppm)	Graphic Log	USCS	Material Description	Additional Observations
					Concrete core.	
	BH43_0.4	0.1			FILL. Gravelly sandy clay, low plasticity, coarse-grained sand, angular to sub-angular gravels, dry.	
				CL	CLAY. Low to medium plasticity, brown, firm, dry.	
1	BH43_1.0	0.0				
2						
3	BH43_3.0	0.0				
4						
5						
6	BH43_6.0	0.0			CLAY. Weathered shale, low-medium plasticity, brown, firm, dry.	
					End of Borehole at 6.0 m BGL	

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ENVIRONMENTAL SOIL BORE - BH44

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 08/10/2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Direct Push / Solid Auger
SAMPLING METHOD Push tube / Grab sample
TOTAL DEPTH 6.0 m BGL

LOGGED BY OG
CHECKED BY OG
LOCATION BH44

COMMENTS Asphalt surface

Depth (m)	Samples	PID Reading (ppm)	Graphic Log	USCS	Material Description	Additional Observations
					Concrete core.	
	BH44_0.4	0.2			FILL. Clay, low plasticity, red, brown, grey, firm, dry.	Anthropogenic material in the form of rubber and tile fragments.
1	BH44_1.0	0.1				
2	BH44_2.0	0.0		CL	CLAY. Low to medium plasticity, light brown, firm, dry.	
3	BH44_3.0	0.1				
4						
5	BH44_5.5	0.0		CLS	Sandy CLAY. fine-grained sand, low plasticity, light brown, slightly moist, soft.	
6					Gravelly CLAY, fine-grained sand, low plasticity, light brown, wet, soft.	
					End of Borehole at 6.0 m BGL	

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ENVIRONMENTAL GROUNDWATER BORE - MW01/BH02

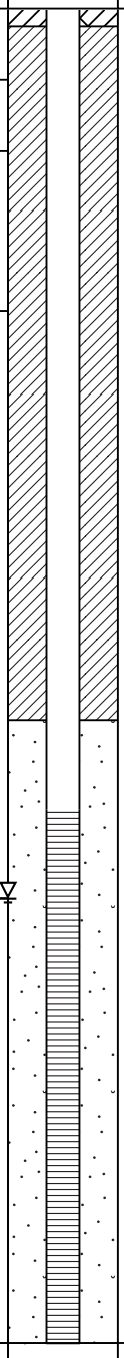
PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 18.07.2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Solid auger
SAMPLING METHOD Grab sample
TOTAL DEPTH 7.5 mBGL

LOGGED BY OG
CHECKED BY OG
WELL COVER Flush mount
LOCATION MW01/BH02
WELL DIAMETER 150 mm

COMMENTS Surface: Asphalt

Depth (m)	Samples	PID	Graphic Log	USCS	Material Description	Well Construction Details	Additional Observations
0	BH02_0.1	0.1			FILL. Silty sand, fine to medium-grained sand, angular gravels, brown, dry, loose, concrete gravels.		
0.5	BH02_0.5	0.2		SC	Clayey gravelly SAND. Fine to medium-grained sand, angular gravels, brown, dry, loose.		
1	BH02_1.0	0.0		CLS	Sandy CLAY. Low plasticity, mottled red-grey, dry to slightly moist, soft, ironstone gravels.		
1.5							
2	BH02_2.0	0.1			Sandy CLAY. Low plasticity, mottled orange-grey, dry to slightly moist, firm, ironstone gravels.		
2.5							
3	BH02_3.0	0.0					
3.5							
4							
4.5	BH02_4.5	0.0					
5					Sandy CLAY. Low plasticity, grey. dry to slightly moist, firm.		
5.5							
6	BH02_6.0	0.0					
6.5							
7	BH02_7.0	0.0					
7.5					End of borehole at 7.5 m BGL		
8							



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ENVIRONMENTAL GROUNDWATER BORE - MW02/BH42

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 24.07.2023 & 25.07.2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Solid auger
SAMPLING METHOD Grab sample
TOTAL DEPTH 7.0 mBGL

LOGGED BY OG
CHECKED BY OG
WELL COVER Flush mount
LOCATION MW02/BH42
WELL DIAMETER 150 mm

COMMENTS Surface: Asphalt

Depth (m)	Samples	PID	Graphic Log	USCS	Material Description	Well Construction Details	Additional Observations
0	BH42_0.1	0.1			FILL. Gravelly sand, fine to coarse-grained sand, angular to sub-angular gravel, brown, dry, loose, no odours, no staining.		No ACM. Some organic matter (rootlets) observed.
0.5	BH42_0.5	0.1			FILL. Clayey sand, low plasticity, fine to medium-grained, brown, dry, mildly dense.		
1	BH42_1.0	0			FILL. Sandy clay. Low plasticity, fine to medium-grained sand, brown, dry, soft.		
1.5	BH42_1.8	0			FILL. Sandy clay. Low plasticity, fine to medium-grained sand, brown, dry to slightly moist, soft, some angular to sub-angular gravels.		Dense gravel layer at 1.8 mBGL
2	BH42_2.0	0		CLS	Sandy CLAY. Low plasticity, fine to medium-grained sand, brown-grey, slightly moist, firm.		
2.5							
3	BH42_3.0	0			Sandy CLAY. Low plasticity, fine to medium-grained sand, brown-grey with red mottling, slightly moist, firm, traces of shale		
3.5							
4	BH42_4.0	0					
4.5							
5							Increasing shale content from 5.0 mBGL.
5.5							
6	BH42_6.0	0			Weathered SHALE.		
6.5							
7	BH42_7.0	0					
					End of borehole at 7.0 m BGL		
7.5							
8							

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ENVIRONMENTAL GROUNDWATER BORE - MW03/BH45

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 27.08.2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Solid auger
SAMPLING METHOD Grab sample
TOTAL DEPTH 7.0 mBGL

LOGGED BY OG
CHECKED BY OG
WELL COVER Flush mount
LOCATION MW03/BH45
WELL DIAMETER 150 mm

COMMENTS Surface: Asphalt

Depth (m)	Samples	PID	Graphic Log	USCS	Material Description	Well Construction Details	Additional Observations
0					FILL. Gravelly sand, fine to coarse-grained sand, angular to sub-angular gravel, brown, dry, loose, no odours, no staining.		No ACM. Some organic matter (rootlets) observed.
0.5	BH45_0.45	0.2			FILL. Clayey sand, low plasticity, fine to medium-grained, brown, dry, mildly dense.		
	BH45_0.5	0.1					
1	BH45_1.0	0.0			FILL. Sandy clay. Low plasticity, fine to medium-grained sand, brown, dry, soft.		
1.5					FILL. Sandy clay. Low plasticity, fine to medium-grained sand, brown, dry to slightly moist, soft, some angular to sub-angular gravels.		Dense gravel layer at 1.8 mBGL
2				CLS	Sandy CLAY. Low plasticity, fine to medium-grained sand, brown-grey, slightly moist, firm.		
2.5							
3	BH45_3.0	0.0			Sandy CLAY. Low plasticity, fine to medium-grained sand, brown-grey with red mottling, slightly moist, firm, traces of shale		
3.5							
4	BH45_4.0	0.0					
4.5							
5							Increasing shale content from 5.0 mBGL.
5.5							
6	BH45_6.0	0.0			Weathered SHALE.		
6.5							
7					End of borehole at 7.0 m BGL		
7.5							
8							

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ENVIRONMENTAL GROUNDWATER BORE - MW04/BH24

PROJECT NUMBER EP3206
PROJECT NAME Centuria Wetherill Park DSI
ADDRESS 74/94 Newton Road Wetherill Park, NSW 2164

DRILLING DATE 18.07.2023
DRILLING COMPANY Stratacore Drilling
DRILLING METHOD Solid auger
SAMPLING METHOD Grab sample
TOTAL DEPTH 7.0 mBGL

LOGGED BY OG
CHECKED BY OG
WELL COVER Flush mount
LOCATION MW04/BH24
WELL DIAMETER 150 mm

COMMENTS Surface: Asphalt

Depth (m)	Samples	PID	Graphic Log	USCS	Material Description	Well Construction Details	Additional Observations
0	BH24/MW04_0.1	0.3			FILL. Silty sand, fine to medium-grained, brown, dry, loose.		
0.5	BH24/MW04_0.5	0.0					
1	BH24/MW04_1.0	0.1		CLS	Sandy CLAY. Low plasticity, red-brown, dry, stiff.		
1.5							
2							
2.5							
3		0.0			Sandy CLAY. Low plasticity, brown, slightly moist, soft.		
3.5							
4							
4.5							
5	BH24/MW04_5.0	0.0					
5.5							
6					Sandy CLAY. Low plasticity, grey, slightly moist, weathered rock.		
6.5							
7					End of borehole at 7.0 m BGL		
7.5							
8							

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Appendix E
CALIBRATION CERTIFICATES

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (60m)
Serial Number	01-8175
Client Name	Sally Kennedy (EP Risk Management Pty Ltd)
Project Number	EP3206

Instrument Check			
Item	Test	Test Passed	Comments
9V Battery	Klein Tools MM300 Multimeter	✓	Battery voltage reading above 7.9V
Battery Box	Check	✓	No damage
Face and Back Plates	Check	✓	No damage
Thumb Screws	Check	✓	Rubber ends intact
Tape Hangar/Protector	Check	✓	No damage
On/Off Button	Operation	✓	Button is functional
Buzzer	Operation	✓	Intermittent tone in H_2O, solid tone in product
LED Signal Light	Operation	✓	LED light functional – green and red
Probe	Operation/Check	✓	Decontaminated, cleaned and tested
Tape	Condition/Check	✓	Decontaminated and cleaned, no damage
Connection	Check	✓	Probe and link connected correctly and tightly
PCB	Operation	✓	Unit is fully functional
Electronics Panel	Orientation	✓	Correctly aligned

Instrument Readings		
Product	Buzzer	LED Light
H_2O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

Checked By	William Pak
Calibration Date	01/11/2023
Calibration Due	01/05/2024

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

WAM Scientific:
Sydney Office - Clemton Park
16 Lawn Avenue
CLEMTON PARK NSW 2206
T: +61 405 241 484
E: rentals@wamscientific.com.au

Website: www.wamscientific.com.au
Alternate Email Addresses:
admin@wamscientific.com.au
accounts@wamscientific.com.au
sales@wamscientific.com.au
service@wamscientific.com.au

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Plus Water Quality Meter w/ 1m Quatro Cable
Serial Number	20G100643
Client Name	Sally Kennedy (EP Risk Management Pty Ltd)
Project Number	EP3206
Comments	-

Instrument Check

Item	Test	Test Passed	Comments
2 x Alkaline C-size Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 2.9V
Battery Saver Function	Operation	✓	Automatically turns off after 60 minutes if idle
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Connection Port and Cable	Condition/Check	✓	Clean, no damage
Monitor Housing	Condition/Check	✓	No damage
Firmware	Version	✓	4.0.0
pH Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
pH millivolts for pH 7.00	Calibration	✓	pH 7.00 calibration range between 0 mV ± 50 mV
pH millivolts for pH 4.00	Calibration	✓	pH 4 mV range +165 to +180 from 7 buffer mV value
pH slope	Calibration	✓	Range between 55 to 60 mV/pH (ideal value 59 mV)
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
ORP Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
ORP Reading	Calibration	✓	Within ± 80 mV of reference Zobell Reading
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
Conductivity/Temp Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
Conductivity Cell	Calibration	✓	Conductivity cell constant 5.0 ± 1.0 in GLP file
Clean Sensor Readings	Calibration	✓	Clean sensor reads less than 3 uS/cm in dry air
Dissolved Oxygen Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
DO Cap	Condition/Calibration	✓	1.25 mil PE membrane (yellow membrane)
DO Sensor in Use	Condition	✓	Polarographic DO sensor
DO Sensor Value	Calibration	✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA

Instrument Readings

Parameter	Standard Used	Reference No.	Calibration Value	Observed	Actual	Units
Temperature	Centre 370 Thermometer	Room Temp.	18.6	18.3	18.6	°C
pH	pH 4.00	386466	4.01	4.10	4.01	pH
pH	pH 7.00	387329	7.00	7.02	7.00	pH
Conductivity	2760 µs/cm at 25°C	388521	2760	2609	2760	µs/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	245.2	253.9	245.2	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	389912	0.0	-1.1	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	103.7	100.0	%

Declaration

WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using solutions of known values.

Calibrated By	William Pak
Calibration Date	01/11/2023
Calibration Due	01/05/2024

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

WAM Scientific:
26 Bungarra Crescent
CHIPPING NORTON NSW 2170
T: +61 405 241 484 | +61 424 198 667
E: rentals@wamscientific.com.au
E: accounts@wamscientific.com.au

Calibration and Service Report

ABN: 74 619 717 350
Contact: 02 9730 2019
Email: sales@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761
Web: www.experttesting.com.au

EXPERT TESTING SERVICES

Company:	EP Risk Management Pty Ltd	**Manufacturer:**	Ion Science	**Serial #:**	L-111467
Contact:	Alex Thomson	**Instrument:**	Phocheck Tiger Select	**Asset #:**	-EPR-053
Address:	109/283 Alfred Street NORTH SYDNEY NSW 2060	**Model:**	Tiger	**Part #:**	-
		Configuration:	VOC	**Sold:**	-
Phone:	0433 309 328	**Wireless:**	-	**Last Cal:**	10.03.2023
Fax:		**Network ID:**	-	**Job #:**	103287
Email:	alex.thomson@eprisk.com.au	**Unit ID:**	-EPR-053	**Cal Spec:**	Std
				Order #:	TBA

Item	Test	Pass/Fail	Comments	Part Code	S/W
Battery	NiCd, NiMH, Dry cell, Li Ion	✓			
Charger	Charger, Power supply	✓			
	Cradle	✓			
Pump	Flow	✓	>500ml/min		
Filter	Filter, fitting, etc	✓			
Alarms	Audible, visual, vibration	✓			
Display	Operation	✓			
Switches	Operation	✓			
PCB	Operation	✓			
Connectors	Condition	✓			
Firmware	Version	✓	V0.8.11		
Datalogger	Operation	✓			
Monitor Housing	Condition	✓			
Case	Condition/Type	✓			
Sensors					
PID	Lamp	✓			
PID	Sensor	✓			
THP	Sensor	✓			

Engineer's Report

Checked unit settings and configuration – okay
Lamp selection set to 10.6eV.
Unit allowed to stabilize and zero calibration performed as per manufacturers specifications
Calibration procedure written and performed to manufacturers specification using traceable gases.

Calibration Certificate

Sensor	Type	Serial No:	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
PID	10.6eV select		Isobutylene	100ppm	WO205484		0	100ppm

Calibrated/Repaired by: **Amend Kumar** Date: **10.03.2023** Next Due: **10.09.2023**

GCC ISO 9001 Certified GCC ISO 14001 Certified JAS-ANZ WWW.JAS-ANZ.ORG/REGISTER

Calibration and Service Report

EXPERT TESTING SERVICES
ABN: 74 619 717 350
Contact: 02 9730 2019
Email: sales@experttesting.com.au
9/171 Power Street, Glendenning NSW 2761
Web: www.experttesting.com.au

Company:	EP Risk Management Pty Ltd	**Manufacturer:**	Ion Science	**Serial #:**	L-111467
Contact:	Alex Thomson	**Instrument:**	Phocheck Tiger Select	**Asset #:**	-EPR-053
Address:	109/283 Alfred Street NORTH SYDNEY NSW 2060	**Model:**	Tiger	**Part #:**	-
		Configuration:	VOC	**Sold:**	-
Phone:	0433 309 328	**Wireless:**	-	**Last Cal:**	16.09.2023
Fax:		**Network ID:**	-	**Job #:**	104219
Email:	alex.thomson@eprisk.com.au	**Unit ID:**	-EPR-052	**Cal Spec:**	Std
				Order #:	TBA

Item	Test	Pass/Fail	Comments	Part Code	S/W
Battery	NiCd, NiMH, Dry cell, Li Ion	✓			
Charger	Charger, Power supply	✓			
	Cradle	✓			
Pump	Flow	✓	Serviced >300ml/min		
Filter	Filter, fitting, etc	✓			
Alarms	Audible, visual, vibration	✓			
Display	Operation	✓			
Switches	Operation	✓			
PCB	Operation	✓			
Connectors	Condition	✓			
Firmware	Version	✓	V0.8.11		
Datalogger	Operation	✓			
Monitor Housing	Condition	✓			
Case	Condition/Type	✓			
Sensors					
PID	Lamp	✓			
PID	Sensor	✓			
THP	Sensor	✓			

Engineer's Report

Checked unit settings and configuration – okay
Lamp selection set to 10.6eV.
Unit allowed to stabilize and zero calibration performed as per manufacturers specifications
Calibration procedure written and performed to manufacturers specification using traceable gases.

Calibration Certificate

Sensor	Type	Serial No:	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
PID	10.6eV select		Isobutylene	100ppm	WO205484		0	100ppm

Calibrated/Repaired by: **Amend Kumar** Date: **16.09.2023** Next Due: **16.03.2024**

GCC ISO 9001 Certified GCC ISO 14001 Certified JAS-ANZ WWW.JAS-ANZ.ORG/REGISTER

Appendix F

NATA ACCREDITED LABORATORY REPORTS

Bulk Identification Report

Job No: 754-SYDEN234000 Bulk ID Report EP3206 01082023
Client: EP Risk Management Pty Ltd
Client Address: Suite 13.01, Level 13, 80 Mount Street, North Sydney, NSW

Contact: Oscar Godfrey
E-mail: oscar.godfrey@eprisk.com.au
Date Sampled: 18-27/07/2023
Date Analysed: 2 & 3/08/2023
Date Authorised: 03-08-23
Sampled By: As received by client (Andrew Lepre)
Site: Wetherill Park DSI

Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation No:2220
Corporate Site No:16909

Please note: Where you have provided the samples for analysis, Tetra Tech Coffey Pty Ltd does not take any responsibility for the quality of the such samples. This report relates exclusively to the samples analysed by Tetra Tech Coffey Pty Ltd and as such only the samples submitted or collected for analysis have been considered in presenting these results. The data and results contained in this report are not representative of the site, product or source material as a whole. Tetra Tech Coffey Pty Ltd does not make any warranty or representation in relation to the site, product or source material as a whole. If you suspect any material to contain asbestos, then you must immediately stop the works and activities at the site or in respect of the materials and engage Tetra Tech Coffey Pty Ltd or another suitably trained asbestos hygienist to sample, assess or re-assess (as the case may be) the material suspected to contain asbestos.

Test Method: **Asbestos in Bulk Samples and Non-homogenous Material**
Tetra Tech Coffey Pty Ltd analyses bulk samples for asbestos using polarising light microscopy and dispersion staining techniques in accordance with Coffey SOP WILAB1, and Australian Standard (AS) 4964 – 2004, Method for the qualitative identification of asbestos in bulk samples (AS 4964). The detection limit for the test method as per AS 4964 is 0.1 g/kg. For non-homogenous samples a semi-quantitative aspect is adopted for the test method and is taken into account when reporting the results. As per Tetra Tech Coffey Pty Ltd's NATA approved SOP WILAB1 sample retention periods are set at 1 month for all samples from the date of analysis.

Analysed At: Tetra Tech Coffey Pty Ltd Laboratory, Level 20, Tower B, Citadel Towers 799 Pacific Highway Chatswood NSW 2067

Total Samples: 2 Bulk ID & 15 Soil samples

Approved Identifier
Panika Wongchanda & Matthew Tang

Approved Signatory
Matthew Tang

Sample No.	Location & Description	Sample Size (~)	Results
TP37_0.1_MS01	As received - Grey compressed fibre cement sheet material	45 x 33 x 5 mm / 4.5 g	**Chrysotile (white asbestos) detected Amosite (brown asbestos) detected Crocidolite (blue asbestos) detected**
TP37_0.1_MS02	As received - Grey compressed fibre cement sheet material	34 x 21 x 5 mm / 4.9 g	**Chrysotile (white asbestos) detected Amosite (brown asbestos) detected Crocidolite (blue asbestos) detected**
TP37_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 546.2 g > 2mm fraction ~ 180.7 g < 2mm fraction ~ 365.5 g < 2mm sub sample ~ 39.4 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP01_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 573.3 g > 2mm fraction ~ 155.3 g < 2mm fraction ~ 418 g < 2mm sub sample ~ 34.1 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP02_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 524.4 g > 2mm fraction ~ 182.5 g < 2mm fraction ~ 341.9 g < 2mm sub sample ~ 36.4 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP03_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 471.5 g > 2mm fraction ~ 177.8 g < 2mm fraction ~ 293.7 g < 2mm sub sample ~ 33.1 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004

Sample No.	Location & Description	Sample Size (~)	Results
TP04_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 443.8 g > 2mm fraction ~ 159.6 g < 2mm fraction ~ 284.2 g < 2mm sub sample ~ 33.3 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP05_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 530.2 g > 2mm fraction ~ 171.5 g < 2mm fraction ~ 358.7 g < 2mm sub sample ~ 33.7 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP06_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 507 g > 2mm fraction ~ 231.1 g < 2mm fraction ~ 275.9 g < 2mm sub sample ~ 32.4 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP07_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 562.2 g > 2mm fraction ~ 272.7 g < 2mm fraction ~ 289.5 g < 2mm sub sample ~ 36 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH21_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 492.9 g > 2mm fraction ~ 418.2 g < 2mm fraction ~ 344.7 g < 2mm sub sample ~ 41.9 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH07_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 499.2 g > 2mm fraction ~ 236.1 g < 2mm fraction ~ 263.1 g < 2mm sub sample ~ 43.5 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP08_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 570.9 g > 2mm fraction ~ 239.7 g < 2mm fraction ~ 331.2 g < 2mm sub sample ~ 64.8 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
TP33_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 603.8 g > 2mm fraction ~ 282.8 g < 2mm fraction ~ 321 g < 2mm sub sample ~ 32.7 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH23_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 664.4 g > 2mm fraction ~ 198.9 g < 2mm fraction ~ 465.5 g < 2mm sub sample ~ 32.7 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH26_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 622.7 g > 2mm fraction ~ 228.2 g < 2mm fraction ~ 394.5 g < 2mm sub sample ~ 30.3 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH32_0.1	As received - Brown non-homogeneous soil & rocks	Total sample ~ 346.1 g > 2mm fraction ~ 114.3 g < 2mm fraction ~ 231.8 g < 2mm sub sample ~ 45.8 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004

Notes

Subsampling is carried out as per Coffey SOP WILAB1 using the coning and quartering method, please note subsampling may reduce the accuracy of the analytical result.

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Bulk Identification Report

Job No: 754-SYDEN234000 Bulk ID Report EP3206 25102023
Client: EP Risk Management Pty Ltd
Client Address: Suite 1301, Level 13, 80 Mount Street,
North Sydney NSW 2060

Contact: Sally Kennedy
E-mail: sally.kennedy@eprisk.com.au & oscar.godfrey@eprisk.com.au
Date Sampled: 08-10-23
Date Analysed: 26-10-23
Date Authorised: 26-10-23
Sampled By: Oscar Godfrey
Site: 94 Newton Rd Wetherill Park

Accredited for compliance with ISO/IEC 17025 - Testing
Accreditation No:2220
Corporate Site No:16909

Please note: Where you have provided the samples for analysis, Tetra Tech Coffey Pty Ltd does not take any responsibility for the quality of the such samples. This report relates exclusively to the samples analysed by Tetra Tech Coffey Pty Ltd and as such only the samples submitted or collected for analysis have been considered in presenting these results. The data and results contained in this report are not representative of the site, product or source material as a whole. Tetra Tech Coffey Pty Ltd does not make any warranty or representation in relation to the site, product or source material as a whole. If you suspect any material to contain asbestos, then you must immediately stop the works and activities at the site or in respect of the materials and engage Tetra Tech Coffey Pty Ltd or another suitably trained asbestos hygienist to sample, assess or re-assess (as the case may be) the material suspected to contain asbestos.

Test Method: **Asbestos in Bulk Samples and Non-homogenous Material**
Tetra Tech Coffey Pty Ltd analyses bulk samples for asbestos using polarising light microscopy and dispersion staining techniques in accordance with Coffey SOP WILAB1, and Australian Standard (AS) 4964 – 2004, Method for the qualitative identification of asbestos in bulk samples (AS 4964). The detection limit for the test method as per AS 4964 is 0.1 g/kg. For non-homogenous samples a semi-quantitative aspect is adopted for the test method and is taken into account when reporting the results. As per Tetra Tech Coffey Pty Ltd's NATA approved SOP WILAB1 sample retention periods are set at 1 month for all samples from the date of analysis.

Analysed At: Tetra Tech Coffey Pty Ltd Laboratory, Level 20, Tower B, Citadel Towers 799 Pacific Highway Chatswood NSW 2067

Total Samples: 4

Approved Identifier
Matthew Tang

Approved Signatory
Matthew Tang

Sample No.	Location & Description	Sample Size (~)	Results
BH11_0.3	As received - Brown non-homogeneous soil & rocks	Total sample ~ 630.6 g > 2mm fraction ~ 196.3 g < 2mm fraction ~ 434.3 g < 2mm sub sample ~ 45.4 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH20_0.3	As received - Brown non-homogeneous soil & rocks	Total sample ~ 540.5 g > 2mm fraction ~ 125.8 g < 2mm fraction ~ 414.7 g < 2mm sub sample ~ 43.6 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH29_0.3	As received - Brown non-homogeneous soil & rocks	Total sample ~ 495.7 g > 2mm fraction ~ 93.3 g < 2mm fraction ~ 402.4 g < 2mm sub sample ~ 39.3 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004
BH43_0.4	As received - Brown non-homogeneous soil & rocks	Total sample ~ 378.1 g > 2mm fraction ~ 231.1 g < 2mm fraction ~ 147.0 g < 2mm sub sample ~ 45.3 g	No asbestos detected above the reporting limit of 0.1 g/kg Organic fibres detected No trace (respirable) asbestos detected as per AS 4964 2004

Notes

Subsampling is carried out as per Coffey SOP WILAB1 using the coning and quartering method, please note subsampling may reduce the accuracy of the analytical result.

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EP Risk Management (NSW)
80 Mount Street,
North Sydney
NSW 2060

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Oscar Godfrey**

Report **1012534-S**
Project name WHETERILL PARK DSI
Received Date Jul 31, 2023

Client Sample ID			**TRIP01**
Sample Matrix			**Soil**
Eurofins Sample No.			**S23-Au0000320**
Date Sampled			**Jul 19, 2023**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	102
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			TRIP01
Sample Matrix			Soil
Eurofins Sample No.			S23-Au0000320
Date Sampled			Jul 19, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	84
p-Terphenyl-d14 (surr.)	1	%	89
Heavy Metals			
Arsenic	2	mg/kg	4.4
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	14
Copper	5	mg/kg	22
Lead	5	mg/kg	14
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	14
Zinc	5	mg/kg	46
Sample Properties			
% Moisture	1	%	16

Sample History

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

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Aug 04, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 04, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 04, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Aug 04, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Aug 04, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Aug 04, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Aug 01, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

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

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: EP Risk Management (NSW)
Address: 80 Mount Street,
North Sydney
NSW 2060

Project Name: WHETERILL PARK DSI

Order No.:
Report #: 1012534
Phone: 02 99225021
Fax:

Received: Jul 31, 2023 2:40 PM
Due: Aug 7, 2023
Priority: 5 Day
Contact Name: Oscar Godfrey

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Moisture Set	Eurofins Suite B7
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TRIP01	Jul 19, 2023		Soil	S23-Au0000320	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	78			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	87			70-130	Pass	
TRH C6-C10	%	74			70-130	Pass	
TRH >C10-C16	%	83			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	76			70-130	Pass	
m&p-Xylenes	%	81			70-130	Pass	
o-Xylene	%	82			70-130	Pass	
Xylenes - Total*	%	82			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	72			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	96			70-130	Pass	
Acenaphthylene	%	97			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	89			70-130	Pass	
Benzo(a)pyrene	%	91			70-130	Pass	
Benzo(b&j)fluoranthene	%	93			70-130	Pass	
Benzo(g.h.i)perylene	%	86			70-130	Pass	
Benzo(k)fluoranthene	%	83			70-130	Pass	
Chrysene	%	87			70-130	Pass	
Dibenz(a.h)anthracene	%	86			70-130	Pass	
Fluoranthene	%	94			70-130	Pass	
Fluorene	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	85			70-130	Pass	
Naphthalene	%	95			70-130	Pass	
Phenanthrene	%	96			70-130	Pass	
Pyrene	%	94			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	91			80-120	Pass	
Cadmium	%	91			80-120	Pass	
Chromium	%	90			80-120	Pass	
Copper	%	91			80-120	Pass	
Lead	%	97			80-120	Pass	
Mercury	%	111			80-120	Pass	
Nickel	%	91			80-120	Pass	
Zinc	%	88			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Au0010355	NCP	%	70			70-130	Pass	
TRH C10-C14	S23-Au0009033	NCP	%	84			70-130	Pass	
TRH C6-C10	S23-Jl0054161	NCP	%	72			70-130	Pass	
TRH >C10-C16	S23-Au0009033	NCP	%	82			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Au0010355	NCP	%	96			70-130	Pass	
Toluene	S23-Au0010355	NCP	%	83			70-130	Pass	
Ethylbenzene	S23-Au0010355	NCP	%	82			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	S23-Au0010355	NCP	%	80			70-130	Pass	
o-Xylene	S23-Au0010355	NCP	%	74			70-130	Pass	
Xylenes - Total*	S23-Au0010355	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S23-Jl0046694	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S23-Au0007582	NCP	%	101			70-130	Pass	
Acenaphthylene	S23-Au0007582	NCP	%	105			70-130	Pass	
Anthracene	S23-Au0007582	NCP	%	105			70-130	Pass	
Benzo(a)pyrene	S23-Au0007582	NCP	%	125			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Au0007582	NCP	%	121			70-130	Pass	
Benzo(g.h.i)perylene	S23-Au0007582	NCP	%	102			70-130	Pass	
Benzo(k)fluoranthene	S23-Au0007582	NCP	%	117			70-130	Pass	
Dibenz(a.h)anthracene	S23-Au0007582	NCP	%	98			70-130	Pass	
Fluorene	S23-Au0007582	NCP	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S23-Au0007582	NCP	%	100			70-130	Pass	
Naphthalene	S23-Au0007582	NCP	%	100			70-130	Pass	
Phenanthrene	S23-Au0007582	NCP	%	124			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Au0009002	NCP	%	100			75-125	Pass	
Cadmium	S23-Au0009002	NCP	%	101			75-125	Pass	
Chromium	S23-Au0009002	NCP	%	102			75-125	Pass	
Copper	S23-Au0009002	NCP	%	98			75-125	Pass	
Lead	S23-Au0009002	NCP	%	112			75-125	Pass	
Mercury	S23-Au0001041	NCP	%	112			75-125	Pass	
Nickel	S23-Au0009002	NCP	%	99			75-125	Pass	
Zinc	S23-Au0009002	NCP	%	99			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Au0000124	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-Au0000125	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Au0000125	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Au0000125	NCP	mg/kg	60	< 50	47	30%	Fail	Q15
TRH C6-C10	S23-Au0000124	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S23-Au0000125	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-Au0000125	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-Au0000125	NCP	mg/kg	100	< 100	24	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Au0000124	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Au0000124	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Au0000124	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Au0000124	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Au0000124	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Au0000124	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S23-Au0000124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Au0009001	NCP	mg/kg	2.6	4.5	52	30%	Fail	Q15
Cadmium	S23-Au0009001	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S23-Au0009001	NCP	mg/kg	10	14	30	30%	Pass	
Copper	S23-Au0009001	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	S23-Au0009001	NCP	mg/kg	9.7	12	25	30%	Pass	
Mercury	S23-Au0009001	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S23-Au0009001	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S23-Au0009001	NCP	mg/kg	9.9	14	37	30%	Fail	Q15
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Au0001043	NCP	%	12	11	3.4	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised by:

Ursula Long	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Fang Yee Tan	Senior Analyst-Metal



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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EP Risk Management (NSW)
80 Mount Street,
North Sydney
NSW 2060

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Oscar Godfrey**

Report **1012827-S**
Project name WHETERILL PARK DSI
Project ID RP3206
Received Date Aug 01, 2023

Client Sample ID			**TRIP02**	**TRIP03**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S23-Au0002798**	**S23-Au0002799**
Date Sampled			**Jul 25, 2023**	**Jul 26, 2023**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	94
TRH C29-C36	50	mg/kg	< 50	75
TRH C10-C36 (Total)	50	mg/kg	< 50	169
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	140
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	140
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	83	53
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			TRIP02	TRIP03
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Au0002798	S23-Au0002799
Date Sampled			Jul 25, 2023	Jul 26, 2023
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	0.7
Total PAH*	0.5	mg/kg	< 0.5	1.2
2-Fluorobiphenyl (surr.)	1	%	112	118
p-Terphenyl-d14 (surr.)	1	%	105	133
Heavy Metals				
Arsenic	2	mg/kg	4.8	4.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	17	9.8
Copper	5	mg/kg	20	23
Lead	5	mg/kg	78	85
Mercury	0.1	mg/kg	< 0.1	0.2
Nickel	5	mg/kg	13	6.4
Zinc	5	mg/kg	170	85
Sample Properties				
% Moisture	1	%	20	7.2

Sample History

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

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Aug 03, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 03, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Aug 03, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Aug 03, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Aug 03, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Aug 03, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Aug 01, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261
Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261
Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261
Site# 25466

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

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Tauranga
1277 Cameron Road,
Gate Pa,
Tauranga 3112
Tel: +64 9 525 0568
IANZ# 1402

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: EP Risk Management (NSW)
Address: 80 Mount Street,
North Sydney
NSW 2060

Project Name: WHETERILL PARK DSI
Project ID: RP3206

Order No.:
Report #: 1012827
Phone: 02 99225021
Fax:

Received: Aug 1, 2023 1:20 PM
Due: Aug 8, 2023
Priority: 5 Day
Contact Name: Oscar Godfrey

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Moisture Set	Eurofins Suite B7
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	TRIP02	Jul 25, 2023		Soil	S23-Au0002798	X	X
2	TRIP03	Jul 26, 2023		Soil	S23-Au0002799	X	X
Test Counts						2	2

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Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	83			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	103			70-130	Pass	
TRH C6-C10	%	84			70-130	Pass	
TRH >C10-C16	%	100			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	92			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	98			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes - Total*	%	99			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	107			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	101			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	100			70-130	Pass	
Benzo(a)pyrene	%	103			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	125			70-130	Pass	
Benzo(k)fluoranthene	%	102			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	130			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	125			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
Phenanthrene	%	105			70-130	Pass	
Pyrene	%	109			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	93			80-120	Pass	
Cadmium	%	92			80-120	Pass	
Chromium	%	95			80-120	Pass	
Copper	%	94			80-120	Pass	
Lead	%	101			80-120	Pass	
Mercury	%	118			80-120	Pass	
Nickel	%	95			80-120	Pass	
Zinc	%	91			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Au0007427	NCP	%	102			70-130	Pass	
TRH C10-C14	R23-Jl0067262	NCP	%	85			70-130	Pass	
TRH C6-C10	S23-Au0007427	NCP	%	103			70-130	Pass	
TRH >C10-C16	R23-Jl0067262	NCP	%	82			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Au0009168	NCP	%	73			70-130	Pass	
Toluene	S23-Au0007427	NCP	%	111			70-130	Pass	
Ethylbenzene	S23-Au0009168	NCP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	S23-Au0009168	NCP	%	72			70-130	Pass	
o-Xylene	S23-Au0009168	NCP	%	72			70-130	Pass	
Xylenes - Total*	S23-Au0009168	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S23-Au0009168	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Au0002798	CP	%	106			75-125	Pass	
Cadmium	S23-Au0002798	CP	%	105			75-125	Pass	
Chromium	S23-Au0002798	CP	%	104			75-125	Pass	
Copper	S23-Au0002798	CP	%	98			75-125	Pass	
Lead	S23-Au0007735	NCP	%	102			75-125	Pass	
Mercury	S23-Au0007735	NCP	%	110			75-125	Pass	
Nickel	S23-Au0002798	CP	%	96			75-125	Pass	
Zinc	S23-Au0007735	NCP	%	125			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	R23-Jl0067261	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	R23-Jl0067261	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	R23-Jl0067261	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	R23-Jl0067261	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	R23-Jl0067261	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	R23-Jl0067261	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S23-Au0006275	NCP	mg/kg	0.7	0.6	14	30%	Pass	
Fluorene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S23-Au0006275	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S23-Au0006275	NCP	mg/kg	0.6	< 0.5	47	30%	Fail	Q15
Pyrene	S23-Au0006275	NCP	mg/kg	0.6	< 0.5	27	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Au0009205	NCP	mg/kg	4.9	5.0	2.2	30%	Pass	
Cadmium	S23-Au0009205	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S23-Au0009205	NCP	mg/kg	9.0	9.2	2.1	30%	Pass	
Copper	S23-Au0009205	NCP	mg/kg	11	11	<1	30%	Pass	
Lead	S23-Au0009205	NCP	mg/kg	13	13	<1	30%	Pass	
Mercury	S23-Au0009205	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S23-Au0009205	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S23-Au0009205	NCP	mg/kg	9.9	9.9	<1	30%	Pass	

Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Au0002695	NCP	%	26	29	13	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Au0002799	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10	S23-Au0002799	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Au0002799	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Au0002799	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Au0002799	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Au0002799	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Au0002799	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Au0002799	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Au0002799	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised by:

Adam Bateup	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Fang Yee Tan	Senior Analyst-Metal



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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EP Risk Management (NSW)
80 Mount Street,
North Sydney
NSW 2060

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Attention: **Sally Kennedy**

Report **1028890-W**
Project name
Project ID EP3206
Received Date Sep 21, 2023

Client Sample ID			**MW01**	**MW02**	**MW03**	**MW04**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S23-Se0056424**	**S23-Se0056425**	**S23-Se0056426**	**S23-Se0056427**
Date Sampled			**Sep 17, 2023**	**Sep 17, 2023**	**Sep 17, 2023**	**Sep 17, 2023**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	99	99	109	101
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW01	MW02	MW03	MW04
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S23-Se0056424	S23-Se0056425	S23-Se0056426	S23-Se0056427
Date Sampled			Sep 17, 2023	Sep 17, 2023	Sep 17, 2023	Sep 17, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	61	59	57	53
p-Terphenyl-d14 (surr.)	1	%	100	101	98	101
Salinity (determined from EC)*	0.1	mg/L	13000	6000	1900	13000
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	0.0004	< 0.0002	0.0004
Chromium (filtered)	0.001	mg/L	0.002	0.002	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.016	0.016	0.001	0.069
Lead (filtered)	0.001	mg/L	< 0.001	0.002	< 0.001	0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.049	0.013	0.002	0.074
Zinc (filtered)	0.005	mg/L	0.028	0.062	0.008	0.23

Client Sample ID			RB01	DUP01	TB01	TS01
Sample Matrix			Water	Water	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			S23-Se0056428	S23-Se0056429	S23-Se0056430	S23-Se0056431
Date Sampled			Sep 17, 2023	Sep 17, 2023	Sep 17, 2023	Sep 17, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	97	103	102	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	-	-

Client Sample ID			RB01	DUP01	TB01	TS01
Sample Matrix			Water	Water	Trip Blank (liquid)	Trip Spike (liquid)
Eurofins Sample No.			S23-Se0056428	S23-Se0056429	S23-Se0056430	S23-Se0056431
Date Sampled			Sep 17, 2023	Sep 17, 2023	Sep 17, 2023	Sep 17, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	55	INT	-	-
p-Terphenyl-d14 (surr.)	1	%	99	97	-	-
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01	-
TRH C6-C10	1	%	-	-	-	68
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	0.0004	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	0.001	-	-
Copper (filtered)	0.001	mg/L	< 0.001	0.068	-	-
Lead (filtered)	0.001	mg/L	< 0.001	0.001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	0.072	-	-
Zinc (filtered)	0.005	mg/L	< 0.005	0.23	-	-
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	-	88
TRH C6-C9	1	%	-	-	-	66
BTEX						
Benzene	1	%	-	-	-	110
Ethylbenzene	1	%	-	-	-	86
m&p-Xylenes	1	%	-	-	-	96
o-Xylene	1	%	-	-	-	82
Toluene	1	%	-	-	-	86
Xylenes - Total	1	%	-	-	-	87
4-Bromofluorobenzene (surr.)	1	%	-	-	-	115

Sample History

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

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Sep 27, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Sep 27, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Sep 25, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Sep 27, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Sep 27, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Sep 27, 2023	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8 filtered	Sydney	Sep 27, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Salinity (determined from EC)*	Sydney	Sep 27, 2023	0 Days
- Method: LTM-INO-4030			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: EP Risk Management (NSW)
Address: 80 Mount Street,
North Sydney
NSW 2060

Project Name:
Project ID: EP3206

Order No.:
Report #: 1028890
Phone: 02 99225021
Fax:

Received: Sep 21, 2023 3:10 PM
Due: Sep 28, 2023
Priority: 5 Day
Contact Name: Sally Kennedy

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						HOLD	Salinity (determined from EC)*	Eurofins Suite B7 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	MW01	Sep 17, 2023		Water	S23-Se0056424		X	X		
2	MW02	Sep 17, 2023		Water	S23-Se0056425		X	X		
3	MW03	Sep 17, 2023		Water	S23-Se0056426		X	X		
4	MW04	Sep 17, 2023		Water	S23-Se0056427		X	X		
5	RB01	Sep 17, 2023		Water	S23-Se0056428			X		
6	DUP01	Sep 17, 2023		Water	S23-Se0056429			X		
7	TB01	Sep 17, 2023		Trip Blank (liquid)	S23-Se0056430				X	
8	TS01	Sep 17, 2023		Trip Spike (liquid)	S23-Se0056431					X
9	BH04_3.0	Sep 17, 2023		Soil	S23-Se0056451	X				
Test Counts						1	4	6	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	107			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	82			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	79			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	106			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	100			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total*	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	91			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	107			70-130	Pass	
Acenaphthylene	%	111			70-130	Pass	
Anthracene	%	108			70-130	Pass	
Benz(a)anthracene	%	102			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	104			70-130	Pass	
Benzo(g.h.i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	117			70-130	Pass	
Chrysene	%	114			70-130	Pass	
Dibenz(a.h)anthracene	%	100			70-130	Pass	
Fluoranthene	%	118			70-130	Pass	
Fluorene	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	79			70-130	Pass	
Phenanthrene	%	111			70-130	Pass	
Pyrene	%	118			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	99			80-120	Pass	
Cadmium (filtered)	%	98			80-120	Pass	
Chromium (filtered)	%	103			80-120	Pass	
Copper (filtered)	%	103			80-120	Pass	
Lead (filtered)	%	103			80-120	Pass	
Mercury (filtered)	%	109			80-120	Pass	
Nickel (filtered)	%	104			80-120	Pass	
Zinc (filtered)	%	103			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S23-Se0056425	CP	%	88			70-130	Pass	
TRH >C10-C16	S23-Se0056425	CP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S23-Se0056429	CP	%	109			75-125	Pass	
Cadmium (filtered)	S23-Se0056429	CP	%	99			75-125	Pass	
Chromium (filtered)	S23-Se0056429	CP	%	94			75-125	Pass	
Copper (filtered)	S23-Se0056429	CP	%	84			75-125	Pass	
Lead (filtered)	S23-Se0056429	CP	%	92			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury (filtered)	S23-Se0056429	CP	%	98			75-125	Pass	
Nickel (filtered)	S23-Se0056429	CP	%	86			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Se0055055	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	N23-Se0052178	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	N23-Se0052178	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	N23-Se0052178	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S23-Se0055055	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	N23-Se0052178	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	N23-Se0052178	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	N23-Se0052178	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Se0055055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S23-Se0055055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S23-Se0055055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S23-Se0055055	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S23-Se0055055	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S23-Se0055055	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Se0055055	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S23-Se0054924	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Salinity (determined from EC)*	S23-Se0056424	CP	mg/L	13000	13000	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S23-Se0056424	CP	mg/L	< 0.001	0.001	36	30%	Fail	Q15
Cadmium (filtered)	S23-Se0056424	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S23-Se0056424	CP	mg/L	0.002	0.002	26	30%	Pass	
Copper (filtered)	S23-Se0056424	CP	mg/L	0.016	0.016	4.8	30%	Pass	
Lead (filtered)	S23-Se0056424	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S23-Se0056424	CP	mg/L	0.049	0.049	<1	30%	Pass	
Zinc (filtered)	S23-Se0056424	CP	mg/L	0.028	0.029	3.5	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised by:

Ursula Long	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Ryan Phillips	Senior Analyst-Inorganic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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EP Risk Management (NSW)
80 Mount Street,
North Sydney
NSW 2060

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Oscar Godfrey**

Report **1035164-S**
Project name WHETERILL PARK DSI
Project ID EP3206
Received Date Oct 16, 2023

Client Sample ID			**TRP05**
Sample Matrix			**Soil**
Eurofins Sample No.			**S23-Oc0034458**
Date Sampled			**Oct 08, 2023**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5

Client Sample ID			TRP05
Sample Matrix			Soil
Eurofins Sample No.			S23-Oc0034458
Date Sampled			Oct 08, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88
p-Terphenyl-d14 (surr.)	1	%	97
Heavy Metals			
Arsenic	2	mg/kg	5.8
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	30
Copper	5	mg/kg	18
Lead	5	mg/kg	13
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	14
Zinc	5	mg/kg	15
Sample Properties			
% Moisture	1	%	16

Sample History

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

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 19, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 19, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 19, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Oct 19, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 19, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Oct 19, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Oct 17, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: EP Risk Management (NSW)
Address: 80 Mount Street,
North Sydney
NSW 2060

Project Name: WHETERILL PARK DSI
Project ID: EP3206

Order No.:
Report #: 1035164
Phone: 02 99225021
Fax:

Received: Oct 16, 2023 1:10 PM
Due: Oct 23, 2023
Priority: 5 Day
Contact Name: Oscar Godfrey

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Moisture Set	Eurofins Suite B7	Eurofins Suite SVV: SVOC/VOC	Per- and Polyfluoroalkyl Substances (PFASs) - Short
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	TRP02	Oct 08, 2023		Water	S23-Oc0034457			X	X
2	TRP05	Oct 08, 2023		Soil	S23-Oc0034458	X	X		
Test Counts						1	1	1	1

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Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	94			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	93			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	95			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	95			70-130	Pass	
Ethylbenzene	%	89			70-130	Pass	
m&p-Xylenes	%	94			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total*	%	96			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	119			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	120			70-130	Pass	
Acenaphthylene	%	116			70-130	Pass	
Anthracene	%	119			70-130	Pass	
Benz(a)anthracene	%	116			70-130	Pass	
Benzo(a)pyrene	%	116			70-130	Pass	
Benzo(b&j)fluoranthene	%	111			70-130	Pass	
Benzo(g.h.i)perylene	%	117			70-130	Pass	
Benzo(k)fluoranthene	%	123			70-130	Pass	
Chrysene	%	114			70-130	Pass	
Dibenz(a.h)anthracene	%	118			70-130	Pass	
Fluoranthene	%	120			70-130	Pass	
Fluorene	%	120			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	118			70-130	Pass	
Naphthalene	%	116			70-130	Pass	
Phenanthrene	%	125			70-130	Pass	
Pyrene	%	123			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	105			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Chromium	%	101			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	108			80-120	Pass	
Mercury	%	109			80-120	Pass	
Nickel	%	101			80-120	Pass	
Zinc	%	104			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Oc0039240	NCP	%	86			70-130	Pass	
TRH C10-C14	S23-Oc0033290	NCP	%	82			70-130	Pass	
TRH C6-C10	S23-Oc0039240	NCP	%	86			70-130	Pass	
TRH >C10-C16	S23-Oc0033290	NCP	%	85			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Oc0039240	NCP	%	97			70-130	Pass	
Toluene	S23-Oc0039240	NCP	%	85			70-130	Pass	
Ethylbenzene	S23-Oc0039240	NCP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
m&p-Xylenes	S23-Oc0039240	NCP	%	95			70-130	Pass	
o-Xylene	S23-Oc0039240	NCP	%	95			70-130	Pass	
Xylenes - Total*	S23-Oc0039240	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S23-Oc0039240	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	R23-Oc0032289	NCP	%	114			70-130	Pass	
Acenaphthylene	R23-Oc0032289	NCP	%	110			70-130	Pass	
Anthracene	R23-Oc0032289	NCP	%	118			70-130	Pass	
Benz(a)anthracene	R23-Oc0032289	NCP	%	113			70-130	Pass	
Benzo(a)pyrene	R23-Oc0032289	NCP	%	115			70-130	Pass	
Benzo(b&j)fluoranthene	R23-Oc0032289	NCP	%	112			70-130	Pass	
Benzo(g.h.i)perylene	R23-Oc0032289	NCP	%	111			70-130	Pass	
Benzo(k)fluoranthene	R23-Oc0032289	NCP	%	114			70-130	Pass	
Chrysene	R23-Oc0032289	NCP	%	112			70-130	Pass	
Dibenz(a.h)anthracene	R23-Oc0032289	NCP	%	115			70-130	Pass	
Fluoranthene	R23-Oc0032289	NCP	%	112			70-130	Pass	
Fluorene	R23-Oc0032289	NCP	%	114			70-130	Pass	
Indeno(1.2.3-cd)pyrene	R23-Oc0032289	NCP	%	115			70-130	Pass	
Naphthalene	R23-Oc0032289	NCP	%	111			70-130	Pass	
Phenanthrene	R23-Oc0032289	NCP	%	118			70-130	Pass	
Pyrene	R23-Oc0032289	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	R23-Oc0032289	NCP	%	91			75-125	Pass	
Cadmium	R23-Oc0032289	NCP	%	108			75-125	Pass	
Chromium	R23-Oc0032289	NCP	%	112			75-125	Pass	
Copper	S23-Oc0034551	NCP	%	94			75-125	Pass	
Lead	S23-Oc0034551	NCP	%	92			75-125	Pass	
Mercury	R23-Oc0032289	NCP	%	109			75-125	Pass	
Nickel	R23-Oc0032289	NCP	%	121			75-125	Pass	
Zinc	R23-Oc0032289	NCP	%	87			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Oc0034537	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	R23-Oc0034959	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	R23-Oc0034959	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	R23-Oc0034959	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S23-Oc0034537	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	R23-Oc0034959	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	R23-Oc0034959	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	R23-Oc0034959	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Oc0034537	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Oc0034537	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Oc0034537	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Oc0034537	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Oc0034537	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Oc0034537	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Oc0034537	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	R23-Oc0032110	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	R23-Oc0032110	NCP	mg/kg	2.5	2.3	9.2	30%	Pass	
Cadmium	R23-Oc0032110	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	R23-Oc0032110	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	R23-Oc0032110	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	R23-Oc0032110	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Mercury	R23-Oc0035145	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	R23-Oc0032110	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	R23-Oc0032110	NCP	mg/kg	6.0	6.7	10	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	R23-Oc0032394	NCP	%	15	15	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised by:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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EP Risk Management (NSW)
80 Mount Street,
North Sydney
NSW 2060

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Oscar Godfrey**

Report **1035164-W**
Project name WHETERILL PARK DSI
Project ID EP3206
Received Date Oct 16, 2023

Client Sample ID			**TRP02**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Oc0034457**
Date Sampled			**Oct 08, 2023**
Test/Reference	LOR	Unit	
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001

Client Sample ID			TRP02
Sample Matrix			Water
Eurofins Sample No.			S23-Oc0034457
Date Sampled			Oct 08, 2023
Test/Reference	LOR	Unit	
Volatile Organics			
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	82
Toluene-d8 (surr.)	1	%	85
Semivolatile Organics			
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.005
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.005
Total PAH*	0.001	mg/L	< 0.001
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
1-Chloronaphthalene	0.005	mg/L	< 0.005
1-Naphthylamine	0.005	mg/L	< 0.005
1.2-Dichlorobenzene	0.005	mg/L	< 0.005
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005
1.3-Dichlorobenzene	0.005	mg/L	< 0.005
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005
1.4-Dichlorobenzene	0.005	mg/L	< 0.005
2-Chloronaphthalene	0.005	mg/L	< 0.005
2-Chlorophenol	0.003	mg/L	< 0.003
2-Fluorobiphenyl (surr.)	1	%	97
2-Methylnaphthalene	0.005	mg/L	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Naphthylamine	0.005	mg/L	< 0.005
2-Nitroaniline	0.005	mg/L	< 0.005
2-Nitrophenol	0.01	mg/L	< 0.01
2-Picoline	0.005	mg/L	< 0.005
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01

Client Sample ID			TRP02
Sample Matrix			Water
Eurofins Sample No.			S23-Oc0034457
Date Sampled			Oct 08, 2023
Test/Reference	LOR	Unit	
Semivolatile Organics			
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
2.4-Dinitrotoluene	0.005	mg/L	< 0.005
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Tribromophenol (surr.)	1	%	126
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
2.6-Dinitrotoluene	0.005	mg/L	< 0.005
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
3-Methylcholanthrene	0.005	mg/L	< 0.005
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005
4-Aminobiphenyl	0.005	mg/L	< 0.005
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.06
4.4'-DDD	0.005	mg/L	< 0.005
4.4'-DDE	0.005	mg/L	< 0.005
4.4'-DDT	0.005	mg/L	< 0.005
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005
a-HCH	0.005	mg/L	< 0.005
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Acetophenone	0.005	mg/L	< 0.005
Aldrin	0.005	mg/L	< 0.005
Aniline	0.005	mg/L	< 0.005
Anthracene	0.001	mg/L	< 0.001
b-HCH	0.005	mg/L	< 0.005
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Benzyl chloride	0.005	mg/L	< 0.005
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005
Chrysene	0.001	mg/L	< 0.001
d-HCH	0.005	mg/L	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Dibenz(a.j)acridine	0.005	mg/L	< 0.005
Dibenzofuran	0.005	mg/L	< 0.005
Dieldrin	0.005	mg/L	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005
Dimethylaminoazobenzene	0.005	mg/L	< 0.005
Diphenylamine	0.005	mg/L	< 0.005
Endosulfan I	0.005	mg/L	< 0.005
Endosulfan II	0.005	mg/L	< 0.005

Client Sample ID			TRP02
Sample Matrix			Water
Eurofins Sample No.			S23-Oc0034457
Date Sampled			Oct 08, 2023
Test/Reference	LOR	Unit	
Semivolatile Organics			
Endosulfan sulphate	0.005	mg/L	< 0.005
Endrin	0.005	mg/L	< 0.005
Endrin aldehyde	0.005	mg/L	< 0.005
Endrin ketone	0.005	mg/L	< 0.005
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
g-HCH (Lindane)	0.005	mg/L	< 0.005
Heptachlor	0.005	mg/L	< 0.005
Heptachlor epoxide	0.005	mg/L	< 0.005
Hexachlorobenzene	0.005	mg/L	< 0.005
Hexachlorobutadiene	0.005	mg/L	< 0.005
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005
Hexachloroethane	0.005	mg/L	< 0.005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Methoxychlor	0.005	mg/L	< 0.005
N-Nitrosodibutylamine	0.005	mg/L	< 0.005
N-Nitrosodipropylamine	0.005	mg/L	< 0.005
N-Nitrosopiperidine	0.005	mg/L	< 0.005
Naphthalene	0.001	mg/L	< 0.001
Nitrobenzene	0.005	mg/L	< 0.005
Nitrobenzene-d5 (surr.)	1	%	INT
Pentachlorobenzene	0.005	mg/L	< 0.005
Pentachloronitrobenzene	0.005	mg/L	< 0.005
Pentachlorophenol	0.01	mg/L	< 0.01
Phenanthrene	0.001	mg/L	< 0.001
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	67
Pronamide	0.005	mg/L	< 0.005
Pyrene	0.001	mg/L	< 0.001
Trifluralin	0.005	mg/L	< 0.005
Haloethers			
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005
Per- and Polyfluoroalkyl Substances (PFASs) - Short			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
13C2-6:2 FTSA (surr.)	1	%	110
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
18O2-PFHxS (surr.)	1	%	138
13C8-PFOS (surr.)	1	%	108
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
13C8-PFOA (surr.)	1	%	112
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01

Sample History

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

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Volatile Organics	Sydney	Oct 16, 2023	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Sydney	Oct 19, 2023	7 Day
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Per- and Polyfluoroalkyl Substances (PFASs) - Short	Sydney	Oct 19, 2023	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261
Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261
Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261
Site# 25466

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

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Tauranga
1277 Cameron Road,
Gate Pa,
Tauranga 3112
Tel: +64 9 525 0568
IANZ# 1402

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: EP Risk Management (NSW)
Address: 80 Mount Street,
North Sydney
NSW 2060

Project Name: WHETERILL PARK DSI
Project ID: EP3206

Order No.:
Report #: 1035164
Phone: 02 99225021
Fax:

Received: Oct 16, 2023 1:10 PM
Due: Oct 23, 2023
Priority: 5 Day
Contact Name: Oscar Godfrey

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Moisture Set	Eurofins Suite B7	Eurofins Suite SVV: SVOC/VOC	Per- and Polyfluoroalkyl Substances (PFASs) - Short
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	TRP02	Oct 08, 2023		Water	S23-Oc0034457			X	X
2	TRP05	Oct 08, 2023		Soil	S23-Oc0034458	X	X		
Test Counts						1	1	1	1

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Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1.2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1.4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2.4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
4.4'-DDD	mg/L	< 0.005			0.005	Pass	
4.4'-DDE	mg/L	< 0.005			0.005	Pass	
4.4'-DDT	mg/L	< 0.005			0.005	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Nitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Haloethers							
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Sum of US EPA PFAS (PFOS + PFOA)*	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	109			70-130	Pass	
1.1.1-Trichloroethane	%	70			70-130	Pass	
1.2-Dichlorobenzene	%	112			70-130	Pass	
1.2-Dichloroethane	%	85			70-130	Pass	
Benzene	%	104			70-130	Pass	
Ethylbenzene	%	111			70-130	Pass	
m&p-Xylenes	%	111			70-130	Pass	
o-Xylene	%	109			70-130	Pass	
Toluene	%	97			70-130	Pass	
Trichloroethene	%	77			70-130	Pass	
Xylenes - Total*	%	110			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	%	128			25-140	Pass	
1.2.4-Trichlorobenzene	%	70			70-130	Pass	
1.4-Dichlorobenzene	%	70			70-130	Pass	
2-Chlorophenol	%	53			25-140	Pass	
2-Methylphenol (o-Cresol)	%	107			25-140	Pass	
2.4-Dichlorophenol	%	111			25-140	Pass	
2.4-Dimethylphenol	%	108			25-140	Pass	
2.4-Dinitrophenol	%	128			25-140	Pass	
2.4.5-Trichlorophenol	%	98			25-140	Pass	
2.4.6-Trichlorophenol	%	112			25-140	Pass	
2.6-Dichlorophenol	%	107			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	95			25-140	Pass	
4-Chloro-3-methylphenol	%	56			25-140	Pass	
4-Nitrophenol	%	56			25-140	Pass	
Acenaphthene	%	74			70-130	Pass	
Acenaphthylene	%	116			70-130	Pass	
Anthracene	%	122			70-130	Pass	
Benz(a)anthracene	%	97			70-130	Pass	
Benzo(a)pyrene	%	130			70-130	Pass	
Benzo(b&j)fluoranthene	%	112			70-130	Pass	
Benzo(g.h.i)perylene	%	116			70-130	Pass	
Benzo(k)fluoranthene	%	111			70-130	Pass	
Chrysene	%	101			70-130	Pass	
Dibenz(a.h)anthracene	%	114			70-130	Pass	
Endrin aldehyde	%	109			70-130	Pass	
Fluoranthene	%	122			70-130	Pass	
Fluorene	%	114			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	116			70-130	Pass	
N-Nitrosodipropylamine	%	77			70-130	Pass	
Naphthalene	%	103			70-130	Pass	
Pentachlorophenol	%	125			25-140	Pass	
Phenanthrene	%	76			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenol	%	63			25-140	Pass	
Pyrene	%	81			70-130	Pass	
LCS - % Recovery							
Per- and Polyfluoroalkyl Substances (PFASs) - Short							
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	88			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	82			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	96			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1					
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	N23-Oc0027910	NCP	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	N23-Oc0027910	NCP	%	87			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	N23-Oc0027910	NCP	%	87			50-150	Pass	
Perfluorooctanoic acid (PFOA)	N23-Oc0027910	NCP	%	94			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Benzene	S23-Oc0041721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S23-Oc0041721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S23-Oc0041721	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S23-Oc0041721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S23-Oc0041721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S23-Oc0041721	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Per- and Polyfluoroalkyl Substances (PFASs) - Short				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S23-Oc0033833	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S23-Oc0033833	NCP	ug/L	0.01	0.01	6.9	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S23-Oc0033833	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	S23-Oc0033833	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.

Authorised by:

Adam Bateup	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2330648**	Page	: 1 of 3
Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: OSCAR GODFREY	Contact	: Jason Dighton
Address	: LEVEL 13 Suite 1301, 80 Mount Street NORTH SYDNEY 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: EP3206 - Wetherill Park DSI	Date Samples Received	: 28-Jul-2023 13:30
Order number	: ----	Date Analysis Commenced	: 13-Sep-2023
C-O-C number	: ----	Issue Date	: 14-Sep-2023 12:30
Sampler	: OSCAR GODFREY		
Site	: ----		
Quote number	: ES23EPRISK0002 - ES PRIMARY WORK ONLY		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Layla Hafner	Acid Sulphate Soils - Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ASS: EA033 (CRS Suite): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004) and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT (2018)
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Laboratory determinations of ANC needs to be corroborated by effectiveness of the measured ANC in relation to incubation ANC. Unless corroborated, the results of ANC testing should be discounted when determining Net Acidity for comparison with action criteria, or for the determination of the acidity hazard and required liming amounts.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH24/MW04_5.0	BH22_6.0	BH02_4.5	BH13_1.0	----
			Sampling date / time	18-Jul-2023 00:00	18-Jul-2023 00:00	18-Jul-2023 00:00	18-Jul-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2330648-001	ES2330648-002	ES2330648-003	ES2330648-004	--------
				Result	Result	Result	Result	----
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	**7.7**	**7.2**	**7.1**	**6.8**	**----**
Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	<2	<2	**----**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.02	<0.02	<0.02	<0.02	**----**
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	**0.020**	**0.015**	**0.007**	**0.006**	**----**
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	**12**	<10	<10	<10	**----**
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	**0.37**	**0.61**	**0.67**	**0.57**	**----**
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	**74**	**122**	**134**	**114**	**----**
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	**0.12**	**0.20**	**0.21**	**0.18**	**----**
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	**1.5**	**1.5**	**1.5**	**1.5**	**----**
Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	**----**
Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	**----**
Liming Rate	----	1	kg CaCO3/t	<1	<1	<1	<1	**----**
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	**----**
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	**12**	<10	<10	<10	**----**
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	<1	<1	**----**

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA033-B: Potential Acidity

(SOIL) EA033-C: Acid Neutralising Capacity

(SOIL) EA033-D: Retained Acidity

(SOIL) EA033-A: Actual Acidity

(SOIL) EA033-E: Acid Base Accounting

CERTIFICATE OF ANALYSIS

Work Order	: **ES2332757**	Page	: 1 of 29
Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: OSCAR GODFREY	Contact	: Jason Dighton
Address	: LEVEL 13 Suite 1301, 80 Mount Street NORTH SYDNEY 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: EP3206 - Wetherill Park DSI	Date Samples Received	: 28-Sep-2023 12:00
Order number	: ep3206	Date Analysis Commenced	: 05-Oct-2023
C-O-C number	: ----	Issue Date	: 11-Oct-2023 21:33
Sampler	: ANDREW LEPRE		
Site	: ----		
Quote number	: ES23EPRISK0002 - ES PRIMARY WORK ONLY		
No. of samples received	: 39		
No. of samples analysed	: 22		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Ben Felgendrejeris	Senior Acid Sulfate Soil Chemist	Brisbane Acid Sulphate Soils, Stafford, QLD
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- ASS: EA033 (CRS Suite): Analysis is performed as per the Acid Sulfate Soils Laboratory Methods Guidelines (2004) and the updated National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, Canberra, ACT (2018)
- EG005T: Poor precision was obtained for Chromium on sample ES2333709 # 001. Confirmed by re-digestion and reanalysis.
- ASS: EA033 (CRS Suite):Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA033 (CRS Suite): Laboratory determinations of ANC needs to be corroborated by effectiveness of the measured ANC in relation to incubation ANC. Unless corroborated, the results of ANC testing should be discounted when determining Net Acidity for comparison with action criteria, or for the determination of the acidity hazard and required liming amounts.
- ASS: EA033 (CRS Suite): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil', multiply 'reported results' x 'wet bulk density of soil in t/m3'.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).

- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH19_0.3	BH19_0.5	BH19_1.0	BH19_2.0	BH19_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-001	ES2332757-002	ES2332757-003	ES2332757-004	ES2332757-005
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	5.9	6.3	----	6.8
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	353	357	----	514
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	5.9	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	8	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	----	<0.02	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	----	0.006	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	----	<10	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	1.5	----
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	12	----
Liming Rate	----	1	kg CaCO3/t	----	----	----	<1	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	12	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	18.2	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----
Asbestos (Trace)	1332-21-4	-	-	No	----	----	----	----
Asbestos Type	1332-21-4	-	--	-	----	----	----	----
Synthetic Mineral Fibre	----	-	--	No	----	----	----	----
Organic Fibre	----	-	--	No	----	----	----	----
Sample weight (dry)	----	0.01	g	149	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	B.SCHRADER	----	----	----	----
ED008: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	----	0.9	0.2	----	0.1
Exchangeable Magnesium	----	0.1	meq/100g	----	7.5	4.2	----	3.1
Exchangeable Potassium	----	0.1	meq/100g	----	0.1	<0.1	----	0.1
Exchangeable Sodium	----	0.1	meq/100g	----	1.8	1.4	----	1.6

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH19_0.3	BH19_0.5	BH19_1.0	BH19_2.0	BH19_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-001	ES2332757-002	ES2332757-003	ES2332757-004	ES2332757-005
				Result	Result	Result	Result	Result
ED008: Exchangeable Cations - Continued								
Cation Exchange Capacity	----	0.1	meq/100g	**----**	**10.4**	**5.9**	**----**	**4.9**
Exchangeable Sodium Percent	----	0.1	%	**----**	**17.4**	**23.2**	**----**	**32.6**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**7**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**33**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**25**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**10**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**20**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**22**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH19_0.3	BH19_0.5	BH19_1.0	BH19_2.0	BH19_3.0
				Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2332757-001	ES2332757-002	ES2332757-003	ES2332757-004	ES2332757-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH19_0.3	BH19_0.5	BH19_1.0	BH19_2.0	BH19_3.0
				Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2332757-001	ES2332757-002	ES2332757-003	ES2332757-004	ES2332757-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH19_0.3	BH19_0.5	BH19_1.0	BH19_2.0	BH19_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-001	ES2332757-002	ES2332757-003	ES2332757-004	ES2332757-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**99.6**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**108**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**90.6**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**73.2**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**71.6**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**62.9**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**79.8**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**86.1**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**82.2**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**92.6**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	**94.2**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**102**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH05_0.2	BH05_5.0	BH06_0.2	BH06_0.5	BH06_1.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-009	ES2332757-015	ES2332757-017	ES2332757-018	ES2332757-019
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	7.2	----
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	----	318	----
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	8.0	----	----	6.4
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	----	----	3
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	<0.02	----	----	<0.02
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	0.008	----	----	0.009
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	<10	----	----	<10
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	2.55	----	----	----
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	509	----	----	----
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	0.82	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	----	----	1.5
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	----	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	----	<10
Liming Rate	----	1	kg CaCO3/t	----	<1	----	----	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	----	----	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	<10	----	----	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	----	----	<1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.2	----	11.6	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	----	----
Asbestos (Trace)	1332-21-4	-	-	No	----	No	----	----
Asbestos Type	1332-21-4	-	--	-	----	-	----	----
Synthetic Mineral Fibre	----	-	--	No	----	No	----	----
Organic Fibre	----	-	--	No	----	No	----	----
Sample weight (dry)	----	0.01	g	106	----	51.8	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH05_0.2	BH05_5.0	BH06_0.2	BH06_0.5	BH06_1.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-009	ES2332757-015	ES2332757-017	ES2332757-018	ES2332757-019
				Result	Result	Result	Result	Result
EA200: AS 4964 - 2004 Identification of Asbestos in Soils - Continued								
APPROVED IDENTIFIER:	----	-	--	B.SCHRADER	----	B.SCHRADER	----	----
ED008: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	0.2	----
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	3.5	----
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	<0.1	----
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	1.6	----
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	5.4	----
Exchangeable Sodium Percent	----	0.1	%	----	----	----	30.0	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	<5	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	----
Chromium	7440-47-3	2	mg/kg	13	----	22	----	----
Copper	7440-50-8	5	mg/kg	68	----	62	----	----
Lead	7439-92-1	5	mg/kg	<5	----	<5	----	----
Nickel	7440-02-0	2	mg/kg	153	----	138	----	----
Zinc	7440-66-6	5	mg/kg	46	----	50	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH05_0.2	BH05_5.0	BH06_0.2	BH06_0.5	BH06_1.0
				Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2332757-009	ES2332757-015	ES2332757-017	ES2332757-018	ES2332757-019
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	<0.05	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	<0.2	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	<0.05	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH05_0.2	BH05_5.0	BH06_0.2	BH06_0.5	BH06_1.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-009	ES2332757-015	ES2332757-017	ES2332757-018	ES2332757-019
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH05_0.2	BH05_5.0	BH06_0.2	BH06_0.5	BH06_1.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-009	ES2332757-015	ES2332757-017	ES2332757-018	ES2332757-019
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**107**	----	**127**	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**91.8**	----	**107**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**81.7**	----	**96.3**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**76.3**	----	**75.6**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**74.4**	----	**73.2**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**66.5**	----	**65.2**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**82.8**	----	**82.2**	----	----
Anthracene-d10	1719-06-8	0.5	%	**89.2**	----	**88.8**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**85.4**	----	**84.2**	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**92.8**	----	**88.5**	----	----
Toluene-D8	2037-26-5	0.2	%	**95.7**	----	**88.2**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**103**	----	**95.3**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.0	BH06_4.0	BH06_6.0	BH35_1.5	BH35_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-020	ES2332757-022	ES2332757-024	ES2332757-025	ES2332757-026
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	**7.3**	**7.9**	**8.2**	----	----
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	**301**	**127**	**165**	----	----
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	----	----	----	**5.4**
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	----	----	----	**19**
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	----	----	----	**0.03**
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	----	----	----	**0.010**
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	----	----	----	<10
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	----	----	----	**1.5**
Net Acidity (sulfur units)	----	0.02	% S	----	----	----	----	**0.04**
Net Acidity (acidity units)	----	10	mole H+ / t	----	----	----	----	**25**
Liming Rate	----	1	kg CaCO3/t	----	----	----	----	**2**
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	----	----	----	**0.04**
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	----	----	----	**25**
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	----	----	----	**2**
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	----	----	**15.9**	----
ED006: Exchangeable Cations on Alkaline Soils								
ø Exchangeable Calcium	----	0.2	meq/100g	----	<0.2	<0.2	----	----
ø Exchangeable Magnesium	----	0.2	meq/100g	----	**0.5**	<0.2	----	----
ø Exchangeable Potassium	----	0.2	meq/100g	----	<0.2	<0.2	----	----
ø Exchangeable Sodium	----	0.2	meq/100g	----	<0.2	<0.2	----	----
ø Cation Exchange Capacity	----	0.2	meq/100g	----	**0.5**	<0.2	----	----
ø Exchangeable Sodium Percent	----	0.2	%	----	----	<0.2	----	----
ø Exchangeable Sodium Percent	----	0.2	%	----	<0.2	----	----	----
ED008: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	**0.4**	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	**3.0**	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	**1.6**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.0	BH06_4.0	BH06_6.0	BH35_1.5	BH35_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-020	ES2332757-022	ES2332757-024	ES2332757-025	ES2332757-026
				Result	Result	Result	Result	Result
ED008: Exchangeable Cations - Continued								
Cation Exchange Capacity	----	0.1	meq/100g	**5.2**	----	----	----	----
Exchangeable Sodium Percent	----	0.1	%	**31.1**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	----	**7**	----
Cadmium	7440-43-9	1	mg/kg	----	----	----	<1	----
Chromium	7440-47-3	2	mg/kg	----	----	----	**39**	----
Copper	7440-50-8	5	mg/kg	----	----	----	**19**	----
Lead	7439-92-1	5	mg/kg	----	----	----	**20**	----
Nickel	7440-02-0	2	mg/kg	----	----	----	**14**	----
Zinc	7440-66-6	5	mg/kg	----	----	----	**24**	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	----	----	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	----	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg	----	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	----	----	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.0	BH06_4.0	BH06_6.0	BH35_1.5	BH35_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-020	ES2332757-022	ES2332757-024	ES2332757-025	ES2332757-026
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	----	----	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.0	BH06_4.0	BH06_6.0	BH35_1.5	BH35_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-020	ES2332757-022	ES2332757-024	ES2332757-025	ES2332757-026
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	----	----	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	----	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	----	<10	----
C10 - C14 Fraction	----	50	mg/kg	----	----	----	<50	----
C15 - C28 Fraction	----	100	mg/kg	----	----	----	<100	----
C29 - C36 Fraction	----	100	mg/kg	----	----	----	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg	----	----	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.0	BH06_4.0	BH06_6.0	BH35_1.5	BH35_3.0
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-020	ES2332757-022	ES2332757-024	ES2332757-025	ES2332757-026
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg	----	----	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg	----	----	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg	----	----	----	<1	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	115	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	102	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	----	71.8	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	----	----	74.8	----
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	----	73.4	----
2.4.6-Tribromophenol	118-79-6	0.5	%	----	----	----	65.4	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	----	82.6	----
Anthracene-d10	1719-06-8	0.5	%	----	----	----	88.3	----
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	----	85.1	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	----	91.6	----
Toluene-D8	2037-26-5	0.2	%	----	----	----	97.1	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	----	103	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH47_0.2	BH47_3.0	BH30_1.5	BH18_3.0	BH18_0.5
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-028	ES2332757-029	ES2332757-031	ES2332757-036	ES2332757-037
				Result	Result	Result	Result	Result
EA033-A: Actual Acidity								
pH KCl (23A)	----	0.1	pH Unit	----	6.6	----	6.3	----
Titratable Actual Acidity (23F)	----	2	mole H+ / t	----	<2	----	4	----
sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	----	<0.02	----	<0.02	----
EA033-B: Potential Acidity								
Chromium Reducible Sulfur (22B)	----	0.005	% S	----	0.010	----	0.012	----
acidity - Chromium Reducible Sulfur (a-22B)	----	10	mole H+ / t	----	<10	----	<10	----
EA033-C: Acid Neutralising Capacity								
Acid Neutralising Capacity (19A2)	----	0.01	% CaCO3	----	0.92	----	----	----
acidity - Acid Neutralising Capacity (a-19A2)	----	10	mole H+ / t	----	183	----	----	----
sulfidic - Acid Neutralising Capacity (s-19A2)	----	0.01	% pyrite S	----	0.29	----	----	----
EA033-E: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	----	1.5	----	1.5	----
Net Acidity (sulfur units)	----	0.02	% S	----	<0.02	----	<0.02	----
Net Acidity (acidity units)	----	10	mole H+ / t	----	<10	----	12	----
Liming Rate	----	1	kg CaCO3/t	----	<1	----	<1	----
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	----	<0.02	----	<0.02	----
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	----	<10	----	12	----
Liming Rate excluding ANC	----	1	kg CaCO3/t	----	<1	----	<1	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	15.7	----	19.9	----	10.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	----	No
Asbestos (Trace)	1332-21-4	-	-	----	----	----	----	No
Asbestos Type	1332-21-4	-	--	----	----	----	----	-
Synthetic Mineral Fibre	----	-	--	----	----	----	----	No
Organic Fibre	----	-	--	----	----	----	----	No
Sample weight (dry)	----	0.01	g	----	----	----	----	104
APPROVED IDENTIFIER:	----	-	--	----	----	----	----	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	----	<5	----	11
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH47_0.2	BH47_3.0	BH30_1.5	BH18_3.0	BH18_0.5
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-028	ES2332757-029	ES2332757-031	ES2332757-036	ES2332757-037
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Chromium	7440-47-3	2	mg/kg	**24**	----	**25**	----	**26**
Copper	7440-50-8	5	mg/kg	**23**	----	**15**	----	**30**
Lead	7439-92-1	5	mg/kg	**17**	----	**11**	----	**28**
Nickel	7440-02-0	2	mg/kg	**14**	----	**9**	----	**40**
Zinc	7440-66-6	5	mg/kg	**38**	----	**17**	----	**79**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH47_0.2	BH47_3.0	BH30_1.5	BH18_3.0	BH18_0.5
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-028	ES2332757-029	ES2332757-031	ES2332757-036	ES2332757-037
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH47_0.2	BH47_3.0	BH30_1.5	BH18_3.0	BH18_0.5
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2332757-028	ES2332757-029	ES2332757-031	ES2332757-036	ES2332757-037
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	----	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	----	<1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH47_0.2	BH47_3.0	BH30_1.5	BH18_3.0	BH18_0.5
				Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00	24-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2332757-028	ES2332757-029	ES2332757-031	ES2332757-036	ES2332757-037
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		119	----	109	----	119
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		109	----	120	----	119
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		95.2	----	88.6	----	100.0
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		73.8	----	89.6	----	81.5
2-Chlorophenol-D4	93951-73-6	0.5	%		72.9	----	88.0	----	104
2.4.6-Tribromophenol	118-79-6	0.5	%		64.0	----	76.0	----	64.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.1	----	98.6	----	95.0
Anthracene-d10	1719-06-8	0.5	%		87.5	----	105	----	103
4-Terphenyl-d14	1718-51-0	0.5	%		83.5	----	100.0	----	110
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		90.6	----	91.3	----	92.3
Toluene-D8	2037-26-5	0.2	%		95.4	----	94.3	----	106
4-Bromofluorobenzene	460-00-4	0.2	%		102	----	102	----	96.2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH30_0.4	BH35_0.3	----	----	----
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2332757-038	ES2332757-039	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**9.7**	**17.9**	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	----	----	----
Asbestos (Trace)	1332-21-4	-	-	**No**	**No**	----	----	----
Asbestos Type	1332-21-4	-	--	**-**	**-**	----	----	----
Synthetic Mineral Fibre	----	-	--	**No**	**No**	----	----	----
Organic Fibre	----	-	--	**No**	**No**	----	----	----
Sample weight (dry)	----	0.01	g	**190**	**183**	----	----	----
APPROVED IDENTIFIER:	----	-	--	**A. SMYLIE**	**A. SMYLIE**	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	**6**	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	**22**	**20**	----	----	----
Copper	7440-50-8	5	mg/kg	**19**	**54**	----	----	----
Lead	7439-92-1	5	mg/kg	**8**	**27**	----	----	----
Nickel	7440-02-0	2	mg/kg	**17**	**76**	----	----	----
Zinc	7440-66-6	5	mg/kg	**59**	**79**	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH30_0.4	BH35_0.3	----	----	----
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2332757-038	ES2332757-039	--------	--------	--------
				Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH30_0.4	BH35_0.3	----	----	----
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2332757-038	ES2332757-039	--------	--------	--------
				Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg	**0.6**	**0.6**	----	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg	**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg	<50	<50	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH30_0.4	BH35_0.3	----	----	----
			Sampling date / time	24-Sep-2023 00:00	24-Sep-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2332757-038	ES2332757-039	--------	--------	--------
				Result	Result	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**101**	**119**	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**93.2**	**128**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**84.6**	**114**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**99.2**	**94.3**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**95.8**	**96.2**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**63.9**	**57.0**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**103**	**102**	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**94.3**	**98.6**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**104**	**102**	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**102**	**97.7**	----	----	----
Toluene-D8	2037-26-5	0.2	%	**116**	**108**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**106**	**100**	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	BH19_0.3 - 24-Sep-2023 00:00	A soil sample.
EA200: Description	BH05_0.2 - 24-Sep-2023 00:00	A soil sample.
EA200: Description	BH06_0.2 - 24-Sep-2023 00:00	A soil sample.
EA200: Description	BH18_0.5 - 24-Sep-2023 00:00	Soil sample.
EA200: Description	BH30_0.4 - 24-Sep-2023 00:00	Soil sample.
EA200: Description	BH35_0.3 - 24-Sep-2023 00:00	Soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Inter-Laboratory Testing

Analysis conducted by ALS Brisbane, NATA accreditation no. 825, site no. 818 (Chemistry) 18958 (Biology).

(SOIL) EA033-B: Potential Acidity

(SOIL) EA033-C: Acid Neutralising Capacity

(SOIL) EA033-D: Retained Acidity

(SOIL) EA033-A: Actual Acidity

(SOIL) EA033-E: Acid Base Accounting

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

CERTIFICATE OF ANALYSIS

Work Order	: **ES2332797**	Page	: 1 of 9
Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: SALLY KENNEDY	Contact	: Jason Dighton
Address	: LEVEL 13 Suite 1301, 80 Mount Street NORTH SYDNEY 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: EP3206	Date Samples Received	: 25-Sep-2023 15:00
Order number	: ----	Date Analysis Commenced	: 27-Sep-2023
C-O-C number	: ----	Issue Date	: 29-Sep-2023 18:59
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 11		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.4	BH12_0.2	BH34_0.3	----	----
				Sampling date / time	17-Sep-2023 00:00	17-Sep-2023 00:00	17-Sep-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2332797-002	ES2332797-005	ES2332797-008	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**21.8**	**10.8**	**17.7**	**----**	**----**
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	**7**	**----**	**----**
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	**----**	**----**
Chromium	7440-47-3	2	mg/kg		**12**	**14**	**31**	**----**	**----**
Copper	7440-50-8	5	mg/kg		**32**	**79**	**47**	**----**	**----**
Lead	7439-92-1	5	mg/kg		**12**	<5	**56**	**----**	**----**
Nickel	7440-02-0	2	mg/kg		**40**	**155**	**36**	**----**	**----**
Zinc	7440-66-6	5	mg/kg		**47**	**47**	**62**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	**0.1**	**----**	**----**
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	**----**	**----**
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.4	BH12_0.2	BH34_0.3	----	----
				Sampling date / time	17-Sep-2023 00:00	17-Sep-2023 00:00	17-Sep-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2332797-002	ES2332797-005	ES2332797-008	--------	--------
					Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.4	BH12_0.2	BH34_0.3	----	----
				Sampling date / time	17-Sep-2023 00:00	17-Sep-2023 00:00	17-Sep-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2332797-002	ES2332797-005	ES2332797-008	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.4	BH12_0.2	BH34_0.3	----	----
				Sampling date / time	17-Sep-2023 00:00	17-Sep-2023 00:00	17-Sep-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2332797-002	ES2332797-005	ES2332797-008	--------	--------
					Result	Result	Result	----	----
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**96.4**	**109**	**100**	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**124**	**128**	**131**	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**107**	**86.9**	**107**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**101**	**80.7**	**92.0**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.9**	**93.1**	**94.0**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**72.4**	**89.6**	**58.0**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**90.3**	**82.4**	**87.5**	----	----
Anthracene-d10	1719-06-8	0.5	%		**103**	**102**	**99.2**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**91.1**	**90.5**	**89.4**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**94.5**	**92.8**	**91.8**	----	----
Toluene-D8	2037-26-5	0.2	%		**101**	**99.8**	**90.4**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**108**	**109**	**108**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TRP01	----	----	----	----
			Sampling date / time	17-Sep-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2332797-001	--------	--------	--------	--------
				Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	**0.0004**	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.074**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.082**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.251**	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L	<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L	<50	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	TRP01	----	----	----	----
				Sampling date / time	17-Sep-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2332797-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**30.5**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**60.6**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**66.8**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**57.5**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**60.8**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**79.8**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**93.9**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**95.2**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**106**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

CERTIFICATE OF ANALYSIS

Work Order	: **ES2334633**	Page	: 1 of 26
Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: OSCAR GODFREY	Contact	: Jason Dighton
Address	: LEVEL 13 Suite 1301, 80 Mount Street NORTH SYDNEY 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: Whetherill Park DSI	Date Samples Received	: 10-Oct-2023 10:30
Order number	: EP3206	Date Analysis Commenced	: 13-Oct-2023
C-O-C number	: ----	Issue Date	: 19-Oct-2023 16:59
Sampler	: OG		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 33		
No. of samples analysed	: 15		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075: Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP231X: Positive results for samples #25,26 and 27 confirmed by re-analysis
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EP075: Where reported, 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH29_0.3	BH20_0.3	BH11_0.3	BH28_0.3	BH43_0.4
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-001	ES2334633-005	ES2334633-009	ES2334633-012	ES2334633-016
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**19.2**	**10.7**	**18.6**	**13.0**	**15.7**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**6**	<5	**8**	<5	**6**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**34**	**21**	**40**	**18**	**18**
Copper	7440-50-8	5	mg/kg	**21**	**48**	**23**	**27**	**31**
Lead	7439-92-1	5	mg/kg	**17**	**12**	**15**	**35**	**42**
Nickel	7440-02-0	2	mg/kg	**18**	**140**	**29**	**35**	**13**
Zinc	7440-66-6	5	mg/kg	**48**	**48**	**22**	**51**	**109**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH29_0.3	BH20_0.3	BH11_0.3	BH28_0.3	BH43_0.4
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-001	ES2334633-005	ES2334633-009	ES2334633-012	ES2334633-016
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH29_0.3	BH20_0.3	BH11_0.3	BH28_0.3	BH43_0.4
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-001	ES2334633-005	ES2334633-009	ES2334633-012	ES2334633-016
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH29_0.3	BH20_0.3	BH11_0.3	BH28_0.3	BH43_0.4
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-001	ES2334633-005	ES2334633-009	ES2334633-012	ES2334633-016
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	117	83.2	104	93.8	76.7
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	71.9	83.5	81.2	134	123
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	83.6	88.9	87.3	126	137
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	65.7	70.4	67.6	66.9	68.6
2-Chlorophenol-D4	93951-73-6	0.5	%	66.2	71.6	70.8	67.3	67.3
2.4.6-Tribromophenol	118-79-6	0.5	%	74.4	79.4	73.9	70.7	74.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	78.3	83.8	82.7	78.3	80.2
Anthracene-d10	1719-06-8	0.5	%	80.1	85.2	81.3	78.4	82.3
4-Terphenyl-d14	1718-51-0	0.5	%	94.4	98.6	96.6	92.5	95.5
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	87.0	98.0	86.8	104	93.7
Toluene-D8	2037-26-5	0.2	%	90.1	99.0	81.5	87.9	80.1
4-Bromofluorobenzene	460-00-4	0.2	%	101	109	80.3	99.4	95.4

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH44_0.4	TRIP BLANK	TRIP SPIKE	TSC	----
			Sampling date / time	08-Oct-2023 00:00	19-Sep-2023 00:00	18-Sep-2023 00:00	19-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2334633-020	ES2334633-031	ES2334633-032	ES2334633-033	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**17.2**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**19**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**19**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**31**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**12**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**58**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH44_0.4	TRIP BLANK	TRIP SPIKE	TSC	----
			Sampling date / time	08-Oct-2023 00:00	19-Sep-2023 00:00	18-Sep-2023 00:00	19-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2334633-020	ES2334633-031	ES2334633-032	ES2334633-033	--------
				Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH44_0.4	TRIP BLANK	TRIP SPIKE	TSC	----
			Sampling date / time	08-Oct-2023 00:00	19-Sep-2023 00:00	18-Sep-2023 00:00	19-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2334633-020	ES2334633-031	ES2334633-032	ES2334633-033	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	**3.7**	**6.4**	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	**4.2**	**7.4**	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	**4.5**	**7.9**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH44_0.4	TRIP BLANK	TRIP SPIKE	TSC	----
			Sampling date / time	08-Oct-2023 00:00	19-Sep-2023 00:00	18-Sep-2023 00:00	19-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2334633-020	ES2334633-031	ES2334633-032	ES2334633-033	--------
				Result	Result	Result	Result	----
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	**2.0**	**3.6**	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	**14.4**	**25.3**	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	**6.5**	**11.5**	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**76.5**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**135**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**136**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**65.7**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**69.4**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**72.4**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**82.2**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**82.1**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**97.2**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**82.3**	**103**	**105**	**103**	----
Toluene-D8	2037-26-5	0.2	%	**86.7**	**94.4**	**104**	**100**	----
4-Bromofluorobenzene	460-00-4	0.2	%	**96.6**	**105**	**111**	**108**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	MW03	MW04	RB02
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-025	ES2334633-026	ES2334633-027	ES2334633-028	ES2334633-029
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
Styrene	100-42-5	5	µg/L	<5	<5	<5	<5	<5
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	<5	<5	<5
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	<5	<5	<5
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	<5	<5	<5
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	<5	<5	<5
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	<5	<5	<5
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	<5	<5	<5
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	<5	<5	<5
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	<5	<5	<5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	<50	<50	<50
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	<50	<50	<50
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	<50	<50	<50
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	<50	<50	<50
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	MW03	MW04	RB02
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-025	ES2334633-026	ES2334633-027	ES2334633-028	ES2334633-029
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L	<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	<5	<5	<5
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L	<5	<5	<5	<5	<5
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	MW04	RB02
				Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2334633-025	ES2334633-026	ES2334633-027	ES2334633-028	ES2334633-029
					Result	Result	Result	Result	Result
EP075A: Phenolic Compounds - Continued									
2-Chlorophenol	95-57-8	2	µg/L		<2	<2	<2	<2	<2
2-Methylphenol	95-48-7	2	µg/L		<2	<2	<2	<2	<2
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	<4	<4	<4	<4
2-Nitrophenol	88-75-5	2	µg/L		<2	<2	<2	<2	<2
2.4-Dimethylphenol	105-67-9	2	µg/L		<2	<2	<2	<2	<2
2.4-Dichlorophenol	120-83-2	2	µg/L		<2	<2	<2	<2	<2
2.6-Dichlorophenol	87-65-0	2	µg/L		<2	<2	<2	<2	<2
4-Chloro-3-methylphenol	59-50-7	2	µg/L		<2	<2	<2	<2	<2
2.4.6-Trichlorophenol	88-06-2	2	µg/L		<2	<2	<2	<2	<2
2.4.5-Trichlorophenol	95-95-4	2	µg/L		<2	<2	<2	<2	<2
Pentachlorophenol	87-86-5	4	µg/L		<4	<4	<4	<4	<4
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	2	µg/L		<2	<2	<2	<2	<2
2-Methylnaphthalene	91-57-6	2	µg/L		<2	<2	<2	<2	<2
2-Chloronaphthalene	91-58-7	2	µg/L		<2	<2	<2	<2	<2
Acenaphthylene	208-96-8	2	µg/L		<2	<2	<2	<2	<2
Acenaphthene	83-32-9	2	µg/L		<2	<2	<2	<2	<2
Fluorene	86-73-7	2	µg/L		<2	<2	<2	<2	<2
Phenanthrene	85-01-8	2	µg/L		<2	<2	<2	<2	<2
Anthracene	120-12-7	2	µg/L		<2	<2	<2	<2	<2
Fluoranthene	206-44-0	2	µg/L		<2	<2	<2	<2	<2
Pyrene	129-00-0	2	µg/L		<2	<2	<2	<2	<2
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L		<2	<2	<2	<2	<2
Benz(a)anthracene	56-55-3	2	µg/L		<2	<2	<2	<2	<2
Chrysene	218-01-9	2	µg/L		<2	<2	<2	<2	<2
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L		<4	<4	<4	<4	<4
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L		<2	<2	<2	<2	<2
Benzo(a)pyrene	50-32-8	2	µg/L		<2	<2	<2	<2	<2
3-Methylcholanthrene	56-49-5	2	µg/L		<2	<2	<2	<2	<2
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L		<2	<2	<2	<2	<2
Dibenz(a.h)anthracene	53-70-3	2	µg/L		<2	<2	<2	<2	<2
Benzo(g.h.i)perylene	191-24-2	2	µg/L		<2	<2	<2	<2	<2
^ Sum of PAHs	----	2	µg/L		<2	<2	<2	<2	<2
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L		<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	MW03	MW04	RB02
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-025	ES2334633-026	ES2334633-027	ES2334633-028	ES2334633-029
				Result	Result	Result	Result	Result
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	<2	<2	<2	<2	<2
Diethyl phthalate	84-66-2	2	µg/L	<2	<2	<2	<2	<2
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	<2	<2	<2	<2
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	<2	<2	<2	<2
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	<10	<10	<10	<10
Di-n-octylphthalate	117-84-0	2	µg/L	<2	<2	<2	<2	<2
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	<4	<4	<4	<4
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	<2	<2	<2	<2
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	<4	<4	<4	<4
Methapyrilene	91-80-5	2	µg/L	<2	<2	<2	<2	<2
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	<2	<2	<2	<2
Acetophenone	98-86-2	2	µg/L	<2	<2	<2	<2	<2
Nitrobenzene	98-95-3	2	µg/L	<2	<2	<2	<2	<2
Isophorone	78-59-1	2	µg/L	<2	<2	<2	<2	<2
2.6-Dinitrotoluene	606-20-2	4	µg/L	<4	<4	<4	<4	<4
2.4-Dinitrotoluene	121-14-2	4	µg/L	<4	<4	<4	<4	<4
1-Naphthylamine	134-32-7	2	µg/L	<2	<2	<2	<2	<2
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	<2	<2	<2	<2
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	<2	<2	<2	<2
Azobenzene	103-33-3	2	µg/L	<2	<2	<2	<2	<2
1.3.5-Trinitrobenzene	99-35-4	2	µg/L	<2	<2	<2	<2	<2
Phenacetin	62-44-2	2	µg/L	<2	<2	<2	<2	<2
4-Aminobiphenyl	92-67-1	2	µg/L	<2	<2	<2	<2	<2
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	<2	<2	<2	<2
Pronamide	23950-58-5	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	MW03	MW04	RB02
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-025	ES2334633-026	ES2334633-027	ES2334633-028	ES2334633-029
				Result	Result	Result	Result	Result
EP075E: Nitroaromatics and Ketones - Continued								
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	<2	<2	<2	<2
Chlorobenzilate	510-15-6	2	µg/L	<2	<2	<2	<2	<2
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	<2	<2	<2	<2
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	<2	<2	<2	<2
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	<2	<2	<2	<2
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	<2	<2	<2	<2
EP075G: Chlorinated Hydrocarbons								
1.3-Dichlorobenzene	541-73-1	2	µg/L	<2	<2	<2	<2	<2
1.4-Dichlorobenzene	106-46-7	2	µg/L	<2	<2	<2	<2	<2
1.2-Dichlorobenzene	95-50-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloroethane	67-72-1	2	µg/L	<2	<2	<2	<2	<2
1.2.4-Trichlorobenzene	120-82-1	2	µg/L	<2	<2	<2	<2	<2
Hexachloropropylene	1888-71-7	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobutadiene	87-68-3	2	µg/L	<2	<2	<2	<2	<2
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	<10	<10	<10	<10
Pentachlorobenzene	608-93-5	2	µg/L	<2	<2	<2	<2	<2
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	<4	<4	<4	<4
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	<2	<2	<2	<2	<2
4-Chloroaniline	106-47-8	2	µg/L	<2	<2	<2	<2	<2
2-Nitroaniline	88-74-4	4	µg/L	<4	<4	<4	<4	<4
3-Nitroaniline	99-09-2	4	µg/L	<4	<4	<4	<4	<4
Dibenzofuran	132-64-9	2	µg/L	<2	<2	<2	<2	<2
4-Nitroaniline	100-01-6	2	µg/L	<2	<2	<2	<2	<2
Carbazole	86-74-8	2	µg/L	<2	<2	<2	<2	<2
3.3`-Dichlorobenzidine	91-94-1	2	µg/L	<2	<2	<2	<2	<2
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	<2	<2	<2	<2	<2
beta-BHC	319-85-7	2	µg/L	<2	<2	<2	<2	<2
gamma-BHC	58-89-9	2	µg/L	<2	<2	<2	<2	<2
delta-BHC	319-86-8	2	µg/L	<2	<2	<2	<2	<2
Heptachlor	76-44-8	2	µg/L	<2	<2	<2	<2	<2
Aldrin	309-00-2	2	µg/L	<2	<2	<2	<2	<2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW01	MW02	MW03	MW04	RB02
			Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2334633-025	ES2334633-026	ES2334633-027	ES2334633-028	ES2334633-029
				Result	Result	Result	Result	Result
EP075I: Organochlorine Pesticides - Continued								
Heptachlor epoxide	1024-57-3	2	µg/L	<2	<2	<2	<2	<2
alpha-Endosulfan	959-98-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDE	72-55-9	2	µg/L	<2	<2	<2	<2	<2
Dieldrin	60-57-1	2	µg/L	<2	<2	<2	<2	<2
Endrin	72-20-8	2	µg/L	<2	<2	<2	<2	<2
beta-Endosulfan	33213-65-9	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDD	72-54-8	2	µg/L	<2	<2	<2	<2	<2
Endosulfan sulfate	1031-07-8	2	µg/L	<2	<2	<2	<2	<2
4.4`-DDT	50-29-3	4	µg/L	<4	<4	<4	<4	<4
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	4	µg/L	<4	<4	<4	<4	<4
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	4	µg/L	<4	<4	<4	<4	<4
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	<2	<2	<2	<2
Dimethoate	60-51-5	2	µg/L	<2	<2	<2	<2	<2
Diazinon	333-41-5	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	<2	<2	<2	<2
Malathion	121-75-5	2	µg/L	<2	<2	<2	<2	<2
Fenthion	55-38-9	2	µg/L	<2	<2	<2	<2	<2
Chlorpyrifos	2921-88-2	2	µg/L	<2	<2	<2	<2	<2
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	<2	<2	<2	<2
Chlorfenvinphos	470-90-6	2	µg/L	<2	<2	<2	<2	<2
Prothiofos	34643-46-4	2	µg/L	<2	<2	<2	<2	<2
Ethion	563-12-2	2	µg/L	<2	<2	<2	<2	<2
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	**0.02**	<0.01	<0.01
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01	MW02	MW03	MW04	RB02
				Sampling date / time	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00	08-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2334633-025	ES2334633-026	ES2334633-027	ES2334633-028	ES2334633-029
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.45**	**0.82**	**0.29**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.02**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.45**	**0.82**	**0.31**	<0.01	<0.01
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**106**	**115**	**112**	**115**	**91.9**
Toluene-D8	2037-26-5	5	%		**106**	**99.1**	**99.5**	**98.0**	**90.0**
4-Bromofluorobenzene	460-00-4	5	%		**105**	**103**	**101**	**101**	**97.9**
EP075S: Acid Extractable Surrogates									
2-Fluorophenol	367-12-4	2	%		**57.1**	**16.9**	**62.4**	**58.7**	**52.1**
Phenol-d6	13127-88-3	2	%		**45.9**	**13.7**	**48.5**	**46.9**	**42.4**
2-Chlorophenol-D4	93951-73-6	2	%		**83.5**	**52.2**	**93.0**	**84.4**	**72.4**
2.4.6-Tribromophenol	118-79-6	2	%		**66.6**	**40.7**	**73.3**	**71.3**	**63.1**
EP075T: Base/Neutral Extractable Surrogates									
Nitrobenzene-D5	4165-60-0	2	%		**91.9**	**75.7**	**104**	**94.3**	**81.1**
1.2-Dichlorobenzene-D4	2199-69-1	2	%		**75.3**	**63.1**	**85.5**	**76.0**	**67.3**
2-Fluorobiphenyl	321-60-8	2	%		**86.6**	**72.5**	**95.9**	**89.8**	**79.4**
Anthracene-d10	1719-06-8	2	%		**96.0**	**78.2**	**108**	**99.8**	**90.1**
4-Terphenyl-d14	1718-51-0	2	%		**99.2**	**89.9**	**119**	**102**	**97.5**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**115**	**107**	**103**	**110**	**96.3**
13C8-PFOA	----	0.02	%		**109**	**107**	**109**	**111**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DUP01	----	----	----	----
				Sampling date / time	08-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2334633-030	--------	--------	--------	--------
					Result	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L		<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L		<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L		<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L		<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L		<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L		<5	----	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	50	µg/L		<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	----	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DUP01	----	----	----	----
				Sampling date / time	08-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2334633-030	--------	--------	--------	--------
					Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	----	----	----	----
Bromoform	75-25-2	5	µg/L		<5	----	----	----	----
EP075A: Phenolic Compounds									
Phenol	108-95-2	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DUP01	----	----	----	----
				Sampling date / time	08-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2334633-030	--------	--------	--------	--------
					Result	----	----	----	----
EP075A: Phenolic Compounds - Continued									
2-Chlorophenol	95-57-8	2	µg/L		<2	----	----	----	----
2-Methylphenol	95-48-7	2	µg/L		<2	----	----	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L		<4	----	----	----	----
2-Nitrophenol	88-75-5	2	µg/L		<2	----	----	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L		<2	----	----	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L		<2	----	----	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L		<2	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L		<2	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L		<2	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L		<2	----	----	----	----
Pentachlorophenol	87-86-5	4	µg/L		<4	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	2	µg/L		<2	----	----	----	----
2-Methylnaphthalene	91-57-6	2	µg/L		<2	----	----	----	----
2-Chloronaphthalene	91-58-7	2	µg/L		<2	----	----	----	----
Acenaphthylene	208-96-8	2	µg/L		<2	----	----	----	----
Acenaphthene	83-32-9	2	µg/L		<2	----	----	----	----
Fluorene	86-73-7	2	µg/L		<2	----	----	----	----
Phenanthrene	85-01-8	2	µg/L		<2	----	----	----	----
Anthracene	120-12-7	2	µg/L		<2	----	----	----	----
Fluoranthene	206-44-0	2	µg/L		<2	----	----	----	----
Pyrene	129-00-0	2	µg/L		<2	----	----	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L		<2	----	----	----	----
Benz(a)anthracene	56-55-3	2	µg/L		<2	----	----	----	----
Chrysene	218-01-9	2	µg/L		<2	----	----	----	----
Benzo(b+j) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L		<4	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L		<2	----	----	----	----
Benzo(a)pyrene	50-32-8	2	µg/L		<2	----	----	----	----
3-Methylcholanthrene	56-49-5	2	µg/L		<2	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L		<2	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	2	µg/L		<2	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	2	µg/L		<2	----	----	----	----
^ Sum of PAHs	----	2	µg/L		<2	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DUP01	----	----	----	----
				Sampling date / time	08-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2334633-030	--------	--------	--------	--------
					Result	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued									
EP075C: Phthalate Esters									
Dimethyl phthalate	131-11-3	2	µg/L		<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L		<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L		<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L		<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L		<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L		<2	----	----	----	----
EP075D: Nitrosamines									
N-Nitrosomethylethylamine	10595-95-6	2	µg/L		<2	----	----	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L		<2	----	----	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L		<4	----	----	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L		<2	----	----	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L		<2	----	----	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L		<2	----	----	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L		<2	----	----	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L		<4	----	----	----	----
Methapyrilene	91-80-5	2	µg/L		<2	----	----	----	----
EP075E: Nitroaromatics and Ketones									
2-Picoline	109-06-8	2	µg/L		<2	----	----	----	----
Acetophenone	98-86-2	2	µg/L		<2	----	----	----	----
Nitrobenzene	98-95-3	2	µg/L		<2	----	----	----	----
Isophorone	78-59-1	2	µg/L		<2	----	----	----	----
2.6-Dinitrotoluene	606-20-2	4	µg/L		<4	----	----	----	----
2.4-Dinitrotoluene	121-14-2	4	µg/L		<4	----	----	----	----
1-Naphthylamine	134-32-7	2	µg/L		<2	----	----	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L		<2	----	----	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L		<2	----	----	----	----
Azobenzene	103-33-3	2	µg/L		<2	----	----	----	----
1.3.5-Trinitrobenzene	99-35-4	2	µg/L		<2	----	----	----	----
Phenacetin	62-44-2	2	µg/L		<2	----	----	----	----
4-Aminobiphenyl	92-67-1	2	µg/L		<2	----	----	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L		<2	----	----	----	----
Pronamide	23950-58-5	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DUP01	----	----	----	----
				Sampling date / time	08-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2334633-030	--------	--------	--------	--------
					Result	----	----	----	----
EP075E: Nitroaromatics and Ketones - Continued									
Dimethylaminoazobenzene	60-11-7	2	µg/L		<2	----	----	----	----
Chlorobenzilate	510-15-6	2	µg/L		<2	----	----	----	----
EP075F: Haloethers									
Bis(2-chloroethyl) ether	111-44-4	2	µg/L		<2	----	----	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L		<2	----	----	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L		<2	----	----	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L		<2	----	----	----	----
EP075G: Chlorinated Hydrocarbons									
1.3-Dichlorobenzene	541-73-1	2	µg/L		<2	----	----	----	----
1.4-Dichlorobenzene	106-46-7	2	µg/L		<2	----	----	----	----
1.2-Dichlorobenzene	95-50-1	2	µg/L		<2	----	----	----	----
Hexachloroethane	67-72-1	2	µg/L		<2	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	2	µg/L		<2	----	----	----	----
Hexachloropropylene	1888-71-7	2	µg/L		<2	----	----	----	----
Hexachlorobutadiene	87-68-3	2	µg/L		<2	----	----	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L		<10	----	----	----	----
Pentachlorobenzene	608-93-5	2	µg/L		<2	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L		<4	----	----	----	----
EP075H: Anilines and Benzidines									
Aniline	62-53-3	2	µg/L		<2	----	----	----	----
4-Chloroaniline	106-47-8	2	µg/L		<2	----	----	----	----
2-Nitroaniline	88-74-4	4	µg/L		<4	----	----	----	----
3-Nitroaniline	99-09-2	4	µg/L		<4	----	----	----	----
Dibenzofuran	132-64-9	2	µg/L		<2	----	----	----	----
4-Nitroaniline	100-01-6	2	µg/L		<2	----	----	----	----
Carbazole	86-74-8	2	µg/L		<2	----	----	----	----
3.3`-Dichlorobenzidine	91-94-1	2	µg/L		<2	----	----	----	----
EP075I: Organochlorine Pesticides									
alpha-BHC	319-84-6	2	µg/L		<2	----	----	----	----
beta-BHC	319-85-7	2	µg/L		<2	----	----	----	----
gamma-BHC	58-89-9	2	µg/L		<2	----	----	----	----
delta-BHC	319-86-8	2	µg/L		<2	----	----	----	----
Heptachlor	76-44-8	2	µg/L		<2	----	----	----	----
Aldrin	309-00-2	2	µg/L		<2	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DUP01	----	----	----	----
				Sampling date / time	08-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2334633-030	--------	--------	--------	--------
					Result	----	----	----	----
EP075I: Organochlorine Pesticides - Continued									
Heptachlor epoxide	1024-57-3	2	µg/L		<2	----	----	----	----
alpha-Endosulfan	959-98-8	2	µg/L		<2	----	----	----	----
4.4`-DDE	72-55-9	2	µg/L		<2	----	----	----	----
Dieldrin	60-57-1	2	µg/L		<2	----	----	----	----
Endrin	72-20-8	2	µg/L		<2	----	----	----	----
beta-Endosulfan	33213-65-9	2	µg/L		<2	----	----	----	----
4.4`-DDD	72-54-8	2	µg/L		<2	----	----	----	----
Endosulfan sulfate	1031-07-8	2	µg/L		<2	----	----	----	----
4.4`-DDT	50-29-3	4	µg/L		<4	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	4	µg/L		<4	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	4	µg/L		<4	----	----	----	----
EP075J: Organophosphorus Pesticides									
Dichlorvos	62-73-7	2	µg/L		<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L		<2	----	----	----	----
Diazinon	333-41-5	2	µg/L		<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L		<2	----	----	----	----
Malathion	121-75-5	2	µg/L		<2	----	----	----	----
Fenthion	55-38-9	2	µg/L		<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L		<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L		<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L		<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L		<2	----	----	----	----
Ethion	563-12-2	2	µg/L		<2	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	DUP01	----	----	----	----
				Sampling date / time	08-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2334633-030	--------	--------	--------	--------
					Result	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		96.7	----	----	----	----
Toluene-D8	2037-26-5	5	%		94.5	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		102	----	----	----	----
EP075S: Acid Extractable Surrogates									
2-Fluorophenol	367-12-4	2	%		41.4	----	----	----	----
Phenol-d6	13127-88-3	2	%		32.4	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%		62.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	2	%		57.5	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates									
Nitrobenzene-D5	4165-60-0	2	%		68.9	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	2	%		59.9	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%		65.9	----	----	----	----
Anthracene-d10	1719-06-8	2	%		74.3	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%		76.4	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		95.9	----	----	----	----
13C8-PFOA	----	0.02	%		101	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2.4.6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1.2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Appendix G
GEOTECHNICAL REPORT

GEOTECHNICAL INVESTIGATION REPORT

FORTIFY
GEOTECH

Proposed Industrial Development

CLIENT

EP Risk Management

ADDRESS

74-94 Newton Road,
Wetherill Park, NSW

DATE

July 2023 – October 2023



2/538 Gardeners Road, Alexandria NSW 2015
PO Box 9225, Deakin ACT 2600

Consulting Engineers

(02) 9188 4033
FortifyGeotech.com.au

18 January 2024
Our ref: JS/S1922

EP Risk Management
via email: oscar.godfrey@eprisk.com.au

Attention: Oscar Godfrey

Proposed Industrial Development – 74-94 Newton Road, Wetherill Park, NSW
Geotechnical Investigation Report

We are pleased to present our geotechnical investigation report for the proposed industrial development, located at 74-94 Newton Road, Wetherill Park, NSW.

The report outlines the methods and results of exploration, describes site subsurface conditions, and provides recommendations for building footing design, excavation conditions, preparation of subgrades, stability of cut and fill batters, provides indicative design CBR values, laboratory test results, and site drainage advice.

Yours faithfully
Fortify Geotech



Jeremy Murray
Director | Senior Geotechnical Engineer
FIEAust CPEng EngExec RPEQ NER APEC Engineer IntPE (Aust)
NSW Professional Engineer Registration #PRE0001487 (for Class 2 Buildings)

About us

We work with our clients to provide practical advice and solutions tailored to each project. Our professional services are reliable, responsive and efficient.

Our highly capable Geotechnical Engineers and Geologists have a comprehensive understanding of the industry. We provide the best engineering solution for complicated geotechnical engineering issues. This has earned us a solid reputation with our Construction Industry, Municipal and Government clients

- Residential
- Commercial
- Transport Infrastructure
- Industrial Developments of all sizes.

- Geotechnical Site Investigations and Reporting;
- Engineering Geology;
- Mining/Rock Geotechnics;
- Foundation Engineering;
- Dam Engineering; Embankment Design and Specification;
- Geotechnical Design Recommendations;
- Pavement Engineering and Design;
- Pavement Condition Surveys;
- Slope Stability and Risk Assessments;

- Geotechnical and Hydrological Instrumentation and Monitoring;
- Footing and Excavation Supervision and Certifications;
- Excavated soil/rock assessments and VENM assessments;
- Supervision and Certification of Earthworks and Controlled Fill, including Level 1 supervision;
- Geotechnical Construction Specifications;
- Deep Excavation Support; and
- Slope/Retaining Structure Analysis and Design

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FORTIFY
GEOTECH

Proposed Industrial Development – Wetherill Park, NSW

Geotechnical Investigation Report

EP Risk Management

Proposed Industrial Development – 74-94 Newton Road, Wetherill Park, NSW

Geotechnical Investigation Report

1 INTRODUCTION

At the request of EP Risk Management, Fortify Geotech Pty Ltd carried out a geotechnical investigation for the proposed industrial development at 74-94 Newton Road, Wetherill Park, NSW.

The project is understood to involve the construction of a new single-storey warehouse with associated carparking and office spaces. It is understood that only minor excavations are expected for the proposed development.

The aim of the investigation was to:

i. Identify subsurface conditions including the extent and nature of any fill materials, soil strata, bedrock type and depth, and groundwater presence.

ii. Provide site classification to AS2870 “Residential Slabs & Footings”.

iii. Advise on suitable footings systems, founding depths, allowable bearing pressures and design parameters for piles.

iv. Advise on excavation conditions and suitability of excavated material for use in controlled fill.

v. Advise on stable batter slopes and shoring/support of temporary excavations.

vi. Provide earth/rock pressure parameter values for low retaining wall design.

vii. Advise on pavement subgrade preparation and provide indicative design CBR values.

viii. Provide Atterberg limit test results.

ix. Provide aggressivity test results and exposure classification.

x. Provide earthquake design parameters to AS1170.4-2007.

xi. Advise on site drainage and other geotechnical advice.

2 SITE DESCRIPTION & GEOLOGY

The site is located at 74-94 Newton Road, Wetherill Park, NSW. The site has an area of approximately ~51,914m^2, and is irregular in shape, bound by an existing industrial development to the north, vacant land to the east and west, and Newton Road to the south. The proposed site is currently occupied by an existing warehouse with associated office building, carparking and concrete hardstand. The ground surface is relatively flat and grass covered where not developed. Figure 1 shows the site locality, while Figure 2 is an aerial photograph showing the approximate borehole locations.

Local Geology Maps (Reference 1) indicate the site to be underlain by Cenozoic age Alluvium, which consists of unconsolidated alluvial clay, silt, sand and gravel deposits, over Middle Triassic age Bringelly Shale, which consists of shale, carbonaceous claystone, laminite, lithic sandstone and rare coal.

3 INVESTIGATION METHODS

The site investigation was conducted on 18th-19th & 24th-27th July and 10th, 17th & 24th September 2023. The investigation comprised of fifty-three boreholes and test pits, designated BH1 to BH50 and TP1 to TP7. Forty-seven of the boreholes were logged by Fortify Geotech, designated BH1 to BH10, BH13-BH19, BH21-BH27, BH30-BH42, BH47, BH49, BH50 and TP1-TP7. Six of the boreholes, BH11, 20, 28, 29, 43 and 44 were logged by EP Risk Management on behalf of Fortify Geotech for the depth of fill and depth to bedrock. The boreholes were excavated using a 5 tonne Mini Excavator with a bucket attachment and a Legion Drilling Geoprobe with a ~100mm diameter auger attachment, terminating at target depths of between 2.5m and 9m. Standard Penetration Tests (SPT's), were conducted in some of the boreholes at 1.5m depth intervals. The locations of the boreholes are shown on Figure 2, and the detailed borehole logs are included in Appendix A.

The soil profiles were visually logged in accordance with the Unified Soil Classification System (USCS). Definitions of geotechnical engineering terms used in the report on the borehole logs, including a copy of the USCS chart, are provided in Appendix B.

4 INVESTIGATION RESULTS

4.1 SUBSURFACE CONDITIONS

The subsurface conditions of the proposed development were investigated by forty-seven boreholes logged by Fortify Geotech, designated BH1 to BH10, BH13-BH19, BH21-BH27, BH30-BH42, BH47, BH49, BH50 and TP1-TP7. The borehole logs in Appendix A can be referred to for more detail.

Investigation boreholes BH1 to BH10, BH13-BH19, BH21-BH27, BH30-BH42, BH47, BH49, BH50 and TP1-TP7 found the subsurface profile to comprise:

TABLE 1: Subsurface Conditions

Geological Profile	Typical Depth Interval	Description
TOPSOIL/ FILL	0m to 0.17m/>2.9m	PEBBLES, GRAVELLY CLAYEY SAND, GRAVELLY SANDY CLAY, SANDY CLAY, CLAYEY GRAVELLY SAND, SILTY SAND, CONCRETE, ROAD BASE, GRAVEL, GRAVELLY SAND, SANDY CLAY with GRAVEL, SILTY to GRAVELLY SAND, SILTY to SANDY CLAY, ASPHALT, SAND with GRAVELS. BH26 was terminated at refusal in fill material at 2.4m depth.
ALLUVIAL/ RESIDUALSOILS	0.17m/>2.9m to 2.4m/>6.5m	CLAY with SAND, CLAY trace SAND, SANDY CLAY, SILTY CLAY, CLAY, GRAVELLY CLAY, SANDY SILTY CLAY, GRAVELLY SANDY CLAY, SANDY CLAY with SILT, SANDY CLAY with GRAVEL, SILTY SANDY CLAY, CLAYEY to GRAVELLY SAND,
WEATHERED BEDROCK	Below 0.1m/6.0m	SILTSTONE, SHALE; extremely weathered (XW), extremely to highly weathered (XW/HW), highly weathered (HW), highly to moderately weathered, very fine grained, fine grained, grey, grey, dry. Bedrock was only encountered in boreholes BH2, BH3, BH4, BH5, BH6, BH9, BH13, BH16, BH19, BH22, BH24, BH34, BH42.

Table 2 below provides a summary of total depth, depth of fill, depth to stiff natural soil, depth to XW bedrock, depth to HW bedrock and termination notes for all boreholes and test pits excavated on the site.

Table 2: Borehole Summary

Borehole/ Test Pit Number	Termination Depth (m)	Termination Note	Depth of Fill (m)	Depth to Stiff Natural Soil (m)	Depth to XW Bedrock (m)	Depth to HW Bedrock (m)
BH1	3	At Target	1.3	1.3	-	-
TP01	3	At Target	1.4	1.4	-	-
BH2	9	At Target in HW/MW Shale	1.9	1.9	5.0	5.0
TP02	3	At Target	1.9	1.9	-	-
TP03	3	At Target	2.7	2.7	-	-
BH3	2.9	At Target	1.1	1.1	2.8	-
BH4	3	Near refusal in HW/MW	0.6	0.6	2.4	-
TP04	3	At Target	0.7	0.7	-	-
BH5	6	At Target	0.19	1.5	4.5	4.5
TP05	2.9	At Target	>2.9	>2.9	-	-
BH6	6	At Target	0.19	5	5	-
TP06	3	At Target	2.6	2.6	-	-
BH7	2.8	At Target	0.7	0.7	-	-
TP07	3	At Target	1.7	>3	-	-
BH8	2.5	At Target	0.7	0.7	-	-
BH9	6	At Target in HW Shale	0.4	0.4	4.8	5.7
BH10	3.3	At Target	0.5	0.5	-	-
BH11[1]	6	At Target	0.4	-	4.0	-
BH13	6	At target in HW/MW Shale	0.1	0.1	0.1	2.5
BH14	3	At Target	2	2	-	-

BH15	3	At Target	2.2	2.2	-	-
BH16	6	At Target in HW Shale	0.3	0.3	4.5	5.2
BH17	2.9	At Target	1.6	1.6	-	-
BH18	3	At Target	0.36	1.05	-	-
BH19	6	At Target in HW Shale	0.18	0.5	4	-
BH20[1]	6	At Target	0.5	-	4	-
BH21	3	At Target	0.75	0.75	-	-
BH22	6	At Target	0.3	0.3	4.5	-
BH23	3	At Target	1.4	1.4	-	-
BH24	7.7	Near Refusal in HW/MW Shale	0.6	0.6	5.8	7
BH25	3	At Target	0.25	0.5	-	-
BH26	2.4	At Refusal in Fill	>2.4	0.8	-	-
BH27	3	At Target	0.8	2.8	-	-
BH28[1]	6	At Target	0.3	-	5.5	-
BH29[1]	6	At Target	0.3	-	4.7	-
BH30	6	At Target	0.4	1	-	-
BH31	3.2	At Target	0.7	0.7	-	-
BH32	3	At Target	0.8	0.8	-	-
BH33	2.9	At Target	1.4	1.4	-	-
BH34	6	At Target in HW Shale	0.4	0.4	5.5	6
BH35	6	At Target	0.17	1.5	-	-
BH36	3	At Target	2	2.0	-	-
BH37	3	At Target	2.6	2.6	-	-
BH38	3	At Target	0.4	0.6	-	-
BH39	3	At Target	0.5	0.5	-	-
BH40	3	At Target	1.5	1.5	-	-
BH41	6.5	At Target	2	2.0	-	-
BH42	6.5	At Target	2	2.9	6	-
BH43[1]	6	At Target	>0.5	-	6	-
BH44[1]	6	At Target	2	-	-	-
BH47	6	At Target	0.25	1.0	-	-
BH49	3	At Target	2.4	2.4	-	-
BH50	3	At Target	2.2	2.2	-	-

[1] Logged by EP Risk on behalf of Fortify Geotech

4.2 GROUNDWATER

Permanent groundwater was not encountered within the investigation depth during the investigation, and the encountered soils were mostly dry or dry to moist. Four groundwater monitoring wells were installed across the site by EP Risk Management. Measurements of the Standing Water Level (SWL) were taken by EP Risk and are summarised in Table 3 below. The location of the groundwater monitoring wells is given in Figure 3. Temporary, perched seepages could be encountered following rainfall within the more pervious soils.

Table 3 – Groundwater Monitoring Well Levels

Well ID	Top of Well RL (AHD)	SWL (AHD)	Depth to Water from Existing Groundsurface Levels (m)
MW01	51.538	46.638	4.9
MW02	46.320	40.8	5.52
MW03	45.343	41.538	3.805
MW04	45.220	41.067	4.153

4.3 LABORATORY CBR & ATTERBERG TEST RESULTS

Six representative samples of the soil from boreholes, designated BH01/1D, BH7/1D, BH33/1D, BH36/1D, BH50/1D and TP04/1D were sampled between 18th to 27th July 2023 and were tested in a NATA laboratory for standard compaction and four-day soaked CBR value. Results of standard compaction and soaked CBR laboratory test performed on the soil sample is summarised in Table 4 below. The CBR test specimens were compacted to a nominal 98%StdMDD at about optimum moisture content and soaked for four days prior to testing.

Table 4 – CBR Result Summary

Sample Location	Depth of sample	Classification of Excavated Material	CBR Value (%)
BH01/1D	0.5m-0.6m	FILL; Gravelly Sandy Clay, medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, brown with dark grey, orange, red, grey, trace anthropogenic material (sandstone, concrete), w~PL, firm to stiff	4.5
BH07/1D	0.7m-1.0m	ALLUVIUM; Sandy Clay; medium plasticity clay, fine to medium grained sand, grey mottled red to brown and brown, trace fine gravels, w<PL, stiff to very stiff	3.0
BH33/1D	1.0m	FILL; Sandy Clay, medium plasticity clay, fine grained sand, pale grey, grey, brown, trace fine to coarse gravels, w~PL, firm to stiff	3.0
BH36/1D	0.6m-0.8m	ALLUVIUM; Sandy Clay, low to medium plasticity clay, fine to medium grained sand, orange to brown mottled grey and red, trace fine gravels, w~PL, stiff	4.5
BH50/1D	0.8m-1.0m	FILL; Gravelly Sandy Clay, medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, grey and brown, trace orange and red, trace anthropogenic material (plastic, ceramic,	3.0
TP04/1D	0.7m-0.9m	ALLUVIUM; Sandy Clay, medium plasticity clay, fine to medium grained sand, pale brown with orange to brown, trace fine gravels, w<PL, stiff	4.5

Four representative samples of the soil from boreholes, designated BH7/1D, BH33/1D, BH34/1D and TP04/1D were sampled between 18th July to 24th September 2023 and were tested in a NATA laboratory for Atterberg limits. Results of Atterberg limits test performed on the soil sample is summarised in Table 5 below. The material test report is included in Appendix B.

Table 5 – Laboratory Test Results Summary – Atterberg Limits

Sample No.	BH07/1D	BH33/1D	BH34/1D	TP04/1D
Liquid Limit (%)	*50*	*44*	*50*	*52*
Plastic Limit (%)	*21*	*17*	*20*	*20*
Plasticity Index (%)	*29*	*27*	*30*	*32*
Linear Shrinkage (%)	*10*	*10*	*7.5*	*10*

4.4 AGGRESSIVITY TEST RESULTS & EXPOSURE CLASSIFICATION

Eleven representative samples of the soils from auger holes, designated BH01/1D, BH02/1D, BH03/1D, BH06/1D, BH13/1D, BH18/1D, BH27/1D, BH30/1D, BH38/1D, BH41/1D & BH49/1D were sampled between 18th July to 24th September 2023 and have been tested in a NATA laboratory for aggressivity (Cl, SO4, pH & EC).

Results of the laboratory test performed on the soil sample is summarised in Table 6 below. The NATA certificates are attached in Appendix C.

Table 6 - Laboratory Test Results Summary

Sample No.	Depth of sample (m)	Material Description	pH	Electrical Conductivity (µS/cm)	Chloride, Cl (mg/kg)	Sulphate, SO4 (mg/kg)
BH01/1D	1.5	ALLUVIAL; Clay with Sand	**6.1**	**580**	**630**	**290**
BH02/1D	3.5-4	RESIDUAL; Sandy Clay	8.4	460	510	160
BH03/1D	2	RESIDUAL; Sandy Silty Clay	7.6	1,100	1,300	560
BH06/1D	0.5	ALLUVIAL; Clay	7.0	410	310	250
BH13/1D	5	WEATHERED SHALE BEDROCK	9.6	400	370	190
BH18/1D	2.5	ALLUVIAL; Sandy Clay	6.8	1,100	1,300	230
BH27/1D	2	ALLUVIAL; Sandy Clay	5.6	380	300	210
BH30/1D	1	ALLUVIAL; Clay	6.9	720	700	300
BH38/1D	1	ALLUVIAL; Sandy Clay	7.2	400	320	300
BH41/1D	6	ALLUVIAL; Gravelly Sandy Clay	7.2	130	30	110
BH49/1D	2.8	ALLUVIAL; Sandy Clay	6.0	520	550	320

The exposure classification for concrete piles can be determined in accordance with AS2159-2009, Table 6.4.2(C). Soil Conditions B can be used as the tested soils were clayey and above groundwater. All the test results are consistent with an exposure classification for **concrete piles of 'non-aggressive'.**

The exposure classification for steel piles can be determined in accordance with AS2159-2009, Table 6.5.2(C). All the test results are consistent with an exposure classification of '**moderate' for steel piles**.

The exposure classification for steel piles can be determined in accordance with AS2870-2011, Table 5.1 and Table 5.2. The test results are consistent with an exposure classification for concrete **in saline soils of 'A1' and in sulfate soils of 'A1'**.

5 DISCUSSION & RECOMMENDATIONS

5.1 SITE CLASSIFICATION

The upper (low, medium and high plasticity) soils are moderately to highly reactive in terms of potential shrink-swell movements that may occur due to seasonal moisture changes. The characteristic ground surface movement "Y_s", as defined by AS2870 for the range of extreme dry to extreme wet moisture conditions is estimated to be between 40mm and 50mm. The site can therefore be treated as Class "H1" (highly reactive).

Deemed-to-comply footing designs provided by AS2870 are applicable specifically to residential-style one and two-storey structures, or buildings with similar loads and superstructure stiffness.

5.2 BUILDING FOOTINGS

AS2870 provides "deemed-to-comply" footing/slab designs, which for a Class "H1" site includes stiffened rafts, stiffened footing slabs, waffle rafts, and strip and/or pad footings with above ground floors. Footings and slabs should be in accordance with the principles of AS2870 (Reference 2).

For structures founded at existing grade, footings, including thickened sections of slabs forming footings should be founded below the topsoil and any fill and founded in stiff natural soils or weathered bedrock. A general suitable founding depth of 0.1m/>3m is expected (See Table 2). Shallow footings could be founded in any newly placed controlled fill following removal of any topsoil and fill material (see Section 5.6). Alternatively, footings could be founded on piers extending to the underlying weak weathered bedrock at 0.1m/6m depth from existing groundsurface levels at some borehole locations (see Table 2).

If designing footings based on engineering principles, recommended allowable end-bearing pressures for various footing systems and likely foundation materials are provided in Table 7.

Table 7 – Recommended Allowable End-Bearing Pressures for Footings

Foundation Material Type	Depth Below Existing Surface Level	Allowable End-Bearing Pressure			Allowable Shaft Adhesion on Bored Piers and Anchors	
		Strips	Pads	Bored Piers	Downward Loading	Uplift
Newly Placed Controlled Fill	-	100kPa	125kPa	N.A	N.A	N.A
Stiff/Medium Dense Natural Soils	*See Table 2*	100kPa	125kPa	150kPa	15kPa	7kPa
Very Stiff/Dense Natural Soils	*~1.5m/5m*[1]	150kPa	175kPa	200kPa	20kPa	10kPa
XW Shale & Siltstone Bedrock	*See Table 2*	400kPa	500kPa	600kPa	60kPa	30kPa
HW Shale & Siltstone Bedrock	*See Table 2*	600kPa	800kPa	1000kPa	100kPa	50kPa

[1] *This material was not encountered in boreholes BH6, 14, 18, 21, 25, 26, 27, 31, 32, 35, 36, 37, 38, 39, 41, 42, and test pits TP01, 04, 05, 07.*

All footings should be inspected and approved by an experienced geotechnical engineer to confirm the foundation material and design values, and to ensure the excavations are clean and stable.

Groundslabs can be constructed on the natural soils or newly placed controlled fill, following the removal of any topsoil and uncontrolled fill material. Following excavation to required level, slab areas on soil should be proof-rolled by a pad foot roller to check for any weak, wet or deforming soils that may require replacement. Suitable replacement fill should be compacted in not thicker than 150mm layers to not less than 98%StdMDD.

If required for design of ground slabs, a modulus of subgrade reaction of 30kPa/mm can be assumed for a natural soil or controlled fill foundation.

5.3 EXCAVATION CONDITIONS & USE OF EXCAVATED MATERIAL

It is understood that only minor excavations are anticipated for the development, with some cut to fill earthworks. Such excavations will be through topsoil and alluvial/residual material and into weak weathered bedrock. The topsoil, alluvial/residual material and weak weathered bedrock is readily diggable by backhoe and medium sized excavator to ~3m/9m depth. Large fill cobbles and anthropogenic material may be encountered near BH26 and may require large excavators or ripping.

Any low/medium plasticity alluvial and residual soils can be used in controlled fill construction of building platforms, provided any rock particles are broken down to <75mm size and the fill is environmentally suitable for re-use on site. Topsoil, silty soil, existing uncontrolled fill material and any medium to high and high plasticity, clayey soils should not be used in controlled fill construction.

If imported fill is required, a suitable select fill material would include a low or medium plasticity soil such as clayey sand or gravelly clayey sand, containing less than 35% fines less than 0.075mm size (silt and clay), and no particles greater than 75mm size.

5.4 STABLE EXCAVATION BATTERS

Temporary site excavations to 1.5m depth can be formed near vertical, although loose topsoil and fill should be cut back at 1(H):1(V). If required and space allows, deeper temporary cuts can be formed at 1(H):1(V) or benched at 1.5m intervals in natural soils. A geotechnical engineer should inspect all cut batters during construction to confirm stability. Exposed temporary batters should be protected from the weather by black plastic pinned to the face with link-wire mesh, or similar.

Permanent cut & fill batter slopes should be formed at no steeper than 2(H):1(V) in soil and be protected against erosion by shotcreting, stone pitching or other suitable methods. Alternatively, permanent excavations can be supported by structural retaining walls.

5.5 LOW RETAINING WALLS

Retaining walls constructed in open excavation, with the gap between the excavation face and the wall backfilled later, can be designed for an earth pressure distribution given by:

$$\sigma_h = (K\gamma' h) + Kq$$

where,

σ_h is the horizontal earth pressure acting on the back of the wall, in kPa

K is the dimensionless coefficient of earth pressure; this can be assumed to be 0.4 when the top of the wall is unrestrained horizontally, and 0.5 when the top of the wall is restrained (i.e. by building slabs etc.)

γ' is the effective unit weight of the backfill, and can be assumed to be 20kN/m^3 for a lightly compacted soil backfill

h is the height of the backfill, in metres

q is any uniform distributed vertical surcharge acting on the top of the backfill, in kPa

Apart from structural restraints such as floor slabs, resistance to overturning and sliding of retaining walls is provided by frictional and adhesive resistance on the base, and by passive resistance at the toe of the wall. For a natural soil or controlled fill foundation, an ultimate base friction factor (tanδ) of 0.5, base adhesion (c) of 30kPa, and allowable passive earth pressure coefficient K_p=2.5 can be used for calculation of sliding resistance.

Free-draining granular backfill or synthetic fabric drains should be installed behind all walls. These should connect to weep holes and/or a collector drain, and ultimately to the stormwater system. Granular backfill should be wrapped in a suitable filter fabric to minimise infiltration of silt/clay fines

5.6 CONTROLLED FILL CONSTRUCTION

For construction of any new fill foundation platforms and road subgrades, it is recommended that:

- Areas be fully stripped of all topsoil, fill material and soft/loose soils. A general stripping depth of 0.1m/>3m is expected (See Table 2). Stripped foundations should be proof-rolled by a vibratory pad-foot roller of not less than 10 tonne static mass to check for any weak or wet areas that would require replacement. No fill should be placed until a geotechnical engineer has confirmed the suitability of the foundation.

- Controlled fill comprising suitable site excavated or imported materials of not greater than 75mm maximum particle size, be compacted in not greater than 150mm layers to not less than 98%SMDD at about OMC.

- Fill placement and control testing be overviewed and certified by a geotechnical engineer at Level 1 or 2 involvement of AS3798 – 1996 “Guidelines on Earthworks for Commercial & Residential Developments” (Reference 3).

5.7 PAVEMENT SUBGRADES

Pavement subgrades should be prepared as outlined in Section 5.6. Natural soil or controlled fill subgrades can be designed using a CBR value of 3%. Prepared subgrades should be inspected by a geotechnical engineer to confirm whether these are structurally sound, and to confirm a suitable design CBR value.

5.8 EARTHQUAKE SITE FACTOR

The Geoscience Australia Earthquake Hazard Map (Reference 4) indicates the earthquake acceleration coefficients (with an annual probability of exceedance of 1/500) for Australia to be used in structural design. These values are equivalent to hazard factor, Z. The Wetherill Park area has an acceleration coefficient of 0.06g. AS1170.4 – 2007 – Minimum Design Loads on Structures – Part 4 Earthquake Loads (Reference 4) allows a minimum value of 0.08 to be used for the hazard factor, Z.

Section 4.2 of AS1170.4 “Minimum Design Loads on Structures – Part 4: Earthquake Loads” lists the site sub-soil classes to be considered in structural design. The site is classified as a “Class C_e – Shallow Soil Site”.

5.9 SITE DRAINAGE

Permanent groundwater was not encountered within the investigation depth during the investigation, and the encountered soils were mostly dry or dry to moist. Four groundwater monitoring wells were installed across the site by EP Risk Management. Measurements of the Standing Water Level (SWL) were taken by EP Risk and are summarised in Table 3. The location of the groundwater monitoring wells is given in Figure 3. The permanent groundwater table is expected to be below the proposed excavations, although temporary perched seepages may be present following rain.

Suitable surface drainage should be provided to ensure rainfall run-off or other surface water cannot pond against buildings or pavements. Drainage should be provided behind all retaining walls, and subsoil drains should be installed along the upslope sides of access roads and carparks.

REFERENCES

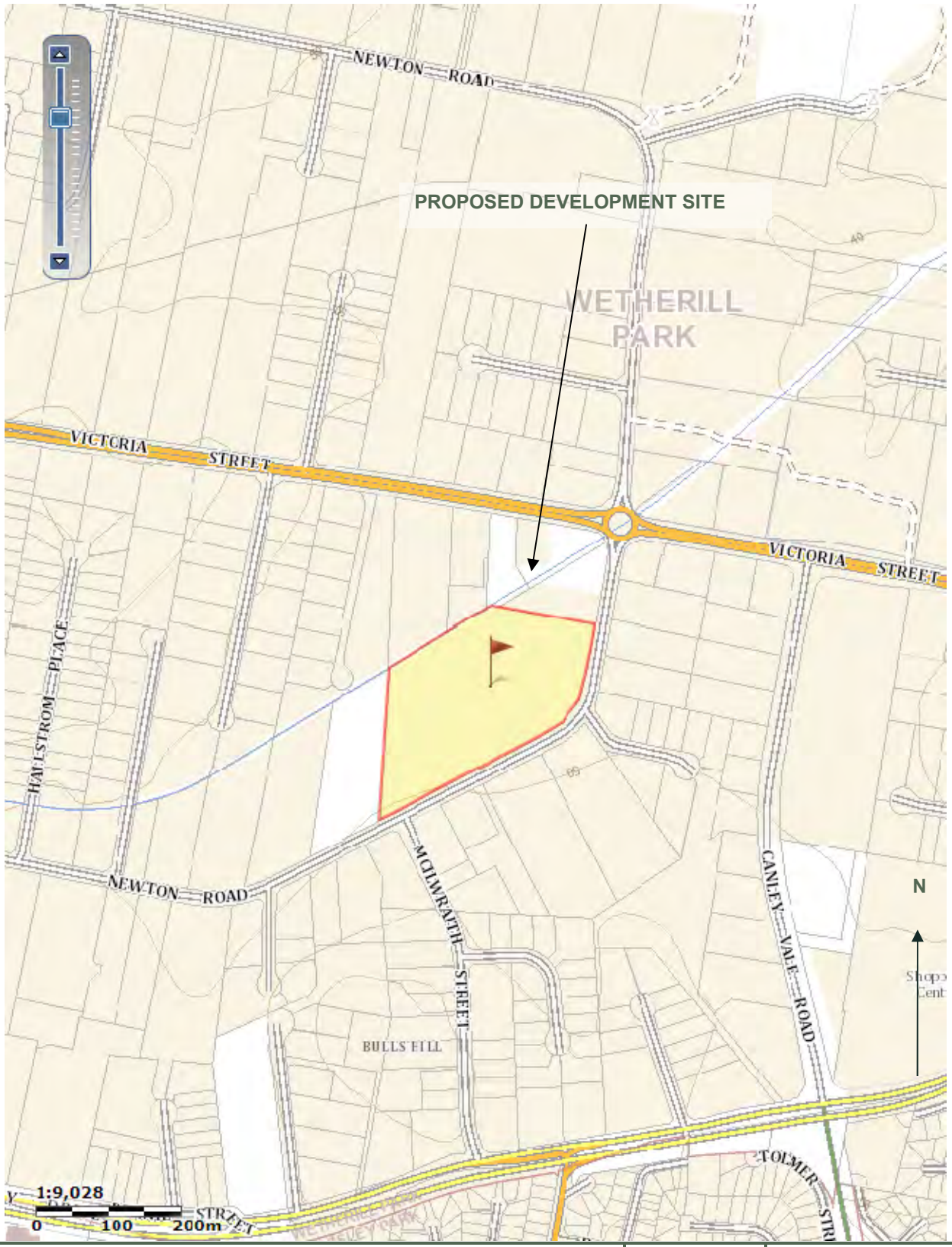
Reference 1 MinView – geological map - https://minview.geoscience.nsw.gov.au - Accessed 20/10/2023

Reference 2 Standards Australia, “AS2870 – Residential Slabs & Footings”, 2011.

Reference 3 AS3798, “Guidelines on earthworks for commercial and residential developments”.

Reference 4 Geosciences Website: http://www.ga.gov.au/darwin-view/hazards.xhtml# - Accessed on 20/10/2023

Reference 5 Standards Australia, “AS1170.4 – 2007 – Minimum Design Loads on Structures – Part 4 Earthquake Loads”.



SITE LOCALITY	S1922	FIGURE 1



AERIAL PHOTOGRAPH AND APPROXIMATE BOREHOLE LOCATIONS	S1922	FIGURE 2



GROUNDWATER MONITORING WELL LOCATIONS	S1922	FIGURE 3

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Appendix A

Borehole logs BH1 to BH10, BH13-BH19, BH21-BH27, BH30-BH42, BH47, BH49, BH50 and TP1-TP7

Borehole Log

Borehole No.	**BH01**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.05			PEBBLES	Loose		FILL
					SC	GRAVELLY CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravels, low plasticity clay, dark grey, trace brown, moist	Loose to Medium Dense		
			0.5		CL	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, brown with dark grey, orange, red, grey, trace anthropogenic material (sandstone, concrete), w~PL	Firm to Stiff		
			1.0						
			1.3		CH	CLAY with SAND; high plasticity clay, fine to medium grained sand, grey mottled orange and brown, w~PL	Stiff		ALLUVIUM
			1.8		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, pale grey mottled orange and red, trace black, trace fine to medium gravels, w<PL	Stiff to Very Stiff		
			2.0		CL	SILTY CLAY; low plasticity clay, pale grey, trace orange and red, trace fine grained sand, trace fine to medium sized gravels, w<PL	Very Stiff to Hard		RESIDUAL
			2.7		CL	SILTY CLAY; low to medium plasticity clay, pale grey, trace orange and red, trace fine grained sand, trace fine to medium sized gravels, w<PL	Stiff to Very Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 27/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

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Borehole Log

Borehole No.	**BH02**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.1		SM	SILTY SAND; fine grained sand, grass roots at surface, dry	Medium Dense		TOPSOIL FILL
0.4		CL	SANDY CLAY; low to medium plasticity clay, fine grained sand, brown, trace grey and black, trace fine to medium gravels, w<PL	Stiff		FILL
0.8		SPG	CLAYEY GRAVELLY SAND; fine to medium grained sand, fine to medium sized gravels, low plasticity clay, brown, trace grey, dry	Loose to Medium Dense		
1.0		CL	SANDY CLAY; low to medium plasticity clay, fine to meidum grained sand, grye to brown, trace black and orange, some fine to medium gravels, w<PL	Stiff		
1.2		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, grey to brown with dark grey adn brown, trace black and orange, trace fine gravels, w<PL	Stiff	SPT 4, 8, 6 N=14	
1.9		CL	SANDY CLAY; fine to medium grained sand, medium plasticity clay, grey and brown, trace red and orange, trace fine gravels, w<PL	Stiff		ALLUVIUM
2.0		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, grey mottled orange, w<PL	Stiff		
2.6		CL	SANDY CLAY; low to medium plasticity clay, fine grained sand, grey and brown, trace orange, trace fine to medium gravels, w~PL	Very Stiff	SPT 4, 6, 10 N=16	RESIDUAL
3.0		CL	SANDY CLAY; low to medium plasticity clay, fine grained sand, grey to brown, trace orange, trace fine gravels, w<PL pale grey mottled orange	Very Stiff	SPT 2, 18, 14 N=32	
3.5						
4.0						
4.4						
5.0			SILTSTONE; highly weathered (HW), fine grained, dark grey, grey to brown, trace iron staining, dry			WEATHERED BEDROCK
6.0						
6.8			SHALE; highly weathered (HW), very fine grained, dark grey, dry			
7.0						
8.0			SHALE; highly to moderately weathered (HW/MW), veyr fine grained, dark grey, dry			
8.8						
9.0			BOREHOLE TERMINATED AT 9m At Target			
10.0						

Water: None Encountered

Logged By : JS Date : 19/7/23 Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

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Borehole Log

Borehole No.	BH03
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.0		SC	GRAVELLY SANDY CLAY/CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravels, low to medium plasticity clay, brown, grey, some red, orange and black, trace anthropogenic material (brick, plastic), trace roots, grass roots at surface, dry	Medium Dense to Dense/Stiff		FILL
			1.0						
			1.1		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, pale grey mottle orange, trace red, trace fine to medium gravels, w~PL	Stiff		ALLUVIUM
						medium plasticity clay	Stiff to Very Stiff		
			2.0		CL	SANDY SILTY CLAY; low plasticity clay, fine grained sand, pale grey mottled orange, trace red, trace fine to coarse gravels, trace ironstone, w<PL	Very Stiff		RESIDUAL
			2.6		CL	SILTY CLAY; low to meidum plasticity clay, pale grey mottled orange, trace black, some fine to coarse gravels, w<PL	Very Stiff		
			2.8						
			2.9			SHALE; extremely weathered (XW), excavates as GRAVELLY SILTY CLAY; low to medium plasticity clay, fine to coarse sized gravels, grey, pale grey, trace orange, w<PL	Very Stiff to Hard		WEATHERED BEDROCK
			3.0			BOREHOLE TERMINATED AT 2.9m At Target			
			4.0						

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BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

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Borehole Log

Borehole No.	**BH04**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.34			CONCRETE			FILL
			0.6		CL	GRAVELLY SANDY CLAY; fine to coarse grained sand, low to medium plasticity clay, grey to brown, w~PL	Firm		
			1.0		CH	CLAY; medium to high plasticity clay, pale grey mottled orange, w<PL	Stiff		ALLUVIUM
			1.5		CL	CLAY; low to medium plasticity clay, dark grey to black, w<PL	Very Stiff		RESIDUAL
			2.0						
			2.4			SHALE; extremely weathered (XW), excavates as CLAY; low to medium plasticity clay, dark grey to black, w<PL	Very Stiff to Hard		WEATHERED BEDROCK
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JOR Date : 24/9/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

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Borehole Log

Borehole No.	**BH05**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.16			CONCRETE			FILL
0.19		GWS	ROAD BASE	Dense		ALLUVIUM
0.5		CI	CLAY; medium plasticity, brown, trace red, w<PL	Firm to Stiff		
1.0		CI	GRAVELLY CLAY; medium plasticity clay, fine to medium sized gravels, pale grey with orange and red, w<PL	Firm to Stiff		
1.5		CL	CLAY; low to medium plasticity, pale grey, trace orange, trace fine to medium gravels, w<PL	Stiff to Very Stiff	SPT 4, 8, 8 N=16	
2.0						
3.0		CL	GRAVELLY CLAY; low to medium plasticity clay, fine gravels, grey, w<PL	Very Stiff to Hard	SPT 8, 20, 25 N=45	RESIDUAL
4.0				Hard		
4.5			SHALE; highly weathered (HW), very fine grained, grey and dark grey, dry			WEATHERED BEDROCK
5.0						
5.5		CL	CLAY; low to medium plasticity, dark grey, w<PL	Firm to Stiff		RESIDUAL
6.0			BOREHOLE TERMINATED AT 6m At Target		SPT 22, 25+ for 100mm N>25	
7.0						

Water: None Encountered

Logged By : JOR Date : 24/9/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

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Borehole Log

Borehole No.	**BH06**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.16			CONCRETE			FILL
0.19		GP	ROADBASE, GRAVEL; fine to medium sized gravel, dark grey, moist	Loose		ALLUVIUM
		CL	CLAY; low to medium plasticity, red to brown, trace fine grained sand, w<PL	Firm to Stiff		
1.0						
1.5		CL	SANDY CLAY; low plasticity clay, fine grained sand, red to brown, trace fine gravels, w~PL	Soft to Firm	SPT 2, 3, 5 N=8	
2.0						
2.6		CL	CLAY; low to medium plasticity, red to brown mottled pale grey and orange, with fine to medium gravels, with fine grained sand, w<PL	Firm		
3.0					SPT 16, 25+ for 100mm N>25	
4.0						
					SPT 8, 23, 25+ for 100mm N>48	
5.0			SHALE; extremely weathered (XW), excavates as CLAY; low to medium plasticity, grey, with fine gravels, w<PL	Very Stiff		WEATHERED BEDROCK
6.0			BOREHOLE TERMINATED AT 6m At Target			
7.0						

None Encountered

Logged By : JOR Date : 24/9/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH07**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.7		SC	GRAVELLY CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravel, low to medium plasticity clay, brown, trace ornage and grey, trace anthopogenic material (concrete, poly pipe), dry	Medium Dense		FILL
			1.0		Cl	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled red to brown and brown, trace fine gravels, w<PL	Stiff to Very Stiff		ALLUVIUM
			1.5		CH	SANDY SILTY CLAY; medium to high plasticity clay, fine grained sand, grey mottled red and orange, trace roots, w<PL	Very Stiff		
			2.0 2.1		Cl	SILTY CLAY; medium plasticity clay, pale grey mottled red and orange, some fine to medium grained sand, w<PL trace ironstone, trace fine to medium gravels	Very Stiff		
			2.5		CL	SILTY CLAY; low to medium plasticity clay, pale grey with orange and red, trace ironstone, trace fine to coarse gravels, trace fine to medium grained sand, w<PL	Very Stiff		RESIDUAL
			2.8			BOREHOLE TERMINATED AT 2.8m At Target			
			3.0						
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH08**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.1		SM	GRAVELLY SILTY SAND; fine to coarse grained sand, fine to coarse sized gravels, brown, grass roots at surface, dry	Medium Dense		TOPSOIL FILL
					CL	GRAVELLY SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, brown with grey, trace anthropogenic material (cloth, concrete), w<PL	Firm to Stiff		FILL
			0.7		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled red to brown, trace orange, trace fine to medium sized gravels, w<PL	Stiff to Very Stiff		ALLUVIUM
			1.0						
			1.6		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, grey mottled red to brown, trace orange, trace fine to medium sized gravels, w<PL	Very Stiff		
			2.0		CL	SANDY SILTY CLAY; low to medium plasticity clay, fine to medium grained, grey to pale grey mottled red to brown, trace orange, some ironstone, trace fine to medium gravels, w<PL	Stiff		
			2.5			BOREHOLE TERMINATED AT 2.5m At Target			
			3.0						
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH09**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.2		SM	GRAVELLY SILTY SAND; fine to coarse grained sand, fine to coarse sized gravels, brown, trace grey, grass roots at surface, dry	Loose to Medium Dense		TOPSOIL FILL
0.4		SWG	GRAVELLY SAND; fine to coarse grained sand and gravels, red to brown and grey, dry	Medium Dense		FILL
0.9		CH	CLAY with sand; medium to high plasticity clay, fine grained sand, grey mottled red to brown and brown, trace fine gravels, w~PL	Stiff		ALLUVIUM
1.0		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, red to brown and grey, trace fine gravels, w<PL	Stiff		
1.6		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled red to brown and orange, some fine to medium gravels, w~PL grey mottled orange to brown	Stiff	SPT 2, 5, 8 N=13	
2.5		CL	SILTY CLAY; low to medium plasticity clay, orange to brown mottled grey, trace red, trace ironstone, trace fine to medium gravels, w<PL	Stiff		
3.5		CI	SILTY CLAY; medium plasticity clay, grey mottled orange to brown, trace red, trace ironstone, trace fine to medium gravels, w<PL	Stiff	SPT 6, 7, 10 N=17	
4.0		CL	SILTY CLAY; low to medium plasticity clay, grey to dark grey, trace orange, w<PL	Very Stiff		RESIDUAL
4.8					SPT 5, 13, 20+ for 150mm N>33	
5.0			SHALE; extremely weathered (XW), excavates as GRAVELLY SILTY CLAY; low to medium plasticity clay, fine gravels, grey, trace orange, w<PL	Very Stiff to Hard		WEATHERED BEDROCK
5.7			SHALE; highly weathered (HW), very fine grained, grey and dark grey, trace orange, dry			
6.0			BOREHOLE TERMINATED AT 6m At Target			
7.0						

Water: None Encountered

Logged By : JS Date : 25/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH10**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.1		SM	GRAVELLY SILTY SAND; fine to coarse grained sand, fine to coarse sized gravels, brown, trace grey, grass roots at surface, dry	Loose to Medium Dense		TOPSOIL FILL
		CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse sized gravels, fine to coarse grained sand, brown with orange and grey, trace anthropogenic material (cermaics, brick), w~PL	Firm to Stiff		FILL
0.5		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, grey mottled ornage, w<PL	Stiff		ALLUVIUM
0.8		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, grey with red and orange, trace fine to medium gravels, w<PL	Stiff		
1.0						
1.3		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, grey mottled orange, trace red, trace ironstone, trace fine to medium gravels, w<PL	Stiff to Very Stiff	SPT 6, 6, 9 N=15	
2.0			medium plasticity clay			
3.0					SPT 5, 19, 23 N=42	
3.2		CL	SILTY CLAY; low to medium plasticity clay, grey, trace dark grey, dry	Very Stiff to Hard		RESIDUAL
3.3			BOREHOLE TERMINATED AT 3.3m At Target			
4.0						

Water: None Encountered

Logged By : JS Date : 25/7/23 Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH13**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.1		CL	GRAVELLY SANDY CLAY/GRAVELLY CLAYEY SAND; low to medium plasticity clay, fine to medium grained sand, fine to coarse sized gravel, brown, some grey, moist	Medium Dense/Firm		FILL
		CL	SHALE; extremely weathered (XW), excavates as GRAVELLY SANDY CLAY; low to medium plasticity clay, fine grained sand, fine to medium sized gravel, grey and dark grey, dry	Very Stiff to Hard		WEATHERED BEDROCK
1.0			trace orange (iron staining)			
					SPT 4, 18, 25+ for 60mm N>43	
2.0						
2.7			SHALE; highly weathered (HW), fine grained, grey and dark grey, dry			
3.0			grey			
4.0						
5.0			SHALE; highly to moderately weathered (HW/MW), fine grained, grey and dark grey, dry			
6.0			BOREHOLE TERMINATED AT 6m At Target			
7.0						

Samples: None Encountered
Water: None Encountered
Casing:

Logged By : JS Date : 24/7/23 Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH14**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure (Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure)	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.2		SC	GRAVELLY CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravels, low plasticity clay, brown with grey, dry	Medium Dense		TOPSOIL FILL
			1.0		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, brown, trace grey and orange, some fine to coarse gravels, trace anthropogenic material (ceramic, brick), w<PL	Stiff		FILL
			1.5		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, grey to brown with red, trace orange, trace roots, w<PL	Stiff to Very Stiff		
			2.0		CI	SANDY CLAY; medium plasticity clay, pale brown mottled orange to brown, trace fine gravels, w<PL	Stiff to Very Stiff		ALLUVIUM
			2.3		CH	SANDY CLAY; medium to high plasticity clay, pale brown mottled orange to brown, trace fine gravels, w<PL	Stiff to Very Stiff		
			2.6		CL	GRAVELLY SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, fine to medium sized gravels, grey mottled orange to brown, trace black, w~PL	Stiff		
			2.8		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, fine to medium sized gravels, grey mottled orange to brown, trace black, w~PL	Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH15**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth Metres	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.8		SC	GRAVELLY SANDY CLAY/CLAYEY SAND; fine to coarse grained sand, low plasticity clay, fine to coarse sized gravels, brown, some grey, trace anthropogenic material (brick, concrete, sandstone), trace roots, dry	Firm to Stiff		FILL
			1.0		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, grey and brown, some red and orange, trace anthropogenic material (plastic, sandstone), some fine to coarse sized gravels, w<PL	Stiff to Very Stiff		
			1.5		CL	GRAVELLY SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, fine to medium sized gravels, brown with grey, black, redtrace anthropogenic material (plastic, sandstone), w<PL	Stiff to Very Stiff		
			2.0						
			2.2		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, orange to brown mottled brown, trace fine to medium gravels, w<PL	Very Stiff		ALLUVIUM
			2.4		CH	SANDY CLAY; medium to high plasticity clay, fine to medium grained sand, orange to brown mottled grey, trace brown and orange, w<PL	Very Stiff to Hard		
			2.8		CL	SILTY CLAY; low to medium plasticity clay, pale grey mottled orange, trace fine grained sand, w<PL	Very Stiff to Hard		RESIDUAL
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 27/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH16**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.1	SM	SILTY SAND/SANDY SILT; fine grained sand, brown, trace roots, grass roots at surface, dry	Loose to Medium Dense		TOPSOIL FILL
0.3	SM	GRAVELLY SILTY SAND; fine to medium grained sand, fine to medium sized gravels, brown, trace grey, dry	Loose to Medium Dense		FILL
	CI	CLAY trace sand; medium plasticity clay, fine grained sand, brown, trace fine gravels, w<PL	Stiff to Very Stiff		ALLUVIUM
1.0	CI	SANDY CLAY; medium plasticity clay, fine grained sand, orange to brown, trace grey, trace fine gravels, w<PL	Stiff		
1.3	CI	SANDY CLAY; medium plasticity clay, fine grained sand, grey mottled orange, trace fine gravels, w~PL	Stiff	SPT 2, 4, 8 N=12	
2.0					
2.5	CH	CLAY trace sand; medium to high plasticity clay, fine grained sand, pale grey, trace orange, w<PL	Very Stiff		
3.0				SPT 3, 8, 13 N=21	
	CL	SANDY CLAY; low to medium plasticity clay, fine grained sand, pale grey with orange, w<PL	Very Stiff		RESIDUAL
3.5	CL	SILTSTONE; extremely weathered (XW), excavates as GRAVELLY SANDY CLAY; low plasticity clay, fine sized gravel, fine grained sand, grey to brown, trace orange, w<PL	Very Stiff to Hard		WEATHERED BEDROCK
4.0	CL	SANDY CLAY; low to medium plasticity clay, fine grained sand, grey to brown, trace fine gravels, w~PL	Very Stiff		RESIDUAL
4.5				SPT 4, 21, 26 N=47	
		SILTSTONE; extremely weathered (XW), excavates as SILTY SANDY CLAY; low plasticity clay, fine grained sand, grey with brown and orange, w<PL	Very Stiff to Hard		WEATHERED BEDROCK
5.0					
5.2		SHALE; highly weathered (HW), very fine grained, grey, some brown, trace orange, dry			
6.0		BOREHOLE TERMINATED AT 6m At Target			
7.0					

Water: None Encountered

Logged By : JS Date : 19/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH17**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered	AUGERING	0.2		SM	SILTY SAND: with gravel, fine to coarse grained sand and gravels, dark orange, grass roots at surface	Medium Dense		TOPSOIL
			1.0		CL	SANDY CLAY: WITH GRAVEL, fine to coarse sand and gravel, brown, trace anthropogenic material (brick, ceramic), w<PL	Stiff		FILL
			1.6		CL	SANDY CLAY: low to medium plasticity clay, fine to coarse sand, grey moittled orange, w<PL	Very Stiff		ALLUVIUM
			2.0		CL	SANDY CLAY: low plasticity clay, fine to coarse sand, grey moittled orange, w<PL	Very Stiff to Hard		
			2.5		CL	SANDY CLAY: WITH SILT, low to medium plasticity clay, fine grained sand, grey moittled orange-brown, w<PL	Very Stiff to Hard		
			2.8		CL	SANDY CLAY: WITH GRAVEL, low to medium plasticity clay, fine to coarse grained sand, fine to medium gravels, grey with dark grey and red, w<PL	Very Stiff		
			2.9			BOREHOLE TERMINATED AT 2.9m At Target			
			3.0						
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH18

UTM	:	Drill Rig	: Geoprobe	Job Number	: S1922
Easting (m)	: 0.0	Driller Supplier	: Legion Drilling	Client	: EP Risk Management
Northing (m)	: 0.0	Logged By	: Jerome Sami	Project	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	Reviewed By	:	Location	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 3 m BGL	Date	: 24/09/2023	Loc Comment	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
			Non-Soil		CCT	Concrete				
		0.36	Alluvial		CL-Cl	Alluvial Sandy CLAY: low to medium plasticity, fine to coarse grained sand, trace fine sized gravel, brown.	w ≈ PL	F-St		
		1								
		1.05	Alluvial		CL-Cl	As above, but		St		
		2								
		3				**BH18 Terminated at 3 m (at Target)**				
		4								

Borehole Log

Borehole No.	**BH19**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
0.18			CONCRETE			FILL
		CI	CLAY; medium plasticity clay, orange to red, trace fine to medium grained sand, w<PL	Firm to Stiff Stiff		ALLUVIUM
			orange to red mottled pale grey	Very Stiff		
0.9						
1.0		CI	GRAVELLY CLAY; medium plasticity clay, fine to coarse sized gravels, pale grey mottled orange to red, w<PL	Very Stiff		
1.1		CI	CLAY; medium plasticity clay, red and orange mottled pale grey, trace fine to medium sized gravels, w<PL	Stiff		
2.0					SPT 5, 9, 10 N=19	
2.5		CL	CLAY; low to medium plasticity clay, brown to grey, w<PL	Very Stiff		RESIDUAL
3.0					SPT 16, 25+ for 100mm N>25	
4.0			SHALE; extremely weathered (XW), excavates as CLAY; low plasticity, dark grey to brown, w>PL	Very Stiff		WEATHERED BEDROCK
5.0					SPT 25+ for 100mm N>25	
6.0			BOREHOLE TERMINATED AT 6m At Target			
7.0						

None Encountered

Logged By : JOR Date : 24/9/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH21**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.2		SM	GRAVELLY SILTY SAND; fine to coarse grained sand, fine to coarse sized gravels, brown, trace grey, grass roots at surface, dry	Loose to Medium Dense		TOPSOIL FILL
			0.75		CL	GRAVELLY SANDY CLAY; low to medium plasticity clay, fine to coarse sized gravels, fine to coarse grained sand, brown with grey, dry	Firm to Stiff		FILL
			1.0		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, red to brown mottled grey, trace fine gravels, w<PL	Stiff		ALLUVIUM
			2.0						
			2.5		CL	SILTY SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, orange to brown mottled red and grey, w<PL	Stiff to Very Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Fortify Geotech

U2/538 Gardeners Road, Alexandria NSW 2015

Phone: 02 9188 4033

Geotechnical Log - Borehole

BH22

UTM	:	**Drill Rig**	: Geoprobe	**Job Number**	: S1922
Easting (m)	: 0.0	**Driller Supplier**	: Legion Drilling	**Client**	: EP Risk Management
Northing (m)	: 0.0	**Logged By**	: Jerome Sami	**Project**	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	**Reviewed By**	:	**Location**	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 6 m BGL	**Date**	: 17/08/2023	**Loc Comment**	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
		0.04	Non-Soil		ASP	Asphalt				
		0.3	Fill		GW	Fill Sandy GRAVEL (GW) : medium dense, grey-brown, fine to medium sized, fine to coarse grained sand, moist to dry.	M-D	MD		
		0.9	Alluvial		CI	Alluvial CLAY: medium plasticity, trace fine grained sand, red-brown mottled grey and orange.	w ≈ PL	St		
		1	Alluvial		CI	Alluvial Sandy CLAY: medium plasticity, fine to medium grained sand, trace fine sized gravel, orange-brown with red, trace grey.	w < PL	St-VSt		
		1.3	Alluvial		CI	As above, but grey mottled orange-brown and red.			5, 6, 8, (N = 14)	
		1.8	Alluvial		CI	Alluvial Sandy CLAY: medium plasticity, fine to medium grained sand, trace fine sized gravel, red-brown mottled grey trace orange.	w ≈ PL			
		2								
		2.5	Alluvial		CI	As above, but orange-brown mottled grey and red.			2, 6, 8, (N = 14)	
		2.8	Alluvial		CL	Alluvial Sandy CLAY: low plasticity, fine to medium grained sand, trace fine to medium sized gravel, pale grey mottled orange trace red.	w < PL	VSt		
		3								
		3.5	Residual		CL-CI	Residual Sandy CLAY: low to medium plasticity, fine to medium grained sand, trace fine to medium sized gravel, pale grey with orange-brown, trace iron stone.	w ≈ PL			
		4							6, 13, 19, (N = 32)	
		4.5	Rock		SLT	Extremelyweathered, rock Clayey to sandy GRAVEL: fine to medium sized, fine grained sand, low plasticity clay, brown trace orange.	D	D		
		5	Rock		SLT	Extremelyweathered, rock Sandy to gravelly CLAY: low plasticity, fine to medium sized gravel, fine grained sand, brown trace orange.	w < PL	VSt		
		5.5	Rock		SLT	Extremelyweathered, rock Silty to sandy CLAY: low plasticity, fine grained sand, grey-brown, grey trace orange.		VSt-H	9, 16, 25/120mm, (N = 47)	
		6				**BH22 Terminated at 6 m (EOH at Target)**				

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH23

UTM	:	Drill Rig	: Geoprobe	Job Number	: S1922
Easting (m)	: 0.0	Driller Supplier	: Legion Drilling	Client	: EP Risk Management
Northing (m)	: 0.0	Logged By	: Jerome Sami	Project	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	Reviewed By	:	Location	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 3 m BGL	Date	: 17/08/2023	Loc Comment	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
		0	Fill		SM	Fill Silty to gravelly SAND (SM) : medium dense, brown, fine to coarse grained, fine to medium sized gravel, dry.	D	MD		
		0.9	Fill		CI	Fill Silty to sandy CLAY (CI) : medium plasticity, stiff, brown trace red and orange, fine to coarse grained sand, inorganic, w ≈ pl.	w ≈ PL	St		
		1								
		1.4	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, trace fine sized gravel, grey mottled orange-brown.	w < PL			
		1.8	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, pale grey with red trace orange.		St-VSt		
		2								
		2.5	Alluvial		CL-CI	As above, but		VSt		
		3				**BH23 Terminated at 3 m (EOH at Target)**				
		4								

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Phone: 02 9188 4033

Geotechnical Log - Borehole

BH24

UTM	:	**Drill Rig**	: Geoprobe	**Job Number**	: S1922
Easting (m)	: 0.0	**Driller Supplier**	: Legion Drilling	**Client**	: EP Risk Management
Northing (m)	: 0.0	**Logged By**	: Jerome Sami	**Project**	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	**Reviewed By**	:	**Location**	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 7.7 m BGL	**Date**	: 18/07/2023	**Loc Comment**	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
		0.6	Fill		SM	Fill Silty to gravelly SAND (SM) : medium dense, brown, fine to medium grained, fine to coarse sized gravel, dry, grass roots at surface, trace anthropogenics [pvc[.	D	MD		
		1.3	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, trace fine sized gravel, grey-brown mottled red.	w < PL	St-VSt		
		1.8	Alluvial		CI	Alluvial Sandy CLAY: medium plasticity, fine grained sand, trace fine sized gravel, red-brown mottled grey.		VSt		
		2.4	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine grained sand, grey mottled red-brown.				
		3	Alluvial		CI	Alluvial Sandy CLAY: medium plasticity, fine to medium grained sand, grey with red-brown trace orange.		St-VSt		
		3.7	Alluvial		CI	As above, but grey mottled red-brown and orange-brown.	w ≈ PL	St		
		4.4	Alluvial		CI	Alluvial Sandy CLAY: medium plasticity, fine grained sand, trace fine sized gravel, pale orange-brown.				
		5	Alluvial		CI	Alluvial CLAY: medium plasticity, trace fine to medium sized gravel, trace fine grained sand, pale grey mottled orange-brown trace red.				
		5.8	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine grained sand, brown mottled orange-brown.				
		6.5	Rock		SST	Extremelyweathered, rock Clayey to sandy GRAVEL: fine to medium sized, fine to medium grained sand, low plasticity clay, grey, with siltstone.	D	D		
		7	Rock		SLT	Extremelyweathered, rock Clayey to sandy GRAVEL: fine sized, fine grained sand, low plasticity clay, grey, dark grey, orange.				
		7.5	Rock		SHA	Rock SHALE, (SHA) : highly weathered, low strength, grey and dark grey, fine grained, dry, trace sandstone.		LS		
			Rock		SHA	As above, but highly to moderately weathered.				
						BH24 refusal at 7.7 m (EOH at near refusal in HW/MW Shale)				

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH25

UTM	:	Drill Rig	: Geoprobe	Job Number	: S1922
Easting (m)	: 0.0	Driller Supplier	: Legion Drilling	Client	: EP Risk Management
Northing (m)	: 0.0	Logged By	: Jerome Sami	Project	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	Reviewed By	:	Location	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 3 m BGL	Date	: 18/07/2023	Loc Comment	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
		0.05	Non-Soil		ASP	Asphalt				
			Fill		GW	Fill Sandy GRAVEL (GW) : medium dense to dense, pale yellow-brown, fine to medium sized, fine to coarse grained sand, moist to dry.	M-D	MD-D		
		0.25	Alluvial		Cl	Alluvial Sandy CLAY: medium plasticity, fine to medium grained sand, red-brown mottled grey and red.	w ≈ PL	F-St		
		0.5	Alluvial		Cl	Alluvial Sandy CLAY: medium plasticity, fine grained sand, red-brown with orange and grey.	w < PL	St-VSt		
		1	Alluvial		CL-Cl	Alluvial Sandy CLAY: low to medium plasticity, fine grained sand, trace fine to medium sized gravel, brown with red and grey.				
		1.8	Alluvial		CL-Cl	As above, but brown, grey and red.				
		2.5	Alluvial		CL-Cl	As above, but orange-brown mottled grey and red.				
		3				**BH25 Terminated at 3 m (at Target)**				
		4								

Borehole Log

Borehole No.	**BH26**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Samples	Water	Casing	Depth Metres	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.3		SM	GRAVELLY SILTY SAND; fine to coarse grained sand, fine to coarse sized gravels, brown, trace grey, trace roots, trace low to medium plasticity clay, dry	Loose to Medium Dense		FILL
					Cl	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, brown with orange and grey, w<PL	Firm to Stiff		
			1.0		CL	low to medium plasticity clay	Stiff	SPT 4, 5, 5 N=10	
			2.0						
			2.4			BOREHOLE TERMINATED AT 2.4m At Refusal in Fill			
			3.0						
			4.0						

Logged By : JS Date : 25/7/23 Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

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Borehole Log

Borehole No.	BH27
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure (Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure)	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.25		SM	GRAVELLY SILTY SAND; fine to coarse grained sand, fine to coarse sized gravels, brown, trace grey, grass roots at surface, trace anthropogenic material (concrete), dry grey to dark grey	Loose to Medium Dense		TOPSOIL FILL
			0.8		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, red to brown and grey mottled orange, some fine to medium gravels, w~PL	Firm to Stiff		FILL
			1.0		CH	SANDY CLAY; medium to high plasticity clay, fine to medium grained sand, grey to brown mottled orange, w<PL	Firm to Stiff		ALLUVIUM
					CI	medium plasticity clay			
			1.4		CH	SANDY CLAY; medium to high plasticity clay, fine to medium grained sand, grey mottled red and brown, w~PL	Firm	SPT 2, 1, 3 N=4	
			2.0						
			2.2		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, orange to brown and grey, w~PL	Firm to Stiff		
			2.8		CI	SANDY CLAY; medium plasticity clay, fine to coarse grained sand, grey mottled orange, w~PL	Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target		SPT 3, 6, 7 N=13	
			4.0						

Logged By : JS Date : 25/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH30

UTM	:	**Drill Rig**	: Geoprobe	**Job Number**	: S1922
Easting (m)	: 0.0	**Driller Supplier**	: Legion Drilling	**Client**	: EP Risk Management
Northing (m)	: 0.0	**Logged By**	: Jerome Sami	**Project**	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	**Reviewed By**	:	**Location**	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 6 m BGL	**Date**	: 26/09/2023	**Loc Comment**	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing: SPT	Samples
		0	Non-Soil		CCT	Concrete			4, 5, 9, (N = 14)	
		0.36 / 0.4	Fill		SW	Fill Gravelly SAND (SW) : loose to medium dense, brown, fine to coarse grained, fine sized gravel, moist to dry.	M-D	L-MD		
			Alluvial		CI-CH	Alluvial CLAY: medium to high plasticity, brown.	w ≈ PL	F-St	5, 8, 12, (N = 20)	
		1							7, 8, 8, (N = 16)	
		1	Alluvial		CI-CH	As above, but		St		
		1.4	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, brown.				
		1.7	Alluvial		CL-CI	As above, but pale brown and pale grey mottled orange.				
		2								
		2.4	Alluvial		SC	Alluvial Clayey to gravelly SAND: fine to coarse grained, fine to medium sized gravel, low plasticity clay, brown.	M-D	D		
		3								
		3.1								
		3.2	Alluvial		SC	As above, but fine to coarse sized gravel.	D			
			Alluvial		CI-CH	Alluvial Sandy CLAY: medium to high plasticity, fine to medium grained sand, pale grey with pale orange.	w ≈ PL	St		
		4								
		4.7	Residual		CI	Residual Silty CLAY: medium plasticity, trace fine sized gravel, grey with pale orange.	w < PL	H		
		5								
		6				**BH30 Terminated at 6 m (at Target)**			4, 16/115mm, (N = 41)	

Borehole Log

Borehole No.	**BH31**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.1		SM	SILTY SAND; fine grained sand, grass roots at surface, dry	Medium Dense		TOPSOIL FILL
					CL	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to medium sized gravel, brown, orange to brown, trace grey and orange, w~PL	Firm to Stiff		FILL
			0.7		CI	CLAY trace sand; medium plasticity clay, fine to medium grained sand, brown to yellow, trace fine gravels, w~PL	Stiff		ALLUVIUM
			1.0						
			1.1		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey to brown with orange, w~PL	Stiff		
						grey mottled orange		SPT 2, 4, 6 N=10	
			2.0			grey and brown mottled orange, some fine to medium gravels			
			2.4		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, orange to brown mottled grey, w~PL	Stiff		
			2.8		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey and orange to brown, some fine to medium gravels, w~PL	Stiff	SPT 3, 8, 8 N=16	
			3.0						
			3.2			BOREHOLE TERMINATED AT 3.2m At Target			
			4.0						

Logged By : JS Date : 19/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH32**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered				SWG	SILTY GRAVELLY SAND; fine to coarse grained sand, fine to medium sized gravels, brown, trace roots, dry to moist	Loose to Medium Dense		FILL
						orange to brown			
			0.8		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, grey to brown with orange, w<PL	Stiff		ALLUVIUM
			1.0			orange to brown with grey	Stiff to Very Stiff	SPT 5, 6, 7 N=13	
			2.0		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey to brown with orange, w<PL	Stiff		
			2.5		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, orange to brown mottled grey, trace fine to medium gravels, trace ironstone, w~PL	Stiff to Very Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target		SPT 4, 7, 10 N=17	
			4.0						

Logged By : JS Date : 24/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

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Borehole Log

Borehole No.	BH33
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.1		SM	CLAYEY SILTY SAND: with gravel, fine to coarse grained sand and gravels, dark orange, grass roots at surface	Medium Dense		TOPSOIL
					SC	GRAVELLY SANDY CLAY/CLAYEY SAND; fine to coarse grained sand, low plasticity clay, fine to coarse sized gravels, dark brown, moist	Medium Dense/Firm		FILL
			0.6		CI	SANDY CLAY; medium plasticity clay, fine grained sand, pale grey, grey, brown, trace fine to coarse gravels, w~PL	Firm to Stiff		
			1.0						
			1.4		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, yellow to brown mottled grey, trace fine gravels, w~PL	Stiff		ALLUVIUM
			2.0						
			2.2		CL	SANDY CLAY; low to medium plasticity clay, fine grained sand, grey mottled red to brown and orange to brown, w<PL	Very Stiff		
			2.9			BOREHOLE TERMINATED AT 2.9m At Target			
			3.0						
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

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Borehole Log

Borehole No.	**BH34**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
			CONCRETE			FILL
0.22		CI	SANDY GRAVELLY CLAY; medium plasticity clay, fine to coarse grained sand, fine sized gravels, pale red with grey, w~PL	Firm to Stiff		
0.4		CI	SANDY CLAY; medium plasticity clay, fine grained sand, pale red mottled grey, w<PL trace fine to medium gravels, pale red mottled pale grey, trace orange pale grey mottle pale red	Stiff		ALLUVIUM
0.9		CH	CLAY; medium to high plasticity, pale red to brown, trace fine grained sand, trace fine to medium sized gravels, w<PL	Stiff to Very Stiff		
1.0			brown to orange		SPT 4, 5, 7 N=12 PP = 250	
2.0						
3.0					SPT 5, 9, 16 N=25	
3.2		CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to medium sized gravel, black and orange, w<PL	Very Stiff		RESIDUAL
4.0						
4.5		CL	CLAY; low to medium plasticity, pale grey, w<PL	Very Stiff to Hard	SPT 4, 9, 11 N=20	
5.0						
5.5			SHALE; extremely weathered (XW), excavates as CLAY; low to medium plasticity, pale grey, w<PL	Very Stiff to Hard		WEATHERED BEDROCK
6						
6.0			BOREHOLE TERMINATED AT 6m At Target		SPT 9, 25+ for 50mm N>25	
7.0						

Water: None Encountered

Logged By : JOR Date : 24/9/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH35

UTM	:	Drill Rig	: Geoprobe	Job Number	: S1922
Easting (m)	: 0.0	Driller Supplier	: Legion Drilling	Client	: EP Risk Management
Northing (m)	: 0.0	Logged By	: Jerome Sami	Project	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	Reviewed By	:	Location	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 6 m BGL	Date	: 24/09/2023	Loc Comment	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
		0.17	Non-Soil		CCT	Concrete				
			Alluvial		Cl	Alluvial Sandy CLAY: medium plasticity, fine to coarse grained sand, trace fine to medium sized gravel, brown.	w ≈ PL	F-St		
		1								
		1.5	Alluvial		Cl	Alluvial CLAY: medium plasticity, with fine to medium sized gravel, with fine to coarse grained sand, brown with dark grey.		St	SPT: 3, 4, 6, (N = 10)	
		2								
		2.5	Alluvial		Cl	As above, but with fine to medium grained sand, brown with pale brown.				
		3								
		3.1	Alluvial			Alluvial Clayey to sandy SILT: low plasticity, fine grained sand, brown with dark brown.		F-St	SPT: 4, 6, 6, (N = 12)	
			Alluvial		CL-Cl	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, brown with pale brown.		St		
		4								
		4.6	Residual		CL-Cl	Residual Sandy to gravelly CLAY: low to medium plasticity, fine to medium sized gravel, fine to coarse grained sand, pale brown with black, brown.	w < PL	St-VSt	SPT: 6, 8, 11, (N = 19)	
		5								
		6				**BH35 Terminated at 6 m (at Target)**			SPT: 6, 14, 11/60mm, (N = 41)	

Borehole Log

Borehole No.	**BH36**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure (Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure)	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.05		SM	SILTY SAND; fine to medium grained sand, dark brown, grass roots at surface, dry to moist	Loose to Medium Dense		TOPSOIL FILL
					SC	GRAVELLY CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravels, low plasticity clay, grey to brown, dry	Medium Dense		FILL
			0.6		CL	SANDY CLAY; low to medium plasticity clay, fine to medium graine sand, orange to brown mottled grey and red, trace fine gravels, w~PL	Stiff		
			1.0						
			1.4		CI	CLAY with sand; medium plasticity clay, fine to medium grained sand, grey, some fine to medium gravels, w<PL	Stiff		
			2.0		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, red to brown mottled orange to brown, w~PL	Stiff		ALLUVIUM
			2.5		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, red to brown with grey, w~PL	Firm to Stiff		
			3.0			SANDY CLAY/CLAYEY SAND			
						BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

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Borehole Log

Borehole No.	**BH37**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.1		SM	SILTY SAND: with gravel, fine to coarse grained sand and gravels, dark orange, grass roots at surface	Medium Dense		TOPSOIL
					SC	CLAYEY SAND WITH GRAVEL, fine to coarse graioned sand and gravels, low plasticity clay, brown with grey, trace anthropogenic material(brick, concrete, PVC), dry	Medium Dense to Dense		FILL
			1.0		CL	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey, brown, orange, red dark grey, w<PL	Stiff		
			1.8		SW	GRAVELLY SAND WITH CLAY; fine to coarse grained gravels and sand, low plasticity clay, grey with orange, red, brown,(some anthopogenic material (brick, ceramic, concrete) dry	Medium Dense to Dense		
			2.0						
			2.3		CL	SANDY CLAY WITH GRAVEL; low to medium plasticity clay, fine to coarse grained sand and gravel, brown, grey with orange, red, w~PL	Stiff		
			2.6		CH	SANDY CLAY; medium to high plasticity clay, fine to medium sand, pale brown, mottrled grey, trave roots, w<PL grey mottled orange-brown	Stiff to Very Stiff		ALLUVIUM
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH38

UTM	:	**Drill Rig**	: Geoprobe	**Job Number**	: S1922
Easting (m)	: 0.0	**Driller Supplier**	: Legion Drilling	**Client**	: EP Risk Management
Northing (m)	: 0.0	**Logged By**	: Jerome Sami	**Project**	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	**Reviewed By**	:	**Location**	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 3 m BGL	**Date**	: 18/07/2023	**Loc Comment**	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
		0.04	Non-Soil		ASP	Asphalt				
			Fill		GW	Fill Sandy GRAVEL (GW) : medium dense, grey-brown, fine to medium sized, fine to coarse grained sand, moist to dry.	M-D	MD		
		0.3								
		0.4	Fill		SC	Fill Clayey to silty SAND (SC) : low plasticity clay, medium dense, dark brown, fine grained, moist to dry.				
			Alluvial		CI	Alluvial CLAY: medium plasticity, trace fine to medium grained sand, grey mottled orange trace black.	w ≈ PL	F-St		
		0.6	Alluvial		CI	Alluvial Sandy CLAY: medium plasticity, fine grained sand, trace fine sized gravel, red-brown trace grey and orange.		St		
		1								
		1.4	Alluvial		CI	As above, but orange-brown.		St-VSt		
		2								
		2	Alluvial		CI	As above, but brown with orange-brown.				
		2.3	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, grey mottled orange.	w < PL			
		3				**BH38 Terminated at 3 m (at Target)**				
		4								

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH39

UTM	:	**Drill Rig**	: Geoprobe	**Job Number**	: S1922
Easting (m)	: 0.0	**Driller Supplier**	: Legion Drilling	**Client**	: EP Risk Management
Northing (m)	: 0.0	**Logged By**	: Jerome Sami	**Project**	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	**Reviewed By**	:	**Location**	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 3 m BGL	**Date**	: 18/07/2023	**Loc Comment**	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing	Samples
		0.5	Fill		SM	Fill Silty to gravelly SAND (SM) : medium dense, brown, fine to medium grained, fine to coarse sized gravel, trace low to medium plasticity clay, dry, trae anthropogenics [pvc].	D	MD		
		1	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, orange-brown mottled orange and grey.	w < PL	St-VSt		
		1.5	Alluvial		CI	Alluvial Sandy CLAY: medium plasticity, fine to medium grained sand, orange-brown mottled orange and grey.				
		2	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine grained sand, trace fine sized gravel, grey mottled orange.				
		2.6	Alluvial		CL-CI	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, trace fine sized gravel, grey and orange-brown.	w ≈ PL	St		
		3	Alluvial		CL-CI	As above, but orange-brown with grey.				
		4				**BH39 Terminated at 3 m (at Target)**				

Borehole Log

Borehole No.	**BH40**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.04		SWG	ASPHALT GRAVELLY SAND; fine to coarse grained sand, fine to medium sized gravels, grey, dry	Dense		FILL
			0.45		SW	SAND with gravels; fine to coarse grained sand, fine to medium sized gravels, grey to brown, dry	Medium Dense		
			0.7		Cl	SANDY CLAY; medium plasticity clay, fine to medium grained sand, orange to brown with grey and brown, trace fine gravels, w~PL	Stiff		
			1.0						
			1.5		Cl	SANDY CLAY; medium plasticity clay, fine to medium grained sand, orange to brown with red and brown, w<PL	Stiff to Very Stiff		ALLUVIUM
			2.0						
			2.3		CL	SANDY CLAY; low plasticity clay, fine to coarse grained sand, orange to brown and grey, w<PL	Stiff to Very Stiff		
						SANDY CLAY/CLAYEY SAND	Very Stiff/Dense		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 24/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

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Borehole Log

Borehole No.	**BH41**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure (Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure)	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.1		SM	SILTY SAND; fine to medium grained sand, brown, trace fine to medium gravels, trace anthropogenic material (concrete), dry	Medium Dense		TOPSOIL
					SM	GRAVELLY SILTY SAND; fine to coarse grained sand, fine to medium sized gravels, brown, trace anthropogenic material, trace medium plasticity clay, dry	Loose to Medium Dense		FILL
			0.8						
			1.0		SM	CLAYEY SILTY SAND; fine to medium grained sand, low plasticity clay, brown with grey, trace fine to medium gravels, dry	Medium Dense		
			1.3		SC	SANDY CLAY/CLAYEY SAND; low to medium plasticity clay, fine to medium grained sand, grey to brown, trace orange, trace fine to coarse gravels, dry	Medium Dense/Firm to Stiff	SPT 3, 3, 5 N=8	
			2						
			2.0		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey to brown mottled orange and grey, some fine to medium gravels, w~PL	Stiff		ALLUVIUM
			2.5		CI	SILTY SAND CLAY; medium plasticity clay, fine to medium grained sand, brown, some fine gravels, w~PL	Firm		
			2.8		CL	SANDY SILTY CLAY; low to medium plasticity clay, fine grained sand, grey, trace fine gravels, organic odour, w>PL	Firm	SPT 2, 3, 2 N=5	
			3.0						
			3.8		CI	SILTY SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey to brown with grey and orange to brown, trace fine gravels, w>PL	Firm		
			4.0						
			4.2		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, grey mottled orange to brown, w~PL	Stiff	SPT 4, 6, 8+ for 150mm N>14	
			5.0						
			6						
			6.0		CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to medium sized gravels, orange with red, grey and brown, w~PL	Stiff	SPT 4, 7, 8 N=15	
			6.5						
						BOREHOLE TERMINATED AT 6.5m At Target			
			7.0						

Logged By : JS Date : 24/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH42**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : Geoprobe
Hole Diameter : 100mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.3		SM	GRAVELLY SILTY SAND; fine to medium grained sand, fine to medium sized gravels, brown, grass roots at surface, dry	Loose to Medium Dense		TOPSOIL
			0.7		SC	SILTY CLAYEY SAND; low plasticity clay, fine to medium grained sand, brown and grey, trace fine to medium sized gravels, dry	Loose to Medium Dense		FILL
			1.0		CI	SANDY CLAY; medium plasticity clay, fine grained sand, grey mottled orange to brown and brown, w<PL	Stiff		
			1.3		CL	SILTY SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, brown, some fine to medium sized gravels, w<PL	Firm to Stiff	SPT 2, 5, 4 N=9	
			1.8		CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, grey, brown, w~PL	Firm to Stiff		
			2.0		CI	SILTY CLAY; medium plasticity clay, grey, trace fine gravels, w~PL	Firm		ALLUVIUM
			2.5		CH	SANDY SILTY CLAY; medium to high plasticity clay, fine grained sand, grey with orange to brown, w~PL	Firm to Stiff		
			2.9		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, orange to brown with grey, trace roots, w~PL	Stiff	SPT 3, 5, 6 N=11	
			3.0						
			4.0		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, grey mottled orange, w~PL	Stiff to Very Stiff	SPT 4, 6, 9+ for 150mm N>15	
			5.0			medium plasticity clay, some fine to medium gravels			
			5.5		CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to medium sized gravels, grey to brown, w~PL	Stiff		RESIDUAL
			6.0			SHALE; extremely weathered (XW), excavates as GRAVELLY SILTY CLAY; low to medium plasticity clay, fine to medium gravels, grey, w<PL)	Hard	SPT 10, 25, 25+ for 70mm N>50	WEATHERED BEDROCK
			6.5			BOREHOLE TERMINATED AT 6.5m At Target			
			7.0						

Logged By : JS Date : 25/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Fortify Geotech
U2/538 Gardeners Road, Alexandria NSW 2015
Phone: 02 9188 4033

Geotechnical Log - Borehole

BH47

UTM	:	**Drill Rig**	: Geoprobe	**Job Number**	: S1922
Easting (m)	: 0.0	**Driller Supplier**	: Legion Drilling	**Client**	: EP Risk Management
Northing (m)	: 0.0	**Logged By**	: Jerome Sami	**Project**	: Proposed Industrial Development
Ground Elevation	: Not Surveyed	**Reviewed By**	:	**Location**	: 74-94 Newton Road, Wetherill Park NSW
Total Depth	: 6 m BGL	**Date**	: 24/09/2023	**Loc Comment**	:

Drilling Method	Water	Depth (m)	Soil Origin	Graphic Log	Classification Code	Material Description	Moisture	Consistency/Density	Testing: SPT	Samples
		0.2	Non-Soil		CCT	Concrete				
		0.25	Non-Soil		SBC	Sub Base Coarse				
			Alluvial		Cl	Alluvial Sandy CLAY: medium plasticity, fine to medium grained sand, with fine to medium sized gravel, brown.	w ≈ PL	F-St		
		1	Alluvial		Cl	Alluvial CLAY: medium plasticity, trace fine to medium sized gravel, trace fine to medium grained sand, brown.		St		
		1.6	Alluvial		Cl	As above, but grey brown.			4, 6, 6, (N = 12)	
		2	Alluvial		Cl	As above, but brown.	w < PL			
		2.8	Alluvial		CL-Cl	Alluvial Sandy CLAY: low to medium plasticity, fine to medium grained sand, trace fine to medium sized gravel, grey and brown mottled black.	w ≈ PL	St-VSt	5, 6, 10, (N = 16)	
		5	Alluvial		CL-Cl	As above, but		VSt	5, 7, 9, (N = 16)	
		6				**BH47 Terminated at 6 m (at Target (wet soils encountered at bottom of hole))**			9, 17, (N = 34)	

Borehole Log

Borehole No.	**BH49**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.05		SM	SILTY SAND; fine to medium grained sand, dark brown, grass roots at surface, dry to moist	Loose to Medium Dense		TOPSOIL FILL
					Cl	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, grey and brown, trace orange and red, trace anthropogenic material (plastic, ceramic, concrete), w<PL	Stiff		FILL
			1.0						
			1.5		Cl	SANDY CLAY; medium plasticity clay, fine to coarse grained sand, grey, brown, some orange and red, trace fine to coarse gravels, w<PL	Stiff to Very Stiff		
			2.0						
			2.4		CH	SANDY CLAY; medium to high plasticity clay, fine to medium grained sand, grey mottled orange to brown and brown, trace fine gravels, w<PL	Very Stiff		ALLUVIUM
			2.8		Cl	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled brown with orange, trace fine gravels, w<PL	Very Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**BH50**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.05		SM	SILTY SAND; fine to medium grained sand, dark brown, grass roots at surface, dry to moist	Loose to Medium Dense		TOPSOIL FILL
					CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, grey and brown, trace orange and red, trace anthropogenic material (plastic, ceramic, concrete), w<PL	Stiff		FILL
			1.0						
			1.5		CI	SANDY CLAY; medium plasticity clay, fine to coarse grained sand, grey, brown, trace fine to coarse gravels, w<PL	Stiff to Very Stiff		
			2.0						
			2.2		CH	SANDY CLAY; medium to high plasticity clay, fine to medium grained sand, grey mottled orange to brown and brown, trace red, trace fine gravels, w<PL	Very Stiff		ALLUVIUM
			2.7		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled orange to brown and brown, trace red, trace fine gravels, w<PL	Very Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	TP01
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.5		SC	GRAVELLY SANDY CLAY/CLAYEY SAND; low to medium plasticity clay, fine to coarse grained sand, brown, grey, trace red and orange, trace anthropogenic material (concrete, ceramic, plastic, sandstone), dry	Medium Dense to Dense/Stiff		FILL
			1.0		CL	GRAVELLY SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, brown, grey, trace red and orange, trace anthropogenic material (concrete, ceramic, plastic, sandstone), dry	Stiff		
			1.4		Cl	SANDY CLAY; medium plasticity clay, fine to medium grained sand, brown mottled red to brown, trace fine gravels, w<PL	Stiff to Very Stiff		ALLUVIUM
			1.9						
			2.0		CH	SANDY CLAY; medium to high plasticity clay, fine grained sand, grey mottled orange to brown, trace roots, trace fine gravels, w<PL	Stiff to Very Stiff		
			2.5		Cl	SANDY CLAY; medium plasticity clay, fine grained sand, grey mottled orange to brown, trace roots, trace fine gravels, w<PL	Stiff to Very Stiff		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 27/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	TP02
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.1		SC	GRAVELLY CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravels, low plasticity clay, brown with grey, dry	Medium Dense		TOPSOIL FILL
			0.5		SC	GRAVELLY CLAYEY SAND/SANDY CLAY; low plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, brown with grey and orange to brown, trace anthropongeic (concrete, plastic), trace roots, dry	Medium Dense to Dense/Stiff		FILL
			1.0		CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to medium grained sand, fine to coarse sized gravels, brown, trace grey, dark grey, red, some anthropogenic material (concrete, plastic, ceramic, brick), trace roots, w<PL	Stiff		
			1.7		CL	SANDY CLAY; low to medium plasticity clay, fine to coarse grained sand, grey with red to brown, some brown, trace anthropogenic material (ceramic), some fine to coarse gravels, w<PL	Very Stiff		
			1.9		CH	SANDY CLAY; medium to high plasticity clay, fine to medium grained sand, pale brown with orange to brown and grey, trace fine to medium gravels, w<PL	Very Stiff		ALLUVIUM
			2.0						
			2.3		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, grey mottled orange to brown, trace black and red, trace fine to coarse sized gravels, w<PL	Very Stiff		
			2.6		CL	SILTY CLAY; low to medium plasticity clay, pale grey mottled orange to brown, trace black, trace fine to coarse sized gravels, trace ironstone, w<PL	Very Stiff to Hard		RESIDUAL
			2.9		CI	SILTY CLAY trace SAND; medium plasticity clay, pale grey mottled orange to brown, trace black, trace fine to coarse sized gravels, trace ironstone, w<PL	Very Stiff to Hard		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 27/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**TP03**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered	AUGERING	0.1		SM	SILTY SAND: with gravel, fine to coarse grained sand and gravels, dark orange, grass roots at surface	Medium Dense		TOPSOIL
					SC	CLAYEY SAND: WITH GRAVEL, fine to coarse graned sand and gravels, low plasticity clay, brown, trace anthropogenic material (poly, brick), dry, medium dense	Medium Dense to Dense		FILL
			1.0		CL	SANDY CLAY: WITH GRAVEL, fine to coarse graned sand and gravels, low plasticity clay, brown, grey, trace orange and black, trace anthropogenic material (brick, concrete, ceramic), w<PL	Stiff		
			2.0						
			2.7		SC	CLAYEY SAND/SANDY CLAY: fine to coarse graned sand, low to medium plasticity clay, brown, grey mottled orange,trace fine to medium gravels, dry	Very Stiff/Dense		ALLUVIUM
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	**TP04**
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth Metres	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.7		SC	GRAVELLY SANDY CLAY/CLAYEY SAND; low to medium plasticity clay, fine to coarse grained sand, brown, grey, trace red and orange, trace anthropogenic material (concrete, ceramic, plastic, sandstone), dry	Medium Dense to Dense/Stiff		FILL
			1.0		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, pale brown with orange to brown, trace fine gravels, w<PL	Stiff		ALLUVIUM
			1.2		CH	SANDY CLAY; medium to high plasticity clay, fine to medium grained sand, pale brown with orange to brown, trace fine gravels, w<PL	Stiff		
			1.7		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, pale grey mottled orange to brown, trace fine gravels, w~PL	Stiff		
			2.0						
			2.2		CL	SANDY CLAY; low to medium plasticity clay, fine to medium grained sand, pale grey mottled orange to brown, trace fine to medium gravels, w<PL	Stiff to Very Stiff		RESIDUAL
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 27/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	TP05
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.0		SC	GRAVELLY SANDY CLAY/CLAYEY SAND; fine to coarse grained sand, low to medium plasticity clay, brown with grey, some anthropogenic material (concrete, bricks, PVC, metal), dry	Medium Dense/Firm to Stiff		FILL
			1.0		CL	GRAVELLY SANDY CLAY; fine to coarse grained sand, low to medium plasticity clay, brown with grey, some anthropogenic material (concrete, bricks, PVC, metal), dry	Firm to Stiff		
			1.3		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled brown, some orange, trace fine to medium gravels, w<PL	Very Stiff		
			1.4		CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled brown, some orange, trace fine to medium gravels, w<PL	Very Stiff		
			2.0						
			2.5		CI	SILTY CLAY/CLAYEY SILT; medium plasticity clay, grey and grey to brown, some fine to medium gravels, trace anthropogenic material (wood), w>PL	Firm		
			2.9			w~PL	Firm to Stiff		
			3.0			BOREHOLE TERMINATED AT 2.9m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	TP06
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth Metres	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.5		SC	GRAVELLY SANDY CLAY/CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravels, low to medium plasticity clay, brown with grey, trace orange and red, trace anthropogenic material (concrete), w<PL	Stiff		FILL
			1.0		CL	GRAVELLY SANDY CLAY; fine to coarse grained sand, fine to coarse sized gravels, low to medium plasticity clay, brown with grey, trace orange and red, trace anthropogenic material (concrete), w<PL	Stiff		
			2.0						
			2.6		CI	SANDY CLAY; medium plasticity clay, fine to medium grained sand, grey mottled pale brown, trace roots, w<PL	Very Stiff		ALLUVIUM
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

Borehole Log

Borehole No.	TP07
Sheet	1 of 1
Job No.	S1922

CLIENT: EP Risk Management

PROJECT: Proposed Industrial Development
74-94 Newton Road, Wetherill Park, NSW

Location : See Report

Collar Level : Not Known
Angle From Vertical : 0°
Bearing : N.A.

Equipment Type : 5t Excavator w/ Bucket
Hole Diameter : 200mm

Samples	Water	Casing	Depth (Metres)	Graphic Log	U.S.C.S.	Material Description, Structure Soil Type: Plasticity or Particle Characteristics, Colour, Secondary and Minor Components, Moisture, Structure	Consistency or Relative Density	Field Test Results	Geological Profile
	None Encountered		0.1		SM	SILTY SAND; fine to medium grained sand, dark brown, grass roots at surface, dry to moist	Loose to Medium Dense		TOPSOIL FILL
					CI	GRAVELLY SANDY CLAY; medium plasticity clay, fine to coarse grained sand, fine to coarse sized gravels, grey and brown, trace orange and red, trace anthropogenic material (plastic, ceramic, concrete), w<PL	Stiff		FILL
			0.8		SWG	CLAYEY GRAVELLY SAND; fine to coarse grained sand, fine to coarse sized gravels, low to medium plasticity clay, dark grey with grey, brown, some anthropogenic material (concrete, brick, ceramic, wood), dry	Dense		
			1.0						
			1.3		CL	GRAVELLY CLAYEY SAND; fine to coarse grained sand, fine to coarse sized gravels, low to medium plasticity clay, dark grey with grey, brown, some anthropogenic material (concrete, brick, ceramic, wood), dry	Dense		
			1.7		CL	SANDY SILTY CLAY; low to medium plasticity clay, fine to medium grained sand, grey to dark grey, trace roots, organic odour, w~PL	Firm		ALLUVIUM
			2.0						
			2.1		CI	SILTY CLAY; medium plasticity clay, grey to brown, some fine gravels, trace roots, organic odour, w~PL	Firm to Stiff		
			2.5		CL	SANDY SILTY CLAY; low to medium plasticity clay, fine to medium grained sand, grey to dark grey, trace roots, organic odour, w~PL	Firm		
			3.0			BOREHOLE TERMINATED AT 3m At Target			
			4.0						

Logged By : JS Date : 26/7/23 | Checked By : Date :

BOREHOLE/EXCAVATION LOG S1922.GPJ ACT GEO.GDT 20/10/23

ACT Geotechnical Engineers

Fortify Geotech Pty Ltd

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Appendix B

CBR & Atterberg Limit Laboratory Test Results

Material Test Report

J & A Geotech Testing Pty Ltd

Canberra Laboratory
Unit 2, 25 Dacre Street Mitchell ACT 2911
Phone: (02) 6255 5363
Email: scott.miller@jageotech.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Scott Miller
Lab Manager

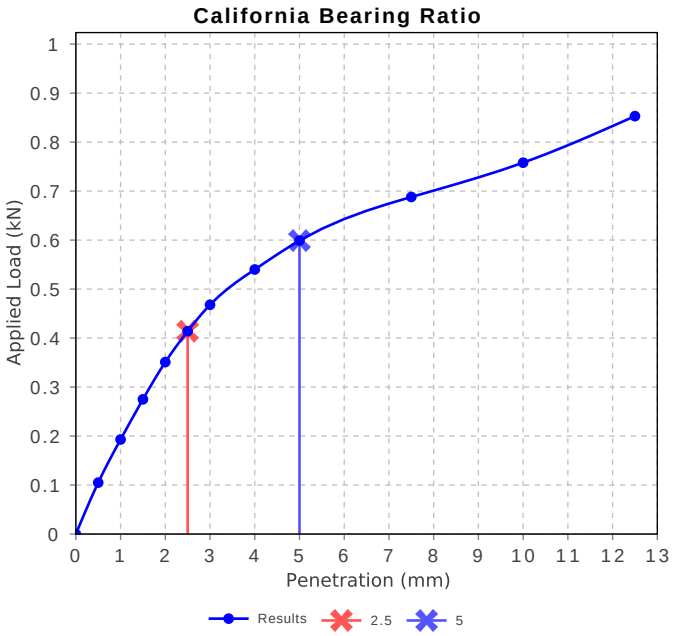
NATA Accredited Laboratory Number: 19979

Report Number:	**CP231330-2**
Issue Number:	1
Date Issued:	16/08/2023
Client:	Fortify Geotech Pty Ltd
	PO Box 9225, Deakin ACT 2600
Contact:	Allison Baillie
Project Number:	CP231599
Project Name:	74 - 94 Newton Road
Project Location:	Wetherill Park NSW
Client Reference:	S1922
Work Request:	8584
Sample Number:	CS8584A
Date Sampled:	02/08/2023
Dates Tested:	04/08/2023 - 15/08/2023
Sampling Method:	Sampled by Client
	The results apply to the sample as received
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Site Selection:	Selected by Client
Sample Location:	**BH7/1D, Depth: 0.7m - 1.0m**

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	visual		
Maximum Dry Density (t/m^3)	1.63		
Optimum Moisture Content (%)	22.5		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	99.5		
Dry Density after Soaking (t/m^3)	1.57		
Field Moisture Content (%)	18.2		
Moisture Content at Placement (%)	22.4		
Moisture Content Top 30mm (%)	29.4		
Moisture Content Rest of Sample (%)	23.7		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	49.4		
Swell (%)	1.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	50		
Plastic Limit (%)	21		
Plasticity Index (%)	**29**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**10.0**		
Cracking Crumbling Curling	Cracking		



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Material Test Report

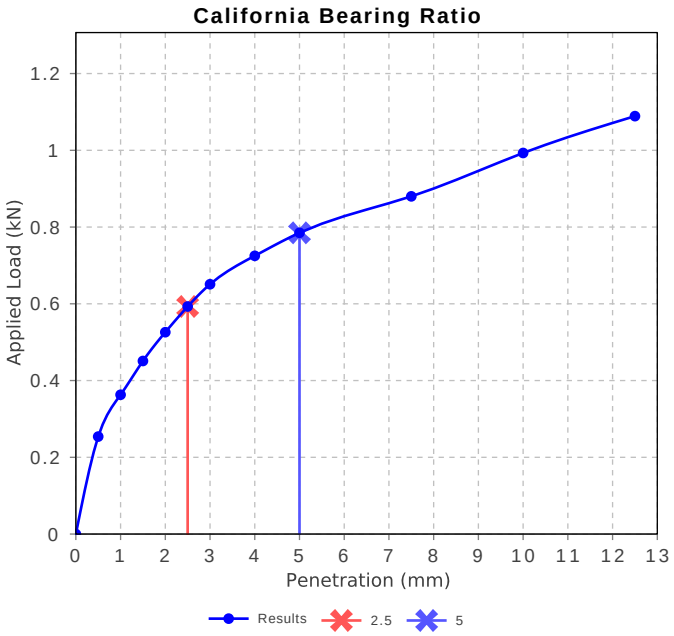
J & A Geotech Testing Pty Ltd
Canberra Laboratory
Unit 2, 25 Dacre Street Mitchell ACT 2911
Phone: (02) 6255 5363
Email: scott.miller@jageotech.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Scott Miller
Lab Manager
NATA Accredited Laboratory Number: 19979

Report Number:	**CP231330-2**
Issue Number:	1
Date Issued:	16/08/2023
Client:	Fortify Geotech Pty Ltd
	PO Box 9225, Deakin ACT 2600
Contact:	Allison Baillie
Project Number:	CP231599
Project Name:	74 - 94 Newton Road
Project Location:	Wetherill Park NSW
Client Reference:	S1922
Work Request:	8584
Sample Number:	CS8584B
Date Sampled:	02/08/2023
Dates Tested:	04/08/2023 - 14/08/2023
Sampling Method:	Sampled by Client
	The results apply to the sample as received
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Site Selection:	Selected by Client
Sample Location:	**TP36/1D, Depth: 0.6m - 0.8m**

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**4.5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	visual		
Maximum Dry Density (t/m^3)	1.76		
Optimum Moisture Content (%)	18.5		
Laboratory Density Ratio (%)	98.5		
Laboratory Moisture Ratio (%)	100.0		
Dry Density after Soaking (t/m^3)	1.71		
Field Moisture Content (%)	17.3		
Moisture Content at Placement (%)	18.5		
Moisture Content Top 30mm (%)	23.2		
Moisture Content Rest of Sample (%)	18.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	49.5		
Swell (%)	0.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		



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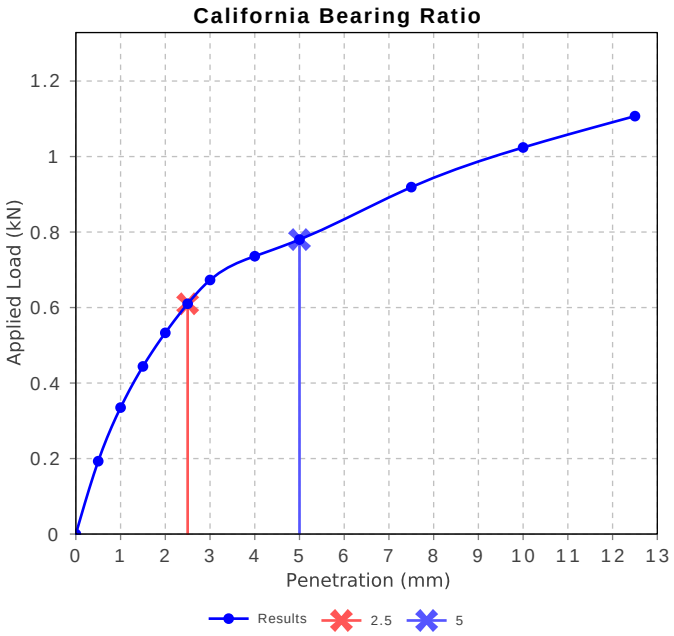
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Approved Signatory: Scott Miller
Lab Manager

NATA Accredited Laboratory Number: 19979

Report Number:	**CP231330-2**
Issue Number:	1
Date Issued:	16/08/2023
Client:	Fortify Geotech Pty Ltd
	PO Box 9225, Deakin ACT 2600
Contact:	Allison Baillie
Project Number:	CP231599
Project Name:	74 - 94 Newton Road
Project Location:	Wetherill Park NSW
Client Reference:	S1922
Work Request:	8584
Sample Number:	CS8584C
Date Sampled:	02/08/2023
Dates Tested:	04/08/2023 - 14/08/2023
Sampling Method:	Sampled by Client
	The results apply to the sample as received
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Site Selection:	Selected by Client
Sample Location:	**BH01/1D, Depth: 0.5m - 0.6m**

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**4.5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	visual		
Maximum Dry Density (t/m^3)	1.78		
Optimum Moisture Content (%)	17.5		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	101.0		
Dry Density after Soaking (t/m^3)	1.74		
Field Moisture Content (%)	18.5		
Moisture Content at Placement (%)	17.5		
Moisture Content Top 30mm (%)	19.5		
Moisture Content Rest of Sample (%)	17.8		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	49.7		
Swell (%)	0.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		



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Material Test Report

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Phone: (02) 6255 5363
Email: scott.miller@jageotech.com.au

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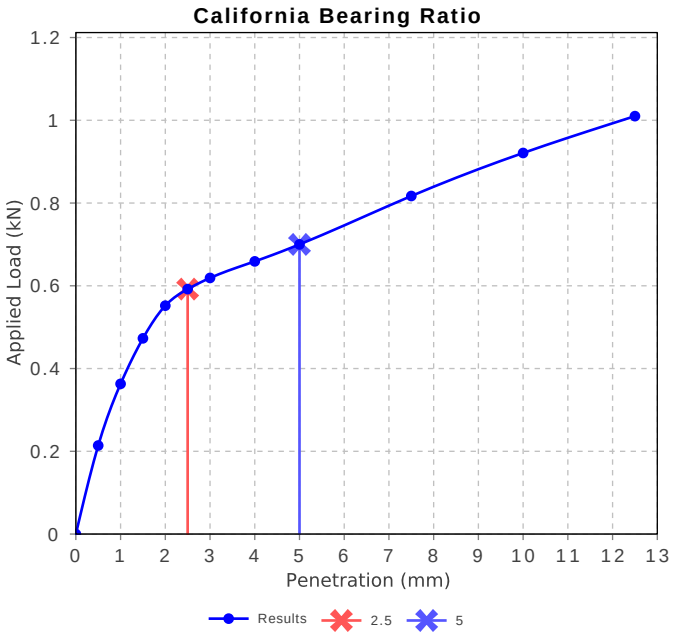
Approved Signatory: Scott Miller
Lab Manager
NATA Accredited Laboratory Number: 19979

Report Number:	**CP231330-2**
Issue Number:	1
Date Issued:	16/08/2023
Client:	Fortify Geotech Pty Ltd
	PO Box 9225, Deakin ACT 2600
Contact:	Allison Baillie
Project Number:	CP231599
Project Name:	74 - 94 Newton Road
Project Location:	Wetherill Park NSW
Client Reference:	S1922
Work Request:	8584
Sample Number:	CS8584D
Date Sampled:	02/08/2023
Dates Tested:	04/08/2023 - 14/08/2023
Sampling Method:	Sampled by Client
	The results apply to the sample as received
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Site Selection:	Selected by Client
Sample Location:	**TP04/1D, Depth: 0.7m - 0.9m**

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**4.5**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	visual		
Maximum Dry Density (t/m^3)	1.54		
Optimum Moisture Content (%)	25.5		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking (t/m^3)	1.49		
Field Moisture Content (%)	21.2		
Moisture Content at Placement (%)	25.8		
Moisture Content Top 30mm (%)	31.3		
Moisture Content Rest of Sample (%)	26.0		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	50.0		
Swell (%)	1.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	52		
Plastic Limit (%)	20		
Plasticity Index (%)	**32**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**10.0**		
Cracking Crumbling Curling	Cracking		



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Material Test Report

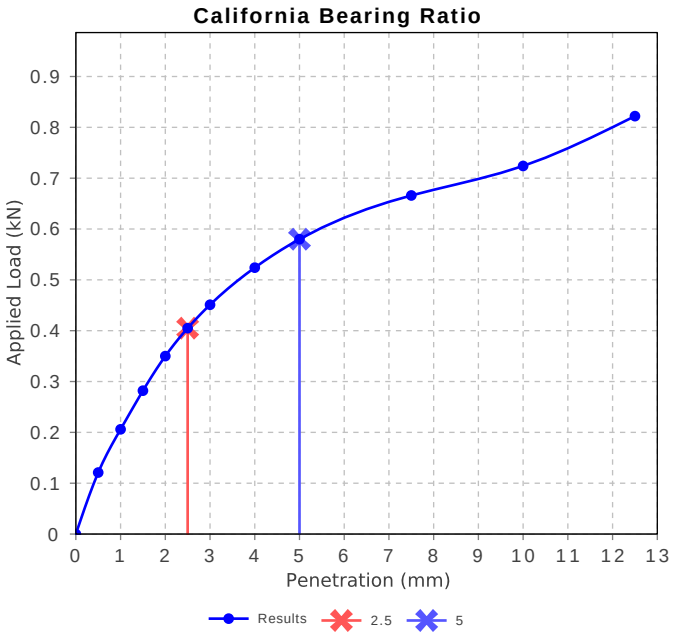
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Canberra Laboratory
Unit 2, 25 Dacre Street Mitchell ACT 2911
Phone: (02) 6255 5363
Email: scott.miller@jageotech.com.au

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Approved Signatory: Scott Miller
Lab Manager
NATA Accredited Laboratory Number: 19979

Report Number:	**CP231330-2**
Issue Number:	1
Date Issued:	16/08/2023
Client:	Fortify Geotech Pty Ltd
	PO Box 9225, Deakin ACT 2600
Contact:	Allison Baillie
Project Number:	CP231599
Project Name:	74 - 94 Newton Road
Project Location:	Wetherill Park NSW
Client Reference:	S1922
Work Request:	8584
Sample Number:	CS8584E
Date Sampled:	02/08/2023
Dates Tested:	04/08/2023 - 14/08/2023
Sampling Method:	Sampled by Client
	The results apply to the sample as received
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Site Selection:	Selected by Client
Sample Location:	**TP50/1D, Depth: 0.8m - 1.0m**

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	visual		
Maximum Dry Density (t/m^3)	1.69		
Optimum Moisture Content (%)	18.5		
Laboratory Density Ratio (%)	98.5		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking (t/m^3)	1.63		
Field Moisture Content (%)	15.5		
Moisture Content at Placement (%)	18.7		
Moisture Content Top 30mm (%)	26.9		
Moisture Content Rest of Sample (%)	21.2		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	50.1		
Swell (%)	2.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		



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Phone: (02) 6255 5363
Email: scott.miller@jageotech.com.au

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Approved Signatory: Scott Miller
Lab Manager

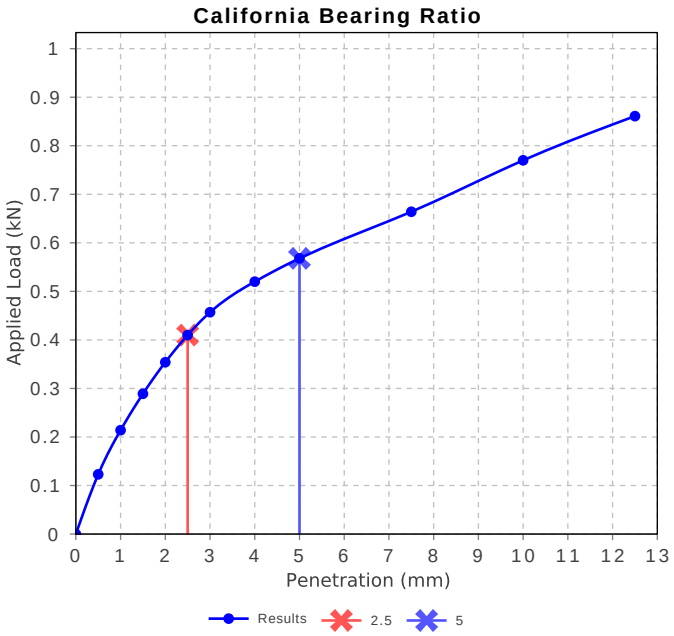
NATA Accredited Laboratory Number: 19979

Report Number:	**CP231330-2**
Issue Number:	1
Date Issued:	16/08/2023
Client:	Fortify Geotech Pty Ltd
	PO Box 9225, Deakin ACT 2600
Contact:	Allison Baillie
Project Number:	CP231599
Project Name:	74 - 94 Newton Road
Project Location:	Wetherill Park NSW
Client Reference:	S1922
Work Request:	8584
Sample Number:	CS8584F
Date Sampled:	02/08/2023
Dates Tested:	04/08/2023 - 14/08/2023
Sampling Method:	Sampled by Client
	The results apply to the sample as received
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Site Selection:	Selected by Client
Sample Location:	**TP33/1D, Depth: 1.0m**

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	2.5 mm		
CBR %	**3.0**		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	visual		
Maximum Dry Density (t/m^3)	1.73		
Optimum Moisture Content (%)	19.5		
Laboratory Density Ratio (%)	98.0		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking (t/m^3)	1.67		
Field Moisture Content (%)	20.8		
Moisture Content at Placement (%)	19.7		
Moisture Content Top 30mm (%)	24.8		
Moisture Content Rest of Sample (%)	20.0		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	50.2		
Swell (%)	1.5		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	0.0		

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	44		
Plastic Limit (%)	17		
Plasticity Index (%)	**27**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**10.0**		
Cracking Crumbling Curling	Cracking		



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Material Test Report

J & A Geotech Testing Pty Ltd

Canberra Laboratory
Unit 2, 25 Dacre Street Mitchell ACT 2911
Phone: (02) 6255 5363
Email: justin.smith@jageotech.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Justin Smith
Managing Director
NATA Accredited Laboratory Number: 19979

Report Number:	**CP231599-1**
Issue Number:	1
Date Issued:	25/09/2023
Client:	Fortify Geotech Pty Ltd
	PO Box 9225, Deakin ACT 2600
Contact:	Allison Baillie
Project Number:	CP231599
Project Name:	74 - 94 Newton Road
Project Location:	Wetherill Park NSW
Client Reference:	S1922
Work Request:	8949
Sample Number:	CS8949A
Date Sampled:	20/09/2023
Dates Tested:	20/09/2023 - 22/09/2023
Sampling Method:	Sampled by Client
	The results apply to the sample as received
Preparation Method:	AS 1289.1.1 - Sampling and preparation of soils
Site Selection:	Selected by Client
Sample Location:	**BH34, Depth: 0.9m - 1.5m**

Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	50		
Plastic Limit (%)	20		
Plasticity Index (%)	**30**		

Linear Shrinkage (AS1289 3.4.1)		Min	Max
Moisture Condition Determined By	AS 1289.3.1.2		
Linear Shrinkage (%)	**7.5**		
Cracking Crumbling Curling	Cracking		

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Appendix C

Aggressivity Laboratory Test Results

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

CERTIFICATE OF ANALYSIS 334695

Client Details

Client	Fortify Geotech
Attention	Allison Baille
Address	Unit 2 / 538 Gardneners Rd, ALEXANDRIA, NSW, 2015

Sample Details

Your Reference	**S1922 - Wetherill Park**
Number of Samples	3 Soil
Date samples received	06/10/2023
Date completed instructions received	06/10/2023

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	13/10/2023
Date of Issue	13/10/2023

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Results Approved By
Diego Bigolin, Inorganics Supervisor

Authorised By
Nancy Zhang, Laboratory Manager

Misc Inorg - Soil				
Our Reference		334695-1	334695-2	334695-3
Your Reference	UNITS	BH30/1D	BH6/1D	BH18/1D
Depth		1	0.5	2.5
Date Sampled		24/09/2023	24/09/2023	24/09/2023
Type of sample		Soil	Soil	Soil
Date prepared	-	10/10/2023	10/10/2023	10/10/2023
Date analysed	-	10/10/2023	10/10/2023	10/10/2023
pH 1:5 soil:water	pH Units	6.9	7.0	6.8
Electrical Conductivity 1:5 soil:water	µS/cm	720	410	1,100
Chloride, Cl 1:5 soil:water	mg/kg	700	310	1,300
Sulphate, SO4 1:5 soil:water	mg/kg	300	250	230

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			10/10/2023	[NT]	[NT]	[NT]	[NT]	10/10/2023	[NT]
Date analysed	-			10/10/2023	[NT]	[NT]	[NT]	[NT]	10/10/2023	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	98	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	100	[NT]
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	96	[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

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

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

CERTIFICATE OF ANALYSIS 335578

Client Details

Client	Fortify Geotech
Attention	Jerome Sami
Address	Unit 2 / 538 Gardneners Rd, ALEXANDRIA, NSW, 2015

Sample Details

Your Reference	**S1922 - 74-94 Newton Road, Wetherill Park**
Number of Samples	8 Soil
Date samples received	18/10/2023
Date completed instructions received	18/10/2023

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	25/10/2023
Date of Issue	25/10/2023

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Results Approved By
Priya Samarawickrama, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

Misc Inorg - Soil						
Our Reference		335578-1	335578-2	335578-3	335578-4	335578-5
Your Reference	UNITS	BH41	TP49	BH27	BH38	BH2
Depth		6m	2.8m	2m	1m	3.5-4m
Date Sampled		24/07/2023	24/07/2023	24/07/2023	25/07/2023	18/07/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
Date analysed	-	19/10/2023	19/10/2023	19/10/2023	19/10/2023	19/10/2023
pH 1:5 soil:water	pH Units	7.2	6.0	5.6	7.2	8.4
Electrical Conductivity 1:5 soil:water	µS/cm	130	520	380	400	460
Chloride, Cl 1:5 soil:water	mg/kg	30	550	300	320	510
Sulphate, SO4 1:5 soil:water	mg/kg	110	320	210	300	160

Misc Inorg - Soil				
Our Reference		335578-6	335578-7	335578-8
Your Reference	UNITS	BH13	BH1	BH03
Depth		5m	1.5m	2m
Date Sampled		24/07/2023	25/07/2023	25/07/2023
Type of sample		Soil	Soil	Soil
Date prepared	-	19/10/2023	19/10/2023	19/10/2023
Date analysed	-	19/10/2023	19/10/2023	19/10/2023
pH 1:5 soil:water	pH Units	9.6	6.1	7.6
Electrical Conductivity 1:5 soil:water	µS/cm	400	580	1,100
Chloride, Cl 1:5 soil:water	mg/kg	370	630	1,300
Sulphate, SO4 1:5 soil:water	mg/kg	190	290	560

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	335578-2
Date prepared	-			19/10/2023	1	19/10/2023	19/10/2023		19/10/2023	19/10/2023
Date analysed	-			19/10/2023	1	19/10/2023	19/10/2023		19/10/2023	19/10/2023
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	1	7.2	7.3	1	100	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	1	130	130	0	103	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	1	30	30	0	99	#
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	1	110	110	0	98	#

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

Tests/Analytes PH/EC/Cl/SO4 have exceeded the recommended technical holding times, Envirolab Group form 347 "Recommended Preservation and Holding Times" can be provided on request (available on the Envirolab website)

MISC_INORG_DRY: ic # Percent recovery is not applicable due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

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Appendix D

Engineering Terms and Definitions

DESCRIPTION AND CLASSIFICATION OF SOILS

The methods of description and classification of soils used in this report are based on the Australian Standard 1726 – 1993, Geotechnical site investigations. In general, descriptions cover the following properties – soil type, colour, secondary grain size, structure, inclusions, strength or density and geological description.

Soil types are described according to the predominating particle size, qualified by the grading of other particles present (e.g. sandy clay) on the following basis:

Classification	**Particle Size**
Clay	Less than 0.002mm
Silt	0.002mm to 0.06mm
Sand	0.06mm to 2.00mm
Gravel	2.00mm to 60.00mm
Cobbles	60mm (63mm) to 200mm
Boulders	>200mm

Soils are also classified according to the Unified Soil Classifications System which is included in this Appendix. Rock types are classified by their geological names.

Cohesive soils are classified on the basis of strength either by laboratory testing or engineering examination. The terms are defined as follows:

Consistency	**Shear Strength su(kPa) (Representative Undrained Shear)**	
Very soft	< 12	<2 (~SPT “N”)
Soft	12 - 25	2-4
Firm	25 - 50	4-8
Stiff	50 – 100	8-15
Very Stiff	100 – 200	15-30
Hard	> 200	>30

Non-cohesive soils are classified on the basis of relative density, generally from the results of in-situ standard penetration tests as below:

Term	**Relative Density (%)**	**SPT Blows/300mm ‘N’**
Very loose	< 15	<4
Loose	15-35	4-10
Medium dense	35-65	10-30
Dense	65-85	30-50
Very Dense	>85	>50

SAMPLING

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

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

Undisturbed samples are generally taken by one of two methods:

1. Driving or pushing a thin walled sample tube into the soil and withdrawing with a sample of soil in a relatively undisturbed state.

2. Core drilling using a retractable inner tube (R.I.T.) core barrel.

Such samples yield information on structure and strength in additions to that obtained from disturbed samples and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Details of the type and method of sampling are given in the report.

PENETRATION TESTING

The relative density of non-cohesive soils is generally assessed by in-situ penetration tests, the most common of which is the standard penetration test. The test procedure is described in Australian Standard 1289 “Testing Soils for Engineering Purposes” Testing Soils for Engineering Purposes” – Test No. F3.1.

The standard penetration test is carried out by driving a 50mm diameter split tube penetrometer of standard dimensions under the impact of a 63 kg hammer having a free fall of 750mm.

The “N” value is determined as the number of blows to achieve 300mm of penetration (generally after disregarding the first 150mm penetration through possibly disturbed material). The results of these tests can be related empirically to the engineering properties of the soil.

The test is also used to provide useful information in cohesive soils under certain conditions, a good quality disturbed sample being recovered with each test. Other forms of in situ testing are used under certain conditions and where this occurs, details are given in the report.

DEFINITIONS OF ROCK, SOIL, AND DEGREES OF CHEMICAL WEATHERING

GENERAL DEFINITIONS – ROCK AND SOIL

ROCK In engineering usage, rock is a natural aggregate of minerals connected by strong and permanent cohesive forces.

Note: Since “strong” and “permanent” are subject to different interpretations, the boundary between rock and soil is necessarily an arbitrary one.

SOIL In engineering usage, soil is a natural aggregate of mineral grains which can be separated by such gentle mechanical means as agitation in water, can be remoulded and can be classified according to the Unified Soil Classification System. Three principal classes of soil recognized are:

Residual soils: soils which have been formed in-situ by the chemical weathering of parent rock. Residual soil may retain evidence of the original rock texture or fabric or, when mature, the original rock texture may be destroyed.

Transported soils: soils which have been moved from their places of origin and deposited elsewhere. The principal agents of erosion, transport and deposition are water, wind and gravity. Two important types of transported soil in engineering geology and materials investigations are:

Colluvium – a soil, often including angular rock fragments and boulders, which has been transported downslope predominantly under the action of gravity assisted by water. The principle forming process is that of soil creep in which the soil moves after it has been weakened by saturation. It may be water borne for short distances.

Alluvium – a soil which has been transported and deposited by running water. The larger particles (sand and gravel size) are water worn.

Lateritic soils: soils which have formed in situ under the effects of tropical weathering include all reddish residual and non residual soils which genetically form a chain of material ranging from decomposed rock through clay to sesqui-oxide rich crusts. The term does not necessarily imply any compositional, textural or morphological definition; all distinctions useful for engineering purposes are based on the differences in geotechnical characteristics.

ROCK WEATHERING DEFINITIONS

Extremely Weathered (EW)	Rock substance affected by weathering to the extent that the rock exhibits soil properties, i.e. it can be remoulded and can be classified according to the Unified Classification System, but the texture of the original rock is still evident.
Highly Weathered (HW)	Rock substance affected by weathering to the extent that limonite staining or bleaching affects the whole of the rock substance and other signs of the chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock usually as a result of iron leaching or deposition. The colour and strength of the original fresh rock substance is no longer recognisable.
Moderately Weathered (MW)	Rock substance affected by weathering to the extent that staining extends throughout the whole of the rock substance and the original colour of the fresh rock is no longer recognisable.
Slightly Weathered (SW)	Rock substance affected by weathering to the extent that partial staining or discolouration of the rock substance, usually by limonite, has taken place. The colour and texture of the fresh rock is recognisable.
Fresh (Fr)	Rock substance unaffected by weathering.

The degrees of rock weathering may be gradational. Intermediate stages are described by dual symbols with the prominent degree of weathering first (e.g. EW-HW).

The various degrees of weathering do not necessarily define strength parameters as some rocks are weak, even when fresh, to the extent that they can be broken by hand across the fabric, and some rocks may increase in strength during the weathering process.

Fresh drill cores of some rock types, such as basalt and shale may disintegrate after exposure to the atmosphere due to slaking, desiccation, expansion or contraction, stress relief or a combination of any of these factors.

AN ENGINEERING CLASSIFICATION OF SEDIMENTARY ROCKS

This classification system provides a standardised terminology for the engineering description of the sandstone and shales in the Sydney area, but the terms and definitions may be used elsewhere when applicable. Where other rock types are encountered, such as in dykes, standard geological descriptions are used for rock types and the same descriptions as below are used for strength, fracturing and weathering.

Under this system rocks are classified by Rock Type, Strength, Stratification Spacing, Degree of Fracturing and Degree of Weathering. These terms do not cover the full range of engineering properties. Descriptions of rock may also need to refer to other properties (e.g. durability, abrasiveness, etc) where these are relevant.

ROCK TYPE DEFINITIONS

ROCK TYPE	DEFINITION
Conglomerate:	More than 50% of the rock consists of gravel sized (greater than 2mm) fragments.
Sandstone:	More than 50% of the rock consists of sand sized (0.06 to 2mm) grains.
Siltstone:	More than 50% of the rock consists of silt-sized (less than 0.06mm) granular particles and the rock is not laminated.
Claystone:	More than 50% of the rock consists of silt or clay sized particles and the rock is not laminated.
Shale:	More than 50% of the rock consists of silt or clay sized particles and the rock is laminated.

Rocks possessing characteristics of two groups are described by their predominant particle size with reference also to the minor constituents, e.g. clayey sandstone, sandy shale.

STRATIFICATION SPACING

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

DEGREE OF FRACTURING

This classification applies to diamond drill cores and refers to the spacing of all types of natural fractures along which the core is discontinuous. These include bedding plane partings, joints and other rock defects, but exclude known artificial fractures such as drilling breaks.

Term	Description
Fragmented:	The core is comprised primarily of fragments of length less than 20mm, and mostly of width less than the core diameter
Highly Fractured:	Core lengths are generally less than 20mm – 40mm with occasional fragments.
Fractured:	Core lengths are mainly 30mm – 100mm with occasional shorter and longer section.
Slightly Fractured:	Core lengths are generally 300mm – 1000mm with occasional longer sections and occasional sections of 100mm – 300mm.
Unbroken:	The core does not contain any fracture.

ROCK STRENGTH

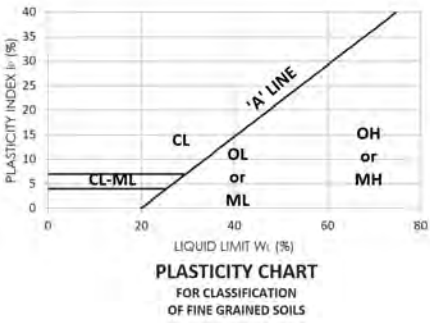
Rock strength is defined by the Point Load Strength Index (Is 50) and refers to the strength of the rock substance in the direction normal to the bedding. The test procedure is described by the International Society of Rock Mechanics.

Term	Point Load Index Is(50) MPa	Field Guide	Approx qu MPa*
Extremely Weak:	0.03	Easily remoulded by hand to a material with soil properties.	0.7
Very Weak:	0.1	May be crumbled in the hand. Sandstone is “sugary” and friable.	2.4
Weak:	0.3	A piece of core 150mm long x 50mm dia. May be broken by hand and easily scored with a knife. Sharp edges of core may be friable and break during handling.	7
Medium Strong:	1	A piece of core 150mm long x 50mm dia. can be broken by hand with considerable difficulty. Readily scored with knife.	24
Strong: (SW)	3	A piece of core 150mm long x 50mm dia. core cannot be broken by unaided hands, can be slightly scratched or scored with knife.	70
Very Strong (SW)	10	A piece of core 150mm long x 50mm dia. may be broken readily with hand held hammer. Cannot be scratched with pen knife.	240
Extremely Strong (Fr)	>10	A piece of core 150mm long x 50mm dia. is difficult to break with hand held hammer. Rings when struck with a hammer.	>240

The approximate unconfined compressive strength (qu) shown in the table is based on an assumed ration to the point load index of 24:1. This ratio may vary widely.

Unified Soil Classification System (Metricated)
Data for Description Indentification and Classification of Soils

MAJOR DIVISIONS				DESCRIPTION				FIELD IDENTIFICATION						LABORATORY CLASSIFICATION				
				Group Symbol	Graphic Symbol	TYPICAL NAME	DESCRIPTIVE DATA			GRAVELS AND SANDS			Group Symbol		% [2] < 0.06mm	PLASTICITY OF FINE FRACTION			NOTES
										GRADATIONS		NATURE OF FINES	DRY STRENGTH						
COARSE GRAINED SOILS	More than 50% by dry mass, less than 60mm is greater than 0.06mm.	GRAVELS	More than 50% of coarse grains are greater than 2.0mm	GW		Well graded gravels and gravel-sand mixtures, little or no fines	Give typical name, indicate approximate percentages of sand and gravel, maximum size, angularity, surface condition and hardness of the coarse grains, local or geological name and other pertinent descriptive information, symbols in parenthesis. For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics. EXAMPLE: Silty Sand, gravelly, about 20% hard, angular gravel particles, 10mm maximum size, rounded and sub angular sand grains coarse to fine, about 15% non-plastic fines with low dry strength, well compacted and moist in place, light brown alluvial sand, (SM)	Determine approximate percentages of material over 60mm size, maximum size, shape, surface texture, hardness of material, geological description, identify on estimated percentage mass of the various fractions.	COARSE GRAINED SOILS More than half of the material less than 60mm is larger than 0.06mm	GOOD	Wide range in grain size	"Clean" materials (not enough fines to band coarse grains)	None	GW	Use the gradation curve of material passing 60mm for classification of fractions according to criteria given under "Major Division".	0-5	-	>4	Between 1 and 3	1. Identify Fines by the method given for fine grained soils. 2. Borderline classifications occur when the percentage of fines (fraction smaller than 0.06mm size) is greater than 5% and less than 12%. Borderline classifications require the use of dual symbols eg SP-SM GW-GC
				GP		Poorly graded gravels and gravel-sand mixtures, little or no fines				POOR	Predominantly one size or range of sizes			GP		0-5	-	Fails to comply with above		
		GRAVELLY SOILS		GM		Silty gravels, gravel-sand-silt mixtures				GOOD TO FAIR	"Dirty" materials (Excess of fines)	Fines are non-plastic (1)	None to medium	GM		12-50	Below 'A' line and Ip >7	-	-	
				GC		Clayey gravels gravel-sand-clay mixtures						Fines are plastic (1)		GC		12-50	Above 'A' line and Ip > 7	-	-	
		SANDS	More than 50% of coarse grains are greater than 2.0mm	SW		Well graded sands and gravelly sands, little or no fines				GOOD	Wide range in grain size	"Clean" materials (not enough fines to band coarse grains)	None	SW		0-5	-	>6	between 1 and 3	
				SP		Poorly graded sands and gravelly sands, little or no fines				POOR	Predominantly one size or range of sizes			SP		0-5	-	Fails to comply with above		
		SANDY SOILS		SM		Silty sand, sand-silt mixtures				GOOD TO FAIR	"Dirty" materials (Excess of fines)	Fines are non-plastic (1)	None to medium	SM		12-50	Below 'A' line or Ip < 4	-	-	
				SC		Clayey sands, sand-clay mixtures						Fines are plastic (1)		SC		12-50	Above 'A' line and Ip > 7	-	-	
FINE GRAINED SOILS	More than 50% by dry mass, less than 60mm is less than 0.06mm	Liquid Limit less than 50%		ML		Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.	Give typical name, indicate degree and character of plasticity, amount and maximum size of coarse grains, colour in wet condition, odour if any, local or geological name and r pertinent descriptive information, symbols in parenthesis. For undisturbed soil add information on structure, stratification, consistancy in undisturbed and remoulded states, moisture and drainage conditions. EXAMPLE Clayey Silt, brown, low plasticity, small percentage of fine sand, numerous vertical root-holes, firm and dry in place, fill, (ML).		FINE GRAINED SOILS More than half of the material less than 50mm is less than 0.06mm 0.06mm is about the smallest particle visible to the naked eye	SILT AND CLAY FRACTION Fraction smaller than 0 20mm AS sieve size					More than 50% passing 0.06mm	Below 'A' line			
				CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.				DRY STRENGTH	DILATANCY	TOUGHNESS				Above 'A' line			
				OL		Organic silts and organic silty clays of low plasticity				None to low	Quick to slow	None		ML		Below 'A' line			
		Liquid Limit more than 50%		MH		Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.				Medium to high	None to very slow	Medium		CL		Above 'A' line			
				CH		Inorganic clays of high plasticity, fat clays.				Low to medium	Slow	Low		OL		Below 'A' line			
				OH		Organic clays of medium to high plasticity.				Low to medium	Slow to none	Low to medium		MH		Below 'A' line			
										High to very high	None	High		CH		Above 'A' line			
										Medium to high	None to very slow	Low to medium		OH		Below 'A' line			
				Pt		Peat muck and other highly organic soils.		Readily identified by colour, odour, spongy feel and generally by fibrous texture						Pt*	*Effervescence with H2O2				



PLASTICITY CHART
FOR CLASSIFICATION
OF FINE GRAINED SOILS

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Limitations in the Use and Interpretation of this Geotechnical Report

Our Professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied.

The geotechnical report was prepared for the use of the Owner in the design of the subject facility and should be made available to potential contractors and/or the Contractor for information on factual data only. This report should not be used for contractual purposes as a warranty of interpreted subsurface conditions such as those indicated by the interpretive boring and test pit logs, cross- sections, or discussion of subsurface conditions contained herein.

The analyses, conclusions and recommendations contained in the report are based on site conditions as they presently exist and assume that the exploratory borings, test pits, and/or probes are representative of the subsurface conditions of the site. If, during construction, subsurface conditions are found which are significantly different from those observes in the exploratory borings and test pits, or assumed to exist in the excavations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. If there is a substantial lapse of time between the submission of this report and the start of work at the site, or if conditions have changed due to natural causes or construction operations at or adjacent to the site, this report should be reviewed to determine the applicability of the conclusions and the recommendations considering the changed conditions and time lapse.

The Summary Boring Logs are our opinion of the subsurface conditions revealed by periodic sampling of the ground as the borings progressed. The soil descriptions and interfaces between strata are interpretive and actual changes may be gradual.

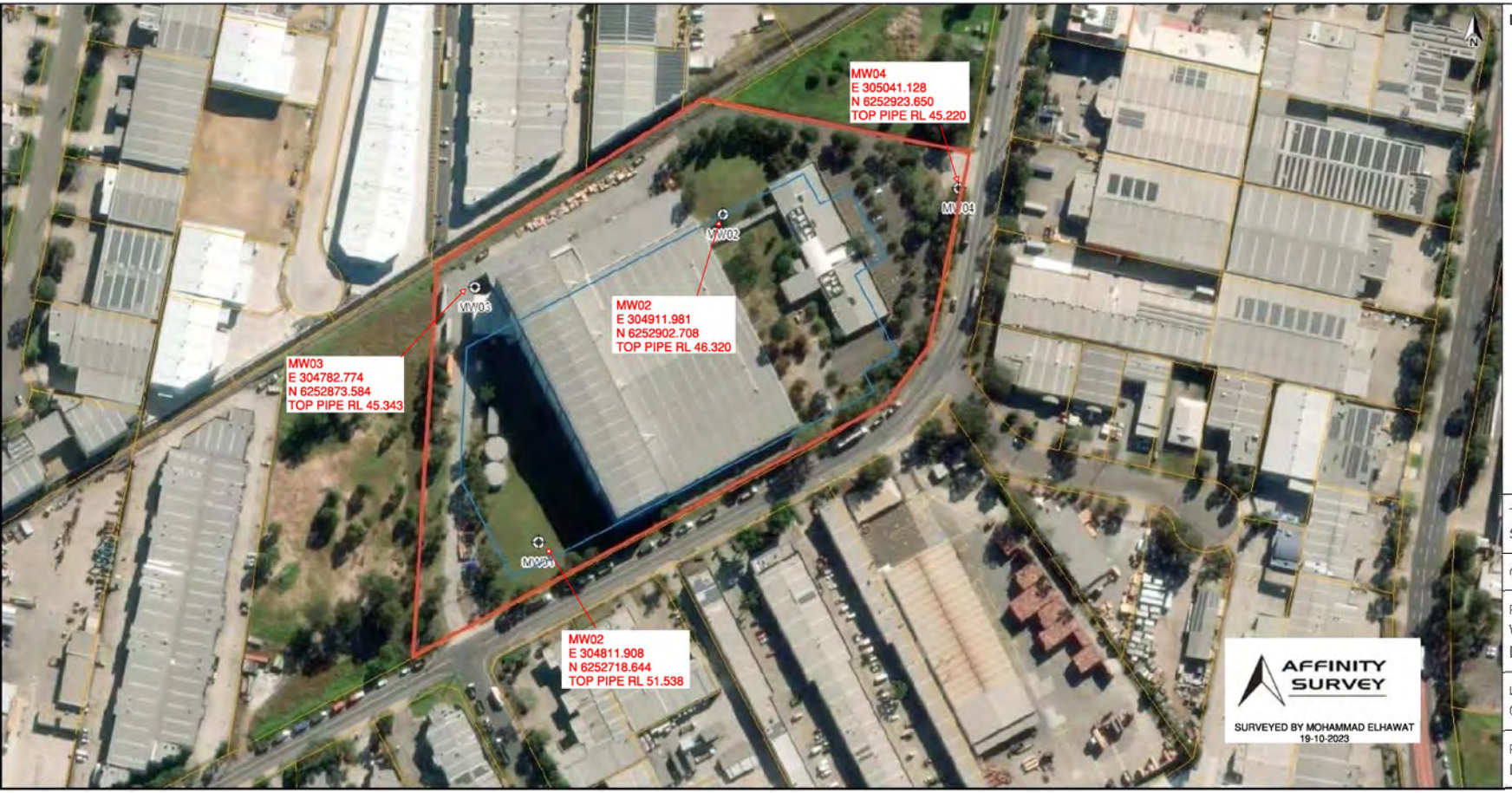
The boring logs and related information depict subsurface conditions only at the specific locations and at the particular time designated on the logs. Soil conditions at the other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change in the soil conditions at these boring locations.

Groundwater levels often vary seasonally. Groundwater levels reported on the boring logs or in the body of the report are factual data only for the dates shown.

Unanticipated soil conditions are commonly encountered on construction sites and cannot be fully anticipated by merely taking soil samples, borings or test pits. Such unexpected conditions frequently require that additional expenditures be made to attain a properly constructed project. It is recommended that the Owner consider providing a contingency fund to accommodate such potential extra costs.

This firm cannot be responsible for any deviation from the intent of this report including, but not restricted to, any changes to the scheduled time of construction, the nature of the project or the specific construction methods or means indicated in this report: nor can our firm be responsible for any construction activity on sites other than the specific site referred to in this report.

Appendix H
GROUNDWATER SURVEY



Legend

- Site Boundary
- Warehouse Footprint

NSW Cadastre and Labels

- Lot
- Groundwater Well Locations

0 25 m 50 m

© Mapbox, © Department of Finance, Services & Innovation 2019

EP RISK

Produced by Datanest.earth

Title: Sampling Locations UPDATED 05/09/23		
Client: Centuria		Figure: EP3206 - Centuria Wetherill Park Sampling Layout
Project: Wetherill Park DSI	Drawn: ZW	
Date: 02-06-2023	Checked: ZW	
Proj No.: EP3206	Scale: 1:1810	Version: draft

Appendix I
PROPOSED DEVELOPMENT PLANS

PROPOSED MULTI-LEVEL WAREHOUSE

74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

STATE SIGNIFICANT DEVELOPMENT APPLICATION PACKAGE

DRAWING LIST

DRAWING NO.	DRAWING TITLE
C015039.01-SSDA 10	DRAWING LIST & GENERAL NOTES
C015039.01-SSDA 11	GENERAL NOTES-SHEET 2
C015039.01-SSDA 15	EXISTING SERVICES PLAN
C015039.01-SSDA 20	EROSION AND SEDIMENT CONTROL PLAN
C015039.01-SSDA 25	EROSION AND SEDIMENT CONTROL DETAILS
C015039.01-SSDA 31	CONCEPT BULK EARTHWORKS PLAN-SHEET 1
C015039.01-SSDA 32	CONCEPT BULK EARTHWORKS PLAN-SHEET 2
C015039.01-SSDA 35	BULK EARTHWORKS SECTIONS - SHEET 1
C015039.01-SSDA 36	BULK EARTHWORKS SECTIONS - SHEET 2
C015039.01-SSDA 40	DRAWING KEY PLAN
C015039.01-SSDA 41	CONCEPT STORMWATER DRAINAGE PLAN-SHEET 1
C015039.01-SSDA 42	CONCEPT STORMWATER DRAINAGE PLAN-SHEET 2
C015039.01-SSDA 44	STORMWATER CATCHMENT PLAN- MUSIC MODEL
C015039.01-SSDA 45	CONCEPT STORMWATER DETAILS - SHEET 1
C015039.01-SSDA 46	CONCEPT STORMWATER DETAILS - SHEET 2
C015039.01-SSDA 51	FINISHED LEVELS PLAN - SHEET 1
C015039.01-SSDA 52	FINISHED LEVELS PLAN - SHEET 2
C015039.01-SSDA 55	TYPICAL SECTIONS - SHEET 1
C015039.01-SSDA 56	TYPICAL SECTIONS - SHEET 2
C015039.01-SSDA 57	TYPICAL SECTIONS - SHEET 3

GENERAL NOTES:

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT STANDARDS AUSTRALIA CODES AND WITH THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.
3. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. ENGINEER'S DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. ENGINEER'S DRAWINGS ISSUED IN ANY ELECTRONIC FORMAT MUST NOT BE USED FOR DIMENSIONAL SETOUT. REFER TO THE ARCHITECT'S DRAWINGS FOR ALL DIMENSIONAL SETOUT INFORMATION.
4. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED. TEMPORARY BRACING SHALL BE PROVIDED BY THE BUILDER TO KEEP THE WORKS AND EXCAVATIONS STABLE AT ALL TIMES.
5. UNLESS NOTED OTHERWISE ALL LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES.
6. ALL WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH ACCEPTABLE SAFETY STANDARDS & APPROPRIATE SAFETY SIGNS SHALL BE INSTALLED AT ALL TIMES DURING THE PROGRESS OF THE JOB.

ELECTRONIC INFORMATION NOTES:

1. THE ISSUED DRAWINGS IN HARD COPY OR PDF FORMAT TAKE PRECEDENCE OVER ANY ELECTRONICALLY ISSUED INFORMATION, LAYOUTS OR DESIGN MODELS.
2. THE CONTRACTOR'S DIRECT AMENDMENT OR MANIPULATION OF THE DATA OR INFORMATION THAT MIGHT BE CONTAINED WITHIN AN ENGINEER-SUPPLIED DIGITAL TERRAIN MODEL AND ITS SUBSEQUENT USE TO UNDERTAKE THE WORKS WILL BE SOLELY AT THE DISCRETION OF AND THE RISK OF THE CONTRACTOR.
3. THE CONTRACTOR IS REQUIRED TO HIGHLIGHT ANY DISCREPANCIES BETWEEN THE DIGITAL TERRAIN MODEL AND INFORMATION PROVIDED IN THE CONTRACT AND/OR DRAWINGS AND IS REQUIRED TO SEEK CLARIFICATION FROM THE SUPERINTENDENT.
4. THE ENGINEER WILL NOT BE LIABLE OR RESPONSIBLE FOR THE POSSIBLE ON-GOING NEED TO UPDATE THE DIGITAL TERRAIN MODEL, SHOULD THERE BE ANY AMENDMENTS OR CHANGES TO THE DRAWINGS OR CONTRACT INITIATED BY THE CONTRACTOR.



LOCALITY PLAN
NTS

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 10

CONSULT AUSTRALIA

Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au

COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: DRAWING LIST & GENERAL NOTES

DRAWING No: C015039.01-SSDA 10 ISSUE: A

SITE PREPARATION NOTES:

1. ALL EARTHWORKS SHALL BE COMPLETED GENERALLY IN ACCORDANCE WITH THE GUIDELINES SPECIFIED BY THE GEOTECHNICAL _____ PROVIDED BY _____ DATED _____.
2. EXISTING LEVELS ARE BASED ON INFORMATION PROVIDED BY LTS SURVEYORS TITLED 51145 001DT DATED12.10.20.
3. STRIP ANY TOP SOIL OR DELETERIOUS MATERIAL AND DISPOSE OF FROM SITE OR STORE AS DIRECTED.
4. COMPLETE CUT TO FILL EARTHWORKS TO ACHIEVE THE REQUIRED LEVELS AS INDICATED ON THE DRAWINGS WITHIN A TOLERANCE OF +0mm/-10mm THROUGH BUILDING PADS/PAVEMENTS AND +0mm/-20mm ELSEWHERE.
5. PREPARE STEEP BATTERS TO RECEIVE FILL BY CONSTRUCTING BENCHING TO FACILITATE FILL PLACEMENT AND COMPACTION.
6. AREAS TO RECEIVE FILL (THAT ARE NOT ON BENCHED BATTERS) AND AREAS IN CUT SHALL BE PROOF ROLLED TO IDENTIFY ANY SOFT HEAVING MATERIAL. SOFT MATERIAL SHALL BE BOXED OUT AND REMOVED PRIOR TO FILL PLACEMENT. PROOF ROLLING TO BE INSPECTED BY A GEOTECHNICAL ENGINEER OR THE EARTHWORKS DESIGNER.
7. SITE WON FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HILF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HILF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
8. IMPORTED FILL SHALL BE COMPACTED IN MAXIMUM 300mm LAYERS AND TO DRY OR HILF DENSITY RATIOS (STANDARD COMPACTION) OF BETWEEN 98% AND 103%. THE PLACEMENT MOISTURE VARIATION OR HILF MOISTURE VARIATION SHALL BE CONTROLLED TO BE BETWEEN 2% DRY AND 2% WET.
9. ALL ENGINEERED FILL PARTICLES SHALL BE ABLE TO BE INCORPORATED WITHIN A SINGLE LAYER. FURTHER, LESS THAN 30% OF PARTICLES SHALL BE RETAINED ON THE 37.5 mm SIEVE. ENGINEERED FILL SHALL BE ABLE TO BE TESTED IN ACCORDANCE WITH THE STANDARD COMPACTION METHOD (AS1289.5.4.1) OR HILF TEST METHOD (AS1289.5.7.1). THESE METHODS REQUIRE LESS THAN 20% RETAINED ON THE 37.5 mm SIEVE. WHERE BETWEEN 20% AND 30% OF PARTICLES ARE RETAINED ON THE 37.5 mm SIEVE THE ABOVE TEST METHODS SHALL STILL BE ADOPTED AND TEST REPORTS ANNOTATED APPROPRIATELY. THESE REQUIREMENTS SHOULD BE MET BY THE MATERIAL AFTER PLACEMENT AND COMPACTION
10. ALL THE EARTHWORKS UNDERTAKEN AND THE SUBGRADE CONDITION IN THE CUT AREAS [IN THE STATED PERIOD] ARE DOCUMENTED IN THE REPORTS AND HAVE BEEN UNDERTAKEN IN ACCORDANCE WITH THE SPECIFICATION (EG. COSTIN ROE SITE PREPARATION NOTES IN DWG C013003.01-EWC10)
11. PRIOR TO ANY EARTHWORKS, EROSION CONTROL AS OUTLINED IN THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE COMPLETED.
12. EXISTING ROCK, IF ANY, SHALL BE REMOVED BY HEAVY ROCK BREAKING OR RIPPING.
13. MATCH EXISTING LEVELS AT BATTER INTERFACE.
14. CONTRACTOR TO MATCH EXISTING LEVELS AT THE INTERFACE OF EARTHWORKS AND EXISTING SURFACE AT BATTER LOCATIONS OR WHERE NO RETAINING WALLS ARE PRESENT. ANY DISCREPANCY BETWEEN DESIGN AND EXISTING LEVELS TO BE REFERRED TO THE ENGINEER FOR DIRECTION OR ADJUSTMENTS TO DESIGN LEVELS.
15. DURING EARTHWORKS THE CONTRACTOR IS TO ENSURE ALL AREAS ARE FREE DRAINING & WILL NOT RETAIN WATER DURING RAINFALL. PROVIDE TEMPORARY MEASURES AS REQUIRED TO ENSURE FREE FLOWING RUNOFF THROUGH MANAGED DRAINAGE PATHS, DIVERSION DRAINS OR OTHER SUITABLE DISPOSAL METHOD AS AGREED DURING THE WORKS. REFER ANY CONCERNS TO THE ENGINEER. REFER TO EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES.

SURVEY NOTE:

1. EXISTING SITE LEVELS AND DETAILS BASED ON A PLAN OF SURVEY '51145 001DT' BY 'LTS SURVEYORS' DATED 12.10.2020.

CONTAMINATION NOTE:

CONTAMINATED MATERIAL ENCOUNTERED DURING THE WORKS SHALL BE MANAGED IN ACCORDANCE WITH THE CONTAMINATION MANAGEMENT PLAN, WHICH FORMS PART OF THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN. A CAPPING LAYER CONSISTING OF CLEAN COMPACTED CLAY FILL (VENM ONLY) TO A MINIMUM DEPTH OF 100mm IS TO BE PROVIDED OVER THE SITE. CONTAMINATED MATERIAL CAN NOT BE REMOVED FOR OFF-SITE DISPOSAL.

DUST CONTROL NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE DUST CONTROL MEASURES ARE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN.
2. THE APPLICATION OF LIQUID BASED DUST SUPPRESSION MEASURES MUST BE SUCH THAT SEDIMENT LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD. (EG USING HAY BALES)
3. DUST GENERATION ASSOCIATED WITH WIND EROSION TO BE CONTROLLED USING WATER TRUCKS, DUST SUPPRESSING FOG, MIST GENERATORS, SEALANT PLACED OVER THE SOIL, SURFACE ROUGHENING OR RE-VEGETATION.
4. THE FOLLOWING ACTIVITIES SHALL BE ADOPTED, IF NECESSARY, TO MANAGE DUST CONTROL ON SITE:
   - LIMITING THE AREA OF SOIL DISTURBANCE AT ANY GIVEN TIME
   - REPLACING TOPSOIL AFTER COMPLETION OF EARTHWORKS.
   - PROGRAMMING WORK TO MINIMISE THE LIFE OF STOCKPILES.
   - TEMPORARILY STABILISING LONG-TERM STOCKPILES.
   - GRAVELLING UNSEALED ACCESS AND HAUL ROADS.
   - MINIMISING TRAFFIC MOVEMENT ON EXPOSED SURFACES.
   - LIMITING VEHICULAR TRAFFIC TO 15km/h.
   - RETAINING EXISTING VEGETATION AS WIND BREAKS.
5. OIL, LANDFILL GAS CONDENSATE OR ANY CONTAMINATED LEACHATE OR STORMWATER IS NOT TO BE USED FOR DUST SUPPRESSION.

EROSION CONTROL NOTES:

ALL CONTROL WORK INCLUDING DIVERSION BANKS AND CATCH DRAINS, V-DRAINS AND SILT FENCES SHALL BE COMPLETED DIRECTLY FOLLOWING THE COMPLETION OF THE EARTHWORKS.

1. SILT FENCES AND SILT FENCE RETURNS SHALL BE ERECTED CONVEX TO THE CONTOUR TO POND WATER.
2. HAY BALE BARRIERS AND GEOFABRIC FENCES ARE TO BE CONSTRUCTED TO TOE OF BATTER, PRIOR TO COMMENCEMENT OF EARTHWORKS, IMMEDIATELY AFTER CLEARING OF VEGETATION AND BEFORE REMOVAL OF TOP SOIL.
3. ALL TEMPORARY EARTH BERMS, DIVERSION AND SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED AND MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
4. CLEAR WATER IS TO BE DIVERTED AWAY FROM DISTURBED GROUND AND INTO THE DRAINAGE SYSTEM.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND PROVIDING ON GOING ADJUSTMENT TO EROSION CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION.
6. ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING, TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE, APPROVED LOCATION.
7. ALL FINAL EROSION PREVENTION MEASURES INCLUDING THE ESTABLISHMENT OF GRASSING ARE TO BE MAINTAINED UNTIL THE END OF THE DEFECTS LIABILITY PERIOD.
8. ALL EARTHWORKS AREAS SHALL BE ROLLED ON A REGULAR BASIS TO SEAL THE EARTHWORKS.
9. ALL FILL AREAS ARE TO BE LEFT WITH A BUND AT THE TOP OF THE SLOPE AT THE END OF EACH DAYS EARTHWORKS. THE HEIGHT OF THE BUND SHALL BE A MINIMUM OF 200mm.
10. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND HYDROMULCHED WITHIN 10 DAYS OF COMPLETION OF FORMATION.
11. AFTER REVEGETATION OF THE SITE IS COMPLETE AND THE SITE IS STABLE IN THE OPINION OF A SUITABLY QUALIFIED PERSON ALL TEMPORARY WORK SUCH AS SILT FENCE, DIVERSION DRAINS ETC SHALL BE REMOVED.
12. ALL TOPSOIL STOCKPILES ARE TO BE SUITABLY COVERED TO THE SATISFACTION OF THE SITE MANAGER TO PREVENT WIND AND WATER EROSION.
13. ANY AREA THAT IS NOT APPROVED BY THE CONTRACT ADMINISTRATOR FOR CLEARING OR DISTURBANCE BY THE CONTRACTOR'S ACTIVITIES SHALL BE CLEARLY MARKED AND SIGN POSTED, FENCED OFF OR OTHERWISE APPROPRIATELY PROTECTED AGAINST ANY SUCH DISTURBANCE.
14. ALL STOCKPILE SITES SHALL BE SITUATED IN AREAS APPROVED FOR SUCH USE BY THE SITE MANAGER. A 6m BUFFER ZONE SHALL EXIST BETWEEN STOCKPILE SITES AND ANY STREAM OR FLOW PATH. ALL STOCKPILES SHALL BE ADEQUATELY PROTECTED FROM EROSION AND CONTAMINATION OF THE SURROUNDING AREA BY USE OF THE MEASURES APPROVED IN THE EROSION AND SEDIMENTATION CONTROL PLAN.
15. ACCESS AND EXIT AREAS SHALL INCLUDE SHAKE-DOWN OR OTHER METHODS APPROVED BY THE SITE MANAGER FOR THE REMOVAL OF SOIL MATERIALS FORM MOTOR VEHICLES.
16. THE CONTRACTOR IS TO ENSURE RUNOFF FROM ALL AREAS WHERE THE NATURAL SURFACE IS DISTURBED BY CONSTRUCTION, INCLUDING ACCESS ROADS, DEPOT AND STOCKPILE SITES, SHALL BE FREE OF POLLUTANTS BEFORE IT IS EITHER DISPERSED TO STABLE AREAS OR DIRECTED TO NATURAL WATERCOURSES.
17. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SLOPES, CROWNS AND DRAINS ON ALL EXCAVATIONS AND EMBANKMENTS TO ENSURE SATISFACTORY DRAINAGE AT ALL TIMES WATER SHALL NOT BE ALLOWED TO POND ON THE WORKS UNLESS SUCH PONDING IS PART OF AN APPROVED ESCP / SWMP.

SEDIMENT CONTROL BASIN NOTES:

1. TYPE D BASIN IS REQUIRED.
2. VOLUME OF THE BASINS SHALL BE AS NOMINATED ON DRAWING. NOMINAL POND LOCATIONS AND NOMINAL DIMENSIONS.
3. SEDIMENT BUILD UP TO NOT EXCEED 33% TOTAL CAPACITY OF BASIN.
4. DEWATERING OF BASIN TO BE PERFORMED TO THE BOTTOM OF THE SEDIMENT SETTLING ZONE FOLLOWING ACHIEVEMENT OF WQO's. MANAGEMENT OF DOSAGE AND DISCHARGE TO BE ACHIEVED WITHIN 5 DAYS OF THE INITIAL RAINFALL EVENT.
5. FOLLOWING DEWATERING PER NOTE 4, WATER LEVEL TO BE MAINTAINED AT 20% CAPACITY AFTER A FOUR DAY SETTLING PERIOD FOLLOWING A STORM EVENT.
6. WATER TO BE DOSED WITH GYPSUM TO ACCELERATE SETTLEMENT OF SUSPENDED SOLIDS AS REQUIRED.
7. GYPSUM DOSAGE RATE TO BE APPLIED AT APPROX. 32kg PER 100 CUBIC METRE OF COLLECTED RUNOFF.
8. THE USE OF ALUM (OR ANY OTHER ALTERNATIVE) AS A FLOCCULANT IS NOT RECOMMENDED. ALUM OR ANY OTHER FLOCCULANT IS TO BE USED ONLY FOLLOWING CONSULTATION WITH AND ACCEPTANCE FROM COUNCIL ESC OFFICERS.
9. DISCHARGE FROM POND IS PERMISSIBLE WHEN THE WATER PH IS 6.5-8.5 AND IS CLARIFIED TO AT OR BELOW A TSS OF 50mg/L. CLARIFICATION WOULD GENERALLY BE ACHIEVED IN 36-72 HOURS WITH THE USE OF GYPSUM. CORRELATION TESTS MUST BE UNDERTAKEN ON SITE TO ENSURE THIS IS ACHIEVED.
10. DEWATERING SHALL BE DONE IN SUCH A MANNER AS TO REMOVE THE CLEAN WATER (BEING WATER WITHIN THE ADOPTED CRITERIA) WITHOUT REMOVING OR DISTURBING THE SEDIMENT THAT HAS SETTLED. THE PUMP INTAKE PIPE IS NOT TO REST ON THE SETTLED SEDIMENT LAYER.
11. IF WATER EXCEEDS TSS OF 50mg/L DURING DEWATERING, PUMPING IS TO CEASE. RECORDS ARE TO BE KEPT (ON-SITE AT ALL TIMES) OF ALL MEASUREMENT PRIOR TO, DURING AND AFTER DISCHARGE. RECORDS TO BE MADE AVAILABLE TO COUNCIL OFFICERS UPON REQUEST.
12. PROVIDE SECURITY FENCE TO BASIN FOR SAFETY.

SEDIMENTATION BASIN NOTES:

1. REFER TO SEDIMENT & EROSION CONTROL NOTES.
2. FOR SEDIMENT AND EROSION CONTROL DETAILS, REFER TO THE LANDCOM "BLUE BOOK" AND EXTRACTS ON DRAWING SSDA20.
3. SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWAER-THE BLUE BOOK'. CAPACITY BASED ON 5-DAY RAINFALL DEPTHS AT 85th PERCENTILE INTENSITY (32.2mm) IN THE LIVERPOOL CATCHMENT AREA.

NOTES:

1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)
3. REFER TO DRAWING SSDA20 FOR SEDIMENTATION BASIN CALCULATIONS

TABLE 1 - STABILISATION REQUIREMENTS AND TREATMENT METHODS

DURING CONSTRUCTION - TEMPORARY STABILISATION
(DURING PERIODS OF INACTIVITY OR WHEN WORKS ARE ON HOLD)

LANDS	STABILISATION REQUIREMENT	TIMEFRAMES	TREATMENT METHODS - PRODUCTS	REMARKS
ALL LANDS	C-FACTOR = 0.15 (50% EQUIVALENT GROUND COVER[1])	APPLIES AFTER 20 WORKING DAYS OF INACTIVITY (EVEN THOUGH WORKS MIGHT CONTINUE LATER)	SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT[1])	- SPRAY ALL SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT[1] - VITAL DILUTION RATE = 1:10 (VITAL WATER). -RE-APPLY/MAINTAIN AS NECESSARY (APPROX. EVERY 3-6 MONTHS WITHOUT SUITABLE VEGETATION COVER) TO ENSURE THE REQUIRED COVER IS PROVIDED.
			GEOTEXTILE, JUTE MATTING, BLACK PLASTIC OR EQUIVALENT[1]	- COVER ALL EXPOSED SOILS - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
WATERWAYS, DRAINAGE LINES AND CONCENTRATED FLOW AREAS	C-FACTOR = 0.05 (70% GRASS COVER OR EQUIVALENT GROUND COVER[1])	APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION AND BEFORE THEY ARE ALLOWED TO CARRY CONCENTRATED FLOWS.	REFER TO THE DRAIN SPECIFICATIONS DETAILED ON THE PLAN FOR SPECIFIC LINING/STABILISATION REQUIREMENTS. EXAMPLE TREATMENT METHODS ARE SHOWN BELOW.	
			TEMPORARY LINING - GEOTEXTILE (I.E. BOOM A24 OR EQUIVALENT[1])	- COMPLETE ANY SUBSOIL TREATMENT BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
			JUTE MESH, SEEDING AND SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT[1]) - LOW FLOWS TO MODERATE	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5 TONNES/Ha). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - SPRAY ALL SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT[1] - VITAL DILUTION RATE = 1L / m² OF DILUTED VITAL MIXTURE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			JUTE MATTING (~350gsm) AND SEEDING OR EQUIVALENT[1] - LOW FLOWS TO MODERATE	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5TONNES/Ha). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			TURF REINFORCEMENT MATTING (TRM) (E.G. TERRAMAT OR EQUIVALENT[1]) - MODERATE FLOWS	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5TONNES/Ha). - PLACE TOPSOIL TO A DEPTH OF AT LEAST 75mm. - COMPLETE ANY FERTILISATION AND SEEDING BEFORE LAYING THE MATTING. - INSTALL MATTING IN ACCORDANCE WITH SD 5-7. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			ROCK LINING - HIGH FLOWS	- COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5TONNES/Ha). - INSTALL GEOTEXTILE UNDERLAY (IF SPECIFIED) IN ACCORDANCE WITH SD 5-7. - INSTALL ROCK ARMOURING (TO THE DEPTH AND SIZE AS SPECIFIED ON THE PLAN). - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
STOCKPILES	C-FACTOR = 0.10 (60% GRASS COVER OR EQUIVALENT GROUND COVER[1])	APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION	SEEDING AND SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT[1])	- APPLY SEED TO ALL STOCKPILE SURFACES (NOTE: SEEDING MAY NOT BE REQUIRED IF EXISTING SEEDBED IS PRESENT) -SPRAY ALL STOCKPILE SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT[1] - VITAL DILUTION RATE = 1:10 (VITAL WATER). - APPLICATION RATE = 1L / m2 OF DILUTED VITAL MIXTURE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			GEOTEXTILE, JUTE MATTING, BLACK PLASTIC OR EQUIVALENT[1]	- COVER ALL EXPOSED SOILS. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PROVIDED.
GENERAL SURFACES	C-FACTOR = 0.10 / 0.05 (60% / 70% GRASS COVER OR EQUIVALENT GROUND COVER[1])	C-FACTOR = 0.1 APPLIES AFTER 10 WORKING DAYS FROM COMPLETION OF FORMATION AND C-FACTOR = 0.05 APPLIES WITHIN A FURTHER 60 DAYS	TOPSOIL, SEEDING AND SOIL BINDER (I.E. VITAL P47/STONEWALL OR EQUIVALENT[1])	- REFER TO SD 7-1 - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5TONNES/Ha). - PLACE GYPSUM TREATED TOPSOIL TO A DEPTH OF AT LEAST 75mm. - APPLY ANY FERTILISERS REQUIRED. - APPLY SEED TO ALL SURFACES. - SPRAY ALL SURFACES WITH VITAL P47/STONEWALL OR EQUIVALENT[1]. - VITAL DILUTION RATE = 1:10 (VITAL WATER). - APPLICATION RATE = 1L / m2 OF DILUTED VITAL MIXTURE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.
			HYDROMULCH OR EQUIVALENT[1]	- REFER TO SD 7-1 - COMPLETE SUBSOIL TREATMENT (I.E. GYPSUM LIGHTLY RIPPED INTO SUBGRADE AT A RATE OF 5TONNES/Ha). - PLACE GYPSUM TREATED TOPSOIL TO A DEPTH OF AT LEAST 75mm. - APPLY HYDROMULCH WITH APPROVED SEED MIX TO SOIL SURFACE. - RE-APPLY/MAINTAIN AS NECESSARY TO ENSURE THE REQUIRED COVER IS PERMANENTLY MAINTAINED.

[1] - EQUIVALENT COVER/PRODUCT MUST ACHIEVE THE EQUIVALENT C-FACTOR WITH PROVEN RESEARCH/DOCUMENTATION TO VERIFY THIS.
STANDARD DRAWINGS REFERENCED CAN BE LOCATED IN THE 'SOILS & CONSTRUCTION, MANAGING URBAN STORMWATER - VOLUME 1' BOOK BY LANDCOM. ALTERNATIVE DETAILS MAY BE SOUGHT IN CONSULTATION WITH THE ENGINEER

TABLE 2 - LIMITATIONS TO ACCESS DURING CONSTRUCTION

LAND USE	LIMITATION	REMARKS
CONSTRUCTION AREAS	LIMITED TO 5 (PREFERABLE 2) METRES FROM THE EDGE OF ANY ESSENTIAL CONSTRUCTION ACTIVITY AS SHOWN ON ENGINEERING PLANS.	ALL SITE WORKERS SHOULD CLEARLY RECOGNISE THESE AREAS THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCE (DOWNSLOPE) OR SIMILAR MATERIALS.
ACCESS CORRIDORS	LIMITED TO A MAXIMUM WIDTH OF 7 METERS	THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON SITE, THEY CAN VARY IN POSITION SO AS TO BEST CONSERVE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES.
REMAINING LANDS, INCLUDING REVEGETATION AREA	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL MANAGEMENT WORKS	THINNING OF GROWTH MIGHT BE NECESSARY, FOR EXAMPLE, FOR FIRE REDUCTION OR WEED REMOVAL

REINFORCED EARTH RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM HEIGHT (H) TO GEOGRID REINFORCEMENT LENGTH (L) TO BE 1.0.
3. MINIMUM BEARING CAPACITY OF FOUNDATION (BASED ON MINIMUM H/L RATIO OF 1.0) TO BE AS FOLLOWS :
   a. H MAX. 2.0m = 100 kPa
   b. H MAX. 3.5m = 150 kPa
   c. H MAX. 5.0m = 200 kPa
   BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
4. WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT, THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMDD AND PLACED WITHIN 2% OF OMC.
5. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O. ON PLAN:
   a. LIVE LOAD = 20 kPa
   b. DEAD LOAD = 5 kPa
   c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
6. THE GEOGRIDS SHALL BE OF THE TYPE AND INDEX STRENGTH NOMINATED ON THE DRAWINGS. THE MINIMUM GEOGRIDS SHALL BE A SINGLE LENGTH IN THE DIRECTION OF DESIGN TENSION, NOT LAPPED, MAKING PROVISION FOR CONNECTION TO THE FACING ACROSS THE WHOLE WIDTH OF THE FACING AND PROVIDING FOR THE SPECIFIED ANCHORAGE WITHIN THE DESIGNATED ANCHORAGE ZONE. GEOGRIDS SHALL COVER THE WHOLE OF THE PLAN AREA BEHIND THE WALL FOR THE SPECIFIED ANCHORAGE LENGTH AND SHALL BE LAPPED WITH ADJACENT SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm.
8. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
9. SELECT BACKFILL MATERIAL WITHIN THE REINFORCED SOIL BLOCK SHALL BE SOUND GRANULAR MATERIAL OF NATURAL OR INDUSTRIAL ORIGIN, NON-EXPANSIVE, FREE FROM ORGANIC OR OTHER DELETERIOUS MATERIAL CONFORMING TO THE PHYSICAL, CHEMICAL AND ELECTROCHEMICAL LIMITS AS SPECIFIED AND SHALL NOT BE SUBJECT TO BREAKDOWN UNDER COMPACTION. THE SELECT BACKFILL MATERIAL IS TO HAVE THE FOLLOWING PARAMETERS:
   a. MINIMUM INTERNAL FRICTION, Ø = 34°
   b. EFFECTIVE COHESION, C' = 0 kPa
   c. UNIT WEIGHT = 21 kN/m³
   d. PH BETWEEN 4 AND 9.
10. SELECT BACKFILL IS TO BE PLACED AND COMPACTED IN LAYERS NOT MORE THAN 300mm (LOOSE). COMPACTION TO NOT LESS THAN 100% SMDD WILL BE ACHIEVED AND MATERIAL PLACED WITHIN 2% OF OMC. DENSITY TESTING SHALL BE PERFORMED IN EACH COMPACTED LIFT IN ACCORDANCE WITH AS3798.
11. PROVIDE A DRAINAGE LAYER DIRECTLY BEHIND THE FACING UNITS IN A MINIMUM 300mm WIDE 12-20mm AGGREGATE LAYER. FACING UNIT VOIDS TO BE FILLED WITH AGGREGATE. PROVIDE 100mm MINIMUM AG. DRAIN IN GEOTEXTILE SOCK AT TOE OF WALL FACING AND CONNECT TO DRAINAGE SYSTEM AT 30m MAX. SPACING.
12. THE NEED FOR A CHIMNEY DRAIN OR DRAINAGE AT THE REAR OF THE MASS SOIL BLOCK IS TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER AND DESIGNER FOLLOWING PREPARATION OF THE FOUNDATION AND PRIOR TO CONSTRUCTION OF THE MASS SOIL BLOCK.
13. CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500kG STATIC WEIGHT IS TO BE KEPT BACK 1.5m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 1.5m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
14. ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES.
15. TOP OF WALL HEIGHTS ARE NOTED TO ALIGN WITH FINISHED PAVEMENT HEIGHTS. THE CONTRACTOR AND THEIR DESIGN AND CONSTRUCT WALLING CONTRACTORS ARE TO ENSURE THAT ALL WALL STRAPS ARE INSTALLED BELOW THE DESIGN EARTHWORKS SUBGRADE. CONTRACTOR TO ALLOW FOR WALL STRAPS TO BE GRADED AWAY FROM THE FACE OF THE WALL OR OTHERWISE INSTALLED TO SUIT EARTHWORKS DESIGN LEVELS AND GRADES.
16. DIFFERENTIAL SETTLEMENT NOTE:
    FUTURE BUILDING AND SERVICE DESIGNERS TO CONSIDER DIFFERENTIAL SETTLEMENT OF REINFORCED EARTH WALL BLOCK AND GENERAL FILL AREAS. PARTICULAR ATTENTION TO BE DRAWN TO HEAVILY LOADED AREAS, OR DIFFERING LOADED AREAS (INCLUDING SPRINKLER TANK AND TRUCK PAVEMENT AREAS) AND WHERE SIGNIFICANT CHANGES IN OVERALL WALL HEIGHT OR FILL AMOUNTS ARE EXPERIENCED. IT IS THE RESPONSIBILITY OF THE FUTURE DESIGNERS TO ENSURE APPROPRIATE DESIGN CONSIDERATION TO DIFFERENTIAL SETTLEMENT ARE MADE DEPENDING ON THE DESIGN ELEMENT AND INTERACTION WITH RETAINED ELEMENTS AND GENERAL FILL MATERIAL.

RETAINING WALL NOTES:

1. ALL COMPONENTS AND INSTALLATION SHALL COMPLY WITH AS4678 AND THE STANDARDS REFERRED TO THEREIN.
2. MINIMUM BEARING CAPACITY OF FOUNDATION TO BE AS FOLLOWS :
   a. H MAX. 2.0m = 100 kPa
   b. H MAX. 3.5m = 150 kPa
   c. H MAX. 5.0m = 200 kPa
   BEFORE COMMENCEMENT OF CONSTRUCTION THE FOUNDATION SHALL BE INSPECTED AND VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER.
3. WHERE MINIMUM BEARING IS NOT ACHIEVABLE OR NOT MEETING DESIGN REQUIREMENT, THE FOUNDATION MATERIAL IS TO BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL PLACED IN ACCORDANCE WITH THE FILLING SPECIFICATION TO A MINIMUM COMPACTION OF 100% SMDD AND PLACED WITHIN 2% OF OMC.
4. MINIMUM SURCHARGE LOADS TO BE APPLIED AS FOLLOWS U.N.O.
5. ON PLAN :
   a. LIVE LOAD = 20 kPa
   b. DEAD LOAD = 5 kPa
   c. CONSTRUCTION TRAFFIC LIVE LOAD = 10 kPa
6. MINIMUM WALL EMBEDMENT AT THE TOE OF THE WALL TO BE 300mm MINIMUM UNLESS NOTED OTHERWISE.
7. DESIGN LIFE OF STRUCTURE IS TO BE 100 YEARS.
8. TIED WALLS ARE TO BE TEMPORARILY PROPPED AT TOP UNTIL SUCH TIME THE TOP OF WALL IS TIED TO THE SLAB AND 28-DAY CONCRETE STRENGTH HAS BEEN ACHIEVED.
9. CONSTRUCTION EQUIPMENT WEIGHING MORE THAN 500KG STATIC WEIGHT IS TO BE KEPT BACK 1.5m FROM THE REAR FACE OF THE WALL FACING UNITS. COMPACTION OF THE SELECT FILL MATERIAL WITHIN THE 1.5m STRIP ADJACENT TO THE WALL SHALL BE ACHIEVED BY LIGHT MECHANICAL TAMPERS (VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR) TO GIVE THE SAME DENSITY AS IN THE REMAINDER OF THE SELECT FILL.
10. ALL DESIGN AND CONSTRUCT WALL SYSTEM TO BE COMPLETED IN ACCORDANCE WITH THESE NOTES.
11. WALL ELEVATIONS ALLOW FOR NOMINAL EMBEDMENT DEPTHS. WHERE DESIGN AND CONSTRUCT (D+C) WALL SYSTEMS ARE PROPOSED IT IS THE CONTACTORS RESPONSIBILITY TO ALLOW FOR THE FINAL EMBEDMENT DEPTHS AS PER THE D+C DESIGN. ALLOWANCE FOR OVERALL WALL AREAS TO CONSIDER THE FINAL EMBEDMENT DEPTH.
12. WALL ELEVATIONS AND AREAS ARE BASED ON THE VERTICAL PLAN AREA. CONTRACTOR TO ALLOW ADDITIONAL SURFACE AREA WHERE WALLS ARE NOT VERTICAL OR HAVE BACKSLOPES.

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPM



EXISTING SERVICES NOTES:

1. DURING THE EXECUTION OF WORKS, THE CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING SERVICES. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED TO THE EXISTING SERVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT SERVICE AUTHORITY, AT NO COST TO THE PRINCIPAL.
2. WHERE IT IS NECESSARY TO REMOVE, DIVERT OR CUT INTO ANY EXISTING SERVICE, THE CONTRACTOR SHALL GIVE AT LEAST THREE (3) DAYS NOTICE OF ITS REQUIREMENTS TO THE SUPERINTENDENT, WHO WILL ADVISE WHAT ARRANGEMENTS SHOULD BE MADE FOR THE ALTERATION OF SUCH EXISTING WORKS.
3. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA. THE ACCURACY IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCING WORK. ALL CLEARANCES AND APPROVALS SHALL ALSO BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL NEW AND EXHUMED SERVICES THAT CROSS EXISTING AND FUTURE ROADS/PAVEMENTS WITHIN THE SITE SHALL BE BACKFILLED WITH DGB20 MATERIAL TO SUBGRADE LEVEL AND COMPACTED TO 98% STANDARD DENSITY RATIO. SUBJECT TO PRIOR APPROVAL FROM RELEVANT AUTHORITY.
5. ON COMPLETION OF SERVICES INSTALLATION. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL AREAS, GRASSED AREAS AND ROAD PAVEMENTS.
6. CARE TO BE TAKEN WHEN EXCAVATING NEAR UTILITY SERVICES. NO MECHANICAL EXCAVATION TO BE UNDERTAKEN OVER SERVICES. LIAISE WITH RELEVANT AUTHORITY.
7. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL EXISTING SERVICES IN AREAS AFFECTED BY THE WORKS WITHIN THE CONTRACT AREA AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT. ALL TO REGULATORY AUTHORITY STANDARDS AND APPROVAL.
8. THE CONTRACTOR IS TO MAINTAIN EXISTING STORMWATER DRAINAGE FLOWS THROUGH THE ROADS AT ALL TIMES. MAKE DUE ALLOWANCE FOR ALL SUCH FLOWS AT ALL TIMES.
9. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL OBTAIN THE SUPERINTENDENT'S APPROVAL OF THE PROGRAM FOR THE RELOCATION/CONSTRUCTION OF TEMPORARY SERVICES.
10. CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES AS REQUIRED TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
11. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE OR DAMAGE TO THE ADJACENT RESIDENCES. CONTRACTOR TO GAIN APPROVAL OF THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
12. THE CONTRACTOR SHALL UNDERTAKE A DIAL BEFORE YOU DIG (DBYD 1100) SERVICES SEARCH BEFORE THE COMMENCEMENT OF ANY WORKS.

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DEISGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- W – EXISTING SYDNEY WATER MAIN
- S – EXISTING SEWER MAIN
- E – EXISTING UNDERGROUND ELECTRICAL
- T – EXISTING UNDERGROUND TELECOM
- G – EXISTING GAS
- SW – EXISTING STORMWATER

EXISTING SERVICES PLAN

SCALE 1:400

4m 0 10 20 30 40m

SCALE 1:400 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT/CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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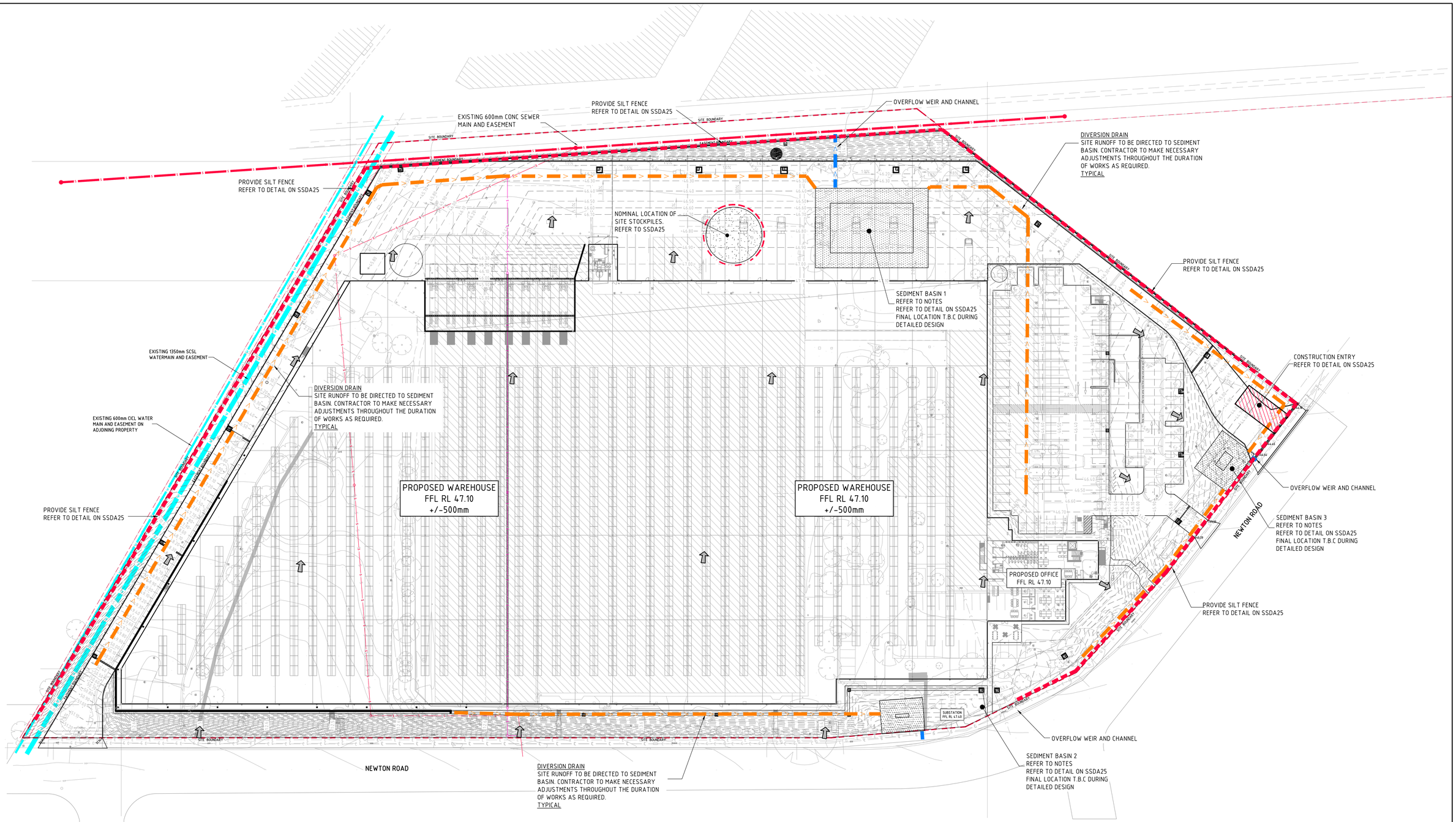
CONSULT AUSTRALIA

Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au

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DRAWING TITLE: EXISTING SERVICES PLAN

DRAWING NO: C015039.01-SSDA 15 | ISSUE: A



LEGEND:

PROVIDE 1m RETURNS TO SILT FENCE AT 30m MAX. INTERVALS.
TYPICAL (N.S.O.P.)

- DENOTES DIVERSION DRAIN
- DENOTES SILT FENCE WITH CATCH DRAIN
- DENOTES SILT FENCE ONLY
- CATCHMENT BOUNDARY
- DENOTES CONSTRUCTION ENTRY
- OVERLAND FLOW DIRECTION
- SEDIMENT BASIN (REFER TO PLAN)

SEDIMENTATION BASIN NOTE:

FOR SEDIMENT & EROSION CONTROL DETAILS REFER TO DRAWING C015039.01-SSDA25.

SEDIMENTATION BASIN SIZING BASED ON RECOMMENDATIONS OF 'SOILS AND CONSTRUCTION, MANAGING URBAN STORMWATER-THE BLUE BOOK'.
CAPACITY BASED UPON 5 DAY RAINFALL DEPTH AT 85th PERCENTILE INTENSITY (32.2mm).

APPROXIMATE AREA OF DISTURBED SITE = 5.07Ha

SEDIMENTATION BASINS TO COLLECT RUN-OFF IN EXTREME RAINFALL EVENTS. COLLECTED RUN-OFF TO BE ASSESSED BY A QUALIFIED LABORATORY FOR DOUSING RATES OF ALUM OR GYPSUM TO ENSURE COAGULATION OF SEDIMENTS PRIOR TO WATER BEING DISCHARGED TO COUNCIL STORMWATER SYSTEM.

EACH BASIN IS TO HAVE A MARKER PLACED AS PER THE DETAIL TO INDICATE WHEN SEDIMENT IS TO BE REMOVED. REMOVED SEDIMENT IS TO BE CLASSED AND DEWATERED PRIOR TO REMOVAL FROM SITE.

ALLOWANCE TO BE MADE DURING BENCHING OF SITE TO ENSURE RUN-OFF IS DIRECTED TO SEDIMENTATION BASINS.

NOTES:
1. ASSUME TYPE D SOIL (CLAY/SILTY CLAY)
2. ASSUME GROUP D SOIL (HIGH PLASTICITY AND SHRINK/SWELL PROPERTIES)

SOIL TYPE ASSESSED FROM GEOTECHNICAL REPORT PROVIDED BY XXXX TITLED XXXX DATED XXXX.

EROSION AND SEDIMENT CONTROL PLAN
SCALE 1:400

SEDIMENT BASIN 1 DIMENSIONS:

CATCHMENT AREA	= 4.20 ha
DISTURBED AREA	= 4.20 ha
REQUIRED BASIN VOLUME	= 867m^3
BASE DIMENSIONS (L X B)	= 25m x 15m
TOP DIMENSIONS (L X B)	= 34m x 24m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 872m^3
Q10 WEIR PEAK FLOW	= 1.052m^3/s
SPILLWAY WIDTH	= 4.0m
SPILLWAY DEPTH	= 0.3m

SEDIMENT BASIN 2 DIMENSIONS:

CATCHMENT AREA	= 0.30 ha
DISTURBED AREA	= 0.30 ha
REQUIRED BASIN VOLUME	= 75m^3
BASE DIMENSIONS (L X B)	= 4m x 1m
TOP DIMENSIONS (L X B)	= 13m x 10m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 78m^3
Q10 WEIR PEAK FLOW	= 0.091m^3/s
SPILLWAY WIDTH	= 1.0m
SPILLWAY DEPTH	= 0.3m

SEDIMENT BASIN 3 DIMENSIONS:

CATCHMENT AREA	= 0.57 ha
DISTURBED AREA	= 0.57 ha
REQUIRED BASIN VOLUME	= 119m^3
BASE DIMENSIONS (L X B)	= 5m x 3m
TOP DIMENSIONS (L X B)	= 14m x 12m
MAX SIDE SLOPE	= 1V:3H
DEPTH	= 1.5m
PROVIDED BASIN VOLUME	= 119m^3
Q10 WEIR PEAK FLOW	= 0.145m^3/s
SPILLWAY WIDTH	= 1.0m
SPILLWAY DEPTH	= 0.3m

EROSION CONTROL NOTES:

REFER TO DRAWING SSDA11 FOR EROSION AND SEDIMENT CONTROL NOTES

FOR DEVELOPMENT APPLICATION

4m 0 10 20 30 40m
SCALE 1:400 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

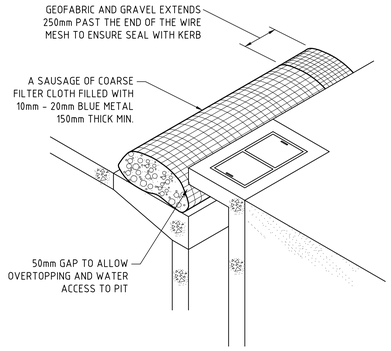
ARCHITECT: SBA ARCHITECTS
CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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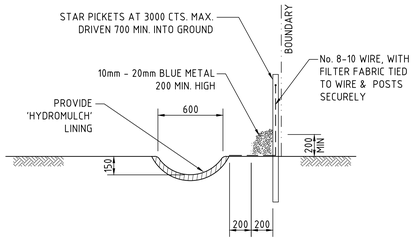
CONSULT AUSTRALIA
Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
CRC COSTIN ROE CONSULTING
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DRAWING TITLE: EROSION AND SEDIMENT CONTROL PLAN
DRAWING No: C015039.01-SSDA 20
ISSUE: B



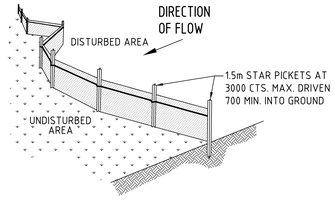
KERB INLET CONTROL

N.T.S



TYPICAL OPEN DRAIN & SILT FENCE

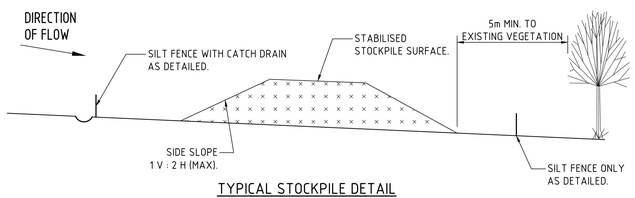
SCALE 1:20



TYPICAL SILT FENCE DETAIL

N.T.S

NOTE: PROVIDE 1m RETURNS AT 30m INTERVALS. TYPICAL

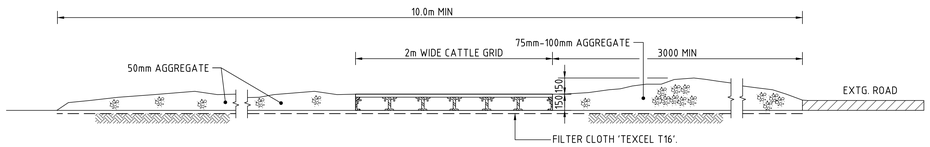


TYPICAL STOCKPILE DETAIL

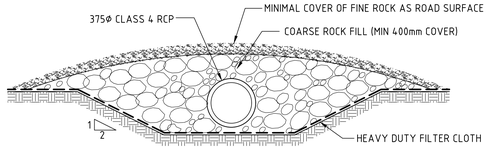
N.T.S

STOCKPILE NOTES

1. PLACE ALL STOCKPILES IN LOCATIONS MORE THAN 5m FROM EXISTING VEGETATION, ROADS & HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT ELONGATED MOUNDS. SIDE SLOPE TO BE 1 V: 2 H MAX.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE STOCKPILES ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE USING WOOD CHIP MULCH - 16 TONNE/Ha.
5. CONSTRUCT SILT FENCE WITH CATCH DRAIN ON UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES & SILT FENCE ONLY 1 TO 2m DOWNSLOPE AS SHOWN.

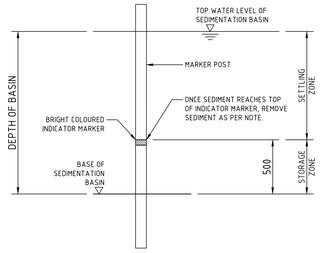


SECTION 1:20 (1) : STABILISED CONSTRUCTION ENTRANCE 'TRUCK SHAKER'



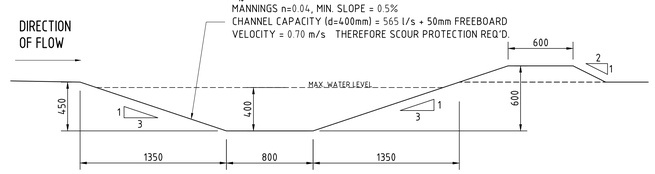
SECTION 1:20 (1)

TYPICAL CROSSING OVER DIVERSION CHANNEL



SEDIMENT STORAGE MARKER

SCALE 1:20



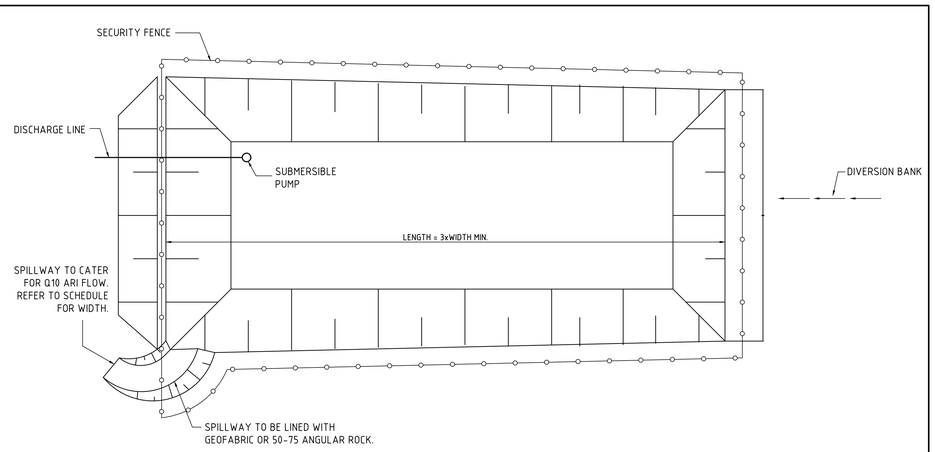
DIVERSION DRAIN SECTION -3500 WIDE

SCALE 1:20

TEMPORARILY PROTECT THE SWALE FROM EROSION DURING CONSTRUCTION.

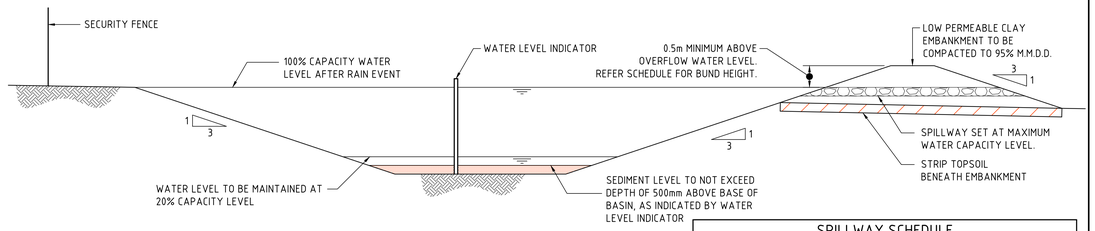
TEMPORARY DIVERSION DRAINS & EARTHEN CLEAN WATER DIVERSION DRAINS SHALL BE STABILISED BY:

a. TURF REINFORCEMENT; OR
b. GEOFABRIC LINER; OR
c. POLYMER HYDRAULIC SOIL STABILISER. DOSAGE TO BE TO MANUFACTURER'S SPECIFICATION FOR FLOW RATES NOMINATED. DOSAGE SHALL BE SUCH THAT C=0.05.



TYPICAL SEDIMENT CONTROL POND PLAN

SCALE 1:250



TYPICAL SEDIMENT CONTROL BASIN SECTION

SCALE 1:50

SPILLWAY SCHEDULE

CATCHMENT (Ha)	FLOW (m^3/s)	WIDTH (m)	FLOW DEPTH (m)	ROCK SIZE (mm)	BUND HEIGHT ABOVE SPILLWAY (m)
1	0.3	2	0.20	200	0.70
2	0.6	4	0.20	200	0.70
5	1.4	5	0.30	200	0.80
10	2.8	8	0.35	200	0.85
20	5.5	14	0.40	250	0.90
40	11.0	20	0.50	250	1.00

1. Erosion Hazard and Sediment Basins

Site Name: 74-94 Newton road

Site Location: Whetherill Park

Precinct/Stage: EROSION AND SEDIMENT CONTROLS

Other Details:

Site area	Sub-catchment or Name of Structure 1	2	3				Notes
Total catchment area (ha)	4.14	0.36	0.57				
Disturbed catchment area (ha)	4.14	0.36	0.57				
Soil analysis (enter sediment type if known, or laboratory particle size data)							
Sediment Type (C, F or D) if known:	D	D	D				From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)							Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)							
% clay (fraction finer than 0.002 mm)							
Dispersion percentage							E.g. enter 10 for dispersion of 10%
% of whole soil dispersible							See Section 6.3.3(a). Auto-calculated
Soil Texture Group	D	D	D				Automatic calculation from above
Rainfall data							
Design rainfall depth (no of days)	5	5	5				See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	85	85	85				
x-day, y percentile rainfall event (mm)	32.2	32.2	32.2				
Rainfall R-factor (if known)							Only need to enter one or the other here
IFD, 2-year, 6-hour storm (if known)	10	10	10				
RUSLE Factors							
Rainfall erosivity (*R*-factor)	2210	2210	2210				Auto-filled from above
Soil erodibility (*K*-factor)	0.075	0.075	0.075				
Slope length (m)	200	100	100				
Slope gradient (%)	0.5	0.5	0.5				RUSLE LS factor calculated for a high rill/interrill ratio.
Length/gradient (*LS*-factor)	0.12	0.11	0.11				
Erosion control practice (*P*-factor)	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cover (*C*-factor)	1	1	1	1	1	1	
Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)							
Storage (soil) zone design (no of months)	2	2	2				Minimum is generally 2 months
C_V (Volumetric runoff coefficient)	0.64	0.64	0.64				See Table F2, page F-4 in Appendix F
Calculations and Type D/F Sediment Basin Volumes							
Soil loss (tha/yr)	26	23	23				
Soil Loss Class	1	1	1				See Table 4.2, page 4-13
Soil loss (m^3/ha/yr)	20	18	18				Conversion to cubic metres
Sediment basin storage (soil) volume (m^3)	14	1	2				See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m^3)	853	74	117				See Sections 6.3.4(i) for calculations
Sediment basin total volume (m^3)	867	75	119				

NB for sizing of Type C (coarse) sediment basins, see Worksheet 3 (if required).

2. Flow Calculations

Peak flow is given by the Rational Formula: $Q_Y = 0.00278 \times C_{10} \times F_Y \times I_{Y,\,tc} \times A$

where: Q_Y is peak flow rate (m^3/sec) of average recurrence interval (ARI) of "Y" years
C_{10} is the runoff coefficient (dimensionless) for ARI of 10 years.
F_Y is a frequency factor for "Y" years.
A is the catchment area in hectares (ha)
$I_{Y,\,tc}$ is the average rainfall intensity (mm/hr) for an ARI of "Y" years and a design duration of "tc" (minutes or hours)

Time of concentration (t_c) = $0.76 \times (A/100)^{0.38}$ hrs

Note: For urban catchments the time of concentration should be determined by more precise calculations or reduced by a factor of 50 per cent. Place an x in the appropriate row below to automatically halve the time of concentration for that sub-catchment.

Structure Details	1	2	3					Notes
Name								
Catchment Area (ha)	4.14	0.36	0.57					
Place an x here to halve tc	x	x	x					Place an x if disturbed catchment
Time of concentration (tc)	7	3	3					minutes
Rainfall Intensities								
1-year, tc	69.6	69.6	69.6					Enter the relevant rainfall intensities (in mm/hr) for each of the nominated rainfall events. The time of concentration (tc) determines the duration of the event to be used
2-year, tc	90.1	90.1	90.1					
5-year, tc	118	118	118					
10-year, tc	134	134	134					
20-year, tc	155	155	155					
50-year, tc	184	184	184					
100-year, tc	205	205	205					
C10 runoff coefficient	0.9	0.9	0.9					Use AR&R or Table F3, pg F-6
Frequency Factors								
FF, 1-year	0.8	0.8	0.8					Can use 0.8 for a construction site
FF, 2-year	0.85	0.85	0.85					Can use 0.85 for a construction
FF, 5-year	0.95	0.95	0.95					Can use 0.95 for a construction
FF, 10-year	1	1	1					Generally always 1
FF, 20-year	1.05	1.05	1.05					Can use 1.05 for a construction
FF, 50-year	1.15	1.15	1.15					Can use 1.15 for a construction
FF, 100-year	1.2	1.2	1.2					Can use 1.2 for a construction site
Flow Calculations								Notes
1-year, tc (m^3/s)	0.577	0.05	0.079					
2-year, tc (m^3/s)	0.793	0.069	0.109					
5-year, tc (m^3/s)	1.161	0.101	0.16					
10-year, tc (m^3/s)	1.388	0.121	0.191					
20-year, tc (m^3/s)	1.686	0.147	0.232					
50-year, tc (m^3/s)	2.102	0.191	0.302					
100-year, tc (m^3/s)	2.548	0.222	0.351					

NB for flow calculations on sediment basin spillway, see Worksheet 3 (if required).

3. Sediment Basin Spillway Design

Structure Details	1	2	3				
Structure Name	1	2	3				Auto-filled from Worksheet 1
Catchment Area (ha)	4.14	0.36	0.57				Auto-filled from Worksheet 1
Time of concentration (tc)	7	3	3				Auto-calculated assuming tc is halved
Rainfall Intensities (IFD Values)							
1 year, Ic	52.51	52.51	52.51				Enter the relevant rainfall intensities (in mm/hr) for each of the nominated rainfall events. The time of concentration (tc) determines the duration of the event to be used
2 year, Ic	68.08	68.08	68.08				
5 year, Ic	89.03	89.03	89.03				
10 year, Ic	101.56	101.56	101.56				
20 year, Ic	117.91	117.91	117.91				
50 year, Ic	139.5	139.5	139.5				
100 year, Ic	156.1	156.1	156.1				
C_{10} runoff coefficient	0.9	0.9	0.9				Use AR&R or Table F3, pg F-6
Design ARI event (select):	10	10	10				Select design ARI (years) from dropdown
Frequency Factor	1	1	1	#N/A	#N/A	#N/A	Auto-filled based on selected ARI
Flow Calculation	1.052	0.091	0.145	#N/A	#N/A	#N/A	Auto-calculated based on selected ARI

2m 0 5 10 15 20 25m

SCALE 1:250 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m

SCALE 1:50 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm

SCALE 1:20 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

ISSUED FOR INFORMATION	15.02.24	A
AMENDMENTS	DATE	ISSUE

ARCHITECT: SBA ARCHITECTS

CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 25

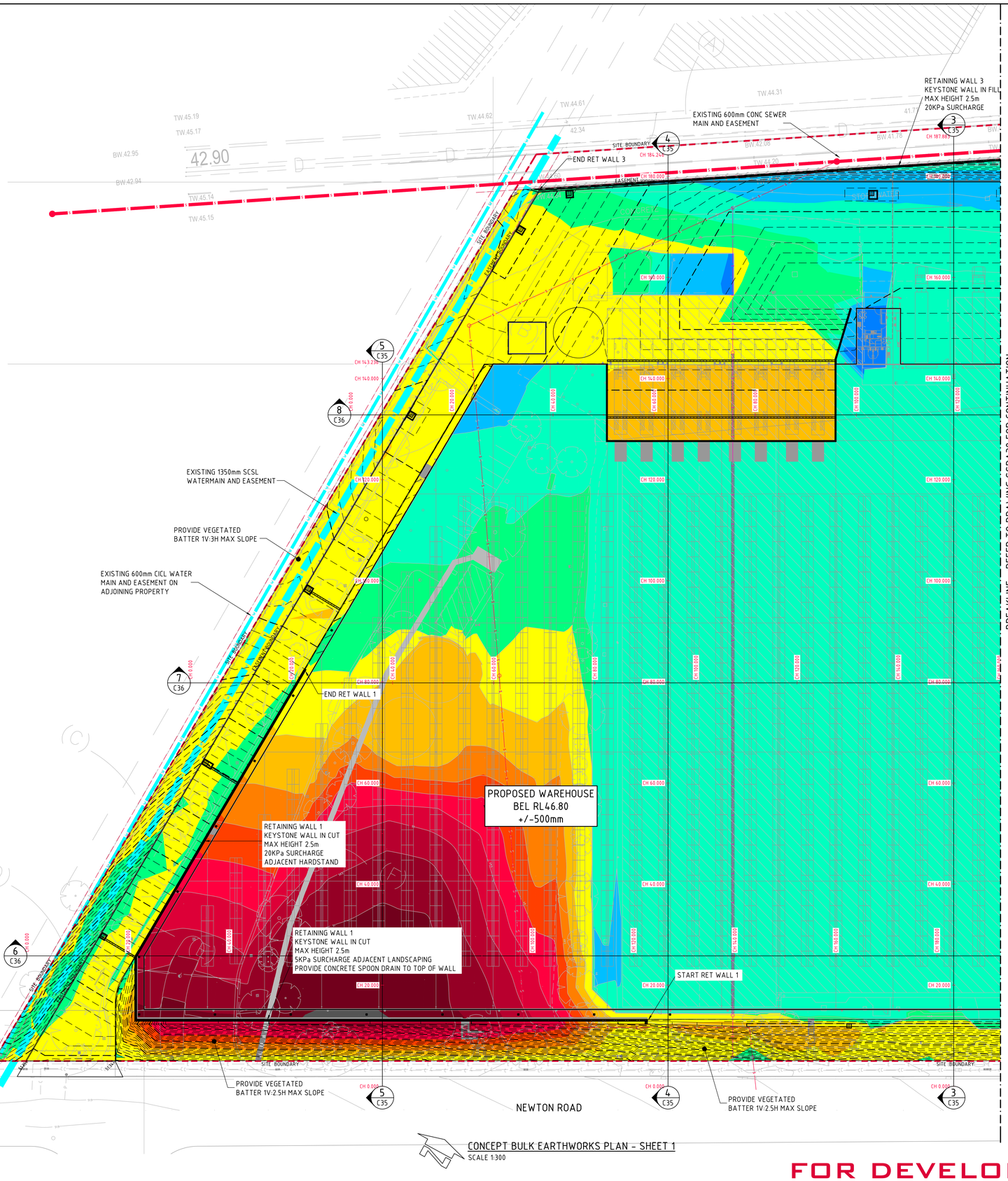
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Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: EROSION & SEDIMENT CONTROL DETAILS

DRAWING No: C015039.01-SSDA 25

ISSUE: A

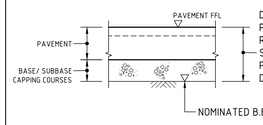


LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20.

- 50.00 – EXISTING CONTOUR (0.2m INTERVAL)
- 50.00 – B.E.L. CONTOUR (MAJOR 1.0m)
- 50.10 – B.E.L. CONTOUR (MINOR 0.25m)
- 50.00 – B.E.L. SPOT LEVEL
- SGGP, SINGLE GRATED GULLY PIT
- W – EXISTING SYDNEY WATER MAIN
- S – EXISTING SEWER MAIN



NOMINATED B.E.L. DETAIL
NTS

CONCEPT EARTHWORK ESTIMATES

SITE AREA	= 5.07 Ha
DELETERIOUS MATERIAL STRIP	=(-10,100m³) (TO BE EXPORTED/REUSED) (200mm OVER 5.07 Ha)
CUT	= -16,200m³
FILL	= +25,700m³
ALLOWANCES	
DETAILED EXCAVATION (1,500m³/Ha)	= 7,600m³
DIFFERENCE	= +1,900m³ (i.e. IMPORT REQUIRED)

NOTE:
VOLUMES BASED ON 200mm DELETERIOUS MATERIAL STRIP OVER THE NOMINATED AREA. EARTHWORKS VOLUMES ARE APPROXIMATE ONLY. NO ALLOWANCE HAS BEEN MADE FOR DELETERIOUS MATERIAL, EROSION AND SEDIMENT CONTROL, BULKING OR COMPACTION OF FILLED SOILS, THE REMOVAL OF UNCONTROLLED OR CONTAMINATED MATERIAL OR ANY OTHER UNSPECIFIED EXCAVATION RELATED TO CONSTRUCTION ACTIVITIES. DETAILED EXCAVATION ALLOWANCE IS APPROXIMATE ONLY AND ACCOUNTS FOR STORMWATER/SERVICES TRENCHING AND FOUNDATIONS. THE DETAILED EXCAVATION VOLUMES ARE TO BE CONFIRMED BY THE CONTRACTOR. REFER ANY CONCERNS TO ENGINEER.

SITE PREPARATION NOTES:

REFER TO DRAWING SSDA11 FOR SITE PREPARATION NOTES

DEPTH RANGE

No.	FROM DEPTH	TO DEPTH	COLOUR
1	-5.000	-4.500	
2	-4.500	-4.000	
3	-4.000	-3.500	
4	-3.500	-3.000	
5	-3.000	-2.500	
6	-2.500	-2.000	
7	-2.000	-1.500	
8	-1.500	-1.000	
9	-1.000	-0.500	
10	-0.500	0.000	
11	0.000	0.500	
12	0.500	1.000	
13	1.000	1.500	
14	1.500	2.000	
15	2.000	2.500	

ALLOWANCES FOR STRUCTURE

	DEPTH OF PAVEMENT
INTERNAL	
WAREHOUSE	300mm
OFFICE	300mm
EXTERNAL	
HARDSTAND	300mm
CAR PARK	300mm
LANDSCAPING	300mm
PEDESTRIAN	300mm

CONCEPT BULK EARTHWORKS PLAN - SHEET 1
SCALE 1:300

FOR DEVELOPMENT APPLICATION

3m 0 5 10 15 20 25 30m
SCALE 1:300 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	26.03.24	A

ARCHITECT: SBA ARCHITECTS
CLIENT: Centuria
PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 31

CONSULT AUSTRALIA
Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
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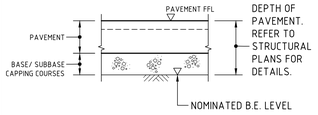
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DRAWING NO: C015039.01-SSDA 31
ISSUE: B

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON SURVEY INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20.

- 50.00 – EXISTING CONTOUR (0.2m INTERVAL)
- 50.00 – B.E.L. CONTOUR (MAJOR 1.0m)
- 50.10 – B.E.L. CONTOUR (MINOR 0.25m)
- 50.00 – B.E.L. SPOT LEVEL
- SGGP – SGGP, SINGLE GRATED GULLY PIT
- W – EXISTING SYDNEY WATER MAIN
- S – EXISTING SEWER MAIN



NOMINATED B.E.L. DETAIL
NTS

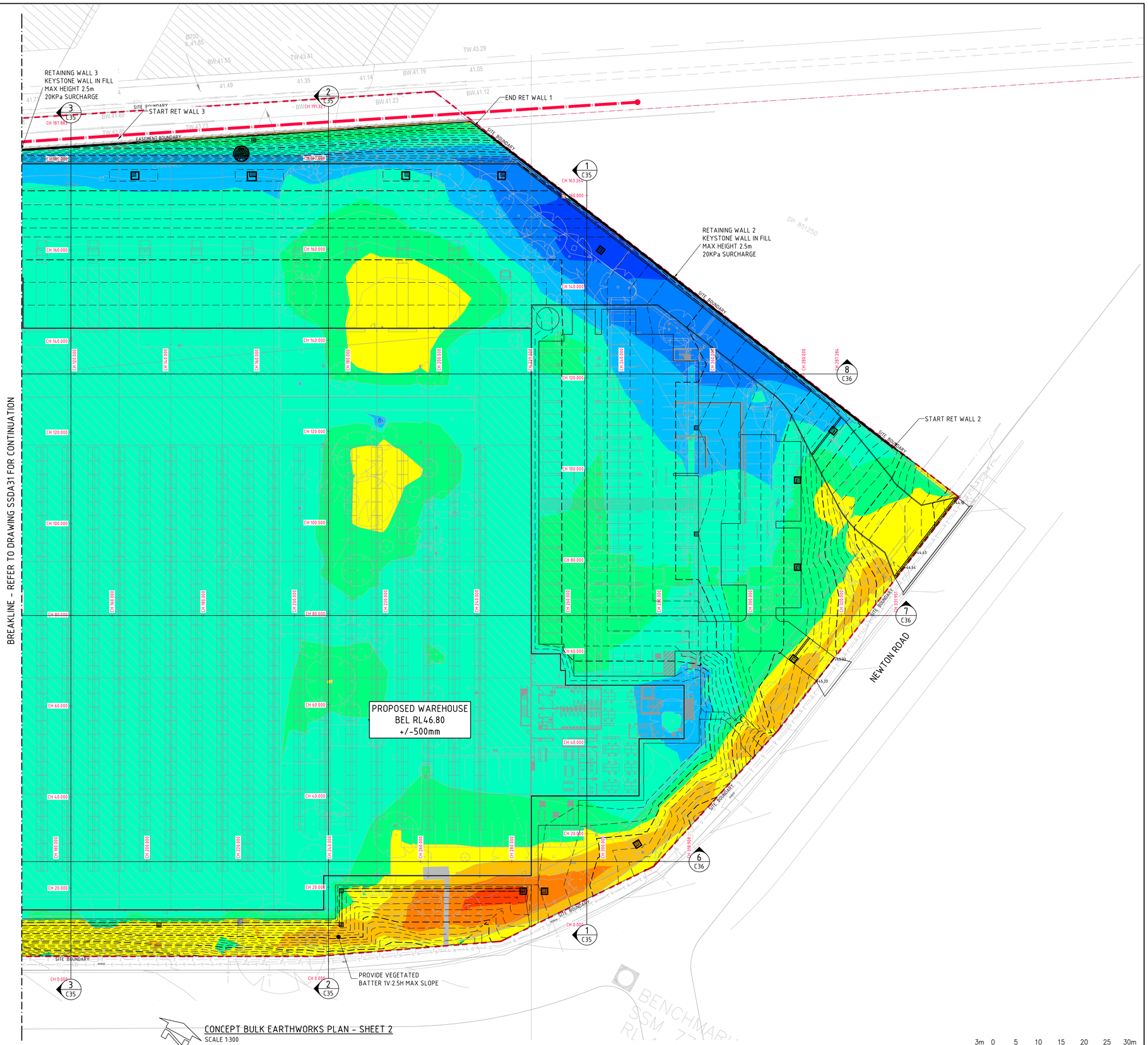
SITE PREPARATION NOTES:

REFER TO DRAWING SSDA11 FOR SITE PREPARATION NOTES

DEPTH RANGE			
No.	FROM DEPTH	TO DEPTH	COLOUR
1	-5.000	-4.500	
2	-4.500	-4.000	
3	-4.000	-3.500	
4	-3.500	-3.000	
5	-3.000	-2.500	
6	-2.500	-2.000	
7	-2.000	-1.500	
8	-1.500	-1.000	
9	-1.000	-0.500	
10	-0.500	0.000	
11	0.000	0.500	
12	0.500	1.000	
13	1.000	1.500	
14	1.500	2.000	
15	2.000	2.500	

ALLOWANCES FOR STRUCTURE

	DEPTH OF PAVEMENT
INTERNAL	
WAREHOUSE	300mm
OFFICE	300mm
EXTERNAL	
HARDSTAND	300mm
CAR PARK	300mm
LANDSCAPING	300mm
PEDESTRIAN	300mm



CONCEPT BULK EARTHWORKS PLAN – SHEET 2
SCALE 1:300

FOR DEVELOPMENT APPLICATION

3m 0 5 10 15 20 25 30m
SCALE 1:300 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	26.03.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

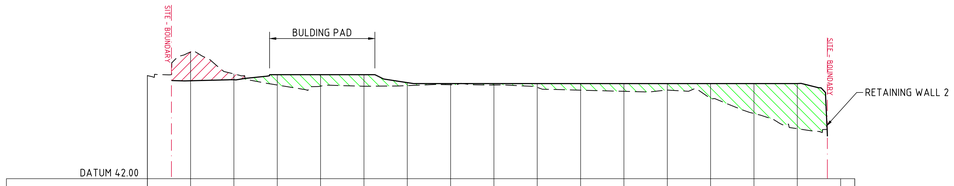
DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 e: +61 2 9241 3751
e: mail@costinroe.com.au w: costinroe.com.au
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DRAWING TITLE: CONCEPT BULK EARTHWORKS PLAN SHEET 2

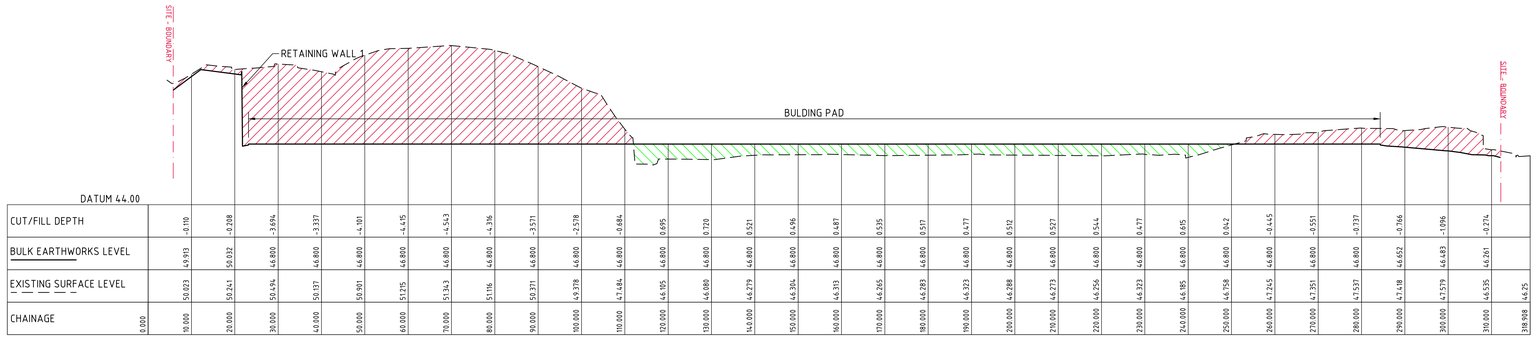
DRAWING No: C015039.01-SSDA 32 ISSUE: B


SITE - BOUNDARY
BULDING PAD
SITE - BOUNDARY
RETAINING WALL 2

| | | |

LEGEND:

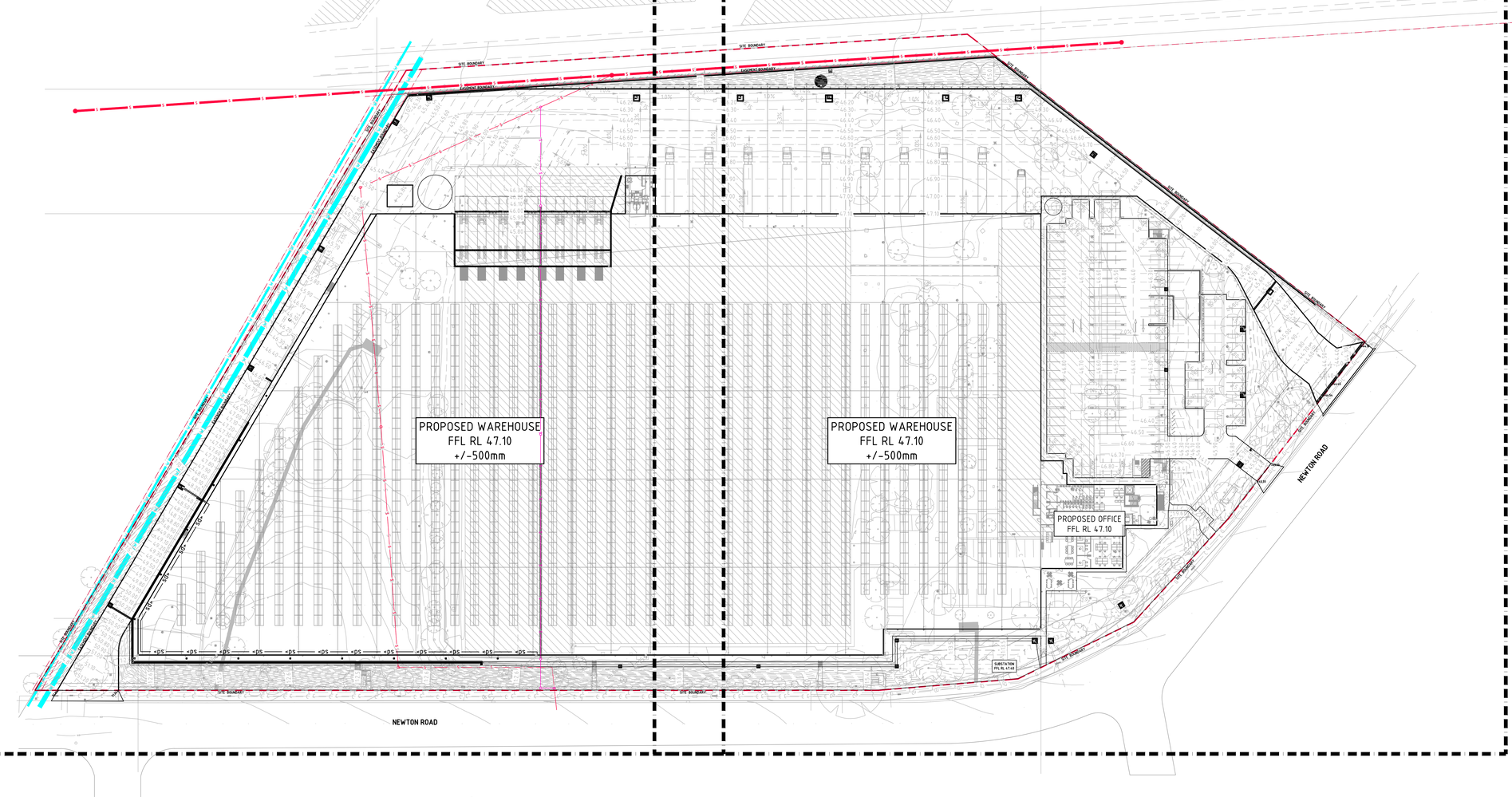
- DENOTES BULK EARTHWORKS PROFILE
- DENOTES EXISTING PROFILE
- DENOTES AREA IN CUT
- DENOTES AREA IN FILL



| DATUM 44.00 | | |

SHEET 1 – REFER TO DRAWING SSDA41 & SSDA51

SHEET 2 – REFER TO DRAWING SSDA42 & SSDA52



DRAWING KEY PLAN
SCALE 1:500

STORMWATER DRAINAGE NOTES:

1. ALL STORMWATER WORKS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500.3 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE.
2. THE MINOR (PIPED) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 20 YEAR ARI STORM EVENT AND THE MAJOR (OVERLAND) SYSTEM HAS BEEN DESIGNED FOR THE 1 IN 100 YEAR ARI STORM EVENT.
3. ALL FINISHED PAVEMENT LEVELS SHALL BE AS INDICATED ON FINISHED LEVELS PLANS SSDA51 & SSDA52.
4. PIT SIZES SHALL BE AS INDICATED IN THE SCHEDULE WHILE PIPE SIZES AND DETAILS ARE PROVIDED ON PLAN.
5. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED BY SURVEY PRIOR TO COMMENCING WORKS ON SITE.
6. ALL STORMWATER PIPES Ø375 OR GREATER SHALL BE CLASS 2 (WITH HS2 SUPPORT) REINFORCED CONCRETE WITH RUBBER RING JOINTS UNLESS NOTED OTHERWISE.
7. ALL PIPES UP TO AND INCLUDING Ø300 TO BE uPVC GRADE SN8 UNO.
8. PIPE CLASS NOMINATED ARE FOR IN-SERVICE LOADING CONDITIONS ONLY. CONTRACTOR IS TO MAKE ANY NECESSARY ADJUSTMENTS REQUIRED FOR CONSTRUCTION CONDITIONS.
9. ALL CONCRETE PITS GREATER THAN 1000mm DEEP SHALL BE REINFORCED USING N12–200 EACH WAY CENTERED IN WALL AND BASE. LAP MINIMUM 300mm WHERE REQUIRED. ALL CONCRETE FOR PITS SHALL BE F'c=25 MPa. PRECAST PITS MAY BE USED WITH THE APPROVAL OF THE ENGINEER.
10. IN ADDITION TO ITEM 9 ABOVE, ALL CONCRETE PITS GREATER THAN 3000mm DEEP SHALL HAVE WALLS AND BASE THICKNESS INCREASED TO 200mm.
11. PIPES SHALL BE LAID AS PER PIPE LAYING DETAILS. PARTICULAR CARE SHALL BE TAKEN TO ENSURE THAT THE PIPE IS FULLY AND EVENLY SUPPORTED. RAM AND PACK FILLING AROUND AND UNDER BACK OF PIPES AND PIPE FAUCETS, WITH NARROW EDGED RAMMERS OR OTHER SUITABLE TAMPING DETAILS.
12. CONCRETE PIPES UNDER, OR WITHIN THE ZONE OF INFLUENCE OF PAVED AREAS SHALL BE LAID USING HS2 TYPE SUPPORT, AS A MINIMUM, IN ACCORDANCE WITH AS 3725. AGGREGATE BACKFILL SHALL NOT BE USED FOR PIPE BEDDING AND OR HAUNCH/SIDE SUPPORT.
13. WHERE PIPE LINES ENTER PITS, PROVIDE 2m LENGTH OF STOCKING WRAPPED SLOTTED Ø100 uPVC TO EACH SIDE OF PIPE.
14. ALL SUBSOIL DRAINAGE LINES SHALL BE Ø100 SLOTTED uPVC WITH APPROVED FILTER WRAP LAID IN 300mm WIDE GRANULAR FILTER UNLESS NOTED OTHERWISE. LAY SUBSOIL LINES TO MATCH FALLS OF LAND AND/OR 1 IN 200 MINIMUM. PROVIDE CAPPED CLEANING EYE (RODDING POINT) AT UPSTREAM END OF LINE AND AT 30m MAX. CTS. PROVIDE SUBSOIL LINES TO ALL PAVEMENT/ LANDSCAPED INTERFACES, TO REAR OF RETAINING WALLS (AS NOMINATED BY STRUCTURAL ENGINEER) AND AS SHOWN ON PLAN.
15. WHERE SUBSOIL DRAINAGE PASSES UNDER A PAVEMENT OR A SLAB, UNSLOTTED UPVC ARE TO BE PROVIDED UNLESS NOTED OTHERWISE.
16. ALL PIPE GRADES 1 IN 200 MINIMUM UNO.
17. PROVIDE STEP IRONS IN PITS DEEPER THAN 1000mm.
18. MIN. 600 COVER TO PIPE OBVERT BENEATH ROADS & MIN. 400 COVER BENEATH LANDSCAPED AND PEDESTRIAN AREAS.
19. PIT COVERS IN TRAFFICABLE PAVEMENT SHALL BE CLASS D 'HEAVY DUTY', THOSE LOCATED IN NON-TRAFFICABLE AREAS SHALL BE CLASS B 'MEDIUM DUTY' U.N.O.
20. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
21. DOWN PIPES (DP) TO BE AS PER HYDRAULIC ENGINEERS DETAILS WITH CONNECTOR TO MATCH DP SIZE U.N.O. ON PLAN. PROVIDE CLEANING EYE AT GROUND LEVEL.
22. PIPE LENGTHS NOMINATED ON PLAN OR LONGSECTIONS ARE MEASURED FROM CENTER OF PITS TO THE NEAREST 0.5m AND DO NOT REPRESENT ACTUAL LENGTH. THE CONTRACTOR IS TO ALLOW FOR THIS.
23. WHERE CONNECTION TO EXISTING INGROUND DRAINAGE SYSTEMS, OPEN SWALES, CHANNELS OR ANY OTHER EXISTING SYSTEM, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND INVERT ON SITE AT THE BEGINNING OF THE CONSTRUCTION PERIOD. REFER ANY VARIANCE FROM DOCUMENTATION OR SURVEYS TO THE ENGINEER FOR CLARIFICATION.

FINISHED LEVELS PLAN NOTES:

1. LEVELS DATUM IS AUSTRALIAN HEIGHT DATUM (A.H.D.).
2. GRADING REQUIREMENTS TO BE COMPLETED IN ACCORDANCE WITH AUSTRALIAN STANDARD AS2890.1, AS2890.2 AND AS2890.6.
3. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
4. CONTOUR INTERVALS
   - THE MINOR CONTOUR INTERVAL IS 0.1m.
   - THE MAJOR CONTOUR INTERVAL IS 0.5m.
5. HARDSTAND GRADING
   - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%).
   - GRADING OF ON-GRADE DOCKS TO BE 1:100 (1%) FALL AWAY FROM THE DOCK FACE FOR A LENGTH OF 15m U.N.O.
   - GRADING OF TRUCK CIRCULATION ZONES TO BE MINIMUM AS NOTED ABOVE, 3-4% NOMINAL AND MAX. 5%.
6. CAR PARKING AREA GRADES
   - MINIMUM PAVEMENT GRADE IS TO BE 1:100 (1%), DESIRABLE MINIMUM GRADE 1:50 (2%).
   - MAXIMUM PAVEMENT GRADE IS TO BE 1:20 (5%) N CARPARKING AREAS AND 1:25 (4%) ELSEWHERE.
   - DISABLED ACCESS PARKING ZONES AND SHARED SPACE TO BE MAXIMUM OF 1:33 (3%) IN ASPHALT PAVEMENT AND MAXIMUM OF 1:40 (2.5%) IN CONCRETE PAVEMENT.
   - CARPARK RAMP GRADES TO BE MAX 1:5 WITH 2.5m SMOOTH TRANSITION AT TOP AND BOTTOM U.N.O.
7. TRUCK RAMP GRADES
   - MAXIMUM B-DOUBLE OR 19.0m AV RAMP GRADES ARE TO BE 1:8.3 (12%) U.N.O. ON PLAN
   - PROVIDE MINIMUM 4.0m LONG TRANSITION WHERE CHANGES OF GRADE EXCEED 1:20 (5%) AT A CREST U.N.O.
   - PROVIDE MINIMUM 3.0m LONG TRANSITION WHERE CHANGE OF GRADE EXCEED 1:20 (5%) AT A SAG U.N.O.
   - TRANSITIONS ARE TO PROVIDE A SMOOTH CONTINOUS CIRCULAR AND TANGENTIAL CHANGE IN GRADE TO ENSURE NO SHARP OR ACUTE CHANGES IN GRADE ARE PRESENT.
8. WHERE FIRE BRIGADE ACCESS IS REQUIRED, MAXIMUM RAMP GRADIENTS ARE TO BE 1:6 (16.6%), DESIRABLE RAMP GRADIENTS ARE TO BE 1:8 (12.5%) WITH 7m TRANSITION TOP AND BOTTOM U.N.O. ON PLAN.
9. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H U.N.O. BASED ON GEOTECHNICAL ASSESSMENT. PROVIDE MINIMUM 0.5m BERM BETWEEN THE BACK OF KERB OR PAVEMENT EDGES AND THE TOP OR TOE OF A BATTER.
10. ALL BATTER SLOPE WITH GRADES AT OR EXCEEDING 1V:6H ARE TO BE TURFED IMMEDIATELY OR APPROPRIATE EROSION CONTROL IS TO BE PROVIDED TO THE SATISFACTION OF THE ENGINEER.
11. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL. GRADE.
12. ALL PAVEMENTS ARE TO BE SET AT 30mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS. PROVIDE LOCAL FEATHERING AT DOORWAYS OR ROLLER SHUTTERS TO PROVIDE FLUSH FINISH AS REQUIRED.
13. WHERE NEW AND EXISTING INTERFACING IS REQUIRED, MATCH EXISTING LEVELS AND PROVIDE SMOOTH INTERFACE BETWEEN NEW AND EXISTING GRADIENTS. REFER ANY CONCERNS TO THE ENGINEER.

FOR DEVELOPMENT APPLICATION

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 40

CONSULT AUSTRALIA

Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
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DRAWING TITLE: DRAWING KEY PLAN

DRAWING No: C015039.01-SSDA 40 ISSUE: B

EXISTING 600mm CONC SEWER MAIN AND EASEMENT

SITE BOUNDARY

EASEMENT BOUNDARY

CONCRETE

PIT 6

PIT 7

Φ750

Φ825

PIT 5

CONNECT NEW 225 SEWER TO EXISTING VIA NEW MANHOLE

EXISTING 225mm VC SEWER MAIN

Φ225

PIT 4

GD

DIVERT EXISTING 225mm SEWER LINE UNDER WAREHOUSE. OFFSET 3m FROM GRID LINE 9. PIPE TO BE CONCRETE ENCASES UNDER WAREHOUSE. MAX 120m BETWEEN MANHOLES

EXISTING 1350mm SCSL WATERMAIN AND EASEMENT

Φ675

EXISTING 600mm CICL WATER MAIN AND EASEMENT ON ADJOINING PROPERTY

PIT 3

PROVIDE 200x200 HAVESTOCK FLOOR DRAIN (OR SIMILAR) AT 15m SPACING TYPICAL

PROPOSED WAREHOUSE
FFL RL 47.10
+/-500mm

PIT 2

SYPHONIC ROOF DRAINAGE TO CONNECT TO PIT 2. SUBJECT TO FUTURE DESIGN DURING DETAILED DESIGN STAGE

EXISTING 225mm VC SEWER MAIN

150Φ uPVC. PIPE SYSTEM TO BE FULLY SEALED SOLVENT WELDED JOINT uPVC LAID AT 1:300 FALL. CONTRACTOR TO LOCATE AND CONNECT ALL SUBSOIL TAILOUTS FROM ADJACENT RETAINING WALL AND CONNECT TO SEALED PIPE SYSTEM. PIPE TO BE INSTALLED PRIOR TO OR IN CONJUNCTION WITH ADJACENT RETAINING WALL

DIVERT EXISTING 225mm SEWER LINE UNDER WAREHOUSE. OFFSET 3m FROM GRID LINE 9. PIPE TO BE CONCRETE ENCASES UNDER WAREHOUSE. MAX 120m BETWEEN MANHOLES

PIT 1

PROVIDE 200x200 HAVESTOCK FLOOR DRAIN (OR SIMILAR) AT 15m SPACING TYPICAL

150Φ uPVC. PIPE SYSTEM TO BE FULLY SEALED SOLVENT WELDED JOINT uPVC LAID AT 1:300 FALL. CONTRACTOR TO LOCATE AND CONNECT ALL SUBSOIL TAILOUTS FROM ADJACENT RETAINING WALL AND CONNECT TO SEALED PIPE SYSTEM. PIPE TO BE INSTALLED PRIOR TO OR IN CONJUNCTION WITH ADJACENT RETAINING WALL

PROVIDE SYPHONIC ROOF DRAINAGE TO EXTENT SHOWN. FINAL DESIGN DURING DETAILED DESIGN STAGE

PROVIDE GRASSED SWALE
0.5% MIN LONGITUDINAL FALL
0.5m WIDE BASE WIDTH
MAX BATTER SLOPE 1V:3H

PIT 11

Φ450

EXISTING 225mm VC SEWER MAIN

CONNECT NEW 225 SEWER TO EXISTING VIA NEW MANHOLE

PROVIDE 600 WIDE SPOON DRAIN WITH 300x300 DRAIN CAST INTO CONCRETE SPOON DRAIN . PROVIDE 150Φ uPVC OUTLET PIPE & CONNECT TO ADJACENT STORMWATER PITS 15

NEWTON ROAD

BREAKLINE - REFER TO DRAWING SSDA42 FOR CONTINUATION

CONCEPT STORMWATER DRAINAGE PLAN - SHEET 1

SCALE 1:300

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DEISGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- PROPOSED DRAINAGE LINE
- EXISTING DRAINAGE LINE
- ROOFWATER DOWNPIPE (INDICATIVE)
- ROOFWATER LINE
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- SUBSOIL LINE
- OVERLAND FLOW DIRECTION
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

STORMWATER DRAINAGE NOTES:

REFER TO DRAWING SSDA40 FOR STORMWATER NOTES
ALL INLET PITS TO BE FITTED WITHC OCEAN PROTECT OCEANGUARD PIT BASKET

PIT SCHEDULE

PIT No.	GRATE RL	TYPE	SIZE	COMMENT
PIT 1	50.30	SGGP	900x900	○
PIT 2	48.30	SGGP	1800x900	○ 900SQ RISER
PIT 3	46.60	SGGP	1200x1200	○ 900SQ RISER
PIT 4	45.65	SGGP	1200x1200	○ 900SQ RISER
PIT 5	45.20	SGGP	1200x1200	○ 900SQ RISER
PIT 6	45.36	SGGP	1200x1200	○ 900SQ RISER
PIT 7	45.95	SGGP	1500x1500	○ 900SQ RISER
PIT 8	45.95	SGGP	1500x1500	○ 900SQ RISER
PIT 9	45.95	SGGP	1800x1800	○ 900SQ RISER
PIT 10	46.25	SGGP	1500x1500	○ 900SQ RISER
PIT 11	46.80	SGGP	900x900	○
PIT 12	46.80	SGGP	900x900	○
PIT 13	46.80	SGGP	900x900	○
PIT 14	46.80	SGGP	900x900	○
PIT 15	46.80	SGGP	1200x1200	○ 900SQ RISER
PIT 16	46.80	SGGP	1200x1200	○ 900SQ RISER
PIT 17	46.80	SGGP	1200x1200	○ 900SQ RISER
PIT 18				
PIT 19				
PIT 20				
PIT 21				
PIT 22	45.60	SGGP	1200x1200	○ 900SQ RISER
PIT 23	45.70	SGGP	1200x1200	○ 900SQ RISER
PIT 24	45.70	SGGP	1200x1200	○ 900SQ RISER
PIT 25	45.45	SGGP	1200x1200	○ 900SQ RISER
PIT 26	46.67	SGGP	1500x1500	○ 900SQ RISER
PIT 27	46.20	SGGP	1500x1500	○ 900SQ RISER
PIT 28	46.20	SGGP	1500x1500	○ 900SQ RISER
PIT 29				
PIT 30	46.20	SGGP	900x900	○
PIT 31	46.20	SGGP	900x900	○

○ -DENOTES PIT TO THE FITTED WITH OCEAN PROTECT OCEANGUARD PIT INSERT

FOR DEVELOPMENT APPLICATION

3m 0 5 10 15 20 25 30m
SCALE 1:300 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT/CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 41

Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
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COSTIN ROE CONSULTING | CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: CONCEPT STORMWATER DRAINAGE PLAN SHEET 1

DRAWING No: C015039.01-SSDA 41 ISSUE: B

LEGEND:

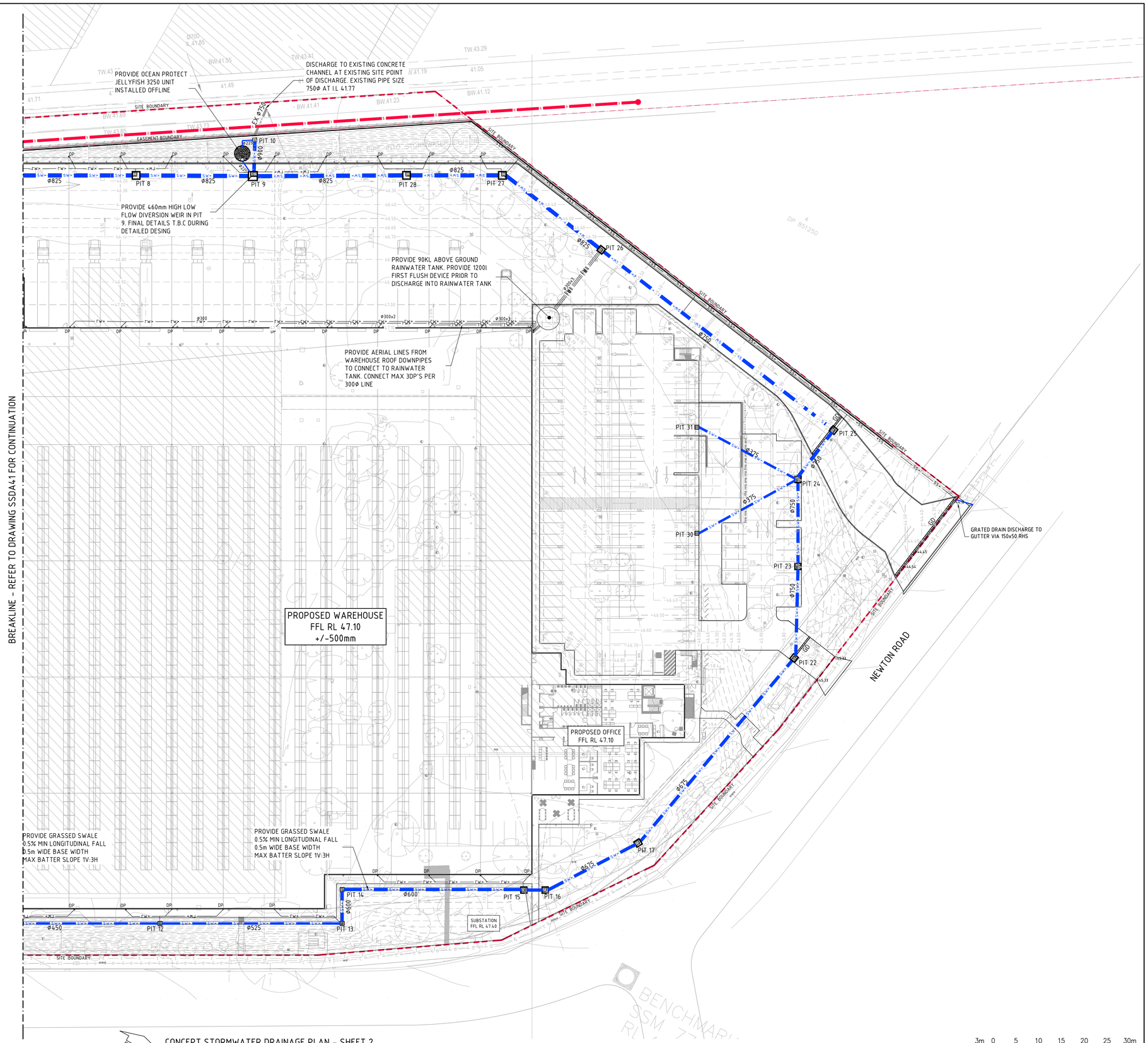
LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DEISGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- PROPOSED DRAINAGE LINE
- EXISTING DRAINAGE LINE
- ROOFWATER DOWNPIPE (INDICATIVE)
- ROOFWATER LINE
- EXISTING SYDNEY WATER MAIN
- EXISTING SEWER MAIN
- SUBSOIL LINE
- OVERLAND FLOW DIRECTION
- FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS

STORMWATER DRAINAGE NOTES:

REFER TO DRAWING SSDA40 FOR STORMWATER NOTES
ALL INLET PITS TO BE FITTED WITHC OCEAN PROTECT OCEANGUARD PIT BASKET



CONCEPT STORMWATER DRAINAGE PLAN – SHEET 2
SCALE 1:300

FOR DEVELOPMENT APPLICATION

3m 0 5 10 15 20 25 30m
SCALE 1:300 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Centuria

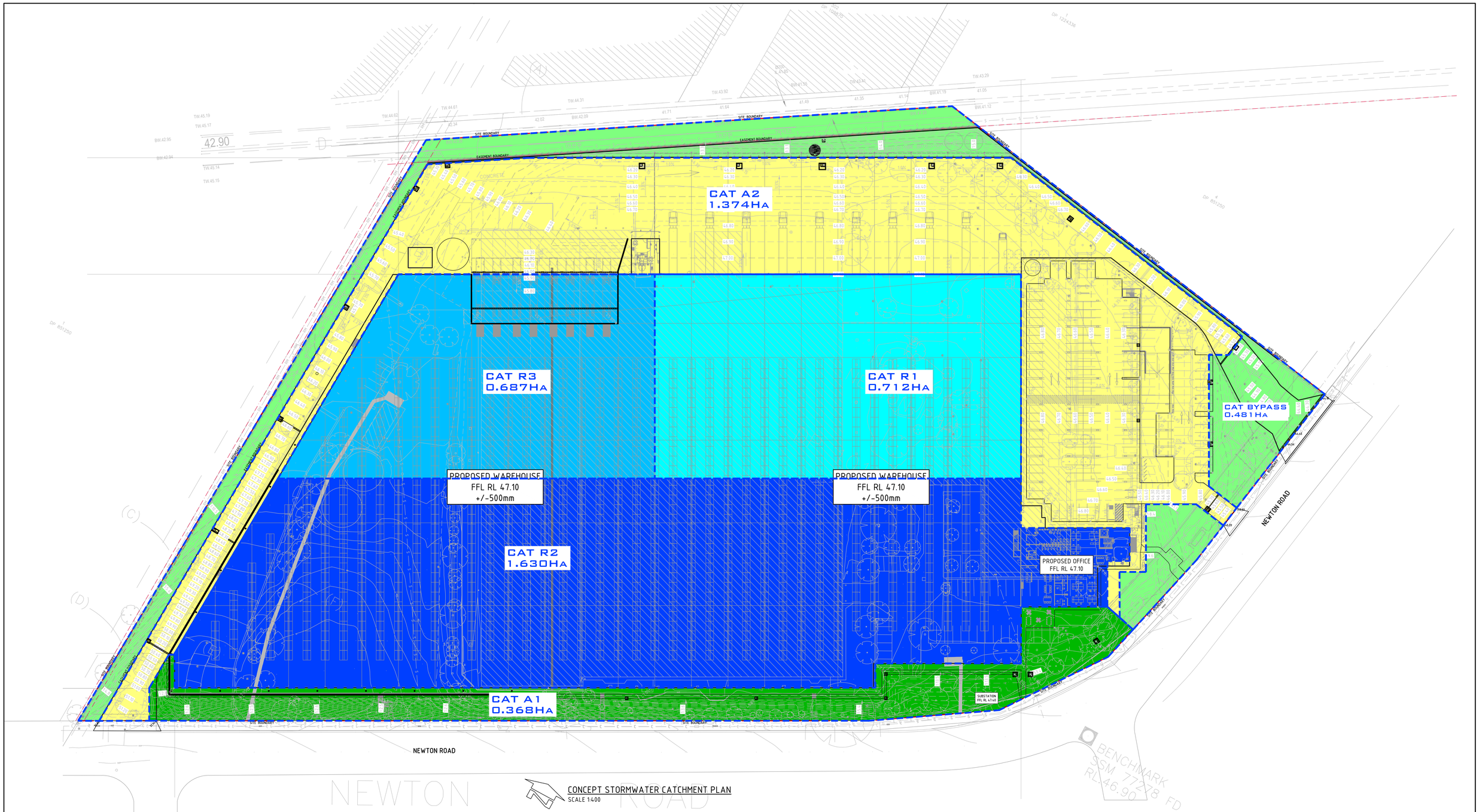
PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	ME	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 42

CONSULT AUSTRALIA
Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 e: mail@costinroe.com.au
f: +61 2 9241 3731 w: costinroe.com.au
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DRAWING TITLE: CONCEPT STORMWATER DRAINAGE PLAN SHEET 2

DRAWING No: C015039.01-SSDA 42 ISSUE: B



CONCEPT STORMWATER CATCHMENT PLAN
SCALE 1:400

SUB-CATCHMENT AREAS - MUSIC

No.	CATCHMENT AREA (Ha)	% IMPERVIOUS	TREATMENT SYSTEM
ROOF R1	0.712	100	OCEANGUARD + RAINWATER TANK
ROOF R2	1.630	100	OCEANGUARD + JELLYFISH
ROOF R3	0.687	100	OCEANGUARD + RAINWATER TANK
LANDSCAPE A1	0.368	10	OCEANGUARD + JELLYFISH
HARDSTAND A2	1.374	90	OCEANGUARD + JELLYFISH
BYPASS	0.481	70	NONE
TOTAL	5.252		

LEGEND:

- DENOTES CATCHMENT ROOF R1
- DENOTES CATCHMENT ROOF R2
- DENOTES CATCHMENT ROOF R3
- DENOTES CATCHMENT LANDSCAPE A1
- DENOTES CATCHMENT HARDSTAND A2
- DENOTES BYPASS AREA

NOTE:
ALL INLET PITS TO BE FITTED WITH OCEAN PROTECT OCEAN GUARD INSERTS.

FOR DEVELOPMENT APPLICATION

4m 0 10 20 30 40m
SCALE 1:400 AT A0 SIZE SHEET

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

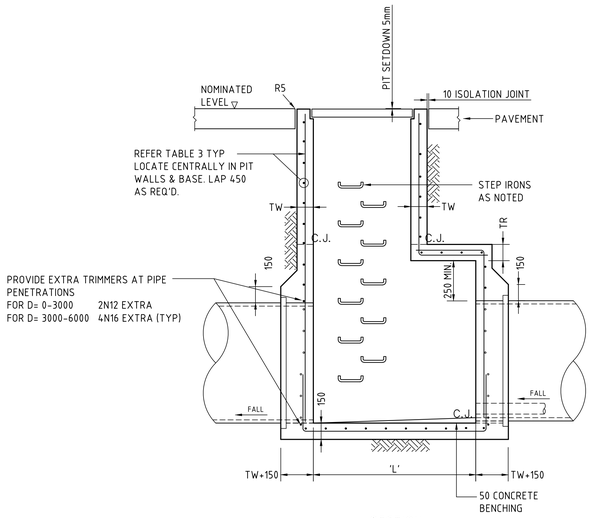
ARCHITECT: SBA ARCHITECTS
CLIENT: Centuria
PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	ME	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 44

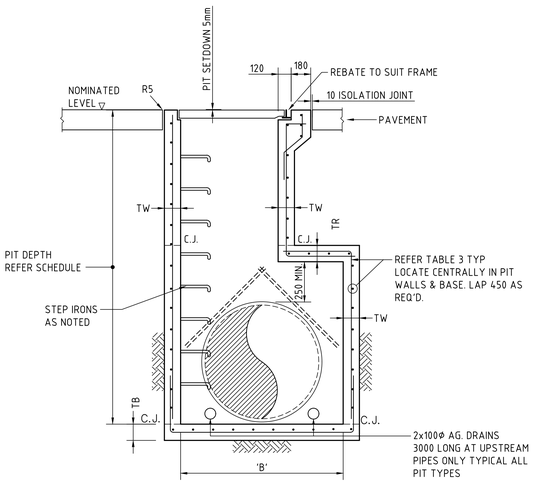
CONSULT AUSTRALIA

Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
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CIVIL & STRUCTURAL ENGINEERS

DRAWING TITLE: CONCEPT STORMWATER CATCHMENT PLAN MUSIC MODEL
DRAWING No: C015039.01-SSDA 44
ISSUE: B



SECTION
SCALE 1:20

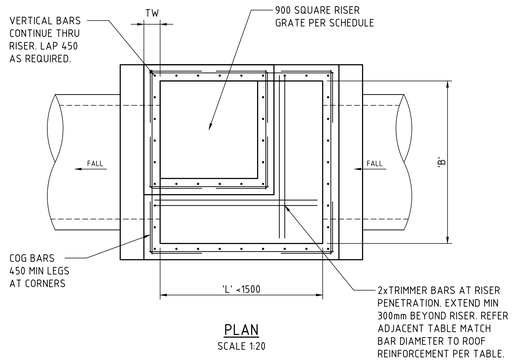


SECTION
SCALE 1:20

CONCRETE QUALITY					
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	F'c (MPa)
PIT	80	20	GP	NIL	32

NOTES:

1. WHERE GULLY PIT IS LOCATED ON KERB RETURNS OR BULB OF CUL-DE-SACS PROVIDE CURVED PRECAST CONCRETE LINTELS.
2. SAG PITS SHALL HAVE LINTEL PLACED CENTRALLY ABOUT THE GRATE.
3. ALL REINFORCING TO HAVE 30 MIN. CLEAR CONCRETE COVER.
4. FOR PITS DEEPER THAN 1200mm STEP IRONS SHALL BE PROVIDED.

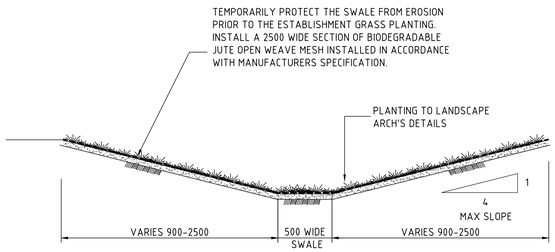


PLAN
SCALE 1:20

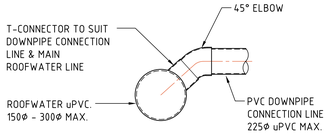
TABLE 1 - TAPERED CLASS D PIT REINFORCEMENT & WALL THICKNESS - MAXIMUM SHORT SPAN 1500mm						
DEPTH 'H'	WALL THICKNESS 'TW'	WALL REINFORCEMENT	ROOF THICKNESS 'TR'	ROOF REINFORCEMENT	BASE THICKNESS 'TB'	BASE REINFORCEMENT
<1.5m	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY
1.5m-3.0m	200mm	N12-200 EACH WAY	200mm	N12-200 EACH WAY	200mm	N12-200 EACH WAY
3.0m-4.5m	200mm	N16-200 EACH WAY	200mm	N16-200 EACH WAY	200mm	N12-200 EACH WAY
4.5-6.0	250mm	N16-200 EACH WAY	250mm	N16-200 EACH WAY	250mm	N16-200 EACH WAY

TAPERED SINGLE GRATED GULLY PIT - SGGP

SUBSOIL NOT SHOWN FOR CLARITY.



TYPICAL SWALE DETAIL
1:20
ADOPT AS REQUIRED

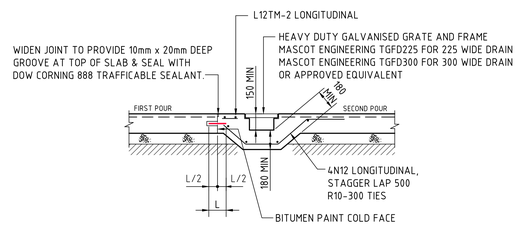


DOWN PIPE CONNECTION TO uPVC PIPE

1. PROPRIETARY T-PIECE CONNECTORS SHALL BE USED TO WHERE DIRECT CONNECTIONS ARE REQUIRED TO uPVC PIPES .
2. ALL JOINTS TO BE SEALED WITH SOLVENT WELDED JOINTS.
3. THE PVC PIPE SHALL NOT PROTUDE BEYOND THE INNER SURFACE OF THE STORMWATER PIPE.

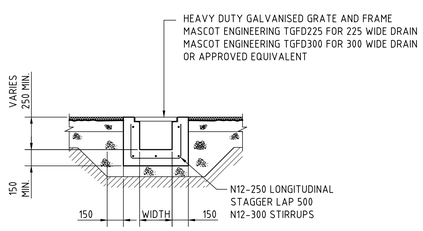
DOWNPIPE CONNECTION DETAILS

SCALE 1:20



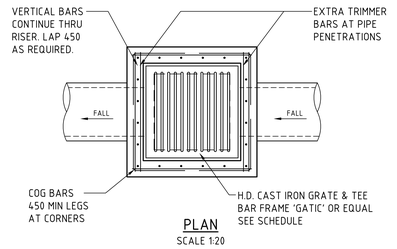
FALL 1:100 TO PITS

DOWEL JOINT AND GRATED DRAIN DETAIL-HARDSTAND
SCALE 1:20

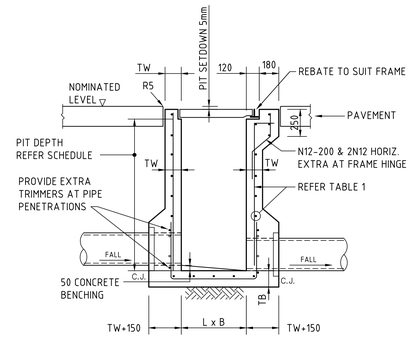


FALL 1:100 TO PITS

GRATED DRAIN DETAIL IN ASPHALT
SCALE 1:20



PLAN
SCALE 1:20



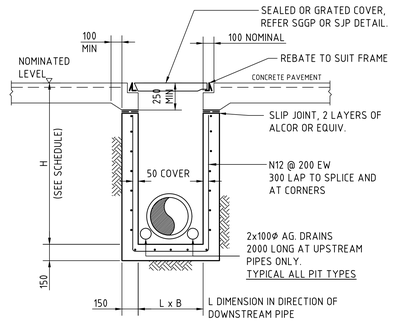
SECTION
SCALE 1:20

SINGLE GRATED GULLY PIT - SGGP

CONCRETE QUALITY					
ELEMENT	SLUMP	AGGREGATE (MAX. SIZE)	CEMENT TYPE	ADMIXTURE	F'c (MPa)
PIT	80	20	GP	NIL	32

NOTES:

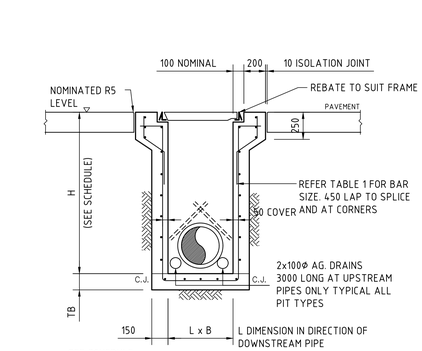
1. WHERE GULLY PIT IS LOCATED ON KERB RETURNS OR BULB OF CUL-DE-SACS PROVIDE CURVED PRECAST CONCRETE LINTELS.
2. SAG PITS SHALL HAVE LINTEL PLACED CENTRALLY ABOUT THE GRATE.
3. ALL REINFORCING TO HAVE 30 MIN. CLAER CONCRETE COVER.
4. FOR PITS DEEPER THAN 1200mm CLIMB RAILS SHALL BE PROVIDED.



SECTION
SCALE 1:20

SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL GRATE/COVER SUPPORT CAST-INTO PAVEMENT SLAB

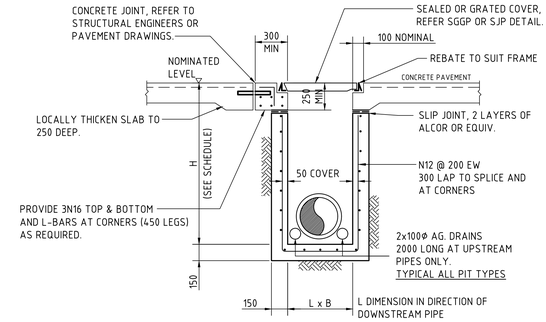
(ADOPT IN CONCRETE PAVEMENTS FOR SGGP's & SJP's, WHERE JOINTS ARE NOT LOCATED WITHIN PROXIMITY OF THE GRATE)



SECTION
SCALE 1:20

SEALED PIT - SP

TABLE 2 - CLASS D <1200mm SQUARE PIT REINFORCEMENT & WALL THICKNESS				
DEPTH 'H'	WALL THICKNESS 'TW'	WALL REINFORCEMENT	BASE THICKNESS 'TB'	BASE REINFORCEMENT
< 1.0m	150mm	-	150mm	-
1.0m-3.0m	150mm	N12-200 EACH WAY	150mm	N12-200 EACH WAY
3.0m-4.5m	200mm	N12-200 EACH WAY	200mm	N12-200 EACH WAY
4.5-6.0	200mm	N16-200 EACH WAY	200mm	N16-200 EACH WAY



SECTION
SCALE 1:20

SJP/CIS & SGGP/CIS (CAST IN SLAB) PIT DETAIL GRATE/COVER SUPPORT CAST-INTO PAVEMENT SLAB

(ADOPT IN CONCRETE PAVEMENT FOR SGGP's & SJP's, WHERE PITS ARE LOCATED IN THE CORNER OF SLAB PANELS OR ADJACENT TO SLAB PANEL JOINTS)

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

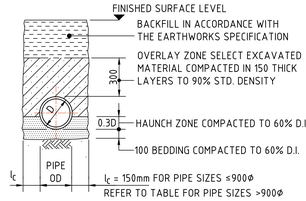
DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 45

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ABN 50 003 696 446
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Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
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DRAWING TITLE: CONCEPT STORMWATER DETAILS - SHEET 1

DRAWING No: C015039.01-SSDA 45 ISSUE: A



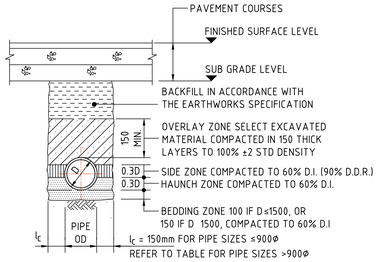
TYPE H1 SUPPORT TO CONCRETE PIPES AT LANDSCAPED AREAS

SCALE 1:20

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

SIDE ZONE WIDTH	
PIPE SIZE (mm)	l_c (mm)
≤ 900Φ	150
1050Φ	175
1200Φ	200
1350Φ	225
1500Φ	250
1650Φ	275
1800Φ	300

ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800Φ



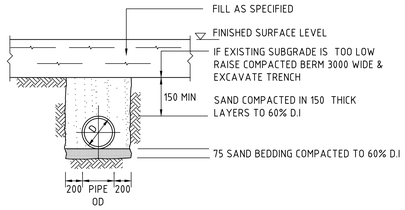
TYPE HS2 SUPPORT TO CONCRETE PIPES UNDER PAVEMENT

SCALE 1:20
D ≤1350, MAX FILL = 4.0m
D >1350, MAX FILL = 3.0m

BEDDING & HAUNCH MATERIAL GRADING	
SIEVE SIZE (mm)	WEIGHT PASSING (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 50
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

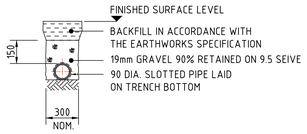
SIDE ZONE WIDTH	
PIPE SIZE (mm)	l_c (mm)
≤ 900Φ	150
1050Φ	175
1200Φ	200
1350Φ	225
1500Φ	250
1650Φ	275
1800Φ	300

ENGINEER TO SPECIFY TRENCH WIDTHS FOR PIPE SIZES GREATER THAN 1800Φ



SUPPORT TO uPVC PIPES

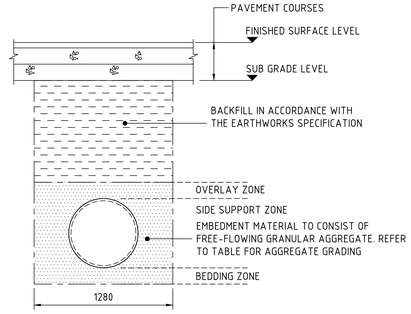
SCALE 1:20



SUPPORT TO AGRICULTURAL DRAIN

FOR USE UNDER CAR PARK PAVEMENTS/LANDSCAPED AREAS
SCALE 1:20

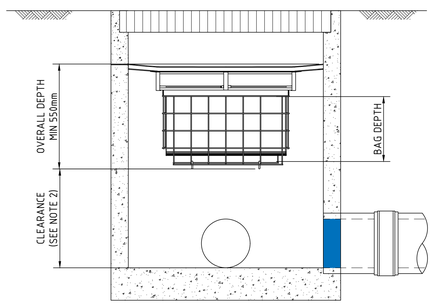
TYPICAL AGGREGATE GRADING			
	% PASSING BY MASS		
SIEVE SIZE (mm)	NOMINAL SIZE OF SINGLE-SIZE AGGREGATE 10mm	7mm	5mm
26.5	–	–	–
19	–	–	–
13.2	100	–	–
9.5	85–100	100	–
6.7	–	85–100	100
4.75	0–20	–	85–100
2.36	0–5	0–20	0–40
0.075	0–2	0–2	0–2



SUPPORT TO STORMPRO HDPE PIPES UNDER PAVEMENT

SCALE 1:20
PIPES TO BE INSTALLED AS PER REQUIREMENTS OF STORMPRO NSTALLATION GUIDE

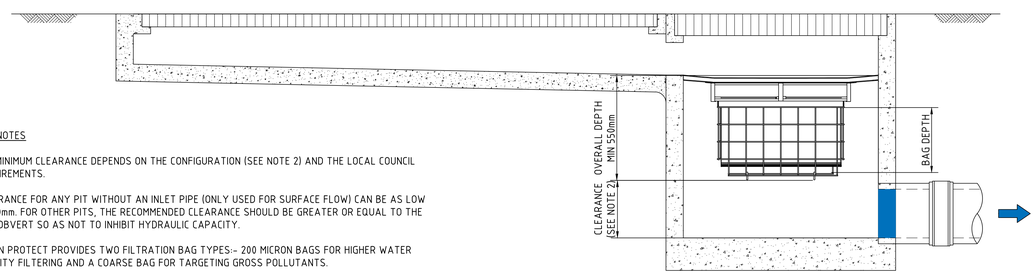
MINIMUM TRENCH DIMENSIONS									
NOMINAL DIAMETER (mm)	150mm	225mm	300mm	375mm	450mm	525mm	600mm	750mm	900mm
MINIMAL TRENCH WIDTH (mm)	470mm	560mm	745mm	830mm	1115mm	1200mm	1280mm	1435mm	1700mm
MINIMAL DEPTH OF BEDDING ZONE (mm)	100mm	100mm	100mm	100mm	150mm	150mm	150mm	150mm	150mm
MINIMAL DEPTH OF OVERLAY ZONE (mm)	150mm	150mm	150mm	150mm	150mm	150mm	150mm	150mm	200mm



SURFACE FLOW CONFIGURATION



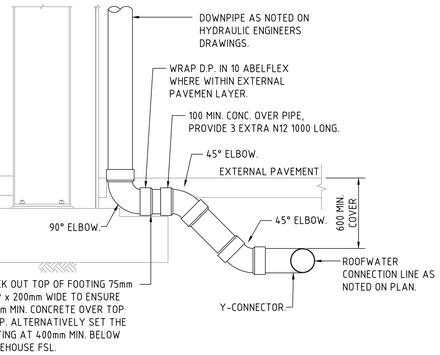
PIPE FLOW CONFIGURATION



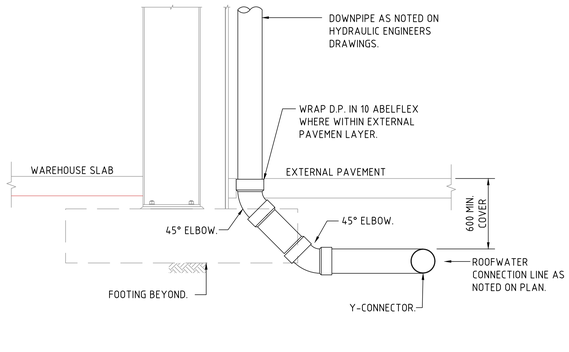
GRATED STRIP DRAIN CONFIGURATION

GENERAL NOTES

1. THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.
2. CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO INHIBIT HYDRAULIC CAPACITY.
3. OCEAN PROTECT PROVIDES TWO FILTRATION BAG TYPES:- 200 MICRON BAGS FOR HIGHER WATER QUALITY FILTERING AND A COARSE BAG FOR TARGETING GROSS POLLUTANTS.
4. DRAWINGS NOT TO SCALE.



DOWNPIPE TURN-UP DETAIL A
(AT FOOTING LOCATION)
SCALE 1:20



DOWNPIPE TURN-UP DETAIL B
(CLEAR OF FOOTING)
SCALE 1:20

OCEAN PROTECT OCEANGUARD DETAILS

100mm 0 200 400 600 800 1000mm
SCALE 1:10 AT A0 SIZE SHEET

200mm 0 500 1000 1500 2000mm
SCALE 1:20 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS
CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 46

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Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
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DRAWING TITLE: CONCEPT STROMWATER DETAILS - SHEET 2
DRAWING No: C015039.01-SSDA 46
ISSUE: A

EXISTING 600mm CONC SEWER MAIN AND EASEMENT

END RET WALL 2

CONNECT NEW 225 SEWER TO EXISTING VIA NEW MANHOLE

EXISTING 225mm VC SEWER MAIN

RECESSED DOCK 1300 DEEP

DIVERT EXISTING 225mm SEWER LINE UNDER WAREHOUSE. OFFSET 3m FROM GRID LINE 9. PIPE TO BE CONCRETE ENCASES UNDER WAREHOUSE. MAX 120m BETWEEN MANHOLES

EXISTING 1350mm SCSL WATERMAIN AND EASEMENT

PROVIDE VEGETATED BATTER 1V:3H MAX SLOPE

EXISTING 600mm CICL WATER MAIN AND EASEMENT ON ADJOINING PROPERTY

END RET WALL 1

PROPOSED WAREHOUSE
FFL RL 47.10
+/-500mm

EXISTING 225mm VC SEWER MAIN

RETAINING WALL 1
KEYSTONE WALL IN CUT
MAX HEIGHT 2.5m
20KPa SURCHARGE
ADJACENT HARDSTAND

DIVERT EXISTING 225mm SEWER LINE UNDER WAREHOUSE. OFFSET 3m FROM GRID LINE 9. PIPE TO BE CONCRETE ENCASES UNDER WAREHOUSE. MAX 120m BETWEEN MANHOLES

RETAINING WALL 1
KEYSTONE WALL IN CUT
MAX HEIGHT 2.5m
5KPa SURCHARGE ADJACENT LANDSCAPING
PROVIDE CONCRETE SPOON DRAIN TO TOP OF WALL

START RET WALL 1

CONNECT NEW 225 SEWER TO EXISTING VIA NEW MANHOLE

EXISTING 225mm VC SEWER MAIN

PROVIDE SUSPENDED RAMP WALKWAY MAX GRADE 1:20

EXISTING STREET SIGN TO BE RELOCATED OUT OF NEW DRIVEWAY

EXISTING TELECOMMUNICATIONS PITS TO BE RELOCATED OUT OF NEW DRIVEWAY

PROVIDE INDUSTRIAL DRIVE CROSSING IN ACCORDANCE WITH FAIRFIELD CITY COUNCIL REQUIREMENTS

PROVIDE VEGETATED BATTER IN CUT 1V:2.5H MAX SLOPE

NEWTON ROAD

BREAKLINE - REFER TO DRAWING SSDA52 FOR CONTINUATION

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DEISGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- W – EXISTING SYDNEY WATER MAIN
- S – EXISTING SEWER MAIN
- S – PROPOSED 225mm SEWER MAIN
- 50.00 – FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 – FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- 50.10+ – FINISHED PAVEMENT SPOT HEIGHT

FINISHED LEVELS NOTES:

REFER TO DRAWING SSDA40 FOR FINISHED LEVELS NOTES

FINISHED LEVELS PLAN - SHEET 1

SCALE 1:300

3m 0 5 10 15 20 25 30m

SCALE 1:300 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
MC	MC	FEB 24	MW	A0	AS SHOWN	C015039.01-SSDA 51

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ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au

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DRAWING TITLE: FINISHED LEVELS PLAN SHEET 1

DRAWING No: C015039.01-SSDA 51

ISSUE: B

LEGEND:

LEVELS DATUM IS AHD.

EXISTING SITE LEVELS AND DETAILS BASED ON ESTATE DEISGN INFORMATION PROVIDED BY LTS SURVEYORS DATED 12.10.20 REF 51145001DT

- SGGP, SINGLE GRATED GULLY PIT
- SJP, SEALED JUNCTION PIT
- KIP, KERB INLET PIT
- GD, GRATED DRAIN (300W x 225D UNO)
- W — EXISTING SYDNEY WATER MAIN
- S — EXISTING SEWER MAIN
- 50.00 — FINISHED PAVEMENT CONTOUR (MAJOR) 0.5m INTERVALS
- 50.10 — FINISHED PAVEMENT CONTOUR (MINOR) 0.1m INTERVALS
- 50.10+ — FINISHED PAVEMENT SPOT HEIGHT

FINISHED LEVELS NOTES:

REFER TO DRAWING SSDA40 FOR FINISHED LEVELS NOTES

BREAKLINE - REFER TO DRAWING SSDA51 FOR CONTINUATION

RETAINING WALL 2
KEYSTONE WALL IN FILL
MAX HEIGHT 2.5m
20KPa SURCHARGE

SITE BOUNDARY

EASEMENT BOUNDARY

PROPOSED WAREHOUSE
FFL RL 47.10
+/-500mm

PROPOSED OFFICE
FFL RL 47.10

SUBSTATION
FFL RL 47.40

START RET WALL 2

PROVIDE INDUSTRIAL DRIVE CROSSING IN ACCORDANCE WITH FAIRFIELD CITY COUNCIL REQUIREMENTS

PROVIDE VEGETATED BATTER IN CUT 1V:2.5H MAX SLOPE

NEWTON ROAD

DP 4 851250

BENCHMARK SSM 7...

FINISHED LEVELS PLAN - SHEET 2
SCALE 1:300

3m 0 5 10 15 20 25 30m
SCALE 1:300 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
ISSUED FOR DEVELOPMENT APPLICATION	10.04.24	B
ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A

ARCHITECT: SBA ARCHITECTS

CLIENT/CLIENT: Centuria

PROJECT
PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

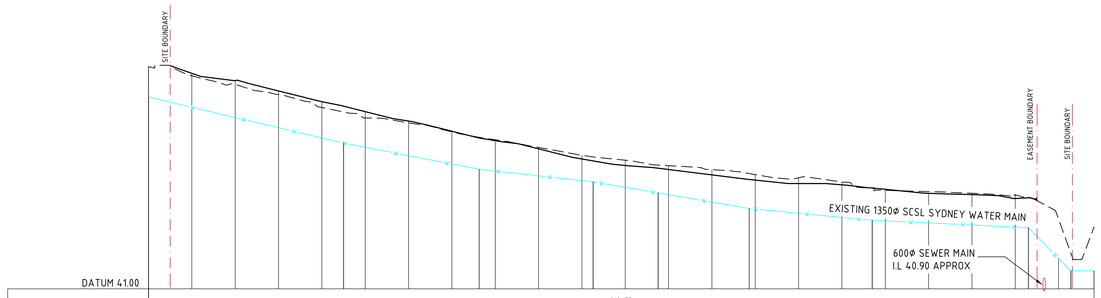
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ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3751
e: mail@costinroe.com.au w: costinroe.com.au
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DRAWING TITLE
FINISHED LEVELS PLAN
SHEET 2

DRAWING No: C015039.01-SSDA 52
ISSUE: B



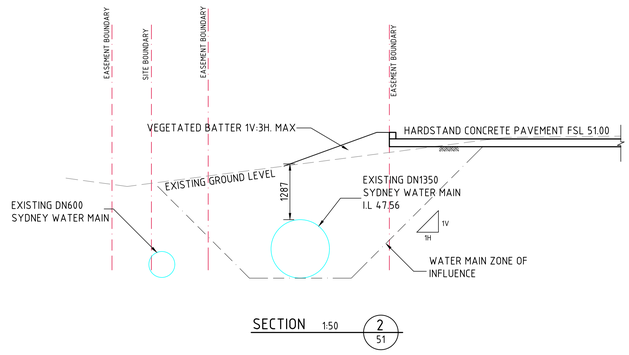
SECTION CL 1350mm WATER MAIN (1/51)
HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:50
WATER MAIN LEVELS ARE BASED ON POTHOLE SURVEY AND ARE SHOWN APPROXIMATE ONLY

NOTE:

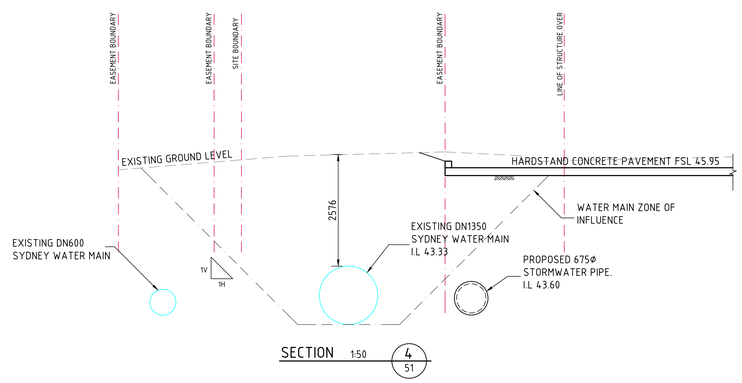
- SECTIONS OF SYDNEY WATER ASSETS ARE PROVIDED FOR INFORMATION ONLY.
- DRAWINGS SHOW THE GENERAL ARRANGEMENT OF THE PROPOSED WORKS & GEOMETRICAL RELATIONSHIP TO THE EXISTING SYDNEY WATER ASSETS.
- DRAWINGS DO NOT SHOW ANY PROPOSED PROTECTION DETAILS OR CONCEPT PROTECTION DETAILS ASSOCIATED WITH THE WORKS.
- THESE DRAWINGS ARE INTENDED TO BE USED TO INFORM THE ASSESSMENT OF THE REQUIREMENTS ASSOCIATED WITH THE SYDNEY WATER ASSETS AND CONSULTATION WITH SYDNEY WATER.

LEGEND:

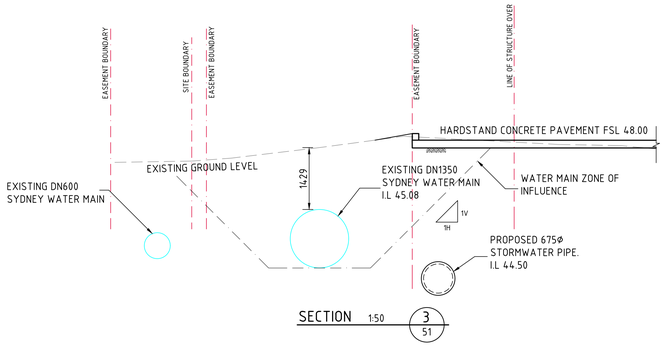
———— – DENOTES BULK EARTHWORKS PROFILE
– – – – – – DENOTES EXISTING PROFILE
———— DENOTES WATER MAIN OBVERT PROFILE



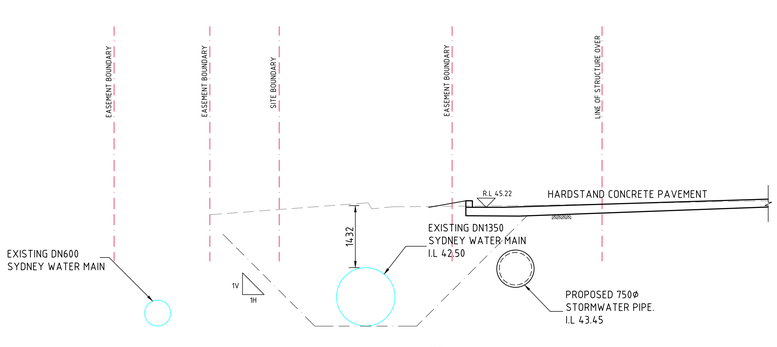
SECTION 1:50 (2/51)



SECTION 1:50 (4/51)



SECTION 1:50 (3/51)



SECTION 1:50 (5/51)

1m 0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100 AT A0 SIZE SHEET

5m 0 10 20 30 40 50m
SCALE 1:500 AT A0 SIZE SHEET

500mm 0 1 2 3 4 5m
SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

ISSUED FOR DEVELOPMENT APPLICATION	15.02.24	A
AMENDMENTS	DATE	ISSUE

AMENDMENTS DATE ISSUE
AMENDMENTS DATE ISSUE

ARCHITECT: SBA ARCHITECTS
CLIENT/CLIENT: Centuria

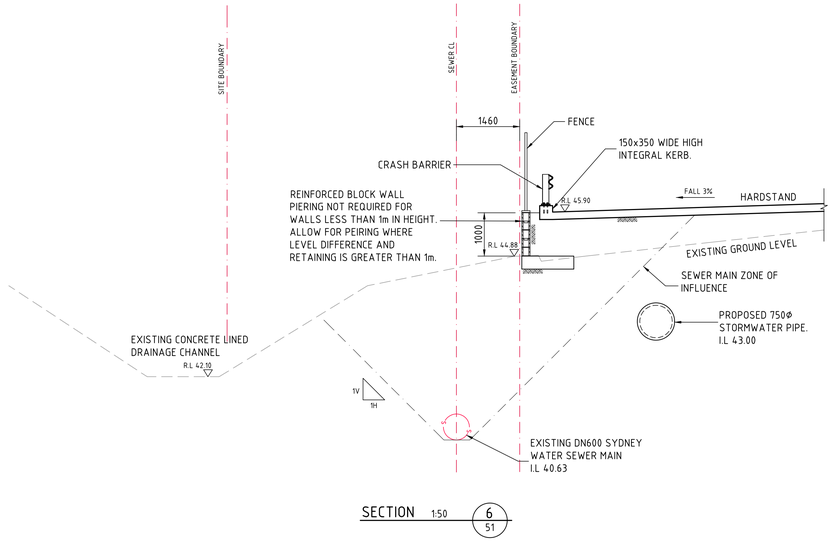
PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

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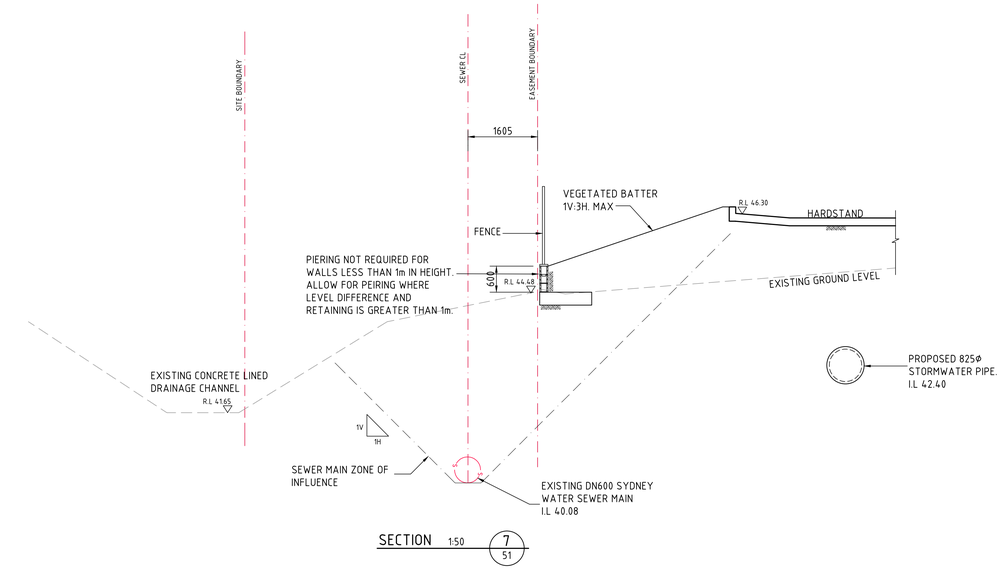
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Costin Roe Consulting Pty Ltd.
ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au
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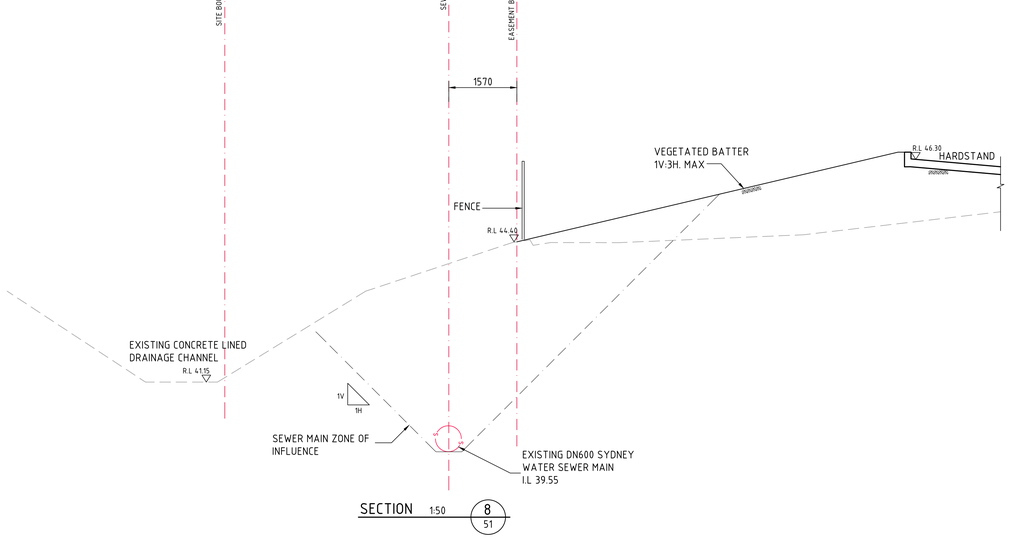
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DRAWING No: C015039.01-SSDA 55 ISSUE: A



SECTION 1:50 6/51



SECTION 1:50 7/51



SECTION 1:50 8/51

500mm 0 1 2 3 4 5m

SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

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CLIENT: Centuria

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DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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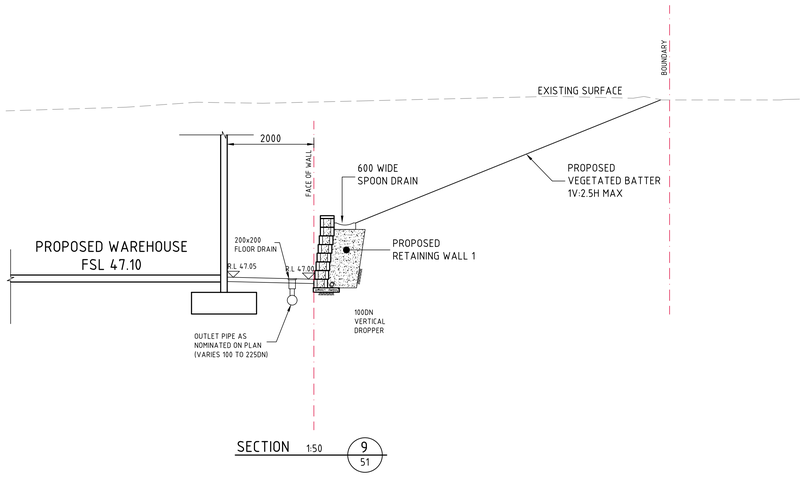
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ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
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e: mail@costinroe.com.au w: costinroe.com.au

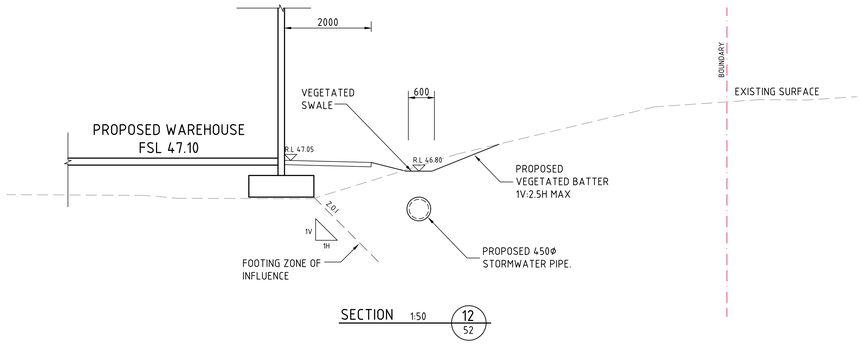
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DRAWING TITLE: TYPICAL SECTIONS-SHEET 2

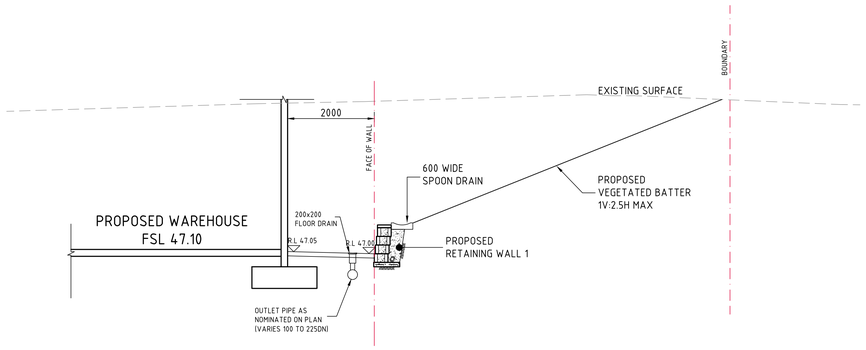
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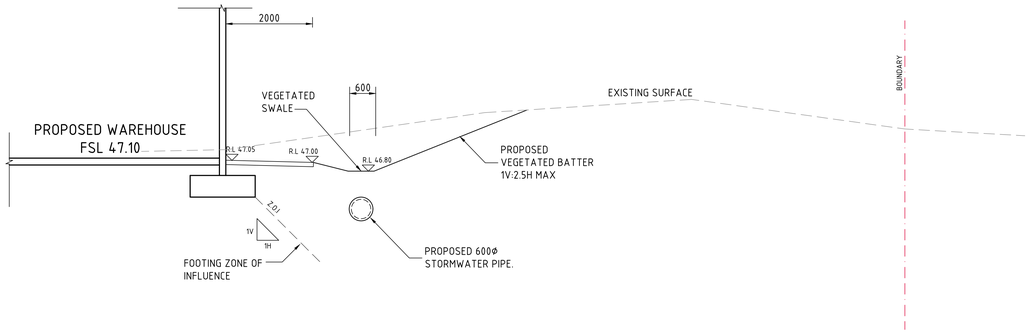
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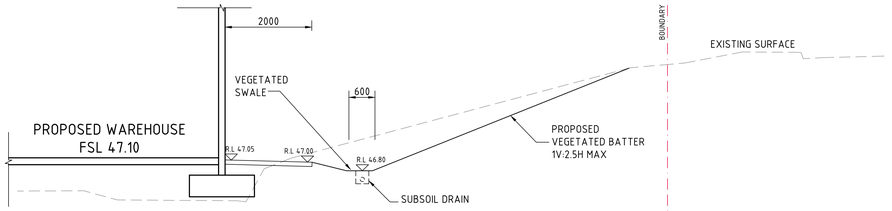
SECTION 1:50 12/52



SECTION 1:50 10/51



SECTION 1:50 13/52



SECTION 1:50 11/51

500mm 0 1 2 3 4 5m

SCALE 1:50 AT A0 SIZE SHEET

FOR DEVELOPMENT APPLICATION

AMENDMENTS	DATE	ISSUE
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CLIENT/CLIENT: Centuria

PROJECT: PROPOSED WAREHOUSE
74-94 NEWTON ROAD, WETHERILL PARK NSW 2164

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD REF:
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ABN 50 003 696 446
PO Box N419 Sydney NSW 1220
Level 4, 8 Windmill Street, Millers Point NSW 2000
p: +61 2 9251 7699 f: +61 2 9241 3731
e: mail@costinroe.com.au w: costinroe.com.au

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DRAWING TITLE: TYPICAL SECTIONS-SHEET 3

DRAWING No: C015039.01-SSDA 57 | ISSUE: A

Appendix J

TECHNICAL DUE DILLIGENCE REPORT

Property
Consultancy

74-94 Newton Road
Wetherill Park NSW



Technical Due Diligence Report

Project No. 93816.2

Prepared For:

Fife Capital Pty Ltd
Level 12, 89 York Street
Sydney NSW 2000
Tel: +61 2 9251 2777
Fax: +61 2 9251 2877

Prepared By:

SGA Property Consultancy Pty Ltd
Suite 8, 599 Pacific Highway
St Leonards NSW 2065
Tel +61 2 9438 3222
Fax +61 2 9437 2333

June 2013

Property Consultancy

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SGA Property Consultancy Pty Ltd
ABN 53 103 479 992

Suite 8, 599 Pacific Highway
St Leonards NSW 2065

Phone 61 2 9438 2333
Fax 61 2 9437 3222
Email syd@sgaproperty.com
Web www.sgaproperty.com
Postal Address PO Box 243 St Leonards NSW 1590

Offices in Australia, New Zealand & Asia

RICS CHARTERED BUILDING CONSULTANCY

1.0 INTRODUCTION & EXECUTIVE SUMMARY

1.1 Introduction

On the instructions of Mr Ben Fife of Fife Capital Pty Ltd, SGA Property Consultancy Pty Ltd has carried out a Technical Due Diligence inspection of the property at 74 – 94 Newton Road, Wetherill Park NSW and presents the following report.

In general accordance with our instructions, our team has completed this report with the principal objective of furnishing you with sufficient information as to the current condition of the building in terms of its internal / external fabric, its structural adequacy and the operation of its services.

The weather at the time of the inspection was dry and sunny.

The subject property comprises two (2) buildings; a freestanding single storey office building and a warehouse storage and distribution facility currently leased to Australian Postal Corporation. The property is located in Wetherill Park NSW approximately 30 kilometres west of Sydney's CBD and was constructed circa 2001. The legal description of the property is Lot 1 Deposited Plan 1017259.

The office building is accessed directly from Newton Road via an on-grade concrete apron and asphalt surfaced driveways. The warehouse is accessed via a separate entrance on Newton Road via an on-grade concrete driveway. The property is bounded to the south and east by Newton Road, to the north by an adjacent industrial property and to the west by an adjacent industrial property separated from the site by a small area of open bushland.

Given the nature of this inspection report, we have not inspected parts of the building built in, covered up or otherwise made inaccessible during construction, alteration or fitting out. We have therefore been unable to comment as to whether such areas are free from defect or infestation. Building services have not been tested, nor have any specific engineering calculations, testing or measurements been undertaken.

We confirm that this report has been prepared for Fife Capital Pty Ltd. The report is not to be reproduced, in whole or in part, without the express written authorisation of SGA Property Consultancy Pty Ltd.

1.1.1 Scope

The report details the investigations and findings associated with the following building elements:

- Building Structure and Fabric
- Mechanical Systems
- Electrical Systems
- Hydraulic Systems
- Fire Services

The following investigations and assessments are also included within this report:

- Limited Hazardous Materials & Environmental Assessment
- Cost Rectification Schedule

The following is the basis of information used for our investigations:

- Walk through visual and audible appraisal of accessible structure and services undertaken on 6 June 2013.
- External inspection of the facades from ground level.
- No safe access was available to either roofs and these could not be inspected.
- Review of available documentation including the following:-
    - Information Memorandum - Savills dated November 2012

1.2 Executive Summary

1.2.1 General Property Description

The subject property comprises two (2) buildings; a freestanding single storey office building currently sub-leased to CPI Graphics and ITW Proline, and a warehouse storage and distribution facility currently leased to Australian Postal Corporation. The property is located in Wetherill Park NSW approximately 30 kilometres west of Sydney's CBD and was constructed circa 2001. The legal description of the property is Lot 1 Deposited Plan 1017259.

The office building is accessed directly from Newton Road via an on-grade concrete apron and asphalt surfaced driveways. The warehouse is accessed via a separate entrance on Newton Road via an on-grade concrete driveway. The property is bounded to the south and east by Newton Road, to the north by an adjacent industrial property and to the west by an adjacent industrial property separated from the site by a small area of open bushland.

The warehouse has a reported GLA of 14,709m^2 (10,255m^2 of traditional warehouse with 4,454m^2 of high bay warehouse). The office has a reported NLA of 2,400m^2. The site features an on-grade concrete hardstand area to the north of the warehouse building and bitumen surfaced car parking to the east and south of the office building. Grassed areas with shrubs and tree planting occupy the remainder of the site. The site has a total reported area of 5.19ha.

1.2.2 Building Structure and Fabric

The office building structure appears to be in good condition commensurate with its age although defects (cracking to rear façade panels) requiring remediation were noted. The warehouse building structure is considered to be in good condition although repainting of external steelwork in the long term is recommended.

Whilst safe access to both the warehouse and office roofs is provided, we were prohibited from inspecting the building roofs as we had not completed an Australian Post off-site roof safety induction course. We are therefore unable to comment on the condition of either building roof.

The façade to the office building is considered to be in good condition with no significant damage or deterioration noted. Repainting and annual washdowns are recommended.

The façades to the warehouse building appears to be in good condition with only minor damage and deterioration evident. The loading docks and roller shutter doors appeared to be in good condition commensurate with their age and purpose. Annual washdowns of the façade are recommended.

The internal areas to the office building, warehouse and warehouse office components are considered to be in fair to good condition commensurate with their age and purpose.

The hardstands, entrance driveways and car parking areas are considered to be in fair condition commensurate with their age and usage although defects requiring remediation were noted. The landscaped areas appear to be in good condition and well maintained.

1.2.3 Mechanical Services

The mechanical services at the property consist of air conditioning to the office building, office areas of the warehouse and the warehouse cool room. Ducted ventilation is provided to the various toilets and shower rooms.

Although the systems were operating satisfactorily at the time of inspection, they are approaching the end of their normal economic life and reliability issues can be expected moving forward. In addition the original air conditioning units operate on refrigerant R22 which is undergoing a phase out.

There is no smoke exhaust to the warehouse as required for compliance; this may be result of an alternate solution for the site. Review of any existing fire reports for the site is recommended to resolve this issue.

1.2.4 Electrical Services

Electrical installations installed at the property comprises of two (2) pad mounted transformers, supplying two (2) main switchboards, which in turn supplies the various sub-mains distribution boards and mechanical services boards Lighting, power and communications is provided throughout, and security systems are installed at the property.

Residual current device (RCD) protection has not been provided in accordance with the current AS 3000 and recently revised WHS requirements.

The electrical services would not comply with the current requirements of the energy requirements of the BCA; energy measures can be introduced into the facility as areas are refurbished.

1.2.5 Hydraulic Services

Hydraulic services at the site include, metered mains water supply, domestic hot water, gas supply, stormwater drainage, sewer drainage and sanitary fixtures and fittings.

The hydraulic systems at the property were visually inspected and the installations were noted to be of a commercial standard.

1.2.6 Fire Services

Fire protection services installed at the site include fire sprinkler protection to the warehouse, a fire hydrant and hose reel system and fire extinguishers.

The warehouse areas are provided with ESFR protection in the low bay areas and in-rack protection to the 28m high bay racking.

We have not reviewed the AFSS for the site or any fire reports identifying alternate solutions for the site to address non-compliance issues noted on the site.

The fire protection systems at the property were visually inspected and the installations were noted to be of a commercial standard. Maintenance tags are provided to each of the fire hose reels, hydrants and extinguishers and were up to date.

1.2.7 Limited Hazardous Materials and Environmental Assessment

Fife Capital requested SGA Environmental to undertake a Limited Hazardous Materials and Environmental Assessment at 74-94 Newton Road, Wetherill Park, NSW as part of their purchaser due diligence program.

Based on the results of the Limited Hazardous Materials and Environmental Assessment, SGA Environmental considers that the site presents a low hazardous materials risk and a low environmental risk.

Hazardous building materials identified during the inspection were limited to synthetic mineral fibre (SMF) and R22 refrigerant gas utilised in the air conditioning units.

SMF has been identified as a potential irritant to the respiratory tract. The National Health & Safety Commission (NOHSC) has released the Code of Practice for Safe Use of Synthetic Mineral Fibres. This code of practice includes procedures for working with SMF products and monitoring requirements when disturbing SMF containing materials. The occurrences of SMF identified are considered to pose a very low risk; however disturbance of any SMF materials should only be undertaken with guidance from a safe work method statement prepared in accordance with the Code of Practice for Safe Use of Synthetic Mineral Fibres.

Some air conditioning systems onsite are supplied by R22 refrigerant gas which is a hydro chlorofluorocarbon (HCFC). Consideration should be given to upgrading R22 containing air conditioning systems as this refrigerant gas is being phased out and future supplies will be restricted.

Whilst no asbestos containing material (ACM) was observed during the site inspection, there remains a potential that ACM is present. When considering asbestos and the property's age (constructed 2001), the site does not comply with the Work Health and Safety Regulation 2011. The Regulation requires that an asbestos assessment be undertaken on all workplaces in NSW constructed prior to 2004 and an Asbestos Register and Management Plan produced if asbestos is identified. Therefore, SGA Environmental recommends undertaking a detailed asbestos assessment, and potentially production of an Asbestos Register and Management Plan in order to comply with the Work Health and Safety Regulation 2011.

The environmental assessment identified that the site was undeveloped apart from agricultural activity (food production) up until the 1980's. It was observed that a storage yard/depot was present on the eastern portion of the site during the 1980's and 1990's. The current site buildings were constructed circa 2001. The potential for contamination associated with historical land use is considered low.

Three small diesel above ground storage tanks (AST's) associated with the fire pump and minor volumes of cleaning chemicals were observed on site without secondary containment. It is recommended secondary containment is installed for all Dangerous Goods storage areas to minimise potential environmental risk.

1.2.8 Estimated Required Expenditures

Rectification and upgrading costs have been scheduled in accordance with our instructions. The costs detailed below represent identified works categorised by '*essential'* and '*desirable'*.

- **Essential works** include repairs and capital expenditure, BCA compliance and safety of the premises.

- **Desirable works** include repairs and expenditure of a discretional nature.

Where repairs or expenditure has been identified (within either category) such costs have been further prioritised over time.

Prioritisation of repair and expenditure costs is on the basis of;

Short term within 12 months

Medium term 2 to 5 years

Long term 6 to 10 years

Budgets and estimates presented by this office are presented with the best intentions and knowledge at the time of submission. Actual costs may vary depending on exact scope, timing, market pressure and contractual conditions.

- The budgets are based on normal working hours unless stated otherwise.
- The budgets are exclusive of GST.
- The budgets do not include any design fees, project or construction management fees.

Essential		**Desirable**	
Short Term	$ 28,825	Short Term	$ 23,250
Medium Term	$ 110,875	Medium Term	$ 42,000
Long Term	$ 139,500	Long Term	$ 42,500
Total	**$ 279,200**	**Total**	**$ 107,750**

2.0 BUILDING STRUCTURE & FABRIC

2.1 General Property Description

The subject property comprises two (2) buildings; a freestanding single storey office building currently sub-leased to CPI Graphics and ITW Proline, and a warehouse storage and distribution facility currently leased to Australian Postal Corporation. The property is located in Wetherill Park NSW approximately 30 kilometres west of Sydney's CBD and was constructed circa 2001. The legal description of the property is Lot 1 Deposited Plan 1017259.

The office building is accessed directly from Newton Road via an on-grade concrete apron and asphalt surfaced driveways. The warehouse is accessed via a separate entrance on Newton Road via an on-grade concrete driveway. The property is bounded to the south and east by Newton Road, to the north by an adjacent industrial property and to the west by an adjacent industrial property separated from the site by a small area of open bushland.

The warehouse has a reported GLA of 14,709m^2 (10,255m^2 of traditional warehouse with 4,454m^2 of high bay warehouse). The office has a reported NLA of 2,400m^2. The site features an on-grade concrete hardstand area to the north of the warehouse building and bitumen surfaced car parking to the east and south of the office building. Grassed areas with shrubs and tree planting occupy the remainder of the site. The site has a total reported area of 5.19ha.

2.2 Building Structure

Office Building

The office building structure comprises a combination of precast concrete panels, structural steelwork, reinforced concrete and concrete blockwork. The building walls are formed from a combination of precast concrete panels, concrete blockwork and timber or steel stud internal partitions. Foundations are assumed to be a combination of pad and strip footings. The ground floor is formed from an on-grade concrete slab.

The office building structure appears to be in good condition commensurate with its age although the following defect was noted;

- Cracking to the render at top of blockwork infill panels to the rear (north western) façade was noted. The reason for this is unclear but may be due to load transfer from the precast panel above. Further investigation is required and we recommend a structural engineer be engaged to undertake further intrusive investigations.

- There appears to be moisture behind the render over a blockwork infill panel at the rear wall. The reason for this is unclear and we recommend a structural engineer be engaged to undertake further intrusive investigations.

Warehouse

The warehouse is a conventional single bay steel propped portal frame structure with a high bay section along its western edge. The conventional warehouse structure has an eaves height and ridge height of approximately 9m and 12m respectively and is stabilised by roof and wall steel cross bracing. The high bay section of warehouse has an internal clearance of approximately 28m and is stabilised by both roof and wall steel cross bracing and large diameter diagonal steel struts which run through the roof and floor slab in the conventional warehouse area.

Propped cantilever steel canopies have been provided above the nine (9) on-grade doors and three (3) recessed loading docks along the northern façade. All exposed steelwork is painted. The floor to the warehouse is formed from an on-grade concrete slab and the foundations are assumed to be a combination of pad and strip footings.

The warehouse building features a single storey office component below the canopy area to its northern façade and two internal office areas within the warehouse along its southern façade. A cool room has also been provided internally along the southern façade.

The sprinkler valve and pump room, fire control room and main switchboard are located in a standalone building to the west of the warehouse building. This is formed from steel framing and is clad with profiled Colorbond steel wall and roof sheeting.

The warehouse building structure is considered to be in good condition, although the following defects were noted during the inspection;

- The external steel paint coatings are currently in satisfactory condition commensurate with their age but we recommend allowance be made for re-painting all external exposed steelwork (canopy steelwork, high bay diagonal struts, door jamb bollards etc.) in the long term.

2.3 Building Fabric

2.3.1 Roof Areas

Whilst safe access to both the warehouse and office roofs is provided, we were prohibited from inspecting the building roofs as we had not completed an Australian Post off-site roof safety induction course. We are therefore unable to comment on the condition of either building roof.

2.3.2 Façade

Office Building

The façade to the office building comprises a combination of painted precast concrete panels, rendered and painted blockwork, fire rated emergency exits and single glazed aluminium framed windows and access doors. The building line along the northern, southern and eastern edges has been set back from the façade to form a roof overhang which has been lined with painted fibre cement sheets.

A painted steel canopy has been provided over the on-grade concrete courtyard to the western façade, and a covered walkway has been provided to connect the office and warehouse buildings.

The façade to the office building is considered to be in good condition although the following defects were noted;

- The paint coating to the façade is currently considered to be in good condition however allowance should be made for repainting the façade in the long term.

- The façade was noted as being dirty in areas. We recommend allowance be made for regular washdowns of the façade to maintain the durability of the paint coating and glazing elements.

Warehouse

The façade to all sides of the warehouse building is formed from full height Stramit Monoclad profiled Colorbond wall cladding (various colours). Vertical translucent panels have been installed to the western (high bay) and southern facades. Aluminium framed windows and emergency door exits are also present.

Nine (9) on-grade roller shutter doors and three (3) recessed loading docks have been provided to the northern façade. A single on-grade roller shutter door has been provided to the eastern façade. The loading docks have been provided with dock levellers and all roller shutter door jambs are protected with painted steel bollards. Propped cantilever canopies have been provided above the roller shutter doors and loading docks along the northern facade.

The façades to all areas appears to be in good condition with only minor damage and deterioration evident. The loading docks and roller shutter doors appeared to be in good condition commensurate with their age and purpose.

The following defects were noted during the inspection;

- The bottom edge of the cladding in some areas appears to have deteriorated slightly and touch-up repainting is evident. This has not affected the performance of the cladding but we recommend on-going allowance be made for on-going touch ups in the medium and long term.

- The façade was noted as being dirty in areas. We recommend allowance be made for annual washdowns of the façade to maintain the durability of the cladding.

2.4 Building Interior

2.4.1 Office Areas

Office Building

Entrance to the office building is through bi-parting frameless entry doors on the eastern façade.

The building is currently split into two tenancies (CPI Graphics and ITW Proline) with a central reception area between. A small workshop area has been provided to the rear of the office building; this can be reached either directly from the reception area or via a roller shutter door in its southern façade. The tenancies are formed into various rooms including offices, conference rooms, storage areas, breakout areas, kitchenettes and administration areas. The finishes to these areas comprise a combination of;

- Two way grid suspended ceilings with mineral fibre acoustic tiles, flush fluorescent light fittings, air conditioning registers and essential fire services. Set plasterboard with various light fittings, air conditioning registers and fire services has been used in the rear workshop.
- Set plasterboard or glazed wall partitions and painted blockwork walls.
- Glazed or timber doors.
- Carpet, vinyl and ceramic tile floor finishes (bare concrete in rear workshop).

The finishes to the office building are considered to be in good condition commensurate with their age and usage. The following defects were noted during the inspection;

- Cracked plasterboard in areas.
- Impact damage and scuff marks evident to a number of wall and floor finishes.

No allowance has been made in our capex for repairing these items as they are believed to be part of the Lessee's make good obligations.

Warehouse

The warehouse building features a single storey office component below the canopy area to its northern façade and two internal office areas within the warehouse along its southern façade. The office areas are used for various purposes including as a control room, reception/administration, offices, kitchenettes, toilets, storage rooms and lunchroom

The finishes to the office area comprise a combination of;

- Set plasterboard or two way grid suspended ceilings with mineral fibre acoustic tiles, flush fluorescent light fittings, air conditioning registers and essential fire services.
- Set plasterboard or glazed wall partitions.
- Carpet or vinyl floor finishes.

The finishes to the warehouse internal offices were found to be in fair condition commensurate with their age and purpose. General wear and tear was noted but no significant damage or deterioration was observed.

2.4.2 Warehouse Area

The interior of the warehouse comprises an on-grade concrete floor slab, painted structural steelwork, thin gauge steel wall and roof purlins and Colourbond steel roof and wall cladding.

The interior of the warehouse is considered to be in good condition commensurate with its age and purpose. The following defects were noted during the inspection;

- Impact damage to the slab was noted in a number of areas. These should be epoxy repaired in the short term.
- Shrinkage cracking of the slab was noted in a number of areas. This is considered minor and does not appear to affect the performance of the surface. No remedial action is considered necessary but these areas should be monitored.
- Damaged and deteriorated joint sealant was noted in areas and we recommend allowance be made in the medium and long term for on-going repair to these joints as they deteriorate.
- Edge break was noted to a number of warehouse floor slab joints. This does not currently appear to affect the performance of the surface but allowance should be made for on-going edge break repair in the medium and long term.

2.4.3 Amenities

Office Building

Male and female toilets have been provided to each tenancy. A disabled toilet is provided within the CPI Graphics tenancy.

The finishes to the toilets include;

- Ceramic floor tiles, glazed ceramic wall tiles with set plasterboard walls or painted blockwalls above and set plasterboard ceilings with flush fluorescent light fittings, air conditioning registers and essential fire services
- Vitreous china urinals, pans and bowls with stainless steel fittings and fixtures.
- Laminated timber partitions and vanity top.
- Wall mounted mirror, towel dispenser and soap dispenser.

The finishes to the toilets in the office building are considered to be in good condition commensurate with their age. Significant cracking was noted to the plasterboard wall finishes in the disabled toilet.

No allowance has been made in our capex for repairing this item as it is believed to be part of the Lessee's make good obligations.

Warehouse

Male and female toilets have been provided to two of the internal office areas provided within the warehouse (to the northern office area beneath the canopy and to the office at the south western corner of the warehouse). The finishes to the toilets are similar to those for the office area and are considered to be in fair condition commensurate with their age and purpose. General wear and tear was noted but no significant damage or deterioration was observed.

2.5 External Areas

The external areas comprise the hardstand areas to the north and east of the warehouse, the warehouse entrance driveway to the western site boundary, the office building entrance driveway to the north east of the site, the car parking to the south and east of the office building and the grassed areas and shrub/tree planting around the site.

2.5.1 Hardstand Areas, Entrance Driveways and Car Parking

The hardstand areas comprise an area of on-grade concrete slab to the north of the warehouse and a small area adjacent to the roller shutter door on the eastern façade. They provide turning and manoeuvring space for delivery vehicles. They are edged with concrete kerbs and are provided with drainage sumps to cater for surface water. Painted line markings have been added to the concrete surface to delineate parking bays and loading areas.

The warehouse entrance driveway to the property is formed from concrete slab on grade. It is edged with concrete kerbs and is provided with drainage sumps to cater for surface water. Plastic speed bumps are utilised to control vehicle speed.

The entrance driveway to the office building is formed with asphalt surfacing although an on-grade concrete apron has been installed at the entrance from Newton Road. The staff and visitor car parking to the south and east of the office building is formed with asphalt surfacing. These areas are edged with concrete kerbs and are provided with drainage sumps to cater for surface water. Painted line markings have been added to the asphalt surface to facilitate access routes, parking bays and safe pedestrian walkways.

We understand that there has been some historic issues with site stormwater management resulting in flooding near the western section of the site; this was rectified a few years ago with new in ground drainage pits and pipework.

The hardstands, entrance driveways and car parking areas are considered to be in fair condition commensurate with their age and usage, although the following defects were noted during the inspection;

- The asphalt surfaced car parks and access roads are beginning to show evidence of crazing in some areas. We recommend allowance be made for on-going patch repairs to the asphalt surfaced areas in the medium and long term.

- Kerb damage was noted to various areas. Allowance should be made for on-going repair to these in the medium and long term.

- Edge break was noted to joints in a number of hardstand areas. This does not currently appear to affect the performance of the surface but allowance should be made for on-going edge break repair in the medium and long term.

- Damaged and deteriorated joint sealant was noted in areas of on-grade concrete slabs and we recommend on-going allowance be made in the medium and long term for replacing these as they deteriorate.

- Shrinkage cracking was noted in some areas of the on-grade concrete slabs. This is not considered significant and does not affect the performance of the slab. No remedial work is considered necessary but these areas should be monitored.

- The painted line marking to the car park and hardstand areas are beginning to fade and allowance should be made for repainting these in the medium term.

2.5.2 Landscaping and Miscellaneous Areas

The buildings are surrounded by a combination of grassed areas, shrub planting and trees. The landscaped areas appear to be in good condition and well maintained.

3.0 BUILDING SERVICES

3.1 Mechanical Services

3.1.1 Description of System

The mechanical services at the property consist of air conditioning to the office areas of the warehouse and the single storey office block. Mechanical ventilation is provided to the amenities in the warehouse and office block.

The warehouse is naturally ventilated via roller shutter openings assisted by Hot Air layer exhaust fans mounted on the roof serving the eastern section of the warehouse. Air conditioning and humidity control is provided to Cool Room area within the warehouse.

We were prevented from accessing the roof and roof plant and our report is based on mechanical services drawings sighted at the property.

Air Conditioning – Office Building

Air conditioning is provided throughout the office building via a series of air cooled roof mounted package units and ducted air cooled splits. The plant is divided into two sections to serve the northern and southern part of the office block. The units are located within a roof enclosure with supply and return air ductwork connecting to the air conditioning units and reticulated within the ceiling space. Final air distribution to the office space is by 4-way square diffusers and return air is provided through egg crate style grilles.

Access to the roof of the office block was not available at the time of inspection; however review of drawings available on site indicated that the original design was based on the following systems:

Roof Top Package Units:

- PAC-1 – North Perimeter
- PAC-2 - Lunch Room Centre
- PAC-3 Eastern Perimeter

- PAC-4 – North Centre
- PAC-5 – Centre
- PAC-6 - Auditorium
- PAC-7- Showroom
- PAC-8 – Board Room
- PAC-10 East Perimeter
- PAC-11 – South Perimeter
- PAC-12 South Centre
- PAC-13 – Showroom

Air Cooled Split Units:

- ACU 1 – Training Room
- ACU 8 and ACU 9 – Comms Room North Splits
- Comms Room South

It is our understanding the roof top package units are part of the original construction in the year 2000. The original systems utilise HCFC refrigerant R22, which is a known ozone depleting refrigerant which is currently being phased out. The newer units serving the COMMs room north and south are of a newer installation and operate on refrigerant R410A.

Air Conditioning – Warehouse Offices

The warehouse offices and canteen areas are provided with air conditioning via a combination of air cooled ducted split units and wall mounted split with remote condensers located externally on the ground. The units are of Airfact manufacturer and part of the original construction and operate on refrigerant R22.

Air Conditioning – Warehouse Cool Room

Air conditioning and close humidity control is provided to the Cool room area of the warehouse by two (2) air cooled package unit and steam humidifier. The older Airfact unit and the newer Temperzone unit are mounted on the ground in the southern Newton Road boundary. Supply and return air is ducted is reticulated from the units to the ceiling space of the Cool Room.

Mechanical Ventilation Fans

Toilet Exhaust

Ducted ventilation is provided to the various toilets and shower rooms in the office block and the warehouse. Exhaust air is drawn via ceiling mounted eggcrate grilles with the enclosure with make-up air drawn through door grilles.

Warehouse Exhaust

The warehouse is naturally ventilated through the open roller shutter doors and via six (6) Hot layer exhaust fans mounted in the eastern section of the warehouse.

Discussion with site staff indicated that the Hot layer exhaust fans are manually controlled during high ambient conditions to exhaust the stratified layer of air at high level. We were unable to determine any essential services control for these fans.

The workshop areas of the warehouse are provided with local exhaust systems.

Smoke Exhaust Systems

Fire trips are provided at the various mechanical services boards indicating shut down of the mechanical services systems in the event of a fire. However there does not appear to be any dedicated smoke exhaust fans.

The warehouse is not provided with a smoke exhaust system in compliance with code requirements. Further investigation is required to confirm if there are any alternate solutions in place for the site.

Mechanical Power and Controls

Mechanical switchboards are provided in the Northern and Southern sections of the office building to serve the associated air conditioning plant and toilet exhaust fans.

The mechanical services serving the warehouse offices are supplied power from the various distribution boards located local to the various areas

A separate mechanical services board serves the Hot Air Layer exhaust fans and is mounted within the warehouse.

3.1.2 Physical Inspection and Condition Appraisal

The air conditioning and ventilation systems at the property were visually inspected and the installations were noted to be of a commercial standard and in good operational condition, although no maintenance records were available on site.

Although the systems were operating satisfactorily at the time of inspection, they are approaching the end of their normal economic life and reliability issues can be expected moving forward.

The phase out of HCFC refrigerants will result in escalated maintenance costs should certain failures occur. It is therefore likely that replacement, rather than repair, of the systems will need to be considered on failure and should be budgeted for.

Items noted for further investigation and budget allocation is as follows:

- Staged replacement of the original air conditioning units to address end of life replacement and refrigerant R22 phase out issues.

3.1.3 Compliance with Regulations and Standards

The mechanical services were reviewed for compliance against Australian standards AS 1668.1 and AS 1668.2 and the BCA. Listed below are items required for further clarification and budget allocation are listed below:

- The warehouse is not provided with smoke exhaust in compliance with BCA requirements; the site could be subject to an alternate solution. Review of the annual fire safety statement and any fire reports is required to confirm status of the project.
- The existing mechanical services systems would not comply with the current requirements of Section J of the BCA which address energy savings measures. These items can be addressed as mechanical equipment is replaced and areas are refurbished.

3.2 Electrical Services

Electrical Services located at the site consist of:-

- Two (2) Pad mounted Authority substations (20674 and 20675)
- Consumer Mains;
- Main Switchboards
- Distribution Boards;
- General Lighting;
- Emergency Lighting and Exit signs;
- Communications;
- Security

3.2.1 Description of Systems

Pad Mounted Transformers

The site is provided with two (2) pad mounted Authority transformers serving two (2) main switchboards on the site. Substation Number 20674 serves main switchboard 2. Substation Number 20675 serves main switchboard 1. Sub-mains are run underground from the transformers to the main switchboards.

Main Switchboard

The site is provided with two (2) main switchboards; MSB 1 and MSB 2. MSB 1 is located within the warehouse at the south eastern end of the warehouse building. MSB 2 is located within the switchroom located near the fire control room.

The MSB's are free standing multiple cubicle type assembly of metal clad construction and contains switchgear supplying main distribution boards within the warehouse area and the office building.

Power factor correction is provided to both MSB 1 and MSB 2.

Site metering is provided to both main switchboards.

Distribution Boards

Distribution board are located throughout the warehouse and office building supplying lighting and power distribution and the mechanical Services Integration Management

Residual current device (RCD) protection has been provided to a number of final circuits, but not to all general power and lighting circuits in accordance with the current AS 3000. Although this was not a requirement at the time of construction consideration should be given to an audit and upgrade of RCD protection to the site in view of the revised WHS requirements.

General Lighting

Lighting consists of varying types of fittings to suit the lighting requirements of each area.

The main warehouse area is provided with ceiling mounted high bay type fittings with metal halide high intensity discharge lamps, while external areas are illuminated by wall mounted spotlights.

The office areas are provided with recessed modular luminaires with twin lamps and prismatic diffusers, while the workshop office is provided with surface mounted batten style luminaires.

Lighting luminance levels generally appeared satisfactory, although a full evaluation has not been completed as part of this report.

Emergency Light and Exit Signs

Emergency lighting and exit signage consists of self-contained fittings throughout the office and warehouse.

Communications

Data and communications cabling is provided from the local telecommunications provider and connects with the main distribution equipment in the office ground floor comms room. From this point the services are reticulated throughout the site as required by the tenant.

Security Services

The tenant has installed a security system for the site including perimeter security sensors at the boundary of the site.

3.2.2 Physical Inspection and Condition Appraisal

The electrical distribution systems at the property were visually inspected and the installations were noted to be of a commercial standard and in fair to good condition.

Maintenance of the electrical systems appears to be reasonable for the site. We have not reviewed any maintenance schedules and no record has been viewed of thermographic imaging reports.

Items noted which require further clarification and budget allocation are as follows:

- Installation of a single line diagram for the site reticulation and updating of all switchboard schedules.
- Power factor correction unit serving MSB 2 to be checked for calibration.
- Annual thermographic survey of the main switchboards and distribution boards is recommended.

3.2.3 Compliance with Regulations & Standards

Electrical installations appeared to comply with Australian Standards applicable at the time of construction.

Items noted which require further clarification and budget allocation is as follows:

- Residual current device (RCD) protection has not been provided to all final circuits supplying general power outlets and lighting circuits in accordance with the current AS 3000. While there is no retrospective requirement to upgrade, this should be considered as a health and safety initiative.
- The electrical services installation would not comply with the current energy requirements of Section J of the BCA. The energy initiatives can be incorporated as areas are refurbished.
- The EXIT signage on this site is not fully compliant with the current requirements of a running man pictograph. The signage can be upgraded as areas of the site are refurbished.

3.3 Fire Services

Fire protection services installed at the site include fire sprinkler protection, fire hydrant services, fire hose reel system and fire extinguishers. We did not have access to the site Annual Fire Safety Statement or any fire reports identifying alternate solutions for the site.

3.3.1 Description of Systems

Fire Sprinkler Protection

The warehouse building is provided with fire sprinkler protection consisting of a combination of ESFR system and in-rack sprinkler system.

Fire sprinkler valves serve the following areas:

Valve 1: - Low rise warehouse south

Valve 2: - Low rise warehouse north

Valve 3 – High bay in-rack sprinklers

Valve 4 – High bay roof level

Water supply for the fire sprinkler system is served by two (2) fire sprinkler storage tanks located on the western end of the site adjacent to the pump room and fire control room.

There are three (3) diesel pumps located in the pump house adjacent to the fire control room. The fire control room house a Tyco FIP and a Romteck fire brigade alarm signalling. The fire sprinkler booster connection is provided near the fire tanks for brigade connection.

There is no fire sprinkler protection of the Office building which is separate to the warehouse building.

Hydrant and Hose Reel System

A mains water pressure hydrant and hose reel system is provided to the site, supplying external hydrants located throughout the hardstand and internal hose reels throughout the warehouse.

A hydrant booster assembly is located at the main entrance to the property along Newton road for connection by the local fire brigade.

Fire Extinguishers

Portable fire extinguishers are provided at strategic hazard locations throughout the building as required by AS 2444 and provide a means of fighting small local fires.

Fire Detection and Alarm

The site is provided with an occupant warning system; however no details were available to confirm the extent and compliance.

Smoke detection system has not been provided for the site; review of any alternate solutions for the site is recommended to ensure that non compliance issues are addressed.

3.3.2 Physical Inspection and Condition Appraisal

The fire protection systems at the property were visually inspected and the installations were noted to be of a commercial standard and in good condition.

Maintenance tags are provided to each of the fire hose reels, hydrants and extinguishers and were up to date indicating with last inspection date of April 2013.

No record has been provided however, of the 5-yearly maintenance requirement of the hydrant system, which includes a hydrostatic test or the overhaul of the fire valves and pumps. This should be obtained or undertaken in the short term, with an allowance made for repairs.

3.3.3 Compliance with Regulations and Standards

We have not reviewed the annual fire safety statement or fire reports for the site which may identify alternate solutions for the non-compliance issues.

3.4 Hydraulic Services

Hydraulic services at the site include, metered mains water supply, domestic hot water, stormwater drainage, sewer drainage and sanitary fixtures and fittings.

3.4.1 Description of Systems

Mains Water Supply

The mains water supply enters the property from Newton Road and is provided with an above ground meter adjacent to the fire hydrant booster assembly.

The 50mm metered domestic cold water supply is then reticulated to the various cold water amenities in the office and warehouse, and to the domestic hot water units throughout.

Domestic Hot Water

Domestic hot water is provided to the amenities in the office and warehouse However, during our site inspection due to limited access we were not able to identify the location of the various hot water storage heaters

Stormwater

Stormwater is collected from the roof via box gutters and downpipes, while the hardstand is provided with surface drainage by kerb inlets and grated drains. The systems connect to an underground drainage network which falls at grade to the local authority system.

Sewer and Waste

Underground sewer and waste lines collect soiled waste from the amenities areas throughout and discharge to the local authority sewer.

Sanitary Fixtures and Fittings

Male and female toilets and showers are provided to the office building and warehouse.

Lunch rooms are provided to the office and warehouse and are generally provided with instant hot water boilers and kitchen sinks.

Gas

An Origin LPG above ground tank is located in the western end of the site.

3.4.2 Physical Inspection and Condition Appraisal

The hydraulic systems at the property were visually inspected and the installations were noted to be of a commercial standard.

We understand that there has been some historic issues with site stormwater management resulting in flooding near the western section of the site; this was rectified a few years ago with new in ground drainage pits and pipework.

An allowance should be made for replacement of the domestic hot water heaters which are part of the original construction.

3.4.3 Compliance with Regulations and Standards

From our visual non-intrusive inspection, the design and installation of the various hydraulic services generally appears to comply with AS 3500, at the time of construction.

Upgrades to comply with current standards include the installations of tempering valves to all amenities.

4.0 LIMITED HAZARDOUS MATERIALS AND ENVIRONMENTAL ASSESSMENT

SGA Environmental undertook a limited hazardous building materials and environmental assessment at 74-94 Newton Road, Wetherill Park NSW (the site). The assessment consisted of a site inspection conducted on 6 June 2013 and review of available records pertaining to potential hazardous materials or environmental impacts.

At the time of inspection, the site comprised two buildings; a single level office building, and a large distribution warehouse; as well as on grade parking and landscaped areas. The site is legally known as Lot 1 DP1017259.

4.1 Hazardous Materials

For the purpose of this report, hazardous materials are limited to those building materials containing asbestos, synthetic mineral fibre (SMF), polychlorinated biphenyls (PCBs), chlorofluorocarbons (CFCs) and hydro chlorofluorocarbons (HCFCs) which may be present at the site.

A detailed description of the hazardous materials assessment undertaken is contained in the following sections.

4.1.1 Asbestos

The use of asbestos in building materials is reported to have been phased out throughout Australia from the late 1970s and mid 1980s, with asbestos cement still in use up until 1987, and zelemite (or similar) electrical backing boards in use up until 1988. The use and importation of all forms of asbestos, with the exception of very specific uses, was banned in Australia in 2003.

Due to the age of construction, circa 2001, SGA Environmental considers that there is a low potential for asbestos containing material to be present. No asbestos containing material was observed during the site inspection

4.1.2 Synthetic Mineral Fibre (SMF)

Synthetic mineral fibre (SMF) was observed to be present within ceiling tiles, insulation and pipe/duct work of both buildings on site. SMF has been identified as a potential irritant to the respiratory tract, however their presence within the site buildings is not considered to be of significant concern or liability as contact with site occupants is considered limited.

4.1.3 Polychlorinated Biphenyls (PCBs)

The use of polychlorinated biphenyls (PCBs) in electrical equipment such as transformers and lighting capacitors within Australia was phased out in the early to mid 1970s.

Due to the age of the buildings on site (circa 2001), there is a low potential for PCB containing equipment to be present within the buildings. Our inspection did not identify equipment potentially containing PCBs.

4.1.4 Chlorofluorocarbons (CFCs) and Hydro chlorofluorocarbons (HCFCs)

The air conditioning systems observed on site contained R22 and R407C refrigerant gas.

R407C is a hydro fluorocarbon (HFC) refrigerant gas which is classed as non-ozone depleting and is not considered to warrant any further environmental management action

R22 is a hydro chlorofluorocarbon (HCFC) which is currently commonly used as a refrigerant gas in commercial buildings. Current legislation in Australia, developed with regard to the Montréal protocol, has resulted in a reduced HCFC import quota. By 2016 the importation of HCFCs will effectively be phased out, with a nominal importation quota to allow for servicing of existing equipment. There is some potential that a replacement gas will be developed which can be used in the existing units, however it is expected that any replacement gas will not be as efficient. Therefore, some consideration should be given to replacement of the air conditioning systems using R22 refrigerant gas.

4.2 Environmental Assessment

A brief assessment of potential environmental impacts was undertaken on the site. The conclusions of the assessment have been based on the following:-

- Review of soil, geology and hydrogeology of the area.
- Review of government environmental databases.
- Review of information collected from Australian Heritage Council.
- Review of historical aerial photographs.
- Observations made during the site inspection.

4.2.1 Review of Soil, Geology and Hydrogeology

The geology underlying the site as described in the Geological Survey NSW (1991) – Penrith 1:100 000 Geological sheet 9030 consists of Triassic aged Bringelly Shale, which is generally described as shale, carbonaceous claystone, claystone laminite, fine to medium grained lithic sandstone, rare coal and tuff.

The Australian Soil Resource Information System (ASRIS) describes the soil on the site as falling within the Kurosol soil order, using the Australian Soil Classification System (ASC). Kurosols are soils with strong texture contrast between A horizons (top soil) and strongly acid B horizons (sub soil).

Review of the ASRIS – Coastal Acid Sulfate Soils Risk Map indicated that the site is located over an area with an extremely low probability of occurrence of acid sulphate soils.

Review of the NSW Department of Infrastructure, Planning and Natural Resources *Natural Resource Atlas* identified several groundwater wells within a 1 kilometre radius of the site. No information was available on the depth to groundwater from these wells, although the depth of installation was between 3.9 and 5.0 meters below ground level (mbgl) which may indicate that depth to water can be expected within this range. Groundwater flow is inferred to be in a northerly direction towards Prospect Creek, following the natural topography of the area.

Based on the soil, geological and hydrogeological review the site is located over a shallow impermeable clay soil profile overlying moderately impermeable Bringelly Shale units, which in turn overlie Hawkesbury Sandstone. Based on licenced groundwater monitoring wells in the area, as well as the sites proximity to local water bodies, groundwater is expected to be between 3.9 mbgl and 5.0 mbgl. The potential migration of any chemicals of concern (CoCs) within this geological system is expected to be low to moderate.

4.2.2 Review of Government Environmental Databases

A search of the NSW Environment Protection Authority (EPA) record of notices under section 58 of the Contaminated Land Management Act 1997 (CLM Act) has identified that the site is not:

- land declared to be an investigation area or remediation site under Part 3 of the CLM Act
- subject to an investigation order or a remediation order within the meaning of the CLM Act
- the subject of a voluntary investigation proposal (or voluntary remediation proposal) under Section 19 or 26 of the CLM Act

A search of the NSW EPA record of notices under Section 60 of the CLM Act identified that the site has not been notified to NSW EPA.

A search of the public register of licenses issued under the Protection of the Environment Operations Act 1997 (POEO) did not identify any licenses or prosecutions regarding the subject site.

4.2.3 Review of Australian Heritage Places Inventory

A review of the Australian Heritage Places Inventory did not find reference to the site.

4.2.4 Review of Historical Aerial Photographs

A review of aerial photographs from 1951 to 2012 was undertaken as part of the assessment. Photographs reviewed are listed in Table 1.

Table 1 Historical Aerial Photographs

Year	Run	Photo	Source
1951	-	83-14	Dept. of Lands
1961	33	1068-5045	Dept. of Lands
1970	16W	1909-5189	Dept. of Lands
1982	21	3242-23	Dept. of Lands
1994	9	216	Dept. of Lands
2004	N/A	N/A	Google Earth
2012	N/A	N/A	Google Earth

The findings of the review are presented below:

1951 – At the time of this photograph the site was undeveloped apart from some agricultural activity (food production). Small buildings were observed on site most likely residential premises and/or sheds for farming practices. The surrounding area comprised undeveloped land to the north and further agricultural land to the east and west. Larger warehouses were observed to the south of site.

1961 – No discernible changes to the site or surrounding area were observed since the 1951 aerial photograph apart from the construction of Newton Road along the southern boundary of the site.

1970 – Since the time of the 1961 aerial photograph a residential dwelling was apparent on site adjacent to fields of crops. The surrounding area appeared to be undergoing development at this time with increasing numbers of residential dwellings observed to the south of the site.

1982 – Since the 1970 aerial photograph a storage yard / depot was observed on the eastern portion of the site. The surrounding area was undergoing development with residential precincts under construction to the south and industrial warehouses observed to the east of site.

1994 – No discernible changes to the site were observed since the time of the 1982 aerial photograph. The surrounding area now appears well developed with significant numbers of industrial warehouses observed with more under construction.

2004 – By this time the site had been developed with the current site buildings observed on site. An on grade car park and single level office building were observed in the north eastern portion of the site with the large warehouse facility constructed in the south western portion of the site. No discernible changes were observed to the surrounding area since the time of the 1994 aerial photograph.

2012 - No discernible changes to the site or surrounding area were observed since the time of the previous aerial photograph.

4.2.5 Site Inspection

A site inspection was undertaken on 6 June 2013. At the time of inspection, the site comprised a single level office building including two tenants and a large distribution warehouse. The large distribution warehouse was used to store and distribute a variety of products. The warehouse contained an automated racking system such that products could be stored maximising space constraints and efficiency. During the inspection it appeared workplace health and safety procedures and environmental management was robust within the distribution facility. A bitumen sealed car park was observed to cover the north eastern portion of the site.

Some landscaped areas were observed within common spaces between the office and warehouse buildings. Surrounding land uses consisted of industrial properties. A concrete lined stormwater channel bordered the northern margin of the site. Prospect Reservoir was located approximately 1.5km to the north of site.

The topography of the site was relatively flat although a gentle slope was observed from the south of site to the north towards the concrete lined stormwater channel. From observation of the landscaped features, it is likely some excavation works were undertaken to establish suitable building footprints with surplus materials likely reused on site.

Three diesel above ground storage tanks (ASTs) (~ 100 Litres each) serving the fire pump, were located within a building adjacent to the fire water tanks on the western margin of site. No secondary containment was observed, however no evidence of leaks or spills were identified.

Minor volumes of cleaning chemicals were identified within cleaner storage rooms located within the warehouse building. Some chemicals were observed to be stored without secondary containment, however no evidence of leaks or spills were identified. It is recommended that secondary containment be installed for all Dangerous Goods storage areas.

4.3 Discussion and Recommendations

4.3.1 Hazardous Materials

Hazardous building materials identified during the inspection were limited to synthetic mineral fibre (SMF) and R22 refrigerant gas utilised in the air conditioning units.

SMF has been identified as a potential irritant to the respiratory tract. The National Health & Safety Commission (NOHSC) has released the *Code of Practice for Safe Use of Synthetic Mineral Fibres*. This code of practice includes procedures for working with SMF products and monitoring requirements when disturbing SMF containing materials. The occurrences of SMF identified are considered to pose a very low risk; however disturbance of any SMF materials should only be undertaken with guidance from a safe work method statement prepared in accordance with the *Code of Practice for Safe Use of Synthetic Mineral Fibres.*

Some air conditioning systems onsite are supplied by R22 refrigerant gas which is a hydro chlorofluorocarbon (HCFC). Consideration should be given to upgrading R22 containing air conditioning systems as this refrigerant gas is being phased out and future supplies will be restricted.

Whilst no asbestos containing material (ACM) was observed during the site inspection, there remains a potential that ACM is present. When considering asbestos and the property's age (constructed 2001), the site does not comply with the Work Health and Safety Regulation 2011. The Regulation requires that an asbestos assessment be undertaken on all workplaces in NSW constructed prior to 2004 and an Asbestos Register and Management Plan produced if asbestos is identified. Therefore, SGA Environmental recommends undertaking a detailed asbestos assessment, and potentially production of an Asbestos Register and Management Plan in order to comply with the Work Health and Safety Regulation 2011.

4.3.2 Environmental Assessment

The environmental assessment identified that the site was undeveloped apart from agricultural activity (food production) up until the 1980's. It was observed that a storage yard/depot was present on the eastern portion of the site during the 1980's and 1990's. The current site buildings were constructed circa 2001. The potential for contamination associated with historical land use is considered low.

Three small diesel above ground storage tanks (AST's) associated with the fire pump and minor volumes of cleaning chemicals were observed on site without secondary containment. It is recommended secondary containment is installed for all Dangerous Goods storage areas to minimise potential environmental risk.

4.4 Conclusion and Recommendations

Based on the results of the limited hazardous materials and environmental assessment undertaken at the site, SGA Environmental considers that the site represents a low hazardous materials risk and a low environmental risk.

4.5 Limitations

The work presented in this report is SGA Environmental's (a division of SGA Property Consultancy) response to the specific scope of work planned with and approved by Fife Capital Pty Ltd. Professional advice and opinion provided in this report is for use as a purchaser due diligence report in association with the current sale activities only, in accordance with the agreed scope of work and is not to be relied on by any other third party for any other purposes except with the prior written consent of SGA Environmental (which consent may or may not be given at its discretion).

Where third party survey work, reports or verbal information has been relied upon, the data is included and used in the form provided by the third party. The responsibility for the accuracy of such data remains with the third party, not with SGA Environmental.

The advice provided in this report is based on information obtained from the identified building material inspection locations and/or sampling points. Building materials present in other parts of the building structure or site may differ from those identified at the inspection locations and/or sampling points. Stated quantities of observed materials or items should not be inferred as a definitive quantity survey of such materials or items.

The survey is a visual inspection supported by a selective sampling process. Consequently, only those asbestos materials and products that are physically accessible can be located and identified. The possibility that unsurveyed asbestos materials or products remain in concealed areas cannot be ruled out.

Such areas include but are not limited to, inside set ceilings or wall cavities, service shafts and ducts, height restricted areas, areas only accessible by dismantling equipment, voids or internal areas of plant or areas concealed within the building structure, only accessible during demolition. In the event that building materials suspected of containing asbestos are revealed during renovation and/or demolition of all, or part of a building, SGA Environmental should be contacted immediately.

SGA Environmental will work with the client and demolition contractor to ensure that all building materials containing asbestos are identified and appropriate occupational health and safety measures implemented.

The report is not intended for the general programming of asbestos removal works unless used in conjunction with a “fit for purpose” specification detailing the extent of such work. This report should not be altered, amended or abbreviated, issued in part or issued incomplete without prior approval from SGA Environmental. SGA Environmental does not accept responsibility for any circumstances which arise from the issue of a modified version of the report.

Advice and interpretation is provided on the basis that subsequent site work will be undertaken by SGA Environmental. Should other parties be engaged to implement recommendations made by SGA Environmental, or undertake further environmental work on site, SGA Environmental is not responsible for how the information in this report is used by those other parties or any other party including statutory appointed environmental auditors. If further data is collected or comes to light SGA Environmental reserve the right to alter their conclusions.

A report is provided inclusive of all documentation sections, tables, figures and appendices and should not be provided or copied in part without all supporting documentation for any reason, because misinterpretation may occur.

5.0 EXHIBITS / ATTACHMENTS

5.1 Photographic Record

Photographic Record



1 Facade: Western (high bay) facade



2 Facade: Western (high bay) warehouse facade



3 Facade: Southern warehouse facade



4 Facade: Glazing elements to southern warehouse facade



5 Facade: Deteriorated bottom of cladding with repainting evident



6 Facade: Eastern warehouse facade



7 Facade: Western facade to office building



8 Facade: Southern facade to office building



9 Facade: Dirty facade to office building



10 Facade: Eastern (front) facade to office building



11 Facade: Render cracking to panels along western (rear facade)



12 Facade: Render cracking to panels along western (rear facade)

Photographic Record



13 Facade: Cracking and possible moisture behind render



14 Facade: Render cracking to panels along western (rear facade)



15 Facade: Western (rear) facade to office building



16 Facade: Northern facade to office building



17 Facade: Part northern facade to warehouse building



18 Facade: Part northern facade to warehouse building

Photographic Record



19 Facade: Part northern facade to warehouse building



20 Facade: Loading dock and roller shutter door to northern facade



21 Facade: Part northern facade to warehouse building



22 Facade: Loading dock to northern facade



23 Internal: Typical internal view of warehouse



24 Internal: Typical internal view of warehouse

Photographic Record



25 Internal: Internal office to warehouse



26 Internal: Typical finishes to internal offices



27 Internal: Typical finishes to internal offices



28 Internal: Typical internal view of warehouse



29 Internal: View of diagonal high bay support struts



30 Internal: View of diagonal high bay support struts

Photographic Record



31 Internal: Repaired floor joint



32 Internal: Repaired floor joint



33 Internal: Typical internal view of warehouse



34 Internal: Typical internal view of warehouse

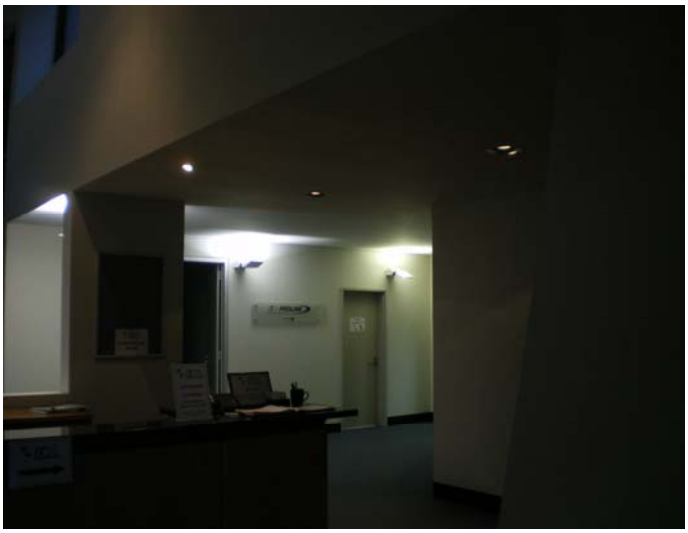


35 Internal: Typical internal view of high bay to warehouse



36 Internal: High bay storage and retrieval system

Photographic Record



37 Internal: Typical internal view of office building.



38 Internal: Typical internal view of office building.



39 Internal: Typical internal view of office building.



40 Internal: Damage to internal finishes in disabled toilet in office building



41 Internal: Typical finishes to toilet in office building



42 Internal: Typical finishes to toilet in office building

Photographic Record



43 Internal: Internal view of workshop area to rear of office



44 Internal: Typical internal view of office building.



45 Internal: Typical internal view of office building.



46 External: View looking up warehouse access driveway



47 External: Minor edge break to hardstand slabs



48 External: View looking towards warehouse driveway entrance

Photographic Record



49 External: Shrub planting along western facade



50 External: Grassed areas and parking between warehouse and office



51 External: Small hardstand area beside roller shutter door to eastern warehouse facade



52 External: Crazing beginning to asphalt car park to front of office building



53 External: View over car park to front of office building



54 External: View over car park to front of office building

Photographic Record



55 External: View over northern hardstand



56 External: Joint sealant deterioration to hardstand slab



57 Services: Typical warehouse distribution board



58 Services: Fire sprinkler water tanks



59 Services: Pad mounted sub-station



60 Services: Package unit serving cool room to southern facade



61 Services: Sprinkler pump, fire control room and main switchboard enclosure



62 Services: Sprinkler pumps



63 Services: Sprinkler valves



64 Services: Main switchboard



65 Services: Back flow preventer and incoming water meter



66 Services: Back flow preventer to sprinkler pump room

5.2 Cost Rectification Schedule

Rectification Cost Schedule

74 - 94 Newton Road, Wetherill Park NSW

June 2013

Item	Element / Location	Inspection / Review Comments	Action / Comments	Capex / R&M	Code	Short Term (Year 1)	Medium Term (Years 2 to 5)	Long Term (Years 6 to 10)	Estimated Rectification Cost
	ELEMENTAL BUILDING AUDIT IDENTIFIED ISSUES REQUIRING FUTURE EXPENDITURE								
1.00	**BUILDING STRUCTURE & FABRIC**								
1.01	Office building structure	Cracking to the render at top of blockwork infill panels to the rear (north western) façade was noted. The reason for this is unclear but may be due to load transfer from the precast panel above. Further investigation is required and we recommend a structural engineer be engaged to undertake further intrusive investigations.	Engage a structural engineer to undertake further intrusive investigations. Cost here is for engaging engineer only.	Capex	E	$ 5,000	$ -	$ -	$ 5,000
1.02	Office building structure	There appears to be moisture behind the render over a blockwork infill panel at the rear wall. The reason for this is unclear and we recommend a structural engineer be engaged to undertake further intrusive investigations.	Engage a structural engineer to undertake further intrusive investigations. Cost included above.	Capex	E	$ -	$ -	$ -	$ -
1.03	Warehouse building structure	The external steel paint coatings are currently in satisfactory condition commensurate with their age but we recommend allowance be made for re-painting all external exposed steelwork (canopy steelwork, high bay diagonal struts, door jamb bollards etc.) in the long term.	Re-paint all external exposed steelwork (canopy steelwork, high bay diagonal struts, door jamb bollards etc.) in the long term.	Capex	E	$ -	$ -	$ 25,000	$ 25,000
1.04	Office building façade	The paint coating to the façade is currently considered to be in good condition however allowance should be made for repainting the façade in the long term.	Repaint the façade in the long term.	Capex	E	$ -	$ -	$ 25,000	$ 25,000
1.05	Office building façade	The façade was noted as being dirty in areas.	We recommend allowance be made for regular washdowns of the façade to maintain the durability of the paint coating and glazing elements.	R&M	D	$ 500	$ 2,000	$ 2,500	$ 5,000
1.06	Warehouse building façade	The bottom edge of the cladding in some areas appears to have deteriorated slightly and touch-up repainting is evident.	This has not affected the performance of the cladding but we recommend on-going allowance be made for on-going touch ups in the medium and long term.	R&M	E	$ 1,000	$ 4,000	$ 5,000	$ 10,000
1.07	Warehouse building façade	The façade was noted as being dirty in areas.	We recommend allowance be made for annual washdowns of the façade to maintain the durability of the cladding.	R&M	D	$ 7,500	$ 30,000	$ 37,500	$ 75,000
1.08	Warehouse internal area	Impact damage to the slab was noted in a number of areas. These should be epoxy repaired in the short term.	These should be epoxy repaired in the short term.	R&M	E	$ 500	$ -	$ -	$ 500
1.09	Warehouse internal area	Shrinkage cracking of the slab was noted in a number of areas.	This is considered minor and does not appear to affect the performance of the surface. No remedial action is considered necessary but these areas should be monitored.	R&M	E	$ -	$ -	$ -	$ -
1.10	Warehouse internal area	Damaged and deteriorated joint sealant was noted in areas.	We recommend allowance be made in the medium and long term for on-going repair to these joints as they deteriorate.	R&M	E	$ 1,500	$ 6,000	$ 7,500	$ 15,000
1.11	Warehouse internal area	Edge break was noted to a number of warehouse floor slab joints.	This does not currently appear to affect the performance of the surface but allowance should be made for on-going edge break repair in the medium and long term.	R&M	E	$ 1,500	$ 6,000	$ 7,500	$ 15,000
1.12	External areas	The asphalt surfaced car parks and access roads are beginning to show evidence of crazing in some areas.	We recommend allowance be made for on-going patch repairs to the asphalt surfaced areas in the medium and long term.	Capex	E	$ -	$ 2,500	$ 2,500	$ 5,000
1.13	External areas	Kerb damage was noted to various areas.	Allowance should be made for on-going repair to these in the medium and long term.	R&M	D	$ -	$ 2,000	$ 2,500	$ 4,500

Rectification Cost Schedule

74 - 94 Newton Road, Wetherill Park NSW

June 2013

Item	Element / Location	Inspection / Review Comments	Action / Comments	Capex / R&M	Code	Short Term (Year 1)	Medium Term (Years 2 to 5)	Long Term (Years 6 to 10)	Estimated Rectification Cost
1.14	External areas	Edge break was noted to joints in a number of hardstand areas.	This does not currently appear to affect the performance of the surface but allowance should be made for on-going edge break repair in the medium and long term.	R&M	E	$ 750	$ 3,000	$ 3,750	$ 7,500
1.15	External areas	Damaged and deteriorated joint sealant was noted in areas of on-grade concrete slabs.	We recommend on-going allowance be made in the medium and long term for replacing these as they deteriorate.	R&M	E	$ 750	$ 3,000	$ 3,750	$ 7,500
1.16	External areas	Shrinkage cracking was noted in some areas of the on-grade concrete slabs.	This is not considered significant and does not affect the performance of the slab. No remedial work is considered necessary but these areas should be monitored.	R&M	D	$ -	$ -	$ -	$ -
1.17	External areas	The painted line marking to the car park and hardstand areas are beginning to fade and allowance should be made for repainting these in the medium term.	Allow to repaint line markings in the medium term.	Capex	D	$ -	$ 8,000	$ -	$ 8,000
2.00	**MECHANICAL SERVICES**								
2.01	Mechanical services - maintenance	No record of maintenance of the mechanical services has been viewed.	It is recommended that a full service and repair of each system be undertaken to improve the reliability and efficiency of the systems in the short term. Costs do not include any major repair items that might be identified.	R&M	D	$ 1,500	$ -	$ -	$ 1,500
2.02	Air conditioning systems	Systems utilise HCFC refrigerant R22 and the phase out of these refrigerants will result in escalated maintenance costs.	The systems are approaching their normal economic life and it is therefore likely that as medium term failures occur, replacement rather than repair of the systems will need to be considered and should be budgeted for.	Capex	E	$ -	$ 60,000	$ -	$ 60,000
3.00	**ELECTRICAL SERVICES**								
3.01	Warehouse lighting	Warehouse lighting dates to the original construction and appears aged.	Budget an annual maintenance sum for replacement on failure.	R&M	E	$ -	$ 9,375	$ 9,375	$ 18,750
3.02	Distribution boards	Distribution boards are generally dirty and contain out-dated circuit schedules. Furthermore, there is no record of thermographic imaging to determine the internal condition.	Undertake full maintenance of distribution boards, including thermographic imaging, and undertake and required repairs. Complete annually.	R&M	E	$ 1,250	$ 5,000	$ 6,250	$ 12,500
3.03	Distribution boards	Life cycle replacement.	Considering their current age and condition, it is recommended that long term replacement of the original distribution boards be budgeted for.	Capex	E	$ -	$ -	$ 35,000	$ 35,000
3.04	Distribution boards	Residual current device (RCD) protection has not been provided to all final circuits supplying general power outlets and lighting circuits in accordance with the current AS 3000.	While there is no retrospective requirement to upgrade, this should be considered as a health and safety item.	Capex	D	$ 12,250	$ -	$ -	$ 12,250
3.05	Emergency and exit lighting	Emergency and exit light testing records have not been provided and it is noted that many the warehouse emergency lights were permanently illuminated, which would not normally be the case.	Undertake annual emergency and exit light testing and investigate and rectify issue with permanently illuminated emergency lights. Repair as required and considering age, allow annual some for replacements on failure.	Capex	E	$ 2,000	$ 2,800	$ 3,500	$ 8,300
4.00	**FIRE SERVICES**								
4.01	Hydrant system	No record has been provided of the 5-yearly maintenance requirement of the hydrant system, which includes a hydrostatic test.	This should be obtained or undertaken in the short term, with an allowance made for repairs.	R&M	E	$ 9,500	$ -	$ -	$ 9,500
5.00	**HYDRAULIC SERVICES**								
5.01	Domestic hot water storage heaters	Life cycle replacement.	An allowance should be made for replacement of the domestic hot water heaters as they are approaching the end of their expected economic life.	Capex	E	$ -	$ 3,900	$ -	$ 3,900
5.02	Tempering valves	No record of annual testing.	Complete annually.	R&M	E	$ 75	$ 300	$ 375	$ 750

Rectification Cost Schedule

74 - 94 Newton Road, Wetherill Park NSW

June 2013

Item	Element / Location	Inspection / Review Comments	Action / Comments	Capex / R&M	Code	Short Term (Year 1)	Medium Term (Years 2 to 5)	Long Term (Years 6 to 10)	Estimated Rectification Cost
6.00	**ENVIRONMENTAL**								
6.01	Asbestos	While no asbestos containing material was observed during the site inspection, there remains a low potential that asbestos is present. No asbestos assessment, register or management plan was provided for review. The Work Health and Safety Regulation 2011 requires all workplaces in NSW constructed prior to 2004 to have an asbestos assessment undertaken and register/management plan produced in order to comply with the Regulation.	Undertake detailed asbestos assessment to produce a register/management plan in order to comply with the Work Health and Safety Regulation 2011. Cost assumes that asbestos is identified and register required to be updated every 5 years.	R&M	E	$5,000	$5,000	$5,000	$15,000
6.02	Minor storage of fuel	Three Diesel above ground storage tanks (100L) were observed in the fire pump room without secondary containment.	Install secondary containment around AST	Capex	D	$1,000	$ -	$ -	$1,000
6.03	Minor storage of cleaning chemicals	Low volumes of cleaning chemicals were identified within cleaning storage rooms located within the warehouse building .	Install secondary containment around chemicals.	Capex	D	$500	$ -	$ -	$500
	TOTALS					**$ 52,075**	**$ 152,875**	**$ 182,000**	**$ 386,950**
			Total - Essential			$ 28,825	$ 110,875	$ 139,500	$ 279,200
			Total - Desirable			$ 23,250	$ 42,000	$ 42,500	$ 107,750
						$ 52,075	**$ 152,875**	**$ 182,000**	**$ 386,950**
			Total - Capex			$ 20,750	$ 77,200	$ 91,000	$ 188,950
			Total - R&M			$ 31,325	$ 75,675	$ 91,000	$ 198,000
						$ 52,075	**$ 152,875**	**$ 182,000**	**$ 386,950**

Budgets and estimates presented by this office are presented with the best intentions and knowledge at the time of submission. Actual costs may vary dependent on exact scope, timing, market pressure and contractual conditions.

- The budgets are based on normal working hours.
- The budgets are exclusive of GST.
- The budgets do not included any design fees, project or construction management fees.

exceptional chartered building surveying and environmental services

for property investors, owners, tenants financiers and managers.

- **Technical Due Diligence - Acquisition / Disposal**
- **Dilapidations (Make Good) Reporting**
- **End of Lease Dilapidation (Make Good) Negotiations**
- **Schedules of Condition**
- **Environmental Reporting - Phase I & II**
- **Asbestos & Hazardous Materials Registers**
- **NABERS / BEEC / Energy Management Plans**
- **Project & Contract Administration**
- **Expert Witness / Defect Reporting**
- **Tax Depreciation**
- **CAPEX and Maintenance Forecasts**
- **WHS Risk Assessments**
- **Disability Access Audits**

Capitalising on a global skill base, all senior SGA consultants are Chartered Building Surveyors, Engineers or Environmental Scientists, providing the company with a breadth of understanding across many specialist competencies, which is the key to our speed of assessment, service and delivery.

sga
Property
Consultancy

www.sgaproperty.com

SYDNEY
Suite 8
599 Pacific Highway
St Leonards NSW 2065
Australia

P: +61 2 9438 2333
F: +61 2 9437 3222
E: syd@sgaproperty.com

MELBOURNE
Suite 301 North, Level 3
350 Collins Street
Melbourne VIC 3000
Australia

P: +61 3 9670 6737
F: +61 3 9670 2357
E: melb@sgaproperty.com

BRISBANE
Level 2
200 Mary Street
Brisbane QLD 4000
Australia

P: +61 7 3221 5255
F: +61 7 3221 4455
E: bris@sgaproperty.com

PERTH
Suite 11
5 Hasler Road
Osborne Park WA 6017
Australia

P: +61 8 9204 3944
F: +61 8 9204 3899
E: perth@sgaproperty.com

AUCKLAND
Level 27, PWC Tower
188 Quay Street
Auckland 1010
New Zealand

P: +64 9 363 3730
F: +64 9 363 2727
E: nz@sgaproperty.com

HONG KONG
6/F, 42A Macdonnell Road
Hong Kong

T: +852 6406 5663
E: hk@sgaproperty.com