Preliminary Site Investigation with Limited Sampling

3-5 Help St, Chatswood

301351072

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Executive Summary

Stantec Pty Ltd was engaged by Loftex Chatswood Pty Ltd to complete a Preliminary Site Investigation (PSI) with limited sampling at 3-5 Help St, Chatswood, NSW, 2067 (herein referred to as 'the site'). The site locality and layout are shown in **Figure 1** in **Appendix A**.

It is understood that the proposed redevelopment will include a mixed-use development including high-density residential apartments and commercial premises, with five (5) basement levels of car parking to an approximate excavation depth of 18 metres below ground level (mBGL).

The purpose of this investigation is to provide information on the contamination status of the site for the lodging of a State Significant Development Application (SSDA) in accordance with section 16; contamination and remediation of the applicable Secretary's Environmental Assessment Requirements (SEAR's) (SSD-76555711, Issued 8 October 2024).

The objectives of the PSI were to assess whether contamination has the potential to exist on the site and whether further investigation is needed.

From the current understanding of site history and observations made during the site walkover, the following conclusions can be made:

- Based on desktop review of available information:
  - Former buildings and structures located at the site under historical land uses were demolished in place of current buildings and structures.
  - The buildings and structures located at the site at the time of Stantec's investigation appear to have been constructed circa 1970 and the site has remained relatively unchanged since that time.
  - Based on the historical aerial photograph review and in consideration of business directories, the site may have hosted residential and commercial/industrial land uses in the past. Historical business directories also indicate that commercial activities may have occurred at the site.
  - Commercial professions listed on land title documentation are limited to taxi cab proprietor, farmer, solicitor and builder. Such professions do not typically present a significant risk of contamination, particularly on a relatively small land area and in an urban setting.
  - SafeWork NSW records indicate that there is no recorded current or historical storage of hazardous chemicals at the site.
  - The land use of the local area surrounding the site has generally undergone similar development with construction of mixed commercial and high-density residential buildings.
- The site walkover identified:
  - Due to the era of their construction, and based on observations, there is potential for current buildings and structures to contain hazardous building materials.
  - There appear to be locations of the site with localised filling, particularly within the 3 Help Street Lot.
  - An oil-like substance was visible on the cover and internal surface of a stormwater drain located within the site. The exact nature of the material is unknown but is unlikely to present a potential contamination risk under the proposed development.



- The limited soil and groundwater investigation identified the following:
  - Soil impacts exceeding the applicable human health and ecological criteria were limited to Benzo(a)pyrene at soil bore HA01 within a sample collected at 0.1 mBGL.
    - The lateral extent of impacts cannot be adequately characterised until removal of buildings, structures and hardstand, post-approval.
    - Following the supplementary assessment, statistical analysis of the data set can be undertaken and any requirement for remediation determined.
    - Based on the current project design, any impacted materials would likely require removal from the site to enable construction of the basement. The assessment of potentially complete source-pathway-receptor linkages must be considerate of the bulk earthworks and civil design to determine the fate of subject materials.
  - Whilst asbestos has not been identified in soil, the investigation was limited and constrained by the presence of buildings and hardstand. Following removal of buildings and structures, post-approval, a supplementary assessment is required.
  - The dissolved zinc (filtered) concentrations detected in groundwater exceeding the ecological criteria are considered to likely represent regional groundwater conditions, possibly sourced from the geologic profile. In the absence ecological receptors at or near to the site, the zinc concentrations are not considered to present a completed source-pathway-receptor linkage.
    - Groundwater levels and the physical description of waters from BH03 were recorded as being variable between gauging events, and whilst contaminant indicators were not evident, an additional monitoring event post-approval is recommended.

Following the desktop review, site walkover, and limited sampling, it is considered that the site presents a relatively low risk of contamination that would prohibit approval of the development application for construction of the proposed development and future land use. Considerate of the current constraints (buildings, hardstand), the limited investigation has gathered sufficient information to satisfy the Resilience and Hazards State Environment Planning Policy (SEPP) 2021 in relation to assessing for contamination, subject to implementation of the below recommendations. The shallow soil impacts identified during this investigation are likely to be localised, but require lateral and vertical delineation during a data gap investigation post-approval, following removal of buildings, structures and hardstand. Statistical analysis should be undertaken the data set following completion of the data gap investigation, which will inform the potential requirement for soil remediation.

The following recommendations are made:

- To confirm groundwater conditions, noting the variance in groundwater levels and descriptions of waters from BH03 during prior gauging events, an additional groundwater monitoring event is recommended, post-approval, utilising existing groundwater wells.
- A Report on Hazardous Building Materials (HAZMAT) Survey was prepared for the site (DP, 2024). Demolition activities and post-demolition clearance inspections are to be undertaken in accordance with the recommendations of the HAZMAT Survey.

- Following demolition and removal of structures, a data gap investigation is required to characterise soil properties and to delineate the Benzo(a)pyrene identified at soil bore BH01. The investigation must be conducted by a qualified and experienced contaminated land professional.
  - Following completion of the data gap investigation, statistical analysis should be completed on the data set to determine any requirements for soil remediation.
  - An assessment of remediation requirements must also consider the bulk earthworks and civil design drawings.
- Any material removed from the site during construction must be classified in accordance with the NSW EPA Waste Classification Guidelines (2014) and/or applicable resource recovery exemptions / orders. Future classification must consider all existing environmental data.
- Any material imported to the site under the proposed development, such as for landscaping and establishment of garden beds, must not present a potential health risk to receptors under the proposed land use.
- A Construction Environmental Management Plan should be implemented for the works and include reference to the actual and potential contamination identified as part of this assessment as well as appropriate mitigations. This should also include an Unexpected Finds Protocol to be implemented in the event contamination, not identified in this assessment, is revealed during construction.

Abbreviations

PSI	Preliminary Site Investigation
mBGL	Metres below ground level
DA	Development application
SSDA	State Significant Development Application.
SEARs	Secretary's Environmental Assessment Requirements
PoEO	Protection of the Environment Operations
DBYD	Dial Before You Dig
LEP	Local Environmental Plan
ASS	Acid Sulfate Soil
^{o}C	Degrees Celsius
UST	Underground storage tank
AST	Aboveground storage tank
PCB	Polychlorinated biphenyls
EPA	Environment Protection Authority
PVC	Polyvinyl chloride

PRELIMINARY SITE INVESTIGATION WITH LIMITED SAMPLING

Introduction

CCO	Chemical control orders
DQO	Data Quality Objective
DQI	Data Quality Indicator
SAQP	Sampling, Analysis Quality Plan
PFAS	Per- and poly-fluoroalkyl substances
SMF	Synthetic mineral fibres
TRH	Total recoverable hydrocarbons
BTEX	Benzene, toluene, ethylene, xylene
BTEXN	Benzene, toluene, ethylene, xylene and napthalene
PAH	Polycyclic aromatic hydrocarbons
OCP/OPP	Organochlorine/organophosphorus pesticides
CHCs	Chlorinated hydrocarbons
VOCs	Volatile organic compounds
CSM	Conceptual site model
SPR	Source – pathway – receptor
NEPM	National Environment Protection Measure

1.0 INTRODUCTION

Stantec Australia Pty Ltd (Stantec) was engaged by Loftex Chatswood Pty Ltd (the client) to complete a Preliminary Site Investigation (PSI) with limited sampling at 3-5 Help St, Chatswood, NSW, 2067 (herein referred to as 'the site'). The site locality and layout are shown in **Figure 1** in **Appendix A**.

The PSI was prepared in accordance with the scope of works presented in a proposal that was provided by the client on 26 October 2022, with updated architectural designs provided by the client (Issue B, dated 5th of December 2024), which are provided in **Appendix B**.

1.1 PROPOSED DEVELOPMENT

The architectural drawings (**Appendix B**) indicate that the proposed development is described as 'mixed-use with infill affordable housing' and will include the following:

- Demolition and removal of existing buildings and structures;
- Bulk earthworks requiring excavation of soil and rock to an approximate depth of 18 mBGL;
- Construction of a mixed-use development including:
  - High-density residential apartments from Level 02 and above. A residential communal garden and outdoor facilities are proposed on Level 02.
  - Commercial premises on ground floor, mezzanine level and Level 01. Waste facilities and plant and control rooms are also situated on the ground floor.
  - Some areas of landscaping are proposed on the southern and western boundaries at ground level .
  - Five (5) levels of basement car parking.

1.2 PURPOSE AND OBJECTIVES

The purpose of PSI with limited sampling report is to document the contamination status of the site, to the extent practicable, for the State Significant Development Application (SSDA) lodgement for the proposed development at the site, as described in **Section 1.1**.

In preparing this report, Section 16 'contamination and remediation' of the Secretary's Environmental Assessment Requirements (SEAR's) (SSD-76555711, Issued 8 October 2024) were considered, which state the following requirements for the SSDA:

- *In accordance with Chapter 4 of SEPP (Resilience and Hazards) 2021, assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable (or will be suitable, after remediation) for the development.*

The objectives of the PSI with Limited Sampling are to:

- Assess whether contamination has the potential to exist on the site,

- Assess soil and groundwater conditions in targeted areas of the site and identify present contaminants of concern (if any).
- Identify potential exposure pathways (human health and ecological) by the contaminants of concern and create a preliminary Conceptual Site Model (CSM)
- Preliminary assess the suitability of the site for the proposed development, and
- Assess whether further investigation is required.

1.3 SCOPE OF WORKS

The following scope of work was undertaken to meet the purpose and objectives stated above in **Section 1.2**:

- Conduct interview(s) with site owners and/or relevant site operators;
- A desktop study of information available for the site and surrounds. This included a review of:
  - Relevant online maps including geology, hydrogeology, topography and acid sulfate soils risk maps;
  - Historical business directories;
  - Historical aerial photographs;
  - SafeWork NSW Schedule 11 hazardous chemicals on premises search;
  - NSW EPA contaminated land records / registers and Protection of the Environment Operations (PoEO) Licenses; and
- Lodgment of a Before-You-Dig (BYD) Australia enquiry to identify the registered utilities above and below ground;
- A site walkover by experienced environmental scientist and contaminated land professionals to identify potential sources of contamination at and near to the site. Walkovers were conducted on two occasions as outlined below:
  - An initial site inspection on 21 November 2022, conducted when Stantec was first engaged by the client to undertake a site investigation; and
  - A second inspection undertaken (17 December 2024) after receiving updated architectural plans from the client. The objective of the inspection was to confirm that no further potential sources of contamination were identifiable following the initial inspection.
- Advancement of three (3) soil bores to a total depth of 1.0 metres Below Ground Level (mBGL) and collection of six (6) soil samples;
- Excavated soils were subjected a visual and olfactory assessment of contaminant indicators such as odour, sheen, discolouration, and the presence of waste inclusions including asbestos containing materials (ACM).
- Laboratory analysis of three (3) soil samples at a NATA accredited laboratory. Each sample was analysed for the contaminants of concern listed below:
  - Total recoverable hydrocarbons (TRH);
  - Benzene, toluene, ethylbenzene, total xylenes and naphthalene (BTEXN);
  - Polycyclic aromatic hydrocarbons (PAHs);
  - Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc);
  - Organochlorine and organophosphate pesticides (OCPs and OPPs);



  - Polychlorinated biphenyls (PCBs);
  - pH Field and pH^{FOX}; and
  - Asbestos (NEPM Quantification).
- Two groundwater wells were installed at the site during a geotechnical investigation also performed by Stantec. Groundwater samples were collected from each well and two (2) groundwater samples utilising a low-flow sampling technique with water quality parameters collected on site. Samples were submitted to a NATA accredited laboratory for analysis of a the following contaminants of concern:
  - TRH;
  - BTEXN;
  - PAH;
  - Speciated Phenols;
  - Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc); and
  - Volatile organic compounds (VOCs).
- Evaluation of analytical results and preparation of the PSI with Limited Sampling report detailing the findings, conclusions, and recommendations for the site.

1.4 APPLICABLE GUIDELINE AND LEGISLATION

The scope of this PSI with Limited Sampling has been developed in accordance with the following guidelines and legislation:

- Contaminated Land Management Act 1997 (CLM Act);
- Protection of the Environment Operations Act 1997 (PoEO Act);
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM), amended 2013 (NEPC, 2013);
- NSW Department of Planning and Environment, State Environmental Planning Policy (Resilience and Hazards) 2021
- NSW Environment Protection Authority Guidelines for the NSW Site Auditor Scheme, 3rd Edition (NSW EPA, 2017);
- NSW EPA Consultants reporting on contaminated land; Contaminated land guidelines (NSW EPA, 2020); and
- Guidelines on the Duty to Report Contamination under the Contamination Land Management Act 1997 (NSW EPA 2015).

2.0 SITE DESCRIPTION AND SETTING

2.1 SITE INFORMATION

Site details are presented in **Table 2-1** below with a site plan presented in **Figure 2** in **Appendix A** detailing site boundary, surface contours and significant features.

Table 2-1 Site identification

Item	Details
Site Address	3-5 Help St, Chatswood NSW, Australia
Approximate Site Area (ha)	2,290 m^2
Title Details	The site is comprised of the following two (2) parcels of land: • Strata Plan SP52320 • Strata Plan SP134
Local Government Area	City of Willoughby
Current land use	Mixed use, high density residential
Current Land Zoning	The Willoughby Local Environmental Plan 2012 identifies the site being zoned as: • MU1 – Mixed Use

2.2 SITE DESCRIPTION

Site information from publicly available data sets is summarised below in **Table 2-2** and the specialist report containing search details is attached in **Appendix D**.

Table 2-2 Site description and public datasets

Item	Details
Site topography and drainage features	The site has a gentle slope towards the south and the overall elevation change is approximately 3 m with the lowest point in the south and highest in the north-eastern corner of site. Surface water drainage is expected to flow to Help Street in the south with stormwater drains located along Cambridge Lane and Mcintosh Street.
Nearby water bodies	Blue Gum Creek is the closest water body and is located approximately 800 m to the west, inferred cross-gradient. Blue Gum Creek flows into the Lane Cove River. Scott's Creek is located approximately 930 m east of site and flows into Middle Harbour.
Acid sulfate soil / rock risk	The eSpade v2.1 online acid sulfate soil (ASS) risk mapping returned no data for acid sulfate soil risk for the site. The closest mapped area was the intersection of Sugarbag Creek and Blue Gum Creek, 1.6 km west of site with a high risk of acid sulfate soils. ASS planning maps within the Willoughby LEP (2012) indicate that the site is a Class 5 area. Class 5 areas require development approval where works are within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the water table is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.
Groundwater (BoM, 2021)	A search of the Water NSW database identified one known groundwater bore within 500 m of the site. GW107757 is located 450 m south of site and had a standing water level (SWL) of 25.60 mBGL and total bore depth of 162.6 mBGL.
Site soil landscapes	A review of soil data from eSpade v2.2 (DPIE, 2022) indicated that the site is overlying the residual Blacktown (bt) soil landscape. Blacktown soils are described as *shallow to moderately deep (<100 cm) Red and Brown Podzolic Soils on crests, upper slopes and well-drained areas; deep (150–300 cm) Yellow Podzolic Soils and Soloths on lower slopes and in areas of poor drainage. Limitations include moderately reactive highly plastic subsoil, low soil fertility, poor soil drainage.*
Site surface geology	The site geology is identified as being underlain by Ashfield Shale of the Wianamatta Group. These are described as *black to light grey shale and laminite. This unit is occasionally underlain by claystone and laminite lenses within the Hawkesbury Sandstone such as at Duffy's Forest*.

3.0 SITE WALKOVER AND OBSERVATIONS

The site was initially inspected during November 2022 with the observations intended to be utilised within a contaminated land specialist report that would be lodged with the development approval. Since that time the development approval was delayed it was considered that a secondary site walkover was required to confirm consistency of site conditions and the document any changes to the site and surrounds.

A summary of the site walkover observations gathered during each inspection are provided in the subsections below.

3.1 SITE WALKOVER OVERSVATIONS, 21 NOVEMBER 2022

An inspection of the site was undertaken by an Environmental Engineer and contaminated land professional from Stantec on 21 November 2022.

Relevant observations made during the inspection are provided below in **Table 3-1** and photographs taken during the inspection are contained in **Appendix C**.

Table 3-1 Site Observations, 21 November 2022

Item	Details	Photo Reference (Appendix C)
Weather condition	The weather was sunny and windy with a low of 17.1 °C and a high of 24.5 °C.	-
Site slope and drainage features	At 3 Help St, the eastern portion of site is relatively flat with guttering along the eastern edge. Culverts were observed on the eastern side of the building. At 5 Help St, there was a slight slope to the southern portion of site. A stormwater grate was observed at the northern entry to carpark and stormwater culverts were running through the central portion of site.	3, 8
Site surface coverings	The site surface was predominantly hardstand (concrete and brick pavers). 3 Help St had grassed areas in the north, small garden beds in the south and exposed soils and a concrete pedestrian path in the west. 5 Help St has segregated garden beds within the central, northern and southern portion of site.	2, 3, 6
Surface soils	At exposed locations, gravelly silty sand was observed, dark grey and with traces of anthropogenic material visible.	-
Site cut and fill	Cutting and filling was observed within site. At 3 Help St, potential filling within northern portion and within garden beds in the south was noted. At 5 Help St, potential filling in the western portion garden beds was noted.	3, 6
Buildings and structures	A three-storey apartment building and ground level parking was noted at 3 Help St. A two-storey apartment building with parking in the northern portion of site and electrical switchboard rooms in the central portion was noted at 5 Help St.	7
Potential asbestos in building materials	Potential asbestos was observed in the building eaves and electrical box at 3 Help St.	4, 5, 7
Manufacturing, industrial or chemical	Not observed on site	-

Item	Details	Photo Reference (Appendix C)
processes and infrastructure		
Fuel storage tanks (USTs/ASTs)	Not observed on site	-
Dangerous goods	Dangerous goods such as liquid chemicals were not observed at the site. Potentially hazardous materials were limited to flaking paint, asbestos in building fabrics and possible PCB containing capacitors in lights.	4, 5
Solid waste deposition	General waste and recycling bins were located in northern portion of site at 3 Help St and the western portion of site at 5 Help St. General rubbish such as plastics, glass and building rubble was also observed along the western boundary at 3 Help St.	1, 2
Liquid waste disposal features	Not observed.	-
Evidence of previous site contamination investigations	Not observed.	-
Evidence of land contamination (staining or odours)	A sewerage odour was present at 3 Help Street, however, the source was unconfirmed.	-
Evidence of groundwater contamination	Not observed.	-
Groundwater use	Not observed.	-
Vegetation	At 3 Help St, in the south there was a garden bed with juvenile trees, shrubs, mature trees and grass. Mature and juvenile trees were observed in the west and grassed areas and a garden bed was observed in the north.	-
Site fencing	Along the east there is a 6 m high concrete retaining wall and 1 m metal fence.	3, 6
Anecdotal information	An interview with the gardener indicated that 5 Help Street has been unchanged for at least 15 years prior to the inspection date.	-

3.1.1 Surrounding Land Use

The surrounding land uses and potential sensitive receptors were determined based off-site observations and from a review of aerial imagery from *MetroMap* dated 12 June 2022 are summarised in **Table 3-2** below.

Table 3-2 Surrounding land uses

Direction from Site	Description	Sensitive Receptors	Distance to Sensitive Receptor
North	North of the site boundary includes; High Density Residential (MU1) and Railway infrastructure (SP2), T1,T9-Northern line and Sydney metro.	MU1 - High Density Residential	5m
South	South of the site boundary includes; Mixed Use (MU1) as mixed commercial / residential,	MU1 - Mixed use commercial / High Density Residential	10m

Direction from Site	Description	Sensitive Receptors	Distance to Sensitive Receptor
	Commercial Core (E2) as Chatswood Concourse, and Public recreation (RE1) memorial park and Chatswood park.	RE1 - Memorial Park and Chatswood park are sensitive to contamination	300m
East	East of the site boundary includes; Mixed use (MU1) as mixed commercial / residential, Chatswood Presbyterian Church and St Pius secondary College, and Commercial Core (E2) Chatswood chase shopping centre.	MU1 - Mixed use commercial / high density residential	0m
		MU1 - Chatswood Presbyterian Church and St Pius secondary College are sensitive receptors.	90m
West	West of the site boundary includes: High Density Residential (MU1), Commercial Core (E2), and raised railway infrastructure T1,T9-Northern line and Sydney metro.	MU1 - High Density Residential	6m

3.1.2 Areas Not Accessed

Due to access limitations the areas detailed in **Table 3-3** were not visually assessed during the walkover and should be considered in relation to the further data gaps detailed in **Section 5.2**.

Table 3-3 Inaccessible areas during site walkover

Area	Justification / Notes
3 Help Street storage room	A locked storage room was located within the northern portion of the building on the ground floor and not accessed.
3-5 Help Street private residencies	Access was not given to the private residencies at both 3 and 5 Help St.
5 Help Street storage room, switch board room and communal hallways within building	The storage room, switch board room and communal hallways within the building were all locked and not accessed.

3.2 SITE WALKOVER OVERSVATIONS, 17 DECEMBER 2024

The inspection was undertaken by an experienced Environmental Scientist and contaminated land professional from Stantec on 17 December 2024. Photographs from the inspection are provided in **Appendix C**.

No substantial changes to the buildings, structures, concrete hardstand, retaining walls, utilities or vegetation was observed by Stantec during the inspection. Prior observation of a sewerage smell during the 2022 inspection was not present.

An increase in soil erosion was observed near the retaining wall in the grassed area of the northern section of 3 Help Street, with evidence of exposed utilities (water) historical fill soils and new fill soils. Exposed fill in garden beds at the southern section of 5 Help Street was also observed. It was also noted that grease and oil was present on the cover and internals of a stormwater drain in the central portion of 3 Help Street, appearing to be indicative of surface discharge of waste oil into the drain. The nature of the oil is unconfirmed and no odour was present. During the site inspection, three (3) existing groundwater monitoring wells were accessed for gauging with an interface probe dip meter and manual removal of water from each well for inspection utilising dedicated PFAS-free plastic bailers. The details of waters encountered in each well are provided in **Section 9.1.2**.

4.0 SITE HISTORY ASSESSMENT

A desktop site history review of the following was undertaken:

- NSW EPA contamination registers and records;
- Historical business directories;
- Historic aerial photographs;
- Historic land title documentation;
- Utilities and service plans;
- SafeWork NSW hazardous chemicals records.

4.1 REGISTERS AND RECORDS

A search of the following databases was undertaken on behalf of Stantec by Lotsearch Report (Report ID – LS036798, **Appendix D**) to identify properties within 1,000 metres of the site that may present a potential contaminant risk:

- List of NSW contaminated sites notified to NSW EPA;
- NSW EPA Contaminated land records of notice;
- NSW EPA locations of former gasworks sites;
- NSW EPA per and poly fluoroalkyl substance (PFAS) Investigations program;
- NSW EPA other sites with contamination issues;
- NSW EPA Licensed activities under the PoEO Act;
- NSW EPA Delicensed PoEO activities now revoked or surrendered;
- Defense PFAS investigation & Management Program;
- Airservices Australia National PFAS Management Program;
- Geoscience Australia National Waste Management Facilities Database; and
- Geoscience Australia National Liquid Fuel Facilities.

Records identified within 1,000 metres of the site are summarised in **Section 4.1.1** to **Section 4.1.4**, while the full results of searches including records outside the 1,000 m buffer and results for databases with no records identified are included in **Appendix D**.

4.1.1 Contaminated Land Record of Notices

The Contaminated Land Record of Notices is maintained by the Office of Environment and Heritage (OEH) in accordance with Part 5 of the Contaminated Land Management (CLM) Act 1997 and contains regulatory notices issued by the Environment Protection Authority (EPA) in relation to contaminated sites. A search of the records on the 6th of January 2025 identified the locations summarised in **Table 4-1** below.

Table 4-1 Contaminated Land Record of Notices within 1,000 m of the site

Site	Address	Notices	Area No	Distance (m) / Direction
Chatswood Toyota	728 Pacific Highway, Chatswood	6 former	3228	344 m / South-west

Site	Address	Notices	Area No	Distance (m) / Direction
Former Caltex Chatswood Service Station	607 Pacific Highway, Chatswood	8 former	3231	949 m / South

4.1.2 Protection of the Environment Operations Public Register

The Protection of the Environment Operations (PoEO) Public Register under Section 308 of the *Protection of the Environment Operations Act 1997* (PoEO Act) contains Environment Protection Licences, applications and notices issued by the EPA. A search of the PoEO public register was undertaken on the 6th of January 2025 and results are summarised below in **Table 4-2** and **Table 4-3**. The full results and figures can be viewed in **Appendix D**.

Table 4-2 PoEO Act Licenses and status

Licence Number	Licence Holder	Location	Activity	Status	Distance (m) / Direction
12208	Sydney Trains	Sydney Trains, Haymarket, NSW, 1238	Railway systems activities	Current	34m / Northwest
1175	Hochtief AG	Macquarie Park, NSW, 2113	Railway systems activities	Surrendered	34m / North
20544	John holland Pty Ltd	Northwest Rail Link - Operations Trains and Stations Project, Between First Ponds Creek, Schofields and Cudgegong Road, ROUSE HILL, NSW 2155, ROUSE HILL	Railway systems activities	Surrendered	34m / North
21247	Metro Trains Sydney Pty Ltd	Sydney Metro, Rouse Hill, NSW 2155	Railway systems activities	Current	38m / Northwest
10500	The Hospitals Contribution Fund of Australia Ltd	6/13 Spring Street, Chatswood	Hazardous, Industrial or Group A Waste Generation or Storage	Delicensed	304 m / South-east
21423	CPB Contactors Pty Ltd	Between Chatswood dive site and Sydenham dive site, Sydney, NSW, 2000	Railway infrastructure construction (<50,000T)	Current	892m / South
4653	Luhrmann Environment Management Pty Ltd	Waterways throughout NSW	Other Activities / Non-Scheduled - Activity - Application of Herbicides	Surrendered	705m / West
4838	Robert Orchard	Various Waterways throughout NSW – 2000	Other Activities / Non-Scheduled - Activity - Application of Herbicides	Surrendered	705m / West
6630	Sydney Weed & Pest Management Pty Ltd	Waterways throughout NSW – Prospect NSW, 2148	Other Activities / Non-Scheduled - Activity - Application of Herbicides	Surrendered	705m / West
20971	John Holland Pty Ltd	Sydney Metro City & Southwest Tunnels and Excavation Works, locations between Chatswood railway	Concrete Works, Railway Systems Activities	Surrendered	854m / South

Licence Number	Licence Holder	Location	Activity	Status	Distance (m) / Direction
		station and Sydenham railway station, 2000, SYDNEY, NSW			

Table 4-3 PoEO Act - clean up and penalty notices

Notice Number	Licence Holder	Location	Distance (m) / Direction
3173530755	Sydney Trains	Sydney Trains, Haymarket, NSW, 1238	34m / Northwest

A PoEO penalty notice was issued to Sydney trains on 10 November 2021 due to Sydney train contravened a condition of license no further information was available online on *Protection of the Environment Operations Act (POEO) public register.*

4.1.3 List of NSW Contaminated Sites Notified to the EPA

The list of NSW contaminated sites notified to the EPA are properties that are contaminated to an extent that warranted reporting to the NSW EPA; however, contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can determine the requirements for regulation. A search of the List of NSW Contaminated Sites Notified to the EPA was undertaken by Lotsearch which identified six (6) contaminated sites within a 1,000 m radius of the site. These sites are summarised in **Table 4-4**.

Table 4-4 List of sites notified as contaminated to the EPA within 1,000 m of the site

Site	Address	Activity	EPA Site Management Class	Distance (m) / Direction
Coles Express Service Station Chatswood	877-879 Pacific Highway	Service Station	Regulation under CLM Act not required	284m / North
Chatswood Toyota	728 Pacific Highway	Service Station	Contamination formerly regulated under the CLM Act	344m / South West
Mobil Service Station	2 Boundary Street	Service Station	Regulation under CLM Act not required	748m / North
Auto Repairs	2 Devonshire Street	Service Station	Regulation under CLM Act not required	801m / Southeast
Former Caltex Chatswood Service Station	607 Pacific Highway	Service Station	Contamination formerly regulated under the CLM Act	949m / South
Caltex Service Station Chatswood	572 Pacific Highway	Service Station	Regulation under CLM Act not required	961m / South

4.1.4 National Waste Management and Liquid Fuel Facilities

A search of Geoscience Australia, Waste Management and Liquid Fuel Facilities on the 6th of January 2025 identified three (3) National Liquid Fuel Facilities within the buffer. A summary of the search is provided in **Table 4-5**.

Table 4-5 National Liquid Fuel Facilities

Site	Location	Category	Status	Distance (m) / Direction
Coles Express Chatswood	887-897 Pacific Highway	Petrol Station	Operational	284 m / north
7-Eleven Pty Ltd Roseville	Pacific Highway	Petrol Station	Operational	748 m / north
Ampol Woolworths Metro Chatswood	572 Pacific Highway	Petrol Station	Operational	961 m / south

4.2 HISTORICAL AERIAL PHOTOGRAPHY REVIEW

Seventeen (17) historical aerial photographs taken in the years 1930, 1943, 1951, 1955, 1961, 1965, 1970, 1978, 1982, 1986, 1991, 1994, 2000, 2005, 2011, 2016 and 2022, were reviewed to identify historical land uses that may present potential contaminant sources.

The aerial photograph summary is provided below in **Table 4-6** and historical photographs are presented in **Appendix D**.

Table 4-6 Summary of Aerial Photograph Review

Year	Onsite	Offsite
1930 (B&W)	Site appears to have five building structures onsite.	North: Mcintosh Street and what appears to be low density residential properties.
		South: Help Street and low-density residential properties.
		East: Low density residential properties and Anderson Street.
		West: Rail corridor and track. Beyond this is residential properties.
1943 (B&W)	No visible changes, better image resolution.	North: No visible changes.
		South: No visible changes.
		East: No visible changes.
		West: No visible changes.
1951 (B&W)	No visible changes, lower image resolution.	North: No visible changes.
		South: No visible changes.
		East: No visible changes.
		West: No visible changes.
1956 (B&W)	The site appears to have another building constructed, totalling six buildings on site.	North: No visible changes.
		South: No visible changes.
		East: No visible changes.
		West: No visible changes.
1961 (B&W)	Three of the six structures on the site appear to have been demolished to construct a long medium density residential property along the eastern portion of the site.	North: A residential property and open space have been developed into two large buildings, land use unknown but appear residential.
		South: structures are visible south of the site and appear commercial / industrial in nature.
		East: No visible changes.

Year	Onsite	Offsite
		West: A large parking lot appears to have been constructed west to north-west of site, adjacent to the rail corridor.
1965 (B&W)	No visible changes.	North: No visible changes.
		South: A large structure, possibly industrial, appears to have been constructed south of the site.
		East: No visible changes.
		West: No visible changes.
1970 (B&W)	A medium density residential structure appears to have replaced three of the inferred low-density residential buildings on the western portion of site.	North: No visible changes.
		South: A construction project appears to be ongoing south of the site, potentially industrial.
		East: No visible changes.
		West: A new building has been constructed west of the railway line.
1978 (B&W)	No visible changes.	North: No visible changes.
		South: Construction to the south appears complete.
		East: No visible changes.
		West: Tall commercial or office buildings have been constructed south-west of site, west of the railway line.
1982 (Colour)	No visible changes.	North: No visible changes.
		South: No visible changes.
		East: No visible changes.
		West: No visible changes.
1986 (Colour)	No visible changes.	North: No visible changes.
		South: No visible changes.
		East: No visible changes.
		West: No visible changes.
1991 (Colour)	No visible changes.	North: An area towards the northwest appears to be undergoing excavation work, pre-construction.
		South: No visible changes.
		East: No visible changes.
		West: Works either side of the railway in the west are under going construction with a building demolished in the north-west.
1994 (Colour)	No visible changes.	North: The north-west appears to be undergoing excavation.
		South: No visible changes.
		East: No visible changes.
		West: The west is still undergoing excavation and pre-construction work.
2000 (Colour)	The building in the western portion of site appears to have different roofing, now splitting the building in two.	North: The area in the north-west appears to be undergoing excavation, planting and paving.
		South: Demolishing of the existing building and construction of a new one is underway directly south of site along Help Street.
		East: No visible changes.



Year	Onsite	Offsite
		West: The area in the west and north-west appears to be undergoing excavation, planting and paving.
2005 (Colour)	No visible changes.	North: In the north-west, construction has finished with several tall buildings and a park now visible with the railway running underneath the park.
		South: Construction has finished with two large, likely accommodation buildings constructed.
		East: No visible changes.
		West: Construction in the west has been finished with the rail corridor running the newly constructed buildings and park area. Multiple buildings have also been constructed.
2011 (Colour)	No visible changes.	North: No visible changes.
		South: No visible changes.
		East: No visible changes.
		West: An area seems to be clear for construction (pre-construction). A new building has finished constructed directly adjacent to site.
2016 (Colour)	No visible changes.	North: No visible changes.
		South: No visible changes.
		East: The low density residential buildings adjacent appear to have been demolished and replaced with a major construction project.
		West: A tall structure appears to have been constructed on the vacant lot, as well as planting and modifying landscaping.
2022 (Colour)	The site is in its current day state and there are no visible changes.	North: No visible changes.
		South: No visible changes.
		East: Building adjacent appears to have completed construction with new, likely apartment blocks built.
		West: No visible changes.

4.3 HISTORICAL LAND TITLES

Historical land title documents were reviewed to identify historical land uses and activities that may present a potential risk of contamination. A summary of the land uses is provided below in **Table 4-7** and the title documents are provided in **Appendix D**.

Table 4-7 Land Title Summary

Date of Acquisition and term held	Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
Strata Plan 52320		
11.08.1913 (1913 to 1957)	George Charles Wilkes (Carter now Taxi Cab Proprietor)	Volume 2365 Folio 24
11.02.1957 (1957 to 1968)	James Charle Petorie (Solicitor) Charles Harvey (Farmer) (Section 94 Application not investigated)	Volume 2365 Folio 24

Date of Acquisition and term held	Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
03.05.1968 (1968 to 1972)	The National Mutual Life Association of Australasia Limited	Volume 2365 Folio 24
10.12.1972 (1972 to 1987)	T.R. Services Pty. Ltd	Volume 2365 Folio 24
18.11.1987 (1987 to 1988)	Tolipo Pty Limited	Volume 2365 Folio 24
07.12.1988 (1988 to 1994)	North City Developments Pty. Limited	Volume 2365 Folio 24 Now 41/2602
23.09.1994 (1994 to 1996)	Pemtex Pty Ltd	41/2602
14.06.1996	Registration of Strata Plan No. 52320	
14.06.1996 (1996 to Date)	# The Owners – Strata Plan No. 52320	41/2602 Now CP/SP52320
Leases: 03.05.1968 (L67972): Lease to T.R. Services Pty. Ltd. Merged in Fee Simple.		
Strata Plan 134		
11.08.1919 (1919 to 1941)	Catherine Sarah Stephens (Spinster)	Volume 2062 Folio 130
13.03.1941 (1941 to 1941)	Public Trustee (Transmission Application not investigated)	Volume 2062 Folio 130
02.06.1941 (1941 to 1949)	George Charles Wilkes (Taxi Cab Proprietor)	Volume 2062 Folio 130
17.01.1949 (1949 to 1960)	George Charles Wilkes (Junior) (Taxi Driver)	Volume 2062 Folio 130
25.05.1960 (1960 to 1962)	Paul Archer (Builder) Illeana Archer (Married Woman)	Volume 2062 Folio 130 Now Volume 9191 Folio 178
04.07.1962	Registration of Strata Plan No. 134	
04.07.1962 (1962 to Date)	# The Proprietors – Strata Plan No. 134 Now # The Owners – Strata Plan No. 134	Volume 9191 Folio 178 Then Volume 8498 Folio 134 Now CP/SP135

4.4 HERITAGE

The site is surrounded by several heritage items, mainly houses and conservation areas. **Table 4-8** provides a summary of contamination relevant heritage items within the buffer. The heritage items present a possible land contamination risk due to the potentially contaminating historical activities. A list of sites with figures is presented in **Appendix D**.

Table 4-8 Summary of relevant heritage items

Site Name	Significance	Details	Distance (m) / Direction from site
Old fire station	Local	Item – General	452 m south west

The identified fire station was in operation from 1900 to 1945 and appears up-gradient from site.

4.5 HISTORICAL BUSINESS DIRECTORY

Historical business directory records for the years 1950, 1961, 1965, 1970, 1975, 1978, 1982, 1986 and 1991 were searched to identify historical land uses at or surrounding the site that could present potential contaminant sources. A copy of the Lotsearch is provided in **Appendix D** and a summary of identified business that could present a potential contaminant risk are provided below in **Table 4-9**.

Table 4-9 Industries, businesses and activities that may cause contamination within 1,000 m of the site

Business Activity	Address	Year Active	Distance(m)/ Direction (m)
Motor garages & engineers	Hepburn, A., 3 Help St. Chatswood	1961	0 m / onsite
Inter-communicating systems mfrs &/or Installers	T.R. Services Pty. Ltd, 5 Help St., Chatswood 2067	1986	0 m / onsite
Fire protection appliances mfrs &/or engineers	T.R. Services Pty. Ltd, 5 Help St., Chatswood 2067	1982	0 m / onsite
Chemical importers &/or dists.	Consolidated Chemical Co., 1 Help St., Chatswood. 2067	1986	0 m / East
Motor garages &/or engineers	Nicolson, Alex A., 3 McIntosh St., Chatswood	1950	12m / north
Laundries &/or laundrettes.	Pageboy, Wallace Way, Chatswood. 2067	1986	42m / south
Railway equipment mfrs &/or dists (R1785)	Steel Merchants Group, Wallace Way, Chatswood 2067	1982	42 m / south
Motor garages &/or engineers; battery service stations	McMahon, K. J., 17 Railway St., Chatswood	1950	55m / northwest
Waste disposal machinery &equipment. (w0999)	Tranfield Bio-Jet, 7th Fl. South Tower, Chatswood Plaza, Chatswood. 2067.	1982	89m / east
Dry cleaners, pressers/dyers	Milford Dry Cleaning Service., 433 Victoria Ave Chatswood	1967	101m / southeast
Dry cleaners, pressers & dyers.	Manns Dry Cleaning Service., 413 Victoria Ave Chatswood	1948	112m / east
Dry cleaners, pressers & dyers.	Wallace Way Laundrette., 2 Help St., Chatswood. 2067.	1979	134m / southwest
Motor service stations-petrol, etc.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	1958	134m / west
Motor service stations-petrol, etc.	New Age Service Station., 847 Pacific Hghwy., Chatswood	1958	145m / northwest

Business Activity	Address	Year Active	Distance(m)/ Direction (m)
Motor garages &/or engineers.	Devlin A. D. And Co., 12 Dalton St Chatswood	1948	170m / south
Motor service stations-petrol, etc.	Curtis H. W (The Avenue Filling Station)., 398 Victoria Ave., Chatswood	1948	175m / southeast
Dry cleaners, pressers & dyers	Renova Dry Cleaners (Mrs. V. M. Umino), 465 Victoria Ave., Chatswood	1950	181m / southwest
Dry cleaners, pressers & dyers.	Marcel Poincare., 352 Victoria Ave Chatswood	1948	229m / east
Dry cleaners, pressers &/or dyers.	Mayne. M., 501 Victoria Ave., Chatswood. 2067	1975	233m / southwest
Dry cleaners, pressers & dyers.	Benjamin A. J Pty. Ltd., 479-495 Victoria Ave Chatswood	1948	233m / southwest
Dry cleaners, pressers/ dyers.	Mark Mayne Pty. Ltd., 391 Victoria Ave Chatswood	1964	246m / east

4.6 UTILITY PLANS

A review of utilities within the site was undertaken from requested Dial Before You Dig (DBYD) utility plans, reference 33103659. A brief summary of the supplied information is provided below in **Table 4-10**.

Table 4-10 Utilities Summary

Utility owner	Asset Description
Telstra	An old 100 mm asbestos cement conduit is located along Help St with a 50 mm PVC conduit running to 5 Help St and a 30-35 mm PVC conduit running to 3 Help St.
Uecomm	An underground Uecomm cable runs along Help St with a fibre optic cable running to 5 Help St.
Jemena	A 1050kPa high pressure gas main runs along Cambridge Lane to the west and 210 kPa medium pressure gas mains run along both Help St and Mcintosh St.
Sydney Water	A sewer concrete encased line runs along the eastern boundary of 3 Help St and is noted to lie within the building / basement. 225 to 300 mm PVC sewer pipes are present along Cambridge Lane and Help St. Water mains also run along each of the bordering streets. The water main along Help St is a 150 mm ductile iron cement lined pipe while the other water mains along Cambridge Lane and Mcintosh St are 200 mm PVC pipes.
TPG Telecom	A pipe networks duct runs along Help St, south of site.
Ausgrid	Ausgrid main lines run along Help St and Mcintosh St.

4.7 CONTROLLED CHEMICALS ASSESSMENT

The NSW EPA uses Chemical Control Orders (CCO) as a primary legislative tool under the Environmentally Hazardous Chemicals Act 1985 to manage chemicals of concern and limit their potential impact on the environment. Stantec provide a preliminary screening of the site history for the likelihood of chemicals of concern within the CCO framework in **Table 4-11** below.

Table 4-11 Preliminary Controlled Chemicals Screening

Chemical of Concern	Likelihood of Occurrence
Were aluminium smelter wastes used or stored on the site (CCO, 1986)?	Low
Do dioxin contaminated wastes (CCO, 1986) have the potential to impact the site?	Low
Were organotin products (CCO 1989) used or stored on site?	Low
Were polychlorinated biphenyls (PCBs) used or PCB waste (CCO 1997) stored on site?	Low to medium – PCBs could be present in old lights on site

4.8 PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS)

A PFAS probability of occurrence qualitative desktop survey is provided in **Table 4-12** and has been undertaken on the basis of information provided in the PFAS National Environmental Management Plan (NEMP 2020).

PFAS are known to be present in Aqueous Film Forming Firefighting Foams (AFFF) and Alcohol-Type Concentrate (ATC). The historic use of AFFF is reported as being used by Fire & Rescue NSW between 1976 and 2007, while other agencies used AFFF during training exercises as late as 2010 (Source: Fire & Rescue NSW, Information Sheet, Firefighting Foam and PFAS, reference D16/82523).

Table 4-12 PFAS Desktop Survey

Preliminary Screening Questions	Likelihood of Occurrence [1,2,3]
Is the past or present site activity listed in the NEMP 2020 as being an activity with risk of fire. If so, list activity:	Low – Residential properties have always occupied the site.
Is the past or present off-site activity up-gradient or adjacent to the site listed in the NEMP 2020 as being an activity with risk of fire. If so list activity:	Low – Old fire station was located 452 m up-gradient from site and was in use until 1945.
Did fire training involving the use of suppressants occur on-site between 1970 and 2010?	Low – Old fire station identified near site ceased operation in 1945.
Did fire training occur up-gradient of or adjacent to the site between 1970 and 2010?	Low
Have “fuel” fires ever occurred on site between 1970 and 2010? (i.e. ignition of fuel storage tanks - solvent, petrol diesel, kerosene, other)?	Unknown
Have PFAS been used in manufacturing or stored on-site?	Low
Could PFAS have been imported to the site in fill materials from a site with activity listed in NEMP 2020 and subject to exposure to PFAS from 1970 to 2010?	Low
Could PFAS-contaminated groundwater or run-off have migrated beneath or on to the site?	Low
Is the site or adjacent sites listed in the NSW EPA PFAS Investigation program 4?	Low
Does the site analytical suite need to be optimised to include preliminary sampling and testing for PFAS in soil and waters (incl. ASLP or TCLP)? Provide rationale.	Sampling and testing for PFAS impacts is not a requirement based on the desktop survey, noting that the fire station upgradient of the site ceased operation in 1945. No other surrounding land uses with a heightened risk of being a PFAS source were identified.



Notes:
1 - Likelihood: Low – All necessary documentation has been reviewed and there is no recorded instance of potential PFAS use or exposure
2 - Medium - All necessary documentation has been reviewed and there is potential evidence of a recorded instance of potential PFAS use or exposure
3 - High - All necessary documentation has been reviewed and there is evidence of a recorded instance of potential PFAS use or exposure
4 - https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program

4.9 SAFEWORK DANGEROUS GOODS SEARCH

A SafeWork NSW Schedule 11 Hazardous Chemicals on premises search was undertaken for the properties identified as 3 – 5 Help Street, Chatswood (Survey Plan SP52320 and Survey Plan SP134).

A search of the records held by SafeWork NSW did not locate any records pertaining to the above-mentioned premises and a copy of the results is provided in **Appendix D**.

4.10 SUITABILITY OF SITE HISTORY RECORDS

The site history information collected during this investigation is considered of a suitable quality for the purposes of a preliminary site assessment.

5.0 CONCEPTUAL SITE MODEL

5.1 PRELIMINARY CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) provides the framework for identifying sources of contamination, contaminant migration pathways, human and ecological receptors and exposure mechanisms. Risk to human health and the environment is identified through complete Source – Pathway – Receptor (SPR) linkages. In order to identify SPR linkages the CSM considers site specific factors, including:

- Source(s) of contamination;
- Identification of Contaminants of Potential Concern associated with past (and present) source(s);
- Site specific information including soil type(s), depth to groundwater, inferred groundwater flow direction and surface water bodies and interactions;
- Location of any identified sources relative to the proposed site development; and
- Actual or potential receptors considering both current and future land use both for the site, adjacent properties and any sensitive ecological receptors.

Based on a review of the desktop site history information and site walk-over observations, the following preliminary CSM has been developed showing potential SPR linkages considered to be potentially complete or incomplete under our understanding of the current and future land use. The completeness of the SPR linkages is evaluated in the revised CSM in **Section 10.1** in consideration of data gathered during the site investigation.

Table 5-1 summarises the contamination sources identified within the site based on the desktop assessment and site walkovers.

Table 5-1 Contamination Sources Summary

Contamination Source	Description	Contaminants of Concern	On/off Site
Demolition of buildings on and off site	The site historically contained buildings and structures that were demolished. During demolition and removal, there is potential for hazardous materials and waste to be buried and/or latent on ground surfaces.	Asbestos, Lead, Polychlorinated biphenyl (PCB), Synthetic Mineral Fibres (SMF)	On site
Hazardous building materials in current structures	The buildings and structures currently on site have potential to contain hazardous building materials. Such materials can weather from building fabrics and result in contamination.	Asbestos, Lead, PCB, SMF	On site
Cutting and fill materials on site	Cutting was observed at 3 Help Street with an approximate 6 m high concrete retaining wall along the eastern site boundary. Potential filling was observed at both 3 and 5 Help Street within the garden beds and at the grassed area in the northern part of site at 3 Help St.	Metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), organochlorine / organophosphorus	On site

Contamination Source	Description	Contaminants of Concern	On/off Site
	The source of this fill material is unknown and there is potential for contaminants to be present.	pesticides (OCP/OPP), asbestos	
On and off-site current and historical commercial land uses	The site and surrounding lands have been identified by historical business directories as potentially containing commercial land uses including motor garages and engineers, chemical importers, manufacturers for railway equipment and fire protection appliances, waste disposal machinery and equipment, and dry cleaners. Such land uses can present a potential source of contamination.	Chlorinated hydrocarbons (CHCs), volatile organic compounds (VOCs), Metals, BTEX, PAH	On site and off site
Historical railway activities adjacent to site	From at least 1930, a railway corridor has been located cross-gradient and approximately 50 m west of site. Rail corridors can contain contamination associated with fill, spills and leaks, and wearing of brake pads.	Metals, TRH, BTEX, PAH, asbestos	Off site
Mismanagement of waste fluids	Grease and oil was observed on the cover and internal surfaces of a stormwater drain in the central portion of 3 Help Street. The nature of the oil is unconfirmed and an odour was not detected during inspection. The oil appears to have been discharged directly into the drain, so contamination of soils on-site is unlikely as any oils would likely have departed the site to the local stormwater network.	TRH, BTEX, PAH, phenol, metals	On site

The preliminary CSM for the site is summarised in **Table 5-2** and applies to the current and future land use as a residential/commercial building.

Conceptual Site Model

PRELIMINARY SITE INVESTIGATION WITH LIMITED SAMPLING

Conceptual Site Model

Contaminant Source	Potential Impacted Media	Potential Contaminants of Concern	Potential Exposure Pathways	Receptors
Demolition of buildings on and off site Hazardous building materials in current structures	Soil	▪ Asbestos; Lead; PCB; SMF	▪ Direct contact ▪ Incidental ingestion ▪ Incidental inhalation of dust and asbestos fibres ▪ Vapour intrusion (volatile contaminants only)	<u>Human:</u> ▪ Current and future site users and residents ▪ Site workers <u>Ecological:</u> ▪ Site vegetation in landscaped areas including soil biota, juvenile and mature trees.
Cutting and fill materials on site	Soil Groundwater	▪ Metals; TRH; BTEX; PAH; OCP/OPP		
On and off-site current and historical commercial land uses	Soil Groundwater Vapour	▪ Chlorinated Hydrocarbons (CHC); VOCs; Metals; BTEX; PAH		
Historical railway activities adjacent to site	Soil Groundwater	▪ Metals; TRH; BTEX; PAH; Asbestos;		
Mismanagement of waste fluids	Soil Groundwater	▪ TRH; BTEX; PAH; Phenol; Metals		

5.2 DATA GAPS

Based on Stantec's assessment of the site historical information, which included a historical review and inspection, the following data gaps were identified:

- Some areas of site could not be accessed during the site walkover and therefore not inspected as part of the investigation, as outlined in **Section 3.1.2.** Inaccessibility of these areas is unlikely to alter the outcome of this assessment.

6.0 DATA QUALITY ASSESSMENT

6.1 DATA QUALITY OBJECTIVES

The NSW EPA *Guidelines for the NSW Site Auditor Scheme* (3rd Edition) (EPA 2017), the NEPC 2013, and the NSW EPA *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines* (EPA 2020), which are made or approved by the NSW EPA under s105 of *the Contaminated Land Management Act 1997* requires that Data Quality Objectives (DQOs) be identified for all assessment and remediation programs.

The DQO process as adopted by the NSW EPA is described within US EPA (2000) *Guidance for the Data Quality Objectives Process and Data Quality Objectives Process for Hazardous Waste Site Investigations* and is outlined below in **Table 6-1**.

Table 6-1 Data Quality Objectives

DQO Step	Discussion
Step 1: State the Problem (Summarise the contamination problem that will require new environmental data, and identify the resources available to resolve the problem, develop a conceptual site model)	The site is proposed for redevelopment that will require demolition of existing buildings and structures and construction of high-density residential dwellings. Currently, the contamination status and suitability of the site for the proposed land use is unknown. A site history review and site inspection have identified the potential for contaminant sources that require investigation to assess the suitability of the site and support the development approval.
Step 2: Identify the decision / goal of the study (Identify the decisions that need to be made on the contamination problem and the new environmental data required to make them)	The goal of the study is to collect sufficient data in order to assess contamination of land at the site. In making this assessment, the following decisions will be made: • Is there sufficient and suitable data, considerate of the data inputs listed in Step 3, to determine the nature and extent of contamination of land and impact on onsite and offsite receptors? • Is the site impacted by contamination of land? If contamination of land is identified then: - What is the source of the impact/s? - What impact do the site geologic and hydrogeological conditions have on the fate and transport of any impact/s? - Does the identified impact coupled with the fate and transport of identified contaminants represent an unacceptable risk to identified human and/or environmental receptors on or offsite? Where data is insufficient or unsuitable, or a potentially unacceptable risk is identified, the following decisions are to be made: • Is further investigation required? • Is remediation necessary to make the site suitable for the intended land use?
Step 3: Identify the Information Inputs (Identify the information needed to support any decision and specify which inputs require new environmental measurements)	Inputs to the decision-making process included: • Guidelines made or approved by the NSW EPA under the Contaminated Land Management Act 1997; • Client information provided (such as proposed designs); • The current and proposed land use; • Available site historical information and existing reports; • Visual observation and documentation (i.e. field notes, geological logs, photographs) during site works; and • Assessment of soil analytical results in relation to the adopted human health and ecological criteria.

DQO Step	Discussion
Step 4: Define the study boundaries (Specify the spatial and temporal aspects of the environmental media that the data must represent to support decision)	The boundaries of the study are: • Lateral – the intrusive investigation is limited to the lateral extent of the site, as shown in Figure 1 in **Appendix A** and defined in **Table 2-1**. • Vertical – the intrusive investigation will target underlying soils to the depth specified in geological logs and chain of custody documentation, and at the groundwater as specified in sampling records; and • Temporal – Results will be valid on the day of data / sample collection and remain valid as long as no changes occur on site or contamination (if present) does not migrate to or from the site.
Step 5: Develop the analytical approach (To define the parameter of interest, specify the action level, and integrate previous DQO outputs into a single statement that describes a logical basis for choosing from alternative actions)	Parameters of interest include the laboratory results for soil and groundwater testing. The CSM must also be considered sufficient and not limited by data gaps that bring question to the quality of the results. Data will be considered suitable for use where: • The laboratories are NATA-accredited and quality assurance/ quality control data are within the acceptable ranges, nominated in **Table 6-2** and • The Practical Quantitation Limit (PQL) or Limit of Reporting (LOR) for all analyses is at or below the adopted criteria level. Where data does not meet suitability criteria, the following approaches will be considered: • The data will be considered unsuitable and will not used for the site assessment; or • The data will be adopted with qualification (e.g. heterogenous distribution of metals within replicate samples; inaccessibility to entire sit due to buildings and structures). Further sampling may be necessary to close data gaps resulting from unsuitable data. Results will be considered less than the adopted site criteria nominated in **Section 7.0** if: • Soil materials are aesthetically suitable for the proposed land-use; and • The laboratory reported results are less than the relevant adopted criteria; or • For a representative group of soil samples (i.e. from the same strata and area within the site): - The calculated 95% Upper Confidence Level of the arithmetic mean (95%UCL) contaminant concentration is less than criteria; and - The standard deviation of the results is less than 50% of the relevant adopted criteria; and, - No single analytical result for a contaminant of concern exceeds 250% of the relevant adopted criteria.
Step 6: Specify performance or acceptance criteria (Specify the decision-maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data	Two primary decision error-types may occur due to uncertainties or limitations in the project dataset: • A sample/area may be deemed to pass the nominated criteria, when in fact it does not. This may occur if contamination is missed due to limitations in the sampling plan, or if the project analytical data set is unreliable • A sample/area may be deemed to fail the nominated criteria, when in fact it does not. This may occur if the project analytical dataset is unreliable due to inappropriate sampling, sample handling or analytical procedures. The following aspects were considered when establishing the acceptable limits on decision errors: • The null hypothesis for the project is: the sample/investigation area is deemed to be contaminated. Sufficient weight of evidence, via the uses of statistical analysis (e.g. 95% upper confidence limit of the mean [UCL]) and/or gathering multiple lines of evidence (e.g. desktop review and laboratory analytical data), would be required to reject/disapprove the null hypothesis • A quality assurance / quality control (QA/QC) assessment evaluating the reliability and useability of data, which are expressed as five DQIs summarised in **Table 6-2**.



DQO Step	Discussion
Step 7: Develop the plan for obtaining data (Identify the most resource-effective sampling and analysis design for general data that are expected to satisfy the DQOs)	The work plan is designed to meet the project objectives and the DQOs outlined above. To ensure resource-effective sampling, analysis and data collection that satisfied the DQOs, the following actions are to be taken: • Written instructions will be used to guide field personnel in the required fieldwork activities; • Representative soil samples will be collected from the site and analysed for characterisation purposes; and • Field works and analyses will be undertaken in accordance with Stantec Standard Operating Procedures. Further detail on the investigation methodology is provided in **Section 8.0**.

6.2 DATA QUALITY INDICATORS

To ensure that the investigation data and results are of an acceptable quality and suitable for the intended purspose, the data set was assessed against the data quality indicators (DQIs) outlined in **Table 6-2** below.

Table 6-2 Data Quality Indicators

QA/QC Measure	Field Quality Indicator	Laboratory Quality Indicator
Precision: A quantitative measure of the variability (or reproducibility) of data	• SOPs are appropriate and complied with. • Field duplicates and blind field duplicates are collected and analysed at a rate of 5% (1 per 20 samples). • Use of calibrated equipment.	• Laboratory analyses of laboratory and inter-laboratory duplicates, field duplicates, laboratory prepared volatile trip spiles. • Relative Percent Difference (RPD) calculation results: • <30% Relative Percentage Difference (RPD). • The RPD values are calculated using the following equation: $$RPD = \left(\frac{Co - Cr}{\frac{[Co + Cr]}{2}} \right) \times 100$$ Where, C_O = Analyte concentration of the original sample C_R = Analyte concertation of the duplicate sample
Accuracy: A quantitative measure of the closeness of reported data to the "true" value	• SOPs are appropriate and complied with. • Use of calibrated equipment. • Field interlaboratory duplicates sampled and analysed at a rate of 1 per 20 samples. • <30% Relative Percentage Difference (RPD) • Analysis of rinsate sample collected at rate of 1 per day. • Trip spike and trip blanks were used.	• Laboratory holds NATA-accreditation for the analyses. • Laboratory limit of reporting is below the adopted investigation level. • Laboratory analysis of: field blanks, rinsate blank, reagent blank, method blank, matrix spike, matrix spike duplicate, surrogate spike, reference material, laboratory control sample, laboratory-prepared spikes. The nominal acceptance limits on laboratory control samples are: – Laboratory spikes: o 70-130% recovery for metals o 60-140% for organics – Laboratory duplicates. If contaminant concentration is:

QA/QC Measure	Field Quality Indicator	Laboratory Quality Indicator
		○ < 10 x PQL, no RPD limit ○ 10-20 x PQL, RPD is 0% to 50% ○ >20 x PQL, RPD is 0% to 20% – Laboratory surrogates: 60-140% recovery. – Laboratory blanks: <PQL – Laboratory control samples, 70-130% recovery
Representativeness: The confidence (expressed qualitatively) that data are representative of each media present on site and the conditions encountered in the field	• Appropriate media sampled. • Preservation and storage of samples upon collection and during transport to the laboratory occurs. • Sampling is undertaken by an experienced sampler.	• Blank samples run in parallel with field samples to confirm there are no unacceptable instances of laboratory artefacts. • Review of RPD values for field and laboratory duplicates to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities • The appropriateness of collection methodologies, handling, storage and preservation techniques will be assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (i.e. volatile loss during transport due to incorrect preservation / transport methods). • Rinsate samples used when sampling equipment is reused have analytical results <LOR.
Completeness: A measure of the amount of useable data from the data collected during the fieldwork program	• All critical locations sampled. • All samples collected (from grid and at depth). • Standard operating practices (SOPs) appropriate and complied with. • Sampling is undertaken by an experienced sampler. • Suitable records of field work are documented. • Completed laboratory sample chain-of-custody and documentation.	• All critical samples are analysed according to the SAQP. • All contaminants of concern are analysed. • Appropriate methods and PQLs are implemented. • Sample documentation is complete. • Samples are analysed within holding times.
Comparability: The confidence (expressed qualitatively) that may be considered to be equivalent for each sampling and analytical event	• Same SOP is used on each field occasion. • Climatic conditions are documented. • Experienced sampler • Sample type, preservation and handling are consistent at sampling events. • Use of calibrated equipment.	• Sample analytical methods used (including clean-up) • Sample PQLs (justify/quantify if different) • Same laboratories are used and justification is given where differences occur. • Same analytical methods, Practical Quantification Limits (PQLs), and units of measurement are used.

7.0 ASSESSMENT CRITERIA

The assessment of soils and groundwater has been undertaken using a Tier 1 screening risk assessment. A Tier 1 assessment is a risk-based analysis comparing site data with generic guideline values for various land uses to determine the need for further assessment or development of an appropriate management strategy.

The following sections detail the adopted Tier 1 screening criteria for the site, which has been adopted from relevant Australian guidelines made or approved by NSW EPA, as specified under Section 105 of CLM Act 1997.

7.1 SOIL

The adopted criteria are provided in the data summary tables in **Appendix F**, and the laboratory certificates are provided in **Appendix G**.

The human health and ecological assessment criteria were adopted from NEPC (2013) to consider the potential risk to future on-stie receptors under the following land use scenarios:

- Human: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments;
- Ecological: Urban residential / public open space. Vegetation with root zones situated within the top 2 metres of the soil profile, including trees, shrubs and landscaped areas.

7.1.1 Human Health

The criteria that have been adopted from National and State Guidelines for human health exposure settings for the site has been summarised below in **Table 7-1**, along with the rationale behind the application of these criterion.

Table 7-1 Adopted Human Health Criteria - Soil

Guidelines	Specific Criteria	Justification
NEPM (2013)	HIL-B, Schedule B1, Section 6, Tables 1A(1)	It is understood that post-construction, the land use of the site will be mixed use with ground floor commercial, five (5) underground basement levels, and high density residential above. The site will also include subsurface utilities, paved publicly accessible outdoor areas, and landscaped garden beds. The Health Investigation Level (HIL) B thresholds have been adopted to assess the human health risk to site users.
	HSL-B & HSL-D, Schedule B1, Section 6, and 1A(3); For asbestos: Section 4, Table 7.	Health Screening Level (HSL) B thresholds for soil vapour have been adopted for high density residential settings, based on the proposed land use. The criteria for asbestos include: • No visible asbestos for surface soils; • HSL-B: 0.04% for bonded ACM in residential settings; and • 0.001% w/w for friable asbestos in soil.

7.1.2 Ecological

The criteria that have been adopted from the National and State Guidelines ecological exposure settings related to the site which has been summarised below in **Table 7-2**, along with the rationale behind the application of these criterion.

Table 7-2 Adopted Ecological Criteria – Soil

Guidelines	Specific Criteria	Justification
NEPM (2013)	EIL, Schedule B1	It is understood that post-construction, the land use of the site will be mixed use with ground floor commercial, five (5) underground basement levels, and high density residential above. The site will also include subsurface utilities, paved publicly accessible outdoor areas, and landscaped garden beds. The Ecological Investigation Level (EIL) for urban residential and public open space thresholds have been adopted to assess the risk to site users. This is based on the potential for ecological receptors to exist with root zones situated within the top 2 metres of the soil profile, including trees, shrubs and landscaped areas.
	ESL, Schedule B1	The generic ecological screening levels (ESL) for urban residential/public open space, coarse-grained soils, based on the proposed mixed land use will be adopted for natural soils and fill materials.

Ecological Investigation Levels (EIL) and Ecological Screening Levels (ESL) have been adopted to assess the risk to future ecological receptors such as flora and fauna in landscaped areas under an urban residential and public open space land use scenario.

- The site will consist of ground floor commercial space, residential apartments above and underground car parking below ground level. Application of the urban residential and public open space EILs and ESLs are considered appropriate to capture risk to potential ecological receptors.
- The site geotechnical report by Stantec listed residual soils as silty CLAY, with depths of 4m across site.
- Aged criteria have been adopted as the desktop review found no visual changes to the site since 2000, with current buildings existing onsite since the 1970's.
- Generic EILs were utilised for arsenic, DDT, lead and naphthalene.

7.2 GROUNDWATER

7.2.1 Rationale for Groundwater Assessment Criteria

In accordance with the Guidelines for the Assessment and Management of Groundwater Contamination (Ref. DEC, 2007), groundwater acceptance criteria are based on environmental values considered relevant for groundwater use at the site and surrounding uses of groundwater and surface waters that may be effected by the site. Environmental values include:

- Aquatic ecosystems: surface water and groundwater ecosystems;
- Human uses: these include but are not limited to potable water supply, industrial water use, recreational use (primary and secondary contact with surface waters) and visual amenity of surface waters;
- Human health in non-use scenarios: this includes consideration of health risks that may arise without direct contact between humans and the groundwater, for example, exposure to volatile contaminants above groundwater contaminant plumes; and



- Buildings and structures: this includes protection from groundwater contaminants that can degrade building materials through contact; for example, the weakening of building footings resulting from chemically aggressive groundwater.

A search of registered groundwater bores within a 500 m radius of the site identified one registered bore with the following details available:

- Bore ID: GW107757, which is located approximately 490 metres south of the site with a stated purpose of 'recreation' at the Chatswood Oval on North Street. The drilled depth is stated as 162.60 metres below ground level (m BGL) and the standing water level is recorded as 25.6 m BGL.

Based on this information, an assessment of the applicability of groundwater environmental values, both on-site and off-site, is provided in **Table 7-3**.

Table 7-3 Assessment of groundwater environmental values

Environmental Value	Applicable	Rationale / Comment
Protection of aquatic ecosystems	Yes	Blue Gum Creek is the closest water body and is located approximately 800 m to the west. Whilst a considerable distance from the site, it is inferred that surface water from the site and groundwater beneath the site would migrate toward Blue Gum Creek.
Drinking water	No	No registered bores were identified within a 500m radius that were listed for domestic purposes, and the site is situated in an urban setting with access to a municipal supply of potable water. As such, the drinking water environmental value is not considered applicable.
Irrigation	Yes	One registered groundwater bore is located within 500 m of the site, which is ustilised for watering a sports oval. On this basis, the irrigation guidelines are considered applicable.
Stock Watering	No	On-site use of groundwater for stock watering purposes is not currently practised. A bore search did not identify domestic bores within 500 m of the site. This environmental value is not considered relevant for the site.
Industrial Use	No	On-site use of groundwater for industrial purposes is not currently practised. A bore search did not identify bores used for manufacturing and industrial purposes within 500 m of the site. This environmental value is not considered relevant for the site.
Aquaculture and human consumption of aquatic foods	No	A review of the NSW Department of Primary Industries NSW Aquaculture Industry Directory 2019 did not list an aquaculture producer on or in close proximity to the site. This environmental value is not considered relevant.
Recreational Use	Yes	Due to recreational activities that likely occur at the sporting oval that receives groundwater irrigation, the recreational use environmental value is considered applicable. This environmental value may also be relevant to intrusive maintenance workers if groundwater is encountered at depths between 1 – 2 mBGL.
Non-use scenarios (i.e. vapour inhalation and intrusion)	Yes	Groundwater health screening levels for vapour intrusion (HSLs) are published in the NEPC 2013, Schedule B1 for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation and direct contact pathways. Workers and future users/occupiers of the land may be exposed to vapours emanating from contaminated groundwater if present. This environmental value should be assessed.

Environmental Value	Applicable	Rationale / Comment
Buildings and Structures	Yes	Groundwater may come in contact with building and infrastructure. Corrosive waters may be a cause of concern for buildings and infrastructure and so this environmental value should be assessed.
Visual amenity and aesthetics	No	Groundwater with aesthetic or visual amenity issues are unlikely based on the proposed land-use as a shopping centre.

7.2.2 Groundwater Assessment Criteria

The environmental quality of groundwater should be assessed against relevant environmental values identified at or near the site. The applicable environmental values, Groundwater Assessment Criteria (GAC) are outlined in **Table 7-4** based on the rationale presented in **Section 7.2.1**.

Table 7-4 Groundwater assessment criteria

Environmental Value	Guideline or Standard	Criteria
Aquatic ecosystems	ANZG 2018	Freshwater, 95% species protection default guideline values (DGVs). 99% species protection DGVs apply to bioaccumulative toxicants.
Irrigation	ANZG 2018	ANZG 2018 refers to ANZECC 2000, Volume 3, Chapter 9.2. Short term and long term trigger values.
Recreational use	ANZG 2018	ANZG 2018 refers to ANZECC 2000 and NHMRC 2008, Guidelines for Managing Risk in Recreational Waters, Chapter 9, Table 9.3.
Non-use scenarios (i.e. vapour inhalation and intrusion)	NEPC 2013, Schedule B1, Table 1A(4)	HSL-B, Medium to High Density Residential
Buildings and structures	AS2159-2009 Piling Design and Installation	Section 6, Durability Design

8.0 INVESTIGATION METHODOLOGY

8.1 SOIL SAMPLING

An Experienced Environmental Geoscientist from Stantec attended the site on the 13th of April 2023 to supervise advancement of three (3) soil bores, HA1, HA2, and HA3. The location of each sampling point is illustrated on **Figure 2** in **Appendix A**.

Soil sampling was carried out in general accordance with AS4482.1 (2005): *Guide to the investigation and sampling of sites with potentially contaminated soil*, and Stantec's Standard Operating Procedures (SOPs).

Due to access constraints and the presence of buildings and structures, the soil bores were advanced using a hand-auger. Excavated material were laid onto a clean tarpaulin for a visual and olfactory assessment of contaminant indicators including sheen, staining, discolouration, the presence of solid wastes (including asbestos) and odour. Volatile organic compounds (VOCs) were measured in the headspace of the collected soil samples as part of the field screening process.

A new pair of disposable nitrile gloves was used for the collection of each sample and samples were immediately transferred into laboratory supplied sample containers and stored in chilled containers for transport to the laboratory under chain of custody conditions.

8.2 GROUNDWATER SAMPLING

An Experienced Environmental Geoscientist from Stantec attended site on the 13th of April 2023 to complete fieldwork including collection of groundwater samples from two (2) existing groundwater monitoring wells, BH01 and BH03, that were installed by Stantec's geotechnical team and are shown on **Figure 2** in **Appendix A**.

On the 17th of December 2024, an Environmental Scientist and contaminated land professional from Stantec attended the site to gauge the existing wells with an interface probe (IP) to assess the groundwater and for the potential presence of LNAPL. Disposable bailers were also used to visually assess the groundwater for potential contaminant indicators and to compare the visual / olfactory observations with the prior sampling event. The findings are further described in **Section 9.1.2**.

The groundwater monitoring event comprised of the following methodology:

- Well Inspection - The general site condition was observed prior to commencement of field works for signs of any site activities that may have altered the groundwater contamination status or require modifications to the field or laboratory works program. The structural integrity and serviceability of each sampling point was also visually assessed.
- Well Gauging - The static water level (SWL) and total depth of each well was measured using an oil/water interface probe prior to purging and sampling.
  - The interface probe was decontaminated between use at each monitoring well with Liquinox and rinsed with tap and deionised water. SWLs were measured from a specified mark on the top of casing (TOC) on each well.

- Well Development – Groundwater monitoring wells were previously developed prior to attending site for sampling, ensuring that the samples collected were representative of the screened water bearing zone.
- Well Purging and Sampling - Field parameters and visual/olfactory observations were recorded during purging of groundwater. Physio-chemical parameters including pH, electrical conductivity (EC), redox potential (ORP), dissolved oxygen (DO), and temperature were measured using a calibrated water quality meter.
  - Once field parameters had stabilised, groundwater samples were collected directly from the dedicated tubing used to purge the monitoring well. Groundwater was purged from the well using a Solinst low-flow bladder pump and purge water was collected in sealable containers. Purge water was transported off-site and disposed by a licensed waste disposal company.
  - The groundwater samples were transferred to appropriately preserved sample containers provided by the laboratories. Field observations and physiochemical parameters are presented in **Appendix E**.

Groundwater samples were placed into an esky containing ice and maintained between 2°C and 4°C whilst onsite and in transit under chain of custody conditions to the NATA-accredited laboratories for the targeted suite of analysis.

9.0 RESULTS

9.1 OBSERVATIONS

9.1.1 Soil observations

Observations from the site walker over and soil sampling are summarised in **Section 3.0** with photographs shown in **Appendix C**. Due the preliminary nature of the soil assessment, complete geological logs have not been prepared, instead the generalised shallow profile is summarised below in **Table 9-1**.

Table 9-1 Soil Observations

Sub-surface Horizon	Typical Depth Range (mBGL)	Description
Fill	0.0 – 0.45	Topsoil, sandy clay, dark brown, low to medium plasticity, fine grain, organic matter present (worms and rootlets), trace silt and gravels. Band of sand at 0.25 mBGL.
	0.0 – 0.45	Topsoil, Sandy clay, dark brown, organic matter present (rootlets), low plasticity, fine grain. Increasing clay concentration, the lower depth with med plasticity.
	0.0 – 0.5	Topsoil, sandy clay, low plasticity, fine grain, dark brown, organic matter present (grass, rootlets, worms and, ants), trace quantities of anthropogenic material present (baby wipe).
Natural	0.45 – 0.7	Silty clay, high plasticity, brown to light brown to orange, with trace sands and decomposing matter (wood).
	0.45 – 0.7	Silty clay, dark brown to orange, medium to high plasticity trace gravels sub angular, trace decomposing matter.
	0.5 – 0.9	Silty clay, orange to light brown, high plasticity, with dark orange mottles. Lighter colour the lower depth (orange to light grey).

The general geological profile form materials beneath the fill profile are described below, as reported in Rev2 of the Geotechnical Investigation Report prepared by Stantec (Stantec, May 2023):

- *Residual Soils (Unit 2): Silty CLAY, pale grey and pale brown, medium to high plasticity, stiff to hard consistency, to depths of 4m across all three boreholes, overlying;*
- *Ashfield Shale (Unit 3): grey to dark grey, highly weathered to fresh rock, very low to high strength, to depths of between 15.74m (BH2) and 19.51m (BH3); and*
- *Hawkesbury Sandstone (Unit 4): pale grey to grey, fine to medium grained, fresh rock, high to very high strength, to borehole termination depths of up to 33.96m in BH2 and BH3.*

The examined soils encountered during advancement of soil bores were evaluated on a qualitative basis for odour and visual signs of contamination (e.g. odours, oil staining, filming / sheen, asbestos fragments, ash, charcoal etc.) and the following observations were noted:

- A relatively shallow fill profile was observed at the three soil bore locations with a maximum thickness of 0.5 metres below ground level.
- Sheen, discolouration and staining were not observed within fill materials onsite;



- No fire cement or asbestos containing material (ACM) was observed within soil bores or found on surfaces throughout the site. One potential ACM fragment was observed on the ground surfaces outside the site boundary within a garden bed adjacent to Chapman Road (northeast portion of the site) (see figure in **Appendix A**), however, this is not considered representative of site conditions based on current observations.
- No odours were noted emanating from excavated materials; and
- Groundwater was not observed at the sampling locations to the depth of excavation.

9.1.2 Groundwater Observations

Groundwater gauging data is presented in **Table 9-2** and stabilised groundwater parameters are presented in **Table 9-3** below:

Table 9-2 Groundwater Gauging Data

Well ID	Date	Screened Interval	SWL (mTOC)	Bore Depth (mTOC)	LNAPL Thickness (mm)
BH01	13/04/2023	5.40 – 14.40	10.94	14.40	Nil
	17/12/2024		11.27	14.44	Nil
BH02	17/12/2024	3.23 – 12.23	6.55	12.23	Nil
BH03	13/04/2023	11.07 – 23.07	14.94	23.13	Nil
	17/12/2024		9.05	23.07	Nil

Table 9-3 Stabilised Physicochemical Field Parameters

Well ID	Sample Date	pH	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox Potential (mV)	Observations
BH01	13/04/2023	5.7	3,197	2.9	20	-2.6	Clear, low turbidity, no odour
	17/12/2024	-	-	-	-	-	Clear, low turbidity, no odour
BH02	17/12/2024	-	-	-	-	-	Cloudy, moderate turbidity, no odour, some sludge observed within base of well
BH03	13/04/2023	6.1	1,840	9.4	20	43.8	Light grey, low turbidity, no odour
	17/12/2024	-	-	-	-	-	Reddish colour, moderate to

Results

Well ID	Sample Date	pH	Electrical Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Temp (°C)	Redox Potential (mV)	Observations
							high turbidity, slight organic odour

Stantec's Geotechnical team attended the site in 2024 to assess groundwater inflow estimates and provide drainage advice for the proposed residential building (Stantec, December 2024). Revision 3 of the report states the following in relation to the site and the groundwater conditions:

- Steady-state groundwater inflows into the basement were modelled using the commercially available software Seep/W by Geostudio which is a 2D finite element water seepage analysis tool.
- The basement excavation was modelled using two selected representative cross-sections. The proposed basement comprised of a trapezoidal shape with a length of about 62 m and maximum width of 44m.
- On the basis that groundwater monitoring data, for Section A and Section B, the design groundwater was conservatively adopted at RL 84.5m across the whole site. Groundwater was inferred to run from north-western corner towards south-eastern corner.
- Considering the very low permeability clay layer on the upper zone and monitoring records, the groundwater seepage impacted by the direct site surface runoff was considered to be very low, and that seepage will be governed by the bedrock discontinuities and defects and subject to regional intense and prolonged rainfall.
- The expected seepage to a drained basement was modelled to be:
- Short term flows for temporary dewatering during construction will be 0.32 ML over the first 6 months (i.e. 0.09 ML + 0.12 ML + 0.11 ML (max. base flow out of all two models)).
- Long term flows during service life of structure will be 0.39 ML/year (i.e. 0.09 ML + 0.13 ML + 0.17 ML (max. base flow out of all two models)).
- Projected seepage inflows for a drained basement are below the WaterNSW threshold of 3 ML/year. It is confirmed that this proposed development can be granted the Groundwater Access License exemptions.
- During the early stages of the excavation, initial inflow rates will be higher due to the absorbed water within the cohesive soil and fractured rock layers. The water flow will then gradually decrease as the hydraulic gradient around the excavation decreases.
- The actual flow rate will only be known once the excavation is completed, and the inflow can be observed and measured. Appropriate planning should be in place to compensate for possible variations and increases in the actual inflow rate. This may include grouting the excavation face if locally fractured rock and high inflows through these fractured zones are observed at the basement excavation face or floor.
- The proposed earthwork will intersect with the underground groundwater table. Groundwater will be limited to minor seepage only during drained basement excavation. Tanked basement is not required.
- The topography and measured standing groundwater levels indicate that there is a hydraulic gradient, and groundwater inflows (if any) may be predominately from the northern and western basement excavation wall.
- It is evident from the results of Stantec's seepage analysis that a drained basement is adopted, the volume of water entering the basement is minimal. An automatic pump-out system with back up pump is suggested and sufficient to be adopted to reduce the likelihood of stormwater catch or flooding to the basement. In the long term, drainage should be provided around the perimeter of the basement and below the basement slab.

- It is noted that this report is prepared by DA submission only. No builder is yet to be awarded for this project. Dewatering management plan should be prepared by the future builder in order to discharge the seepage water during basement excavation.
- Given that the predicted inflow is less than 3 ML/year during construction and long term usage, the proposed excavation is considered as an exemption from a Water Access License from Water NSW but will require a Water Supply Works Approval for construction dewatering.

9.2 LABORATORY RESULTS

Tabulated summary tables of laboratory results is provided in **Appendix F**, with photographs of the materials encountered provided in **Appendix C**. Laboratory Reports are included in **Appendix G**.

The primary analytical laboratory contracted to perform the testing services (Eurofins) holds NATA accreditation for analyses undertaken.

9.2.1 Soil

9.2.1.1 Human Health

All analytes were either below the laboratory LOR or the adopted human health criteria with exception to soil sample HA01_0.1. Benzo(a)pyrene TEQ (Half LOR) was reported at a concentration of 4.2 mg/kg, marginally above the applicable HIL-B criteria of 4.0 mg/kg.

Asbestos, including asbestos fines (AF), fibrous asbestos (FA) and asbestos containing materials (ACM), were not observed nor detected by the laboratory.

9.2.1.2 Ecological

Soil sample HA01_0.1 contained a Benzo(a)pyrene concentration of 2.7 mg/kg, exceeding the applicable ecological screening level (ESL) for an urban residential / public open space setting of 0.7 mg/kg. Sample HA03_0.1 also contained Benzo(a)pyrene but at a concentration below the criteria.

All other analytes were either below the laboratory LOR or the adopted ecological criteria.

9.2.2 Groundwater

9.2.2.1 Human Health

All analytes were either below the laboratory LOR or the adopted human health criteria.

9.2.2.2 Ecological

Dissolved Zinc (filtered) was reported at a concentration that exceeded the ANZG (2018) Freshwater 95% toxicant DGVs guideline of (8 µg/L) at monitoring wells BH01 (59 µg/L) and BH02 (49 µg/L).

All other analytes were either below the laboratory LOR or the adopted ecological criteria.



9.3 QUALITY ASSURANCE / QUALITY CONTROL

Quality Assurance/Quality Control (QA/QC) procedures were implemented to ensure the precision accuracy, representativeness, completeness and comparability of all data gathered. The QA/QC procedures included:

- Equipment calibration to ensure field measurements obtained are accurate.
- Equipment decontamination to prevent cross contamination.
- Use of appropriate measures to prevent cross contamination.
- Appropriate sample identification.
- Correct sample preservation.
- Sample transport with Chain of Custody (COC) documentation.
- Laboratory analysis in accordance with NATA accredited methods.

Due to the preliminary and limited nature of the site investigation, no field duplicate, field blank, rinsate or field spike was included within scope. This is considered acceptable noting that more extensive additional site investigation works will be undertaken at the site post-demolition.

Copies of all the COCs, along with the Sample Receipt Notifications (SRNs), Interpretive QA/QC Reports are provided in **Appendix G**.

9.4 LABORATORY QC AND QCI REPORT

The laboratory selected for undertaking the analysis (Eurofins mgt) is NATA accredited for the analysis required and undertook certain QA/QC requirements to demonstrate the suitability of the data that is obtained. The laboratory is required to undertake and report internal laboratory Quality Control (QC) procedures for all chemical analysis undertaken. The QC testing is required to include:

- Laboratory duplicate sample analysis at the rate of one duplicate analysis per 10 samples.
- Method blank at the rate of one method blank analysis per 20 samples.
- Laboratory control sample at the rate of one (1) laboratory control sample analysis per twenty (20) samples.
- Spike recovery analysis at the rate of one spike recovery analysis per 20 samples.

Compliance with the laboratory QA/QC requirements and non-conformance details are discussed in the internal Laboratory QA/QC reports included with the certificates of analysis in **Appendix G**. Laboratory QA/QC requirements were within acceptance limits.

Stantec concludes that the data reported by the NATA accredited Eurofins, as considered in this report, is suitable for interpretative purposes and to make conclusions/recommendations.



10.0 DISCUSSION

10.1 SOIL

10.1.1 Human Health

Exceedances of the human health criteria were limited to one sample, HA01_0.1, containing Benzo(a)pyrene TEQ (Half LOR) at a concentration of 4.2 mg/kg, marginally above the applicable HIL-B criteria of 4.0 mg/kg. Based on current data, the exceedance appears localized and cannot be attributed to a specific source. Under the current development / construction scenario, the soil will likely be removed from site for basement construction, which would eliminate the potential risk to future site users / occupants (ie incomplete source-pathway-receptor linkage). Further characterization of soil properties is required post-approval following the demolition of buildings and structures, which will allow statistical analysis of contaminants and inform the requirement for remediation or management.

Whilst asbestos was not identified during the investigation, due to the presence of hardstand and building footprints, the ability to adequately assess fill soils was constrained. Asbestos in soil can be more adequately assessed following removement of structures and pavement, post-approval.

10.1.2 Aesthetic Consideration

Observations of fill soil were constrained due to the presence of hardstand and structures. Only trace quantities of foreign materials were observed during the investigation, however, this would require reconsideration as fill soil become more accessible. Aesthetic consideration of shallow soils applies to the finished ground level post-construction, so this should be reconsidered once the bulk earthworks and civil plans are finalized.

10.1.3 Ecological

The limited soil data gathered during the investigation identifies Benzo(a)pyrene in shallow soil at two locations, with one sample exceeding the applicable ecological criteria (HA01_0.1). Under the current development / construction scenario, the soil will likely be removed from site for basement construction, which would eliminate the potential risk to future site users / occupants (ie incomplete source-pathway-receptor linkage).

Further characterization of soil properties is required post-approval following the demolition of buildings and structures, which will allow statistical analysis of contaminants and inform the requirement for remediation or management.

10.2 GROUNDWATER

10.2.1 Human Health

Current data indicates that groundwater beneath the site does not possess chemical concentrations that present a potential risk to human health risk under the proposed land use. Groundwater levels and the physical description of waters from BH03 were recorded as being variable between gauging events, and

whilst contaminant indicators were not evident, an additional monitoring event post-approval is recommended.

10.2.2 Ecological

Dissolved Zinc (filtered) was reported at a concentration exceeded the ANZG (2018) Freshwater 95% toxicant DGVs guideline at monitoring wells BH01 and BH02. Due to the absence of elevated zinc in soil and no known source of heavy metals at the site, the concentrations are considered to likely represent natural groundwater conditions for the broader surrounds, potentially originating from the geologic profile.



11.0 REVISED CONCEPTUAL SITE MODEL

Based on the information collected as part of this limited contamination investigation, including site history information, site observations and limited soil and groundwater data, the CSM in **Table 10-1** has been revised showing potential SPR linkages.

Identified receptors for potential site contamination include:

- Ecological receptors dependent on-site;
- Ecological receptors, both onsite and downgradient, dependent on surface water and groundwater flows;
- Current site users and workers disturbing potentially impacted materials;
- Future construction workers; and
- Future site users and workers disturbing potentially impacted materials.

Table 10-1 Revised conceptual site model

Contaminant Source	Potential Impacted Media	Potential Contaminants of Concern	Potential Exposure Pathways	Receptors	Likelihood of Complete SPR Linkage
Demolition of buildings on and off site	Soil	▪ Asbestos; Lead; PCB; SMF	▪ Direct contact ▪ Incidental ingestion ▪ Incidental inhalation of dust and asbestos fibres ▪ Vapour intrusion (volatile contaminants only)	Ecological ▪ Vegetation in landscaped areas (soil biota, juvenile and mature trees) ▪ Ecological receptors dependent on-site; ▪ Ecological receptors, dependent on surface water and groundwater; Human ▪ Current site users and workers disturbing potentially impacted materials; ▪ Future construction workers; and ▪ Future site users and workers disturbing potentially impacted materials.	Moderate: whilst hazardous building materials were not observed during the investigation, a risk remails that latent waste from former buildings and structures (now demolished) could exist.
Hazardous building materials in current structures					Low to moderate: buildings and structures observed on site appeared to be in sound condition with no visible weathering of building materials.
Cutting and fill materials on site	Soil Groundwater	▪ Metals; TRH; BTEX; PAH; OCP/OPP			Moderate: the fill profile encountered at the site was relatively shallow (~ 0.5m) with trace quantities of waste. However, some elevated contaminant concentrations were identified in surface soils.
On and off-site current and historical commercial land uses	Soil Groundwater Vapour	▪ Chlorinated Hydrocarbons (CHC); VOCs; Metals; BTEX; PAH			Moderate: commercial professions listed on land titles were limited to taxi cab proprietor, farmer, solicitor, builder, however historical business directories indicate the possible presence of commercial activities at the site, as well as within the surrounds.
Historical railway activities adjacent to site	Soil Groundwater	▪ Metals; TRH; BTEX; PAH; Asbestos;			Low: based on current information it is considered unlikely that the railway corridor is a potential source of contamination that could constrain the proposed development.
Mismanagement of waste fluids	Soil Groundwater	▪ TRH; BTEX; PAH; Phenol; Metals			Low: the substance visible at the stormwater inlet during the inspection in December 2024 is considered localised and unlikely to present a risk to the proposed development. The substance was not visible during prior inspection, indicating that it may have been a discrete event.

11.1 DATA GAPS AND UNCERTAINTIES

Following preparation of the revised CSM, the following data gaps were identified:

- Areas where hardstand and the location of building footprints were unable to be assessed. The extent of potential impact in soil at these locations remain unknown;
- Some areas of site could not be accessed during the site walkover and therefore not inspected as part of the investigation;
- Groundwater levels and the physical description of waters from BH03 were recorded as being variable between gauging events, and whilst contaminant indicators were not evident, an additional monitoring event post-approval is recommended.

12.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec Pty Ltd was engaged by Loftex Chatswood Pty Ltd to complete a Preliminary Site Investigation (PSI) with limited sampling at 3-5 Help St, Chatswood, NSW, 2067 (herein referred to as 'the site'). The site locality and layout are shown in **Figure 1** in **Appendix A**.

It is understood that the proposed redevelopment will include a mixed-use development including high-density residential apartments and commercial premises, with five (5) basement levels of car parking to an approximate excavation depth of 18 metres below ground level (mBGL).

The purpose of this investigation is to provide information on the contamination status of the site for the lodging of a State Significant Development Application (SSDA) in accordance with section 16; contamination and remediation of the applicable Secretary's Environmental Assessment Requirements (SEAR's) (SSD-76555711, Issued 8 October 2024).

The objectives of the PSI were to assess whether contamination has the potential to exist on the site and whether further investigation is needed.

From the current understanding of site history and observations made during the site walkover, the following conclusions can be made:

- Based on desktop review of available information:
  - Former buildings and structures located at the site under historical land uses were demolished in place of current buildings and structures.
  - The buildings and structures located at the site at the time of Stantec's investigation appear to have been constructed circa 1970 and the site has remained relatively unchanged since that time.
  - Based on the historical aerial photograph review and in consideration of business directories, the site may have hosted residential and commercial/industrial land uses in the past. Historical business directories also indicate that commercial activities may have occurred at the site.
  - Commercial professions listed on land title documentation are limited to taxi cab proprietor, farmer, solicitor and builder. Such professions do not typically present a significant risk of contamination, particularly on a relatively small land area and in an urban setting.
  - SafeWork NSW records indicate that there is no recorded current or historical storage of hazardous chemicals at the site.
  - The land use of the local area surrounding the site has generally undergone similar development with construction of mixed commercial and high-density residential buildings.
- The site walkover identified:
  - Due to the era of their construction, and based on observations, there is potential for current buildings and structures to contain hazardous building materials.
  - There appear to be locations of the site with localised filling, particularly within the 3 Help Street Lot.
  - An oil-like substance was visible on the cover and internal surface of a stormwater drain located within the site. The exact nature of the material is unknown but is unlikely to present a potential contamination risk under the proposed development.
- The limited soil and groundwater investigation identified the following:
  - Soil impacts exceeding the applicable human health and ecological criteria were limited to Benzo(a)pyrene at soil bore HA01 within a sample collected at 0.1 mBGL.



    - The lateral extent of impacts cannot be adequately characterised until removal of buildings, structures and hardstand, post-approval.
    - Following the supplementary assessment, statistical analysis of the data set can be undertaken and any requirement for remediation determined.
    - Based on the current project design, any impacted materials would likely require removal from the site to enable construction of the basement. The assessment of potentially complete source-pathway-receptor linkages must be considerate of the bulk earthworks and civil design to determine the fate of subject materials.
- Whilst asbestos has not been identified in soil, the investigation was limited and constrained by the presence of buildings and hardstand. Following removal of buildings and structures, post-approval, a supplementary assessment is required.
- The dissolved zinc (filtered) concentrations detected in groundwater exceeding the ecological criteria are considered to likely represent regional groundwater conditions, possibly sourced from the geologic profile. In the absence ecological receptors at or near to the site, the zinc concentrations are not considered to present a completed source-pathway-receptor linkage.
    - Groundwater levels and the physical description of waters from BH03 were recorded as being variable between gauging events, and whilst contaminant indicators were not evident, an additional monitoring event post-approval is recommended.

Following the desktop review, site walkover, and limited sampling, it is considered that the site presents a relatively low risk of contamination that would prohibit approval of the development application for construction of the proposed development and future land use. Considerate of the current constraints (buildings, hardstand), the limited investigation has gathered sufficient information to satisfy the Resilience and Hazards State Environment Planning Policy (SEPP) 2021 in relation to assessing for contamination, subject to implementation of the below recommendations. The shallow soil impacts identified during this investigation are likely to be localised, but require lateral and vertical delineation during a data gap investigation post-approval, following removal of buildings, structures and hardstand. Statistical analysis should be undertaken the data set following completion of the data gap investigation, which will inform the potential requirement for soil remediation.

12.1 RECOMMENDATIONS

The following recommendations are made:

- To confirm groundwater conditions, noting the variance in groundwater levels and descriptions of waters from BH03 during prior gauging events, an additional groundwater monitoring event is recommended, post-approval, utilising existing groundwater wells.
- A Report on Hazardous Building Materials (HAZMAT) Survey was prepared for the site (DP, 2024). Demolition activities and post-demolition clearance inspections are to be undertaken in accordance with the recommendations of the HAZMAT Survey.
- Following demolition and removal of structures, a data gap investigation is required to characterise soil properties and to delineate the Benzo(a)pyrene identified at soil bore BH01. The investigation must be conducted by a qualified and experienced contaminated land professional.



  - Following completion of the data gap investigation, statistical analysis should be completed on the data set to determine any requirements for soil remediation. If a RAP is required, remediation and site validation are to occur as specified, prior to commencement of bulk earthworks.
  - An assessment of remediation requirements must also consider the bulk earthworks and civil design drawings.
- Any material removed from the site during construction must be classified in accordance with the NSW EPA Waste Classification Guidelines (2014) and/or applicable resource recovery exemptions / orders. Future classification must consider all existing environmental data.
- Any material imported to the site under the proposed development, such as for landscaping and establishment of garden beds, must not present a potential health risk to receptors under the proposed land use.
- A Construction Environmental Management Plan should be implemented for the construction and include an Unexpected Finds Protocol to be implemented in the event that contamination is identified.

13.0 LIMITATIONS

This assessment has been undertaken in general accordance with the current "industry standards" for a PSI for the purpose and objectives and scope identified in this report. These standards are set out in:

- National Environment Protection (Assessment of Site Contamination) Measure (NEPM) *1999* (NEPC, 1999) as varied May 2013 (the 'NEPM 2013').
- AS4482.1- 2005: Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds. Standards Australia (2005).

The agreed scope of this assessment has been limited for the current purposes of the Client. The assessment may not identify contamination occurring in all areas of the site, or occurring after sampling was conducted. Subsurface conditions may vary considerably away from the sample locations where information has been obtained.

This Document has been provided by Stantec subject to the following limitations:

- This Document has been prepared for the particular purpose outlined in Stantec's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.
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- Conditions may exist which were undetectable given the limited nature of the enquiry Stantec was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required.
- In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. Stantec's opinions are based upon information that existed at the time of the production of the Document. It is understood that the services provided allowed Stantec to form no more than an opinion of the actual conditions of the site at the time this Document was prepared and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.
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direct legal recourse to, and waives any claim, demand, or cause of action against, Stantec's affiliated companies, and their employees, officers and directors.

This assessment report is not any of the following:

- A Site Audit Report or Site Audit Statement as defined under the *Contaminated Land Management Act, 1997*.
- A site investigation sufficient for a Site Auditor to be able to conclude a Site Audit Report and Site Audit Statement.
- A geotechnical report and the bore logs or test pit logs may not be sufficient as the basis for geotechnical advice.
- A detailed hydrogeological assessment in conformance with NSW DEC (2007) Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination.
- A hazardous building material survey that will identify any specific building materials on site, which may pose a risk to human health or the environment.
- A waste classification certificate in conformance with NSW EPA Waste Classification Guidelines (NSW EPA, 2014)

14.0 REFERENCES

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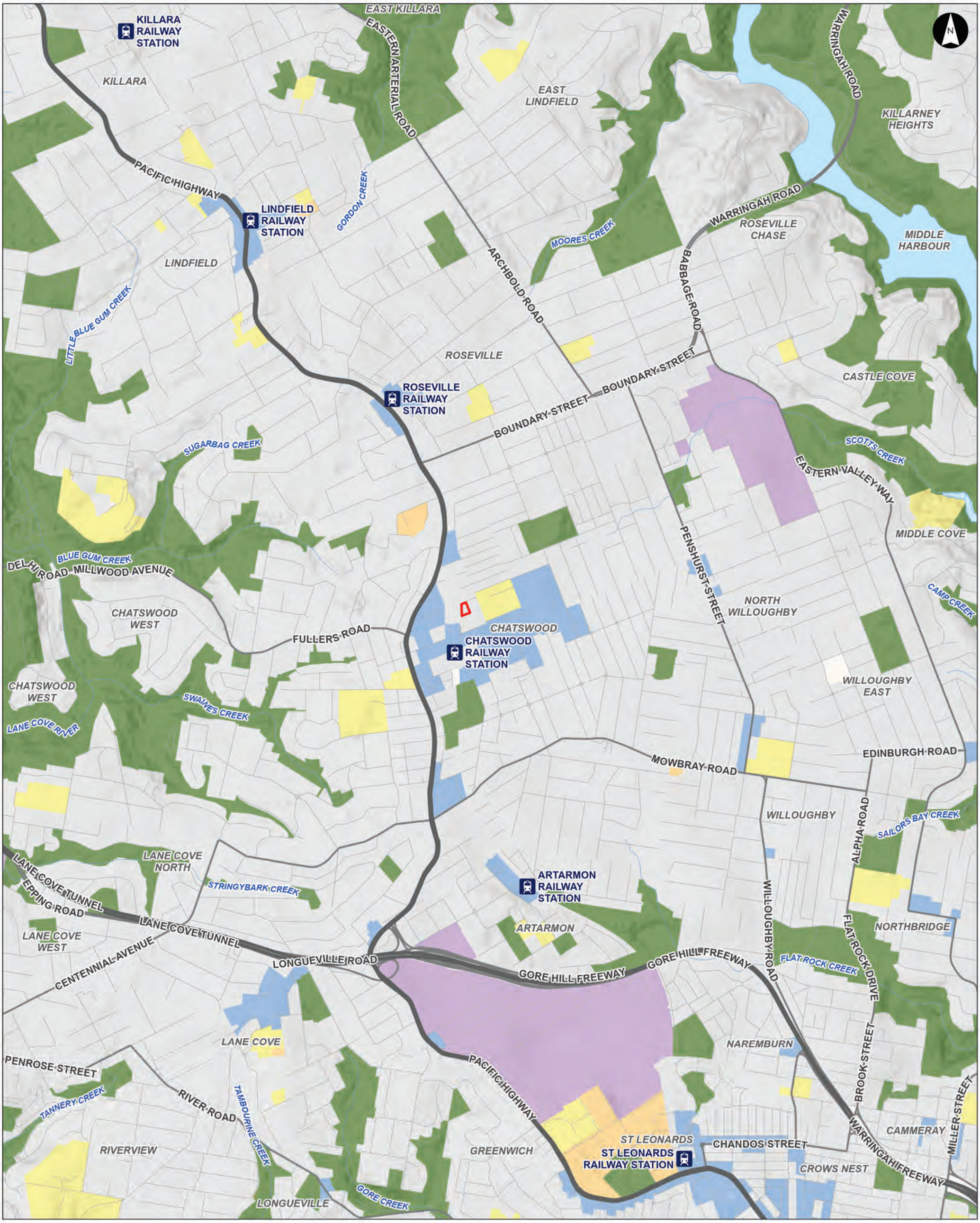
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Stantec Pty Ltd (2023) Proposed Mixed Use Development Geotechnical Investigation Report, 3-5 Help Street, Chatswood Mixed Use Redevelopment.

EMBECE (2024) *Architectural Drawings for coordination, Help Street Apartments, 3-5 Help Street Chatswood*, Drawing no. 1000,1001,1002,1003,1004,1010,1011, Rev.B (05 December 2024)

APPENDIX A

Figures



Locality Plan

3-5 Help Street

Chatswood, NSW

Project Code: 301351072-GS-001
Drawn By: SM, Checked By: AC
Rev: 01
Date: 2022-11-30

Legend

- Site Boundary
- Major Watercourses
- Major Road
- Arterial Road
- Local Road
- Waterbodies

Land Use

- Commercial
- Education
- Hospital/ Medical
- Industrial
- Parkland
- Residential
- Water
- Other

Notes:
1. Map displayed in GDA2020 MGA Zone 56

References:
1. Basemap supplied by ESRI and third party suppliers.
2. Major Roads supplied by NSW SS (2019)
3. Major Watercourses and Waterbodies supplied by NSW SS
4. Land Use supplied by ABS (2021)

0 250 500 750 Meters

Scale at A3: 1:20,000



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Site Plan

3 - 5 Help Street
Chatswood, NSW

Client: Loftex Property
Project Code: 301351072-GS-001
Drawn By: MMM, Checked By: JE
Figure: 2 | Rev: 02
Date: 2023-05-05

Stantec

Legend

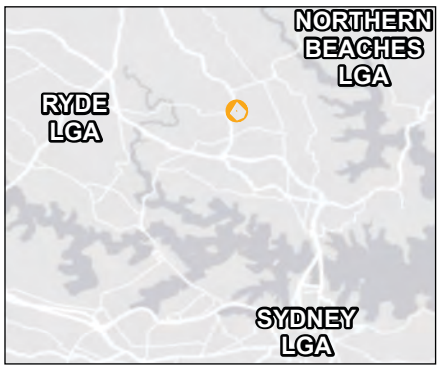
- Site Boundary
- Sample Location
- Borehole Location
- 1m Contour
- Cadastre

Notes:
1. Map displayed in GDA2020 MGA Zone 56

References:
1. Basemap supplied by MetroMap (June, 2022)
2. Contours derived from LPI LiDAR (2013)
3. Cadastre supplied by NSW SS (2022)

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Scale at A3: 1:500



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APPENDIX B

Architectural Drawings

Iss.	Date	For
A	06.08.2024	Scoping Meeting
B	05.12.2024	For Coordination

Legend

SC Storage cage

General Notes

Verify dimensions on site prior to commencement of work. Check existing RL's on site. Advise Architect of any discrepancies before commencement. Allow for adjustments to suit discrepancies. Comply with relevant authorities requirements. Comply with Building Code of Australia requirements. Comply with relevant Australian Standards for materials and construction practice. Comply with Basix Certificate. Do not scale from drawings.

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We acknowledge the traditional custodians of Country, on this land called Australia. We respect their Elders, past, present and emerging.

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BG&E | Structure
Vince Betro
0414 814 862

Neuron | Services
Steve Cassells
0401 222 862

Common Grounds | Landscape
Alex Georgouras
0404 626 520

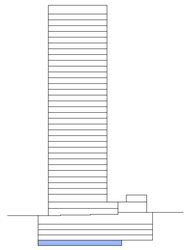
Walkerbai | ESD
Stewart Mann
0407 545 647

Stantec | Civil
Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
MD	MP	05.12.2024

Drawing
B05 Plan

Drawing No.
1000

Scale
1 : 100 @ A1

Issue
B

North

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Scale 1:100 mm

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Iss.	Date	For
A	06.08.2024	Scoping Meeting
B	05.12.2024	For Coordination

Legend

SC Storage cage

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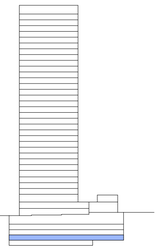
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Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
B04 Plan

Drawing No.
1001

Scale
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Issue
B

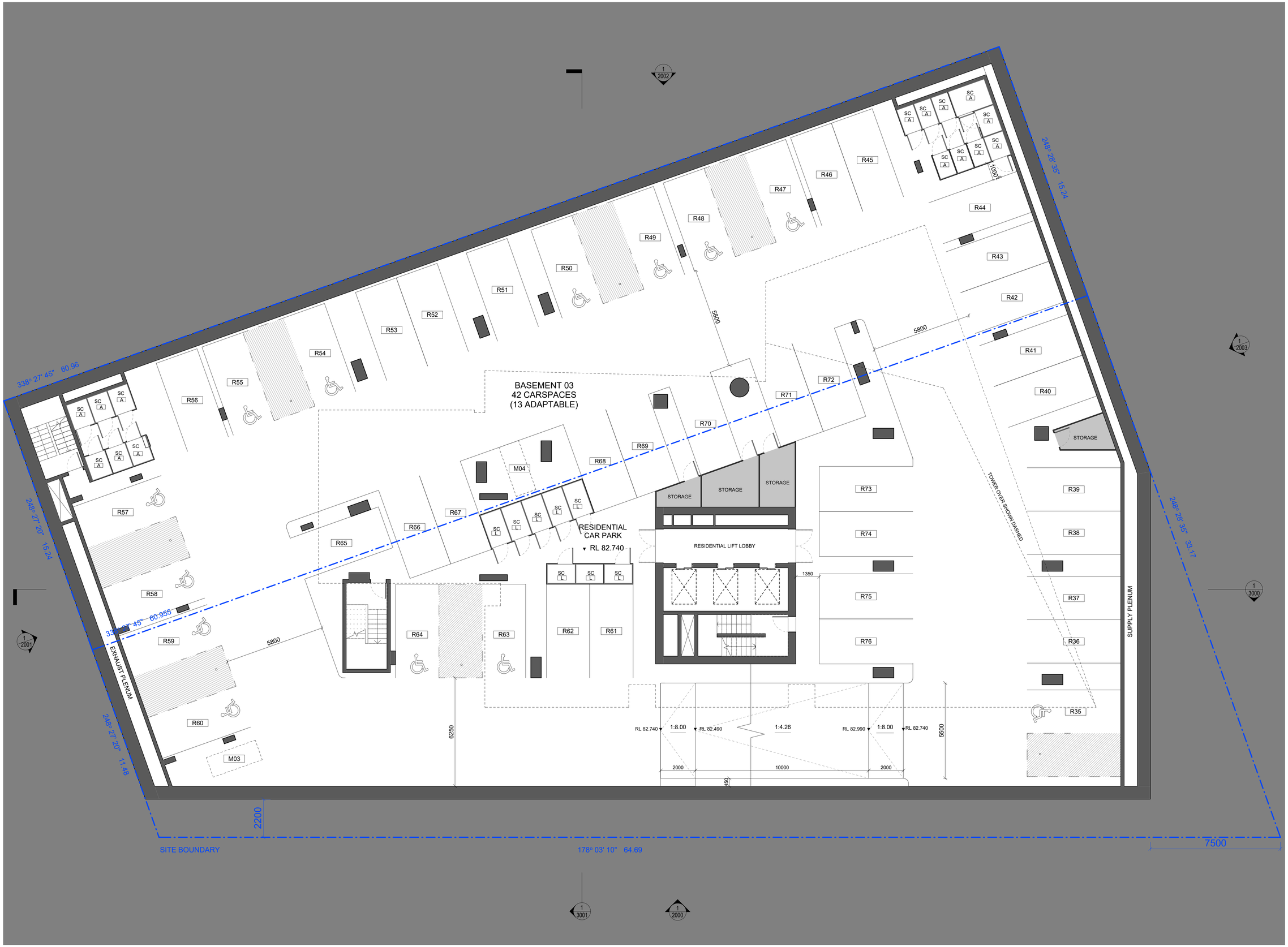
North

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Iss.	Date	For
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Legend

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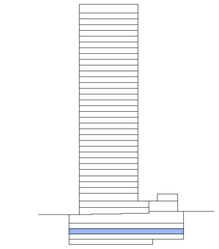
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FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
B03 Plan

Drawing No.
1002

Scale
1 : 100 @ A1

Issue
B

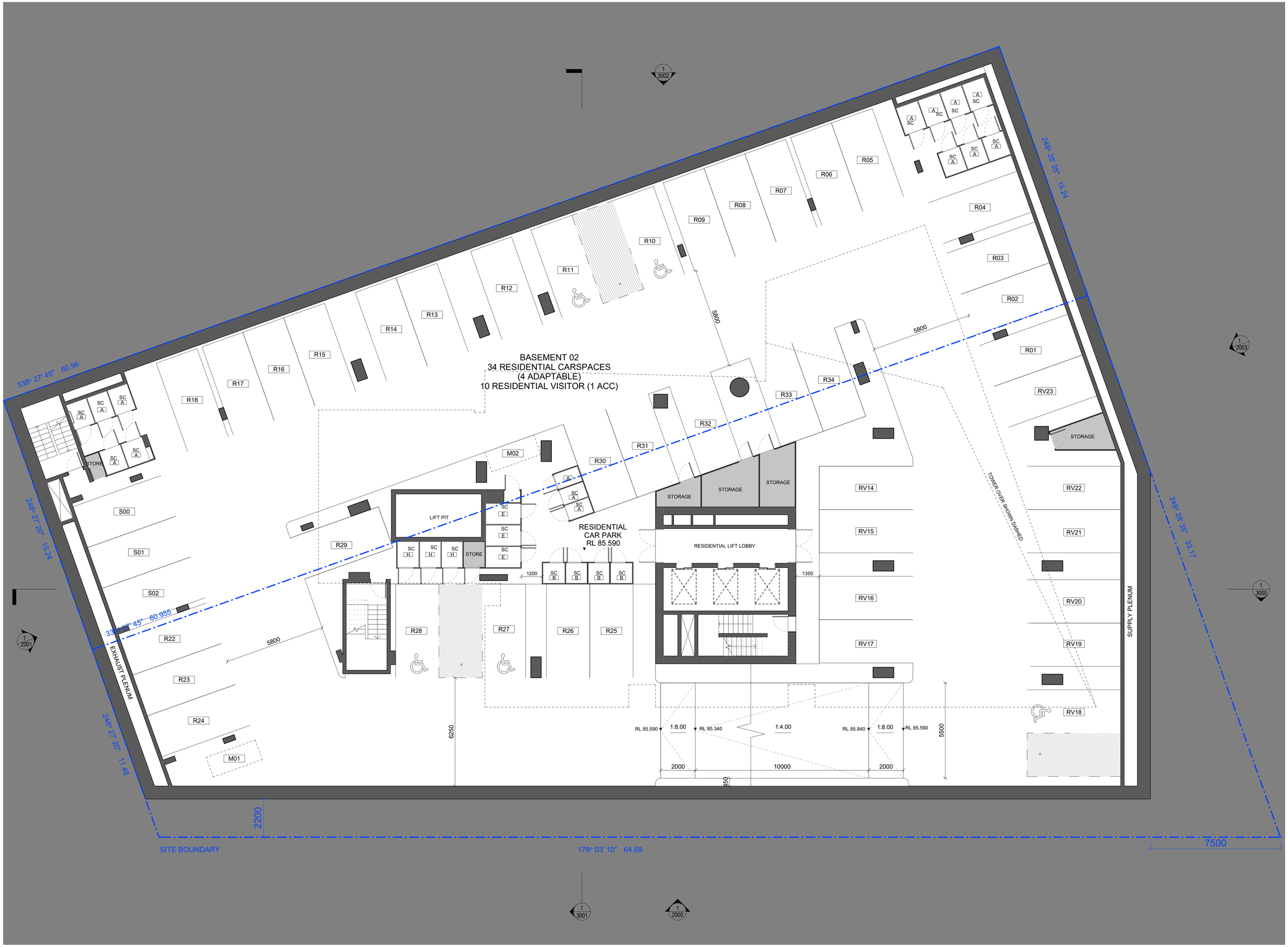
North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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Surry Hills, NSW 2010 Australia

Nominated Architects
Mladen Prnjatovic 7468
Ben Green 7066
Chi Melhem 7754



Iss.	Date	For
A	06.08.2024	Scoping Meeting
B	05.12.2024	For Coordination

Legend

SC Storage cage

General Notes

Verify dimensions on site prior to commencement of work. Check existing RL's on site. Advise Architect of any discrepancies before commencement. Allow for adjustments to suit discrepancies. Comply with relevant authorities requirements. Comply with Building Code of Australia requirements. Comply with relevant Australian Standards for materials and construction practice. Comply with Basix Certificate. Do not scale from drawings.

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0437 898 661

BG&E | Structure
Vince Betro
0414 814 862

Neuron | Services
Steve Cassells
0401 222 862

Common Grounds | Landscape
Alex Georgouras
0404 626 520

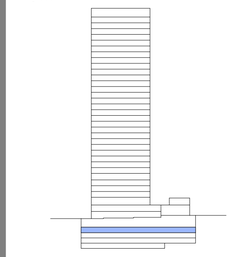
Walkerbai | ESD
Stewart Mann
0407 545 647

Stantec | Civil
Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
B02 Plan

Drawing No.
1003

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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Alex Georgouras
0404 626 520

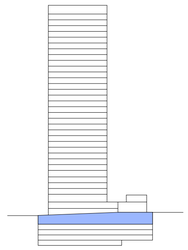
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0421 193 028

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Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
B01 Plan

Drawing No.
1004

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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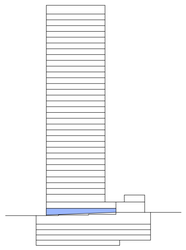
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Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
LG Plan

Drawing No.
1010

Scale
1 : 100 @ A1

Issue
B

North

Scale 1:100 — 0 1000 2000 3000 4000 5000 mm

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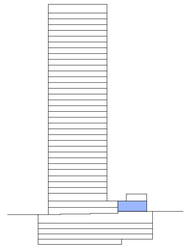
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Stantec | Civil
Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
UG Plan

Drawing No.
1011

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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28 ANDERSON STREET

HELP STREET

MCINTOSH STREET

CAMBRIDGE LANE

SITE BOUNDARY

ROOF GARDEN

COMMERCIAL
RL 97.150

ACC

FEMALE WC

MALE WC

PLANT

LIFT LOBBY

VOID

VOID

VOID

VOID OVER COMMERCIAL BELOW

VOID OVER COMMERCIAL LOBBY

MEZZANINE OVER COMMERCIAL LOBBY BELOW

VOID OVER RESIDENTIAL LOBBY

TOWER OVER SHOWN DASHED

WDCP PODIUM SETBACK

338° 27' 45" 60.96

248° 27' 20" 15.24

3000

338° 27' 45" 60.965

248° 27' 20" 11.48

248° 28' 35" 15.24

3000

248° 28' 35" 33.17

7500

7960

178° 03' 10" 64.69

4500

3000

1500

6000

16050 to 1 CAMBRIDGE LANE

1 2002

1 2003

1 2001

1 3001

1 2000

1 3000

General Notes
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Common Grounds | Landscape
Alex Georgouras
0404 626 520

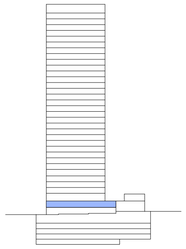
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PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
Mezzanine Plan

Drawing No.
1100

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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Chi Melhem 7754

Iss.	Date	For
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B	05.12.2024	For Coordination

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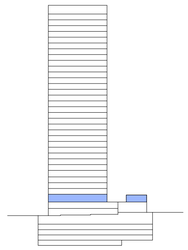
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Lindsay Beard
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Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L01 Plan

Drawing No.
1101

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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Ben Green 7066
Chi Melhem 7754

28 ANDERSON STREET

HELP STREET

MCINTOSH STREET

CAMBRIDGE LANE

SITE BOUNDARY

ROOF GARDEN BELOW

ROOF GARDEN

COMMERCIAL
RL 100.650

ACC

FEMALE WC

MALE WC

LIFT LOBBY

TOWER OVER SHOWN DASHED

WDCP PODIUM SETBACK

338° 27' 45" 60.96

248° 27' 20" 15.24

3000

338° 27' 45" 60.955

248° 27' 20" 11.48

248° 28' 35" 15.24

3000

248° 28' 35" 33.17

7500

7960

4500

3000

1500

6000

16050 to 1 CAMBRIDGE LANE

178° 03' 10" 64.69

1 2002

1 2003

1 3000

1 2001

1 3001

1 2000

Iss.	Date	For
A	06.08.2024	Scoping Meeting
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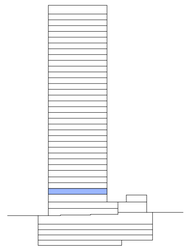
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PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L02 Plan

Drawing No.
1102

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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28 ANDERSON STREET

HELP STREET

MCINTOSH STREET

CAMBRIDGE LANE

SITE BOUNDARY

RESIDENTIAL COMMUNAL GARDEN

RESIDENTIAL PRIVATE GARDEN

RESIDENTIAL COMMUNAL AREA

COVERED OUTDOOR COMMUNAL AREA

ROOF GARDEN BELOW

LIFT LOBBY
▼RL 104.850

FENCE BETWEEN COMMUNAL AND PRIVATE GARDEN SHOWN DASHED

FENCE BETWEEN UNITS SHOWN DASHED

OPERABLE PRIVACY SCREEN

WDCP TOWER SETBACK

WDCP PODIUM SETBACK

SOLAR LINE

2B
2.03
97 m²

1B
2.04
52 m²

2B
2.01
92 m²

1B
2.02
64 m²

BALCONY
122 m²

BALCONY
13 m²

BALCONY
14 m²

BALCONY
13 m²

BED 01

BED 02

338° 27' 45" 60.96

248° 27' 20" 15.24

248° 28' 35" 15.24

248° 28' 35" 33.17

338° 27' 45" 60.955

248° 27' 20" 11.48

178° 03' 10" 64.69

4500

3750

7500

3000

3000

7500

4500

3000

6000

16050 to 1 CAMBRIDGE LANE

1 2002

1 2003

1 3000

1 2001

1 3001

1 2000

Iss.	Date	For
A	06.08.2024	Scoping Meeting
B	05.12.2024	For Coordination

28 ANDERSON STREET

HELP STREET

MCINTOSH STREET

CAMBRIDGE LANE

SITE BOUNDARY

SOLAR LINE

WDCP TOWER SETBACK

338° 27' 45" 60.96

248° 27' 20" 15.24

3000

7500

338° 27' 45" 60.955

248° 27' 20" 11.48

4500

3750

7500

248° 28' 35" 15.24

248° 28' 35" 33.17

178° 03' 10" 64.69

7500

1600 to 1 CAMBRIDGE LANE

BALCONY 10 m²

1B 3.05 68 m²

BED 01

BALCONY 8 m²

BED 01

1B 3.04 61 m² (ADAPTABLE)

BALCONY 12 m²

2B 3.03 106 m²

BED 02

BED 01

BALCONY 10 m²

2B 3.06 91 m²

LIFT LOBBY

▼ RL 108.000

BED 01

1B 3.02 64 m²

BALCONY 8 m²

BED 02

BED 01

BED 02

2B 3.01 92 m²

BALCONY 13 m²

OPERABLE PRIVACY SCREEN

1 2002

1 2003

1 3000

1 2001

1 3001

1 2000

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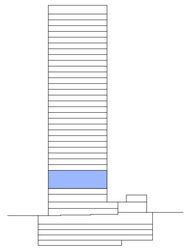
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Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L03-05 Plan

Drawing No.
1103

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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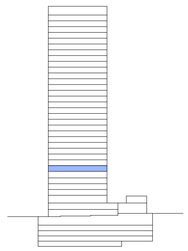
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Stewart Mann
0407 545 647

Stantec | Civil
Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L06 Plan

Drawing No.
1106

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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Chi Melhem 7754

28 ANDERSON STREET

HELP STREET

MCINTOSH STREET

CAMBRIDGE LANE

SOLAR LINE

SOLAR LINE

WDCP TOWER SETBACK

SITE BOUNDARY

338° 27' 45" 60.96

248° 27' 20" 15.24

7500

338° 27' 45" 60.955

248° 27' 20" 11.48

178° 03' 10" 64.69

4500

3750

248° 28' 35" 15.24

7500

248° 28' 35" 33.17

7500

16050 to 1 CAMBRIDGE LANE

FENCE BETWEEN UNITS SHOWN DASHED

OPERABLE PRIVACY SCREEN

LIFT LOBBY
RL 117.850

RESIDENTIAL PRIVATE GARDEN

RESIDENTIAL PRIVATE GARDEN

BALCONY 10 m²
1B 6.05 56 m²
BED 01

BALCONY 8 m²
1B 6.04 50 m²
BED 01

BALCONY 8 m²
BED 01

1B 6.03 58 m² (ADAPTABLE)

BALCONY 54 m²
1B 6.02 57 m²
BED 01

BALCONY 10 m²
2B 6.06 83 m² (ADAPTABLE)

BED 01
BED 02

BED 02
2B 6.01 90 m²
BALCONY 11 m²
BED 01
BED 01

1 2001
1 2002
1 2003
1 3000
1 3001
1 2000

Iss.	Date	For
A	06.08.2024	Scoping Meeting
B	05.12.2024	For Coordination

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BG&E | Structure
Vince Betro
0414 814 862

Neuron | Services
Steve Cassells
0401 222 862

Common Grounds | Landscape
Alex Georgouras
0404 626 520

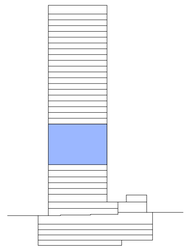
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0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



28 ANDERSON STREET

HELP STREET

MCINTOSH STREET

CAMBRIDGE LANE

SOLAR LINE

WDCP TOWER SETBACK

SITE BOUNDARY

338° 27' 45" 60.96

248° 28' 35" 15.24

4500

7500

248° 28' 35" 33.17

248° 27' 20" 15.24

7500

338° 27' 45" 60.955

248° 27' 20" 11.48

178° 03' 10" 64.69

7500

1600 to 1 CAMBRIDGE LANE

1 / 2002

1 / 2003

1 / 3000

1 / 2001

1 / 3001

1 / 2000

BALCONY 10 m²
1B 7.05 56 m²
BED 01
BALCONY 8 m²
1B 7.04 50 m²
BED 01
BALCONY 8 m²
1B 7.03 58 m² (ADAPTABLE)
BALCONY 10 m²
1B 7.02 57 m²
BALCONY 10 m²
2B 7.06 83 m² (ADAPTABLE)
LIFT LOBBY
▼ RL 121.000
BED 01
BED 01
BED 01
BED 02
BED 02
2B 7.01 90 m²
BALCONY 11 m²
OPERABLE PRIVACY SCREEN

Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L07-13 Plan

Drawing No.
1107

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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A	06.08.2024	Scoping Meeting
B	05.12.2024	For Coordination

28 ANDERSON STREET

HELP STREET

MCINTOSH STREET

CAMBRIDGE LANE

SOLAR LINE

SOLAR LINE

WDCP TOWER SETBACK

SITE BOUNDARY

338° 27' 45" 60.96

248° 27' 20" 15.24

7500

338° 27' 45" 60.955

248° 27' 20" 11.48

4500

248° 28' 35" 15.24

7500

248° 28' 35" 33.17

178° 03' 10" 64.69

7500

16050 to 1 CAMBRIDGE LANE

BALCONY
10 m²

2B
14.04
87 m²

BED 02

BED 01

BED 01

BALCONY
10 m²

BALCONY
10 m²

BED 02

2B
14.03
86 m²

1B
14.02
57 m²

BALCONY
10 m²

2B
14.05
83 m²
(ADAPTABLE)

LIFT LOBBY
▼ RL 143.050

BED 01

BED 01

BED 02

BED 01

BED 02

2B
14.01
90 m²

BALCONY
11 m²

OPERABLE PRIVACY SCREEN

1 2002

1 2003

1 3000

1 2001

1 3001

1 2000

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Neuron | Services
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Common Grounds | Landscape
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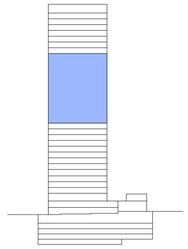
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PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L14 - 25 Plan

Drawing No.
1114

Scale
1 : 100 @ A1

Issue
B

North

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Scale 1:100 mm

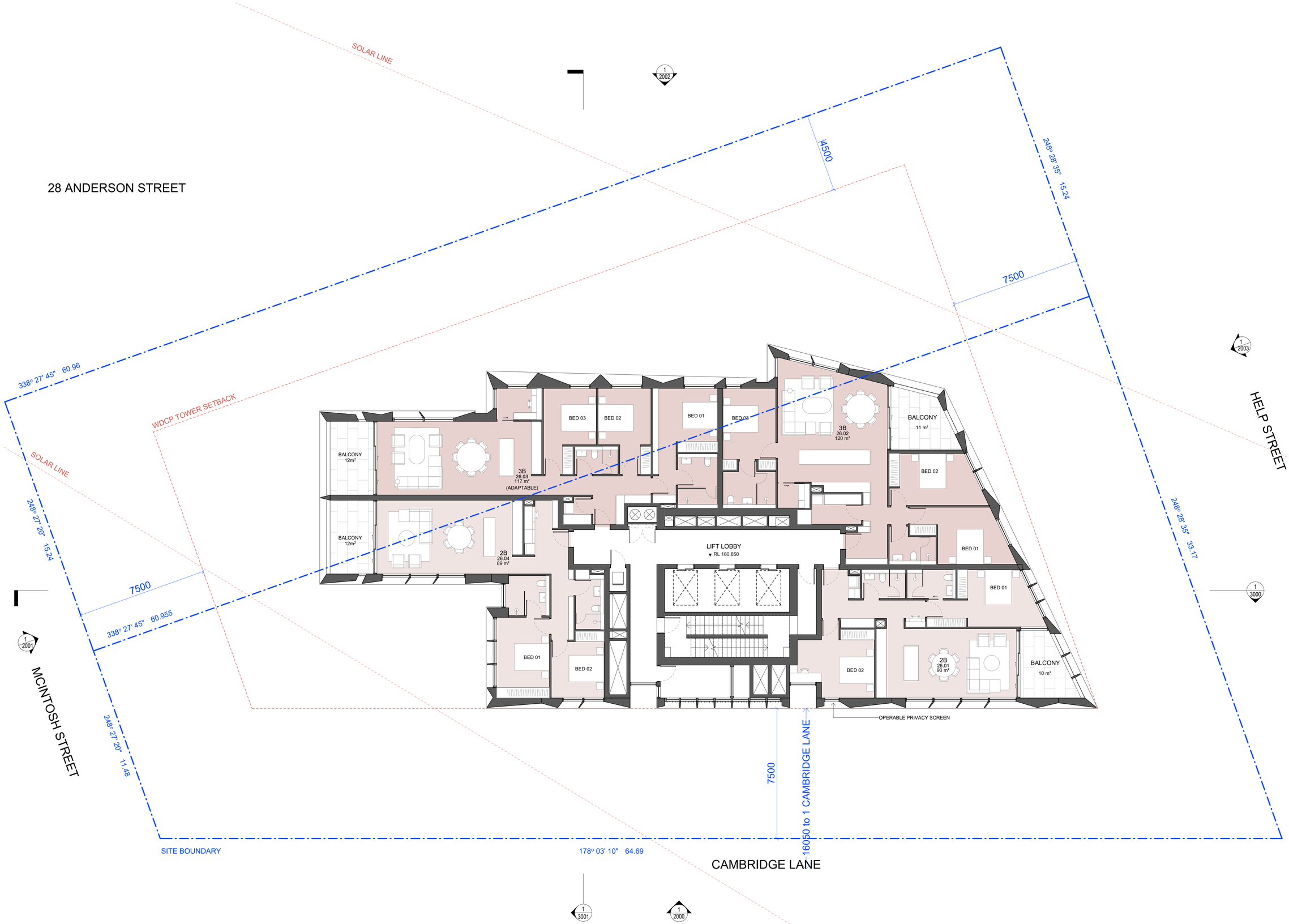
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28 ANDERSON STREET



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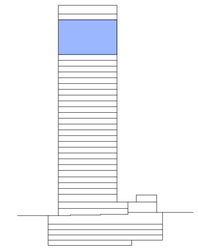
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PDC Consultants | Traffic
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Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L26 - 31 Plan

Drawing No.
1116

Scale
1 : 100 @ A1

Issue
B

North

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Scale 1:100 mm

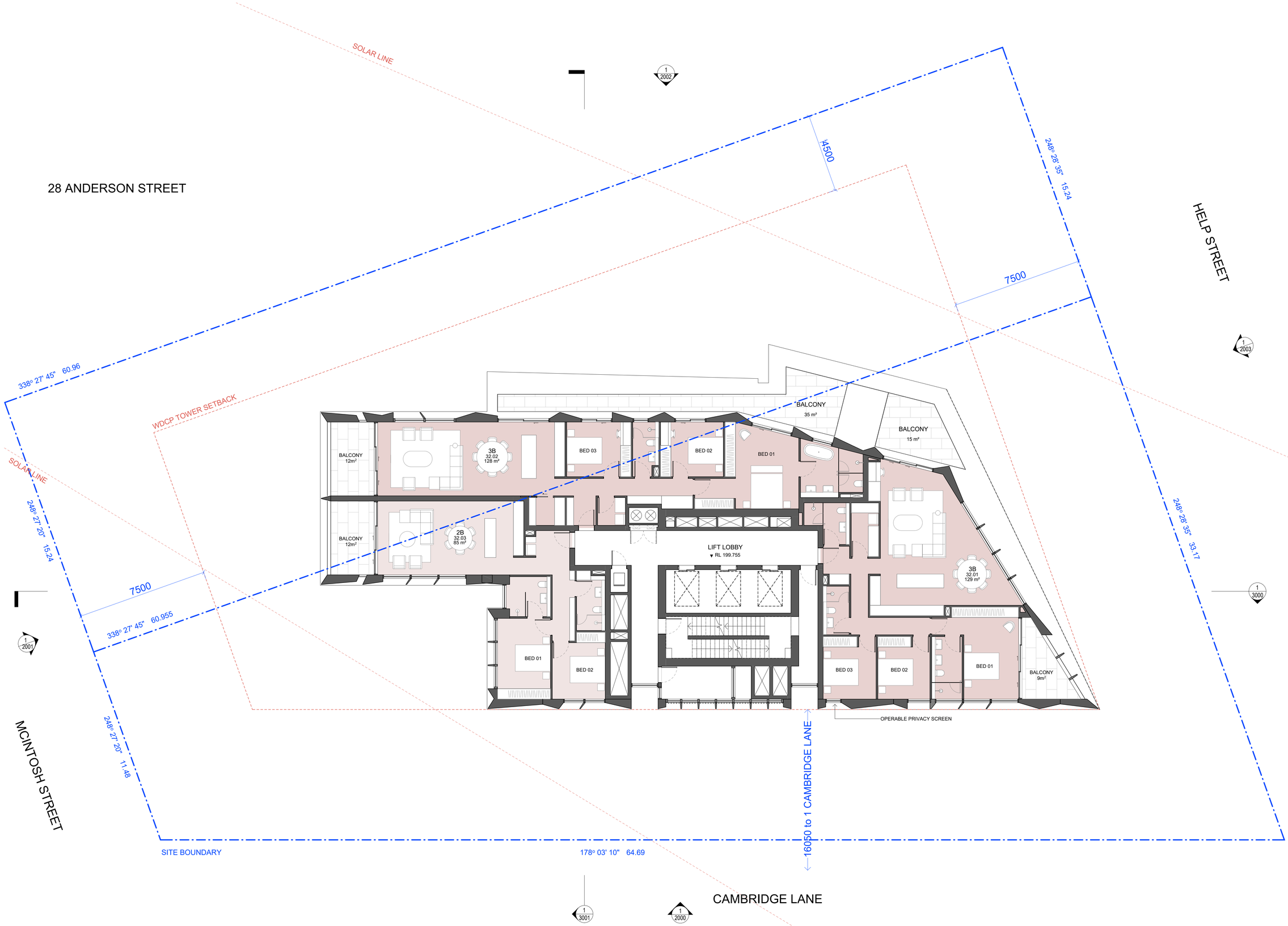
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28 ANDERSON STREET



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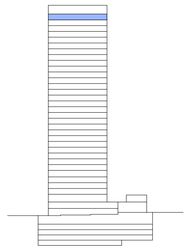
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Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L32 Plan

Drawing No.
1122

Scale
1 : 100 @ A1

Issue
B

North

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Scale 1:100 mm

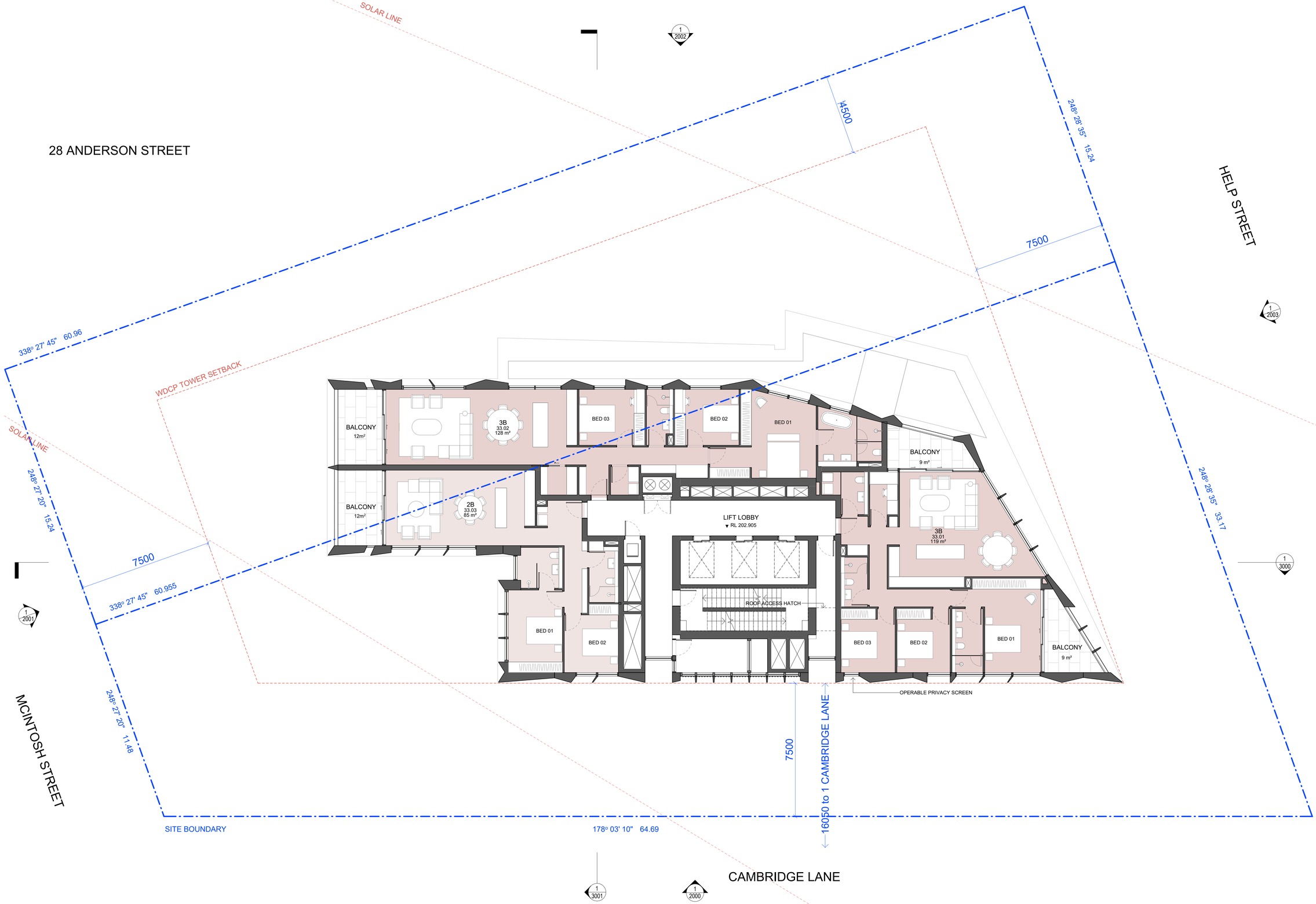
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28 ANDERSON STREET



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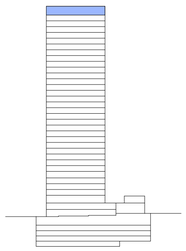
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Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
L33 Plan

Drawing No.
1123

Scale
1 : 100 @ A1

Issue
B

North

0 1000 2000 3000 4000 5000
Scale 1:100 mm

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B	05.12.2024	For Coordination

28 ANDERSON STREET

SOLAR LINE

1
2002

4500

248° 28' 35" 15.24

HELP STREET

7500

1
2003

338° 27' 45" 60.96

WDCP TOWER SETBACK

SOLAR LINE

248° 27' 20" 15.24

PV PANELS

PLANT

▼ TOP OF PLANT RL 208.450

GAS HOT WATER PLANT

LIFT OVERRUN

▼ RL 208.150

PV PANELS

ROOF ACCESS HATCH

MATV ANTENNAS

PLANT

PLANT

1
3000

7500

338° 27' 45" 60.955

1
2001

248° 28' 35" 33.17

248° 27' 20" 11.48

MCINTOSH STREET

16790 to 1 CAMBRIDGE LANE

7500

SITE BOUNDARY

178° 03' 10" 64.69

1
3001

1
2000

CAMBRIDGE LANE

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Common Grounds | Landscape
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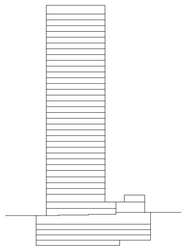
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Key Section



Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
Roof Plan

Drawing No.
1126

Scale
1 : 100 @ A1

Issue
B

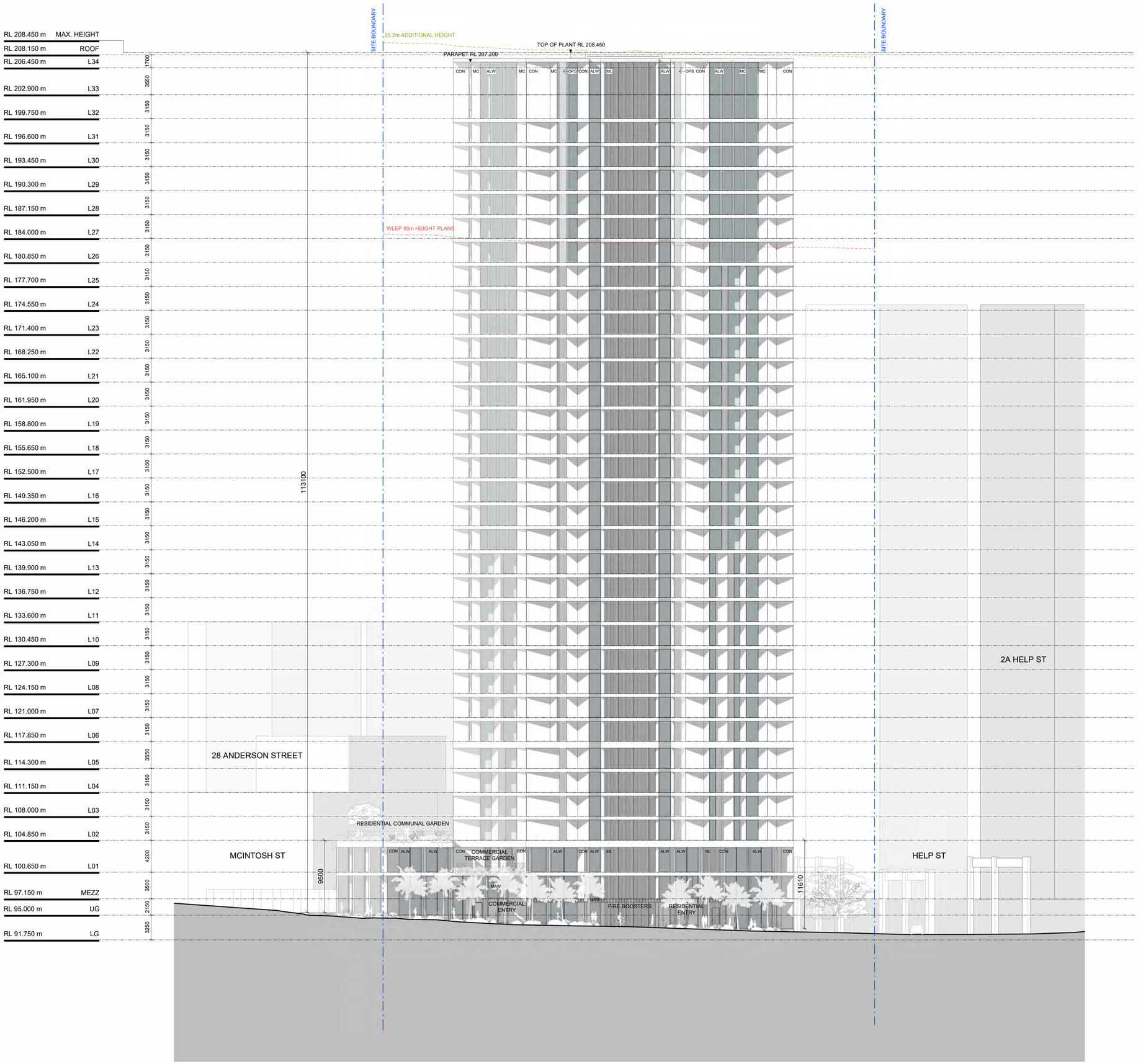
North

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Scale 1:100 mm

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Legend

ALW	Aluminium framed window
BAL	Balustrade
CON	Concrete
MAW	Metal awning
MC	Metal cladding
ML	Metal louvre
OPS	Operable privacy screen

Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
West Elevation Cambridge Lane

Drawing No.
2000

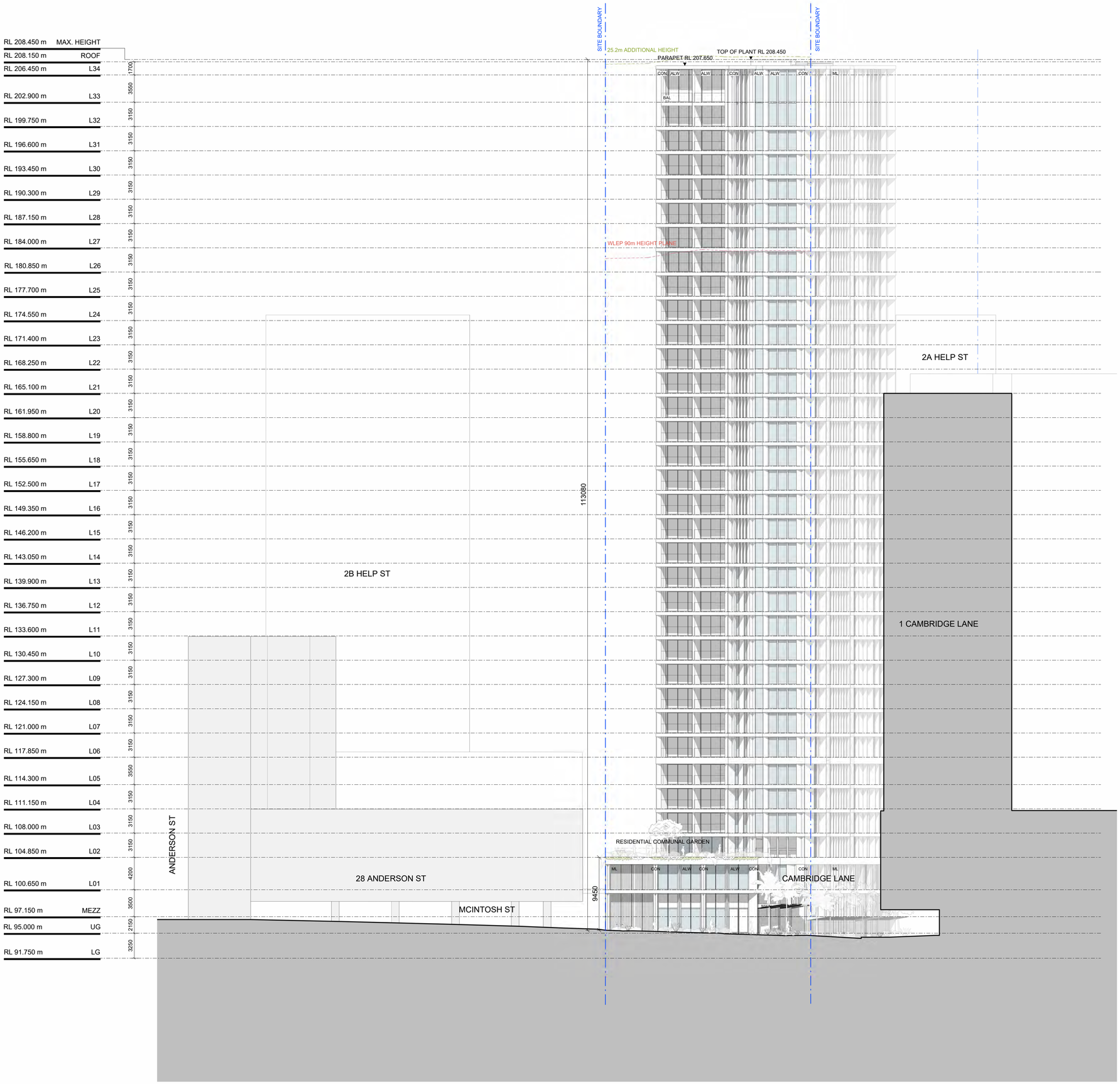
Scale	Issue
1 : 250 @ A1	B

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0407 545 647

Stantec | Civil
Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Legend

ALW	Aluminium framed window
BAL	Balustrade
CON	Concrete
MAW	Metal awning
MC	Metal cladding
ML	Metal lourve
OPS	Operable privacy screen

Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
North Elevation Mcintosh Street

Drawing No.
2001

Scale
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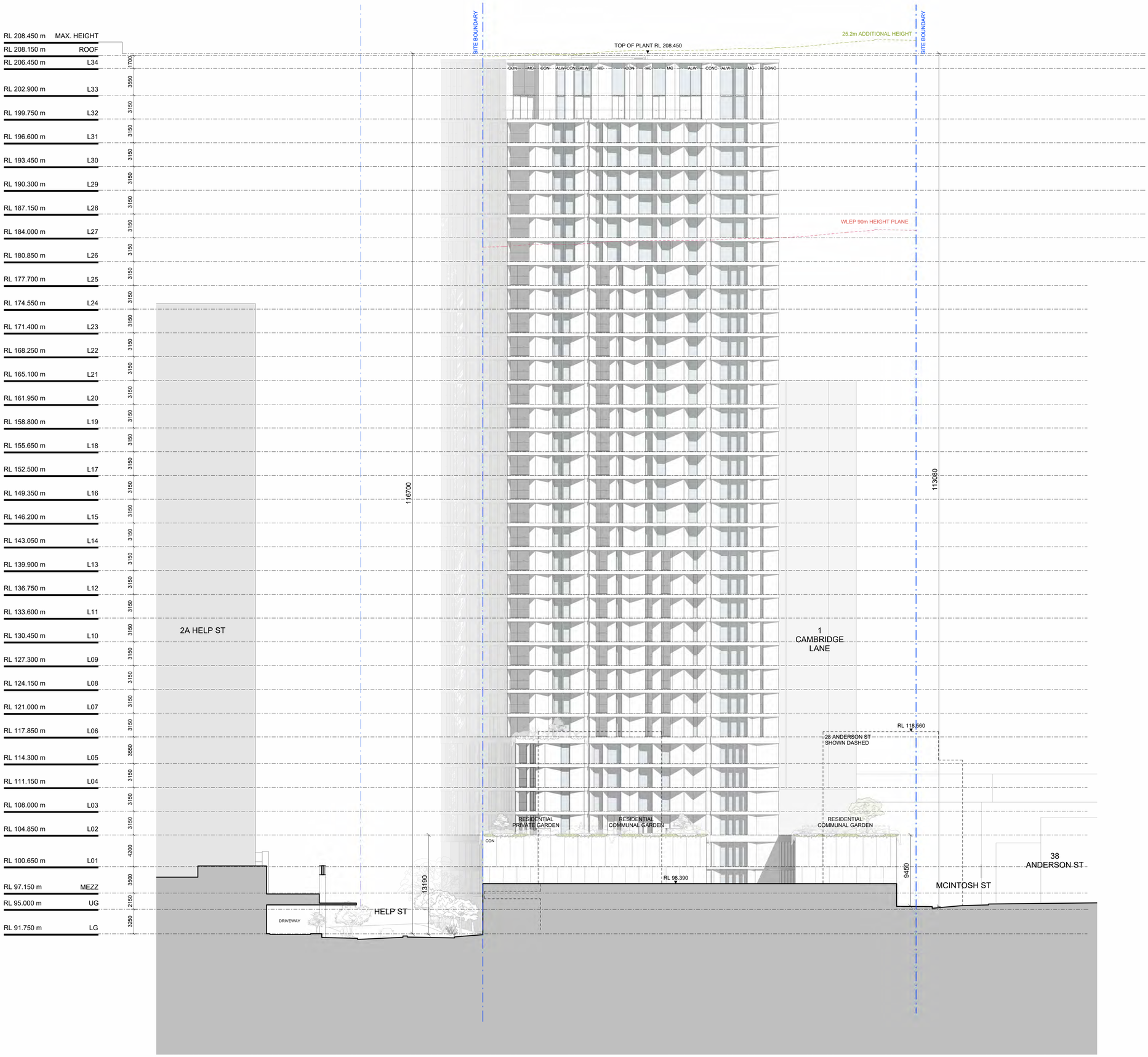
Issue
B

0 2500 5000 7500 10000 12500 mm

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Suite 3, 414 Bourke Street
Surry Hills, NSW 2010 Australia

Nominated Architects
Mladen Prnjatovic 7468
Ben Green 7066
Chi Melhem 7754



Iss.	Date	For
A	06.08.2024	Scoping Meeting
B	05.12.2024	For Coordination

General Notes
Verify dimensions on site prior to commencement of work. Check existing RL's on site. Advise Architect of any discrepancies before commencement. Allow for adjustments to suit discrepancies. Comply with relevant authorities requirements. Comply with Building Code of Australia requirements. Comply with relevant Australian Standards for materials and construction practice. Comply with Basix Certificate. Do not scale from drawings.

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02 8920 0516

Mecone | Planner
Jordan Faeghi
0437 898 661

BG&E | Structure
Vince Betro
0414 814 862

Neuron | Services
Steve Cassells
0401 222 862

Common Grounds | Landscape
Alex Georgouras
0404 626 520

Walkerbai | ESD
Stewart Mann
0407 545 647

Stantec | Civil
Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
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0407 870 612

Legend

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BAL	Balustrade
CON	Concrete
MAW	Metal awning
MC	Metal cladding
ML	Metal louvre
OPS	Operable privacy screen

Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
East Elevation

Drawing No.
2002

Scale
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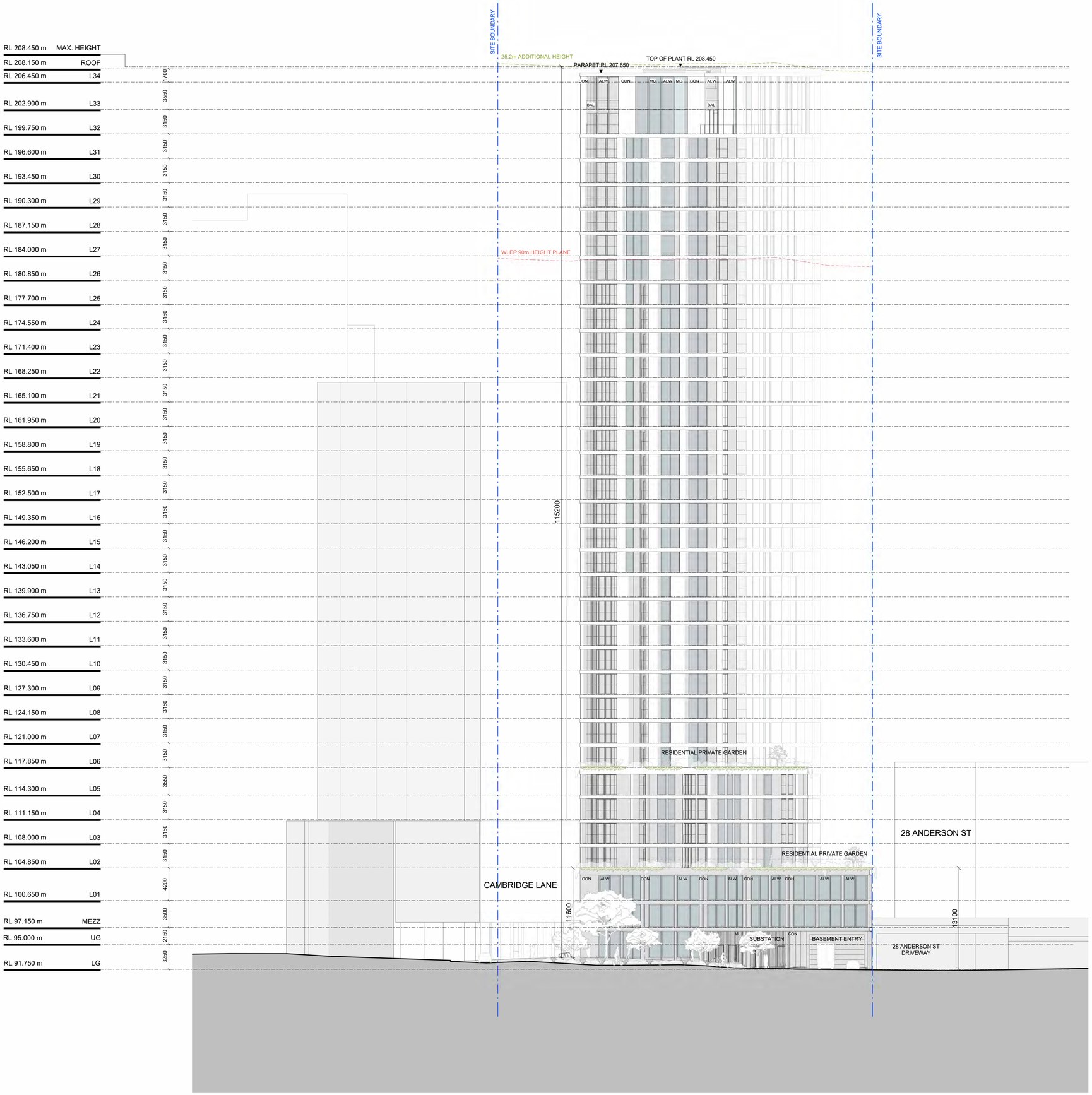
Issue
B

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mm

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PDC Consultants | Traffic
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0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Legend

ALW	Aluminium framed window
BAL	Balustrade
CON	Concrete
MAW	Metal awning
MC	Metal cladding
ML	Metal louvre
OPS	Operable privacy screen

Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
South Elevation Help Street

Drawing No.
2003

Scale
1 : 250 @ A1

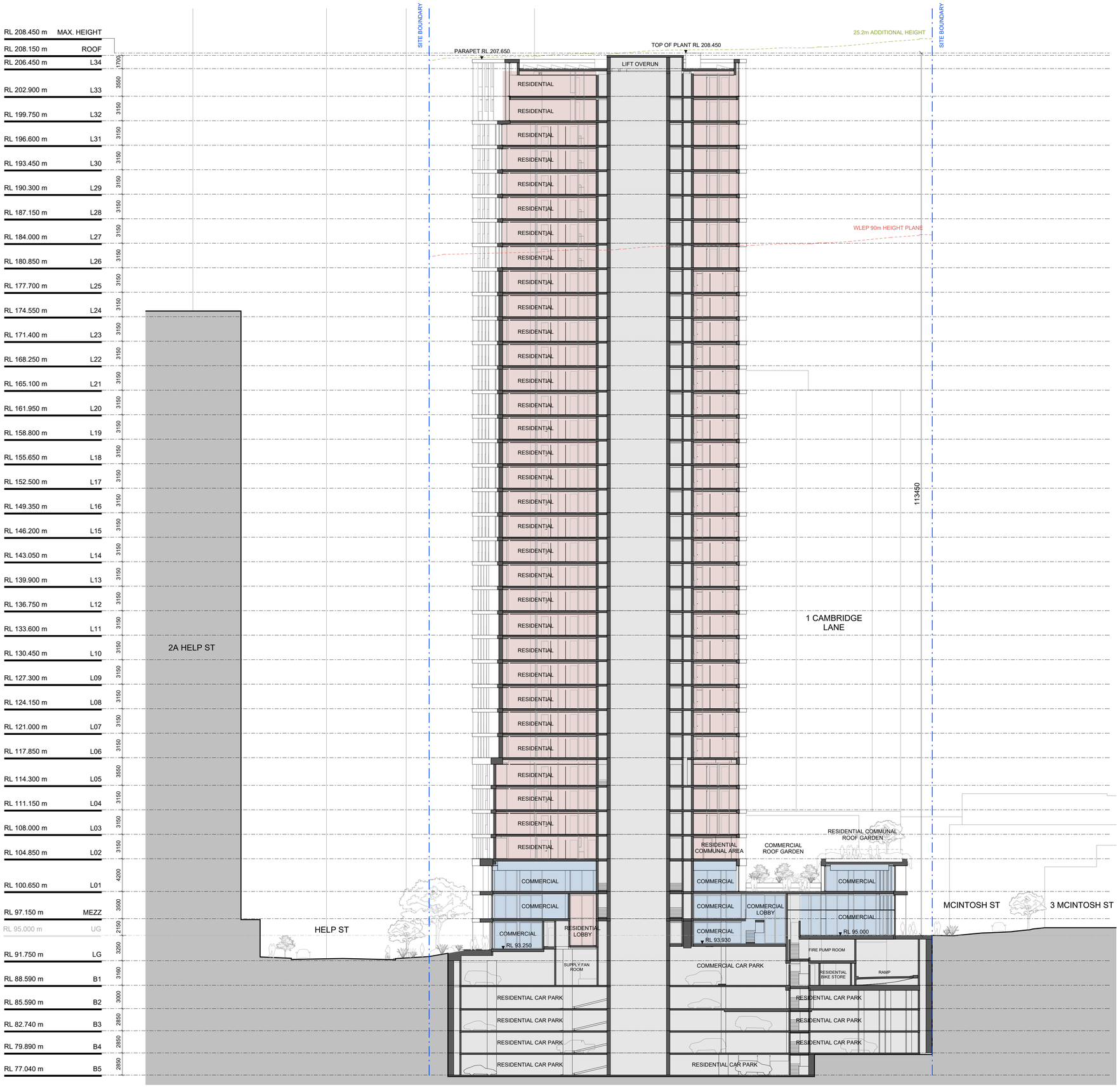
Issue
B

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mm

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Walkerbai | ESD
Stewart Mann
0407 545 647

Stantec | Civil
Jackson Bramley
0421 193 028

PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
Section North-South

Drawing No.
3000

Scale
1 : 250 @ A1

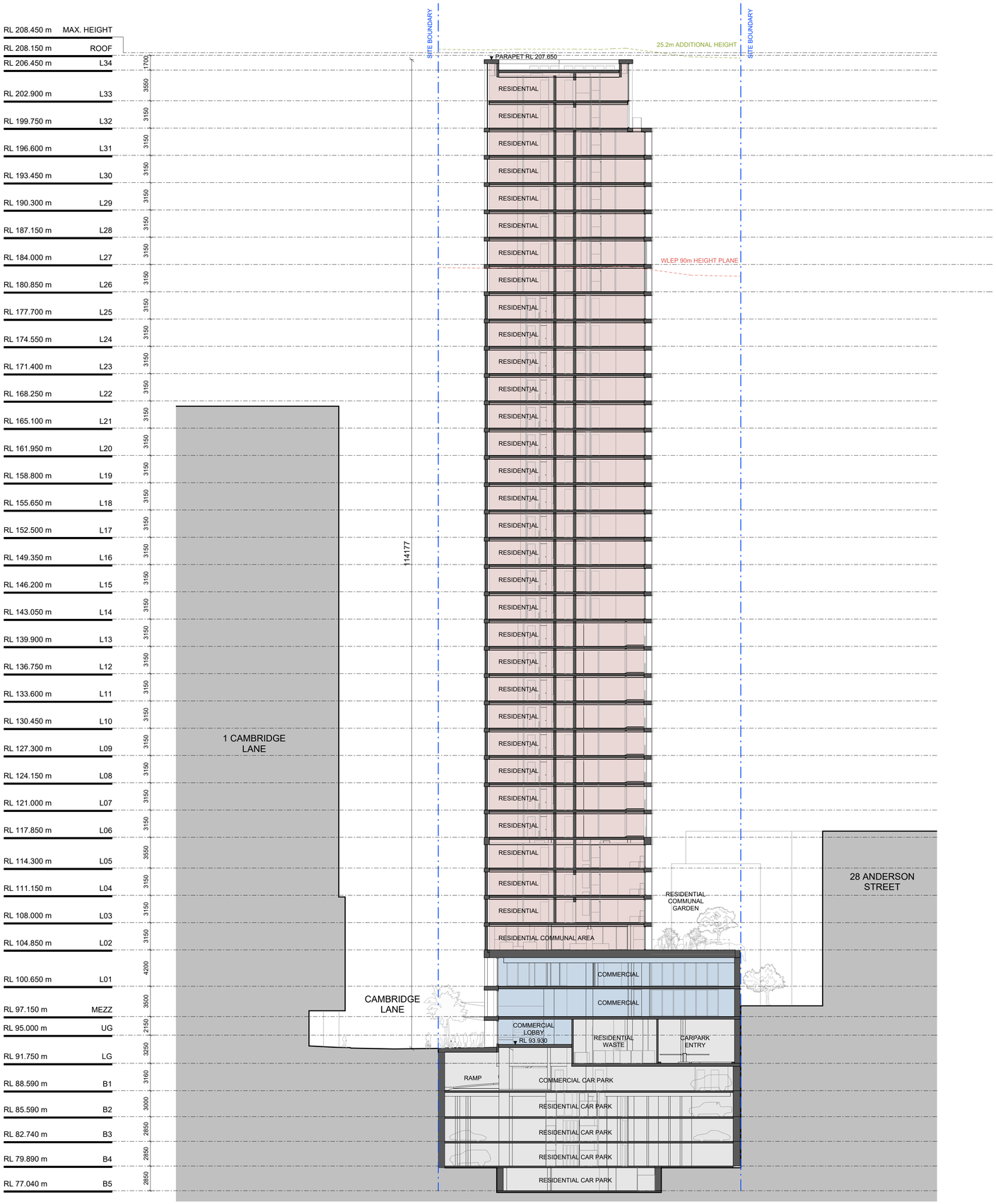
Issue
B

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mm

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Ben Green 7066
Chi Melhem 7754



Iss.	Date	For
A	06.08.2024	Scoping Meeting
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PDC Consultants | Traffic
Ben Midgley
0413 167 797

Design Confidence | BCA / Access
Lindsay Beard
0407 870 612

Project
Help Street Apartments

Project No.
22023

Address
3-5 Help Street Chatswood

Status
FOR INFORMATION

Drawn	Authorised	Date Issued
SY	MP	05.12.2024

Drawing
Section East-West

Drawing No.
3001

Scale
1 : 250 @ A1

Issue
B

0 2500 5000 7500 10000 12500 mm

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APPENDIX C

Photographic Log



Photograph 1: Rubbish bins on site and general rubbish left on site. 21 November 2024



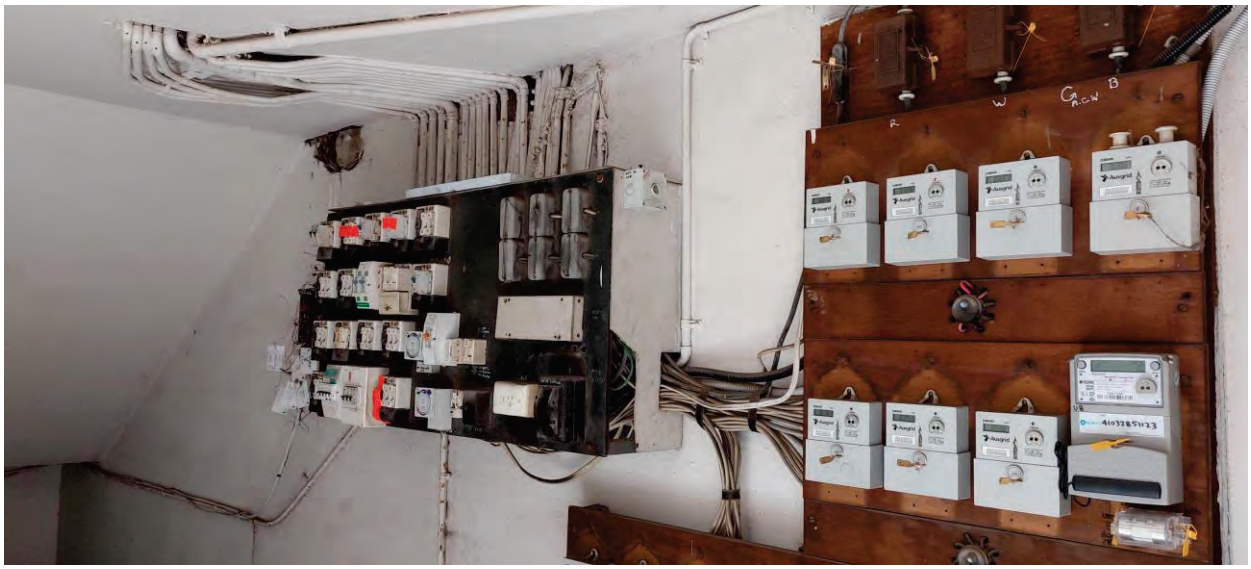
Photograph 2: General rubbish bins and grassed area on site. 21 November 2024



Photograph 3: Retaining wall along the eastern site boundary. 21 November 2024



Photograph 4: Paint flaking off railings and timber palings. 21 November 2024



Photograph 5: Electrical box with potential asbestos sheeting 21 November 2024



Photograph 6: Side view of apartment building on site, concrete hardstand and grassed areas. 21 November 2024



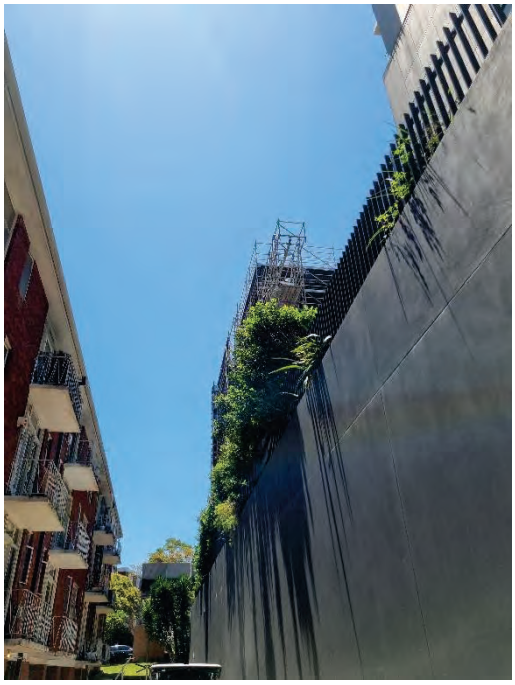
Photograph 7: Apartment building on site. 21 November 2024



Photograph 8: Drainage pipe on side of building. 21 November 2024



Photograph 9: Side view of apartment building on site, concrete hardstand and grassed areas 17 December 2024



Photograph 10: Neighbouring construction works East of 3 Help Street 17 December 2024



Photograph 11: Balconies of 3 Help Street, decaying paint 17 December 2024



Photograph 12: Concrete driveway facing south 3 Help Street, 17 December 2024



Photograph 13: Neighbouring construction works East of 3 Help Street 17 December 2024



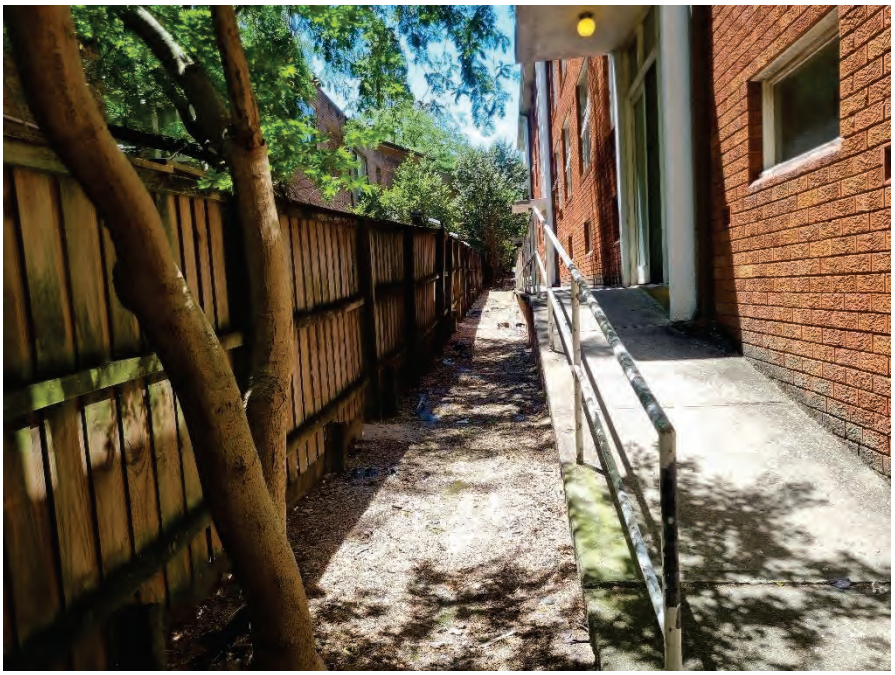
Photograph 14: Oil and grease waste present in drain, east wall 3 Help Street, 17 December 2024



Photograph 15: Oil and grease waste present in drain, east wall 3 Help Street, 17 December 2024



Photograph 16: BH03 in southern portion of site, 17 December 2024



Photograph 17: Western throughfare of 3 Help street, 17 December 2024



Photograph 18: Disposed concrete in western throughfare of 3 Help street, 17 December 2024



Photograph 19: Northern grassed area of 3 Help street, 17 December 2024



Photograph 20: Above ground utilities, northern section 3 Help street, 17 December 2024



Photograph 21: Northern grassed area of 3 Help street, facing south, 17 December 2024



Photograph 22: Soil wash/erosion at top of retaining wall, 3 Help street, 17 December 2024



Photograph 23: Soil wash/erosion at top of retaining wall with exposed fill and services , 3 Help street, 17 December 2024



Photograph 24: New construction waste / fill present on eastern side of retaining wall, 3 Help street, 17 December 2024



Photograph 25: Exposed fill, eastern side of grassed area, 3 Help street, 17 December 2024



Photograph 26: Central walkway and Stormwater services, 5 Help street, 17 December 2024



Photograph 27: Exposed fill in garden beds, southern section of 5 Help street, 17 December 2024



Photograph 28: Covered carpark, stormwater services and residents waste observed. 5 Help street, 17 December 2024



Photograph 29: BH01 location in driveway of 5 Help street, 17 December 2024



Photograph 30: Bailer sample from BH01,17 December 2024



Photograph 31: Bailer sample from BH02,17 December 2024



Photograph 32: Bailer sample from BH03,17 December 2024



Photograph 33: Borehole HA01, range of material encountered up to the termination depth of 0.7 mBGL silt clay. 13 April 2023



Photograph 34: Borehole HA02, range of material encountered, Natural reached at 0.5 mBGL silty clay. 13 April 2023



Photograph 35: Borehole HA03, range of material encountered up to the termination depth of 0.65 mBGL, natural reached at 0.4 mBGL silty clay. 13 April 2023



Photograph 36: Potential rainwater contamination of unsealed ground water monitoring well at BH1. Grey cloudy water with film on top. 13 April 2023

APPENDIX D

PSI Searches (Lotsearch, Titles, SafeWork Schedule 11)

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 01 Nov 2022 14:08:12

Reference: LS037509 EP

Address: 3 - 5 Help Street, Chatswood, NSW 2067

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

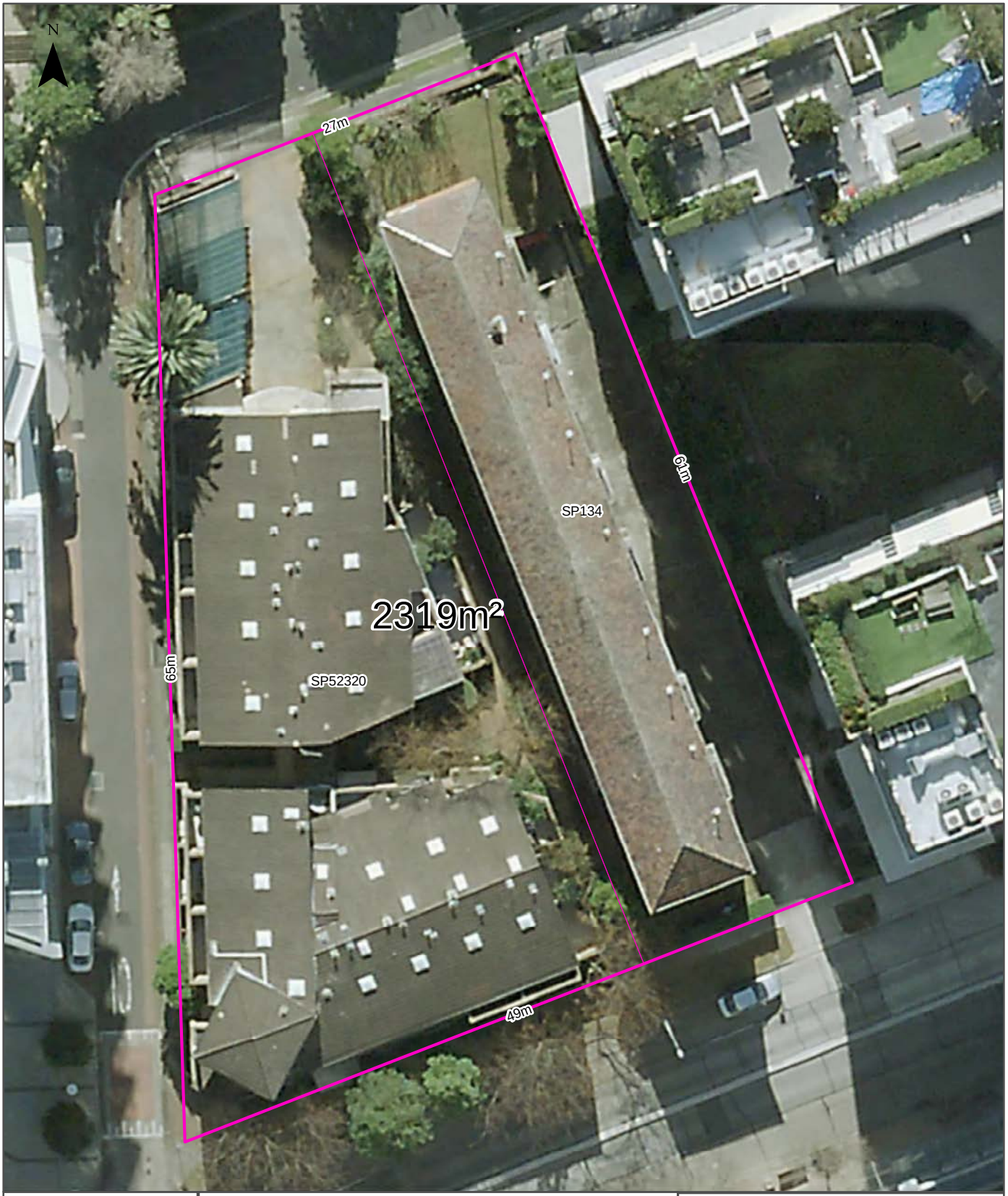
Datasets contained within this report, detailing their source and data currency:

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	05/10/2022	05/10/2022	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	04/10/2022	12/09/2022	Monthly	1000m	0	0	6
Contaminated Land Records of Notice	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	2
Former Gasworks	Environment Protection Authority	02/09/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	3
EPA PFAS Investigation Program	Environment Protection Authority	04/10/2022	23/09/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	06/10/2022	06/10/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	06/10/2022	06/10/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	06/10/2022	06/10/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	2	3
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	2	6
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	100m	34	292	292
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	100m	-	252	252
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	250m	7	40	171
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	250m	-	3	23
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	2	87
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	0
Major Easements	NSW Department of Customer Service - Spatial Services	29/08/2022	29/08/2022	Quarterly	1000m	0	0	8
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	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	Annually	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	0	50

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	2
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	1	1	4
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	11/10/2022	02/09/2022	Monthly	500m	1	-	-
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	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	06/10/2022	06/10/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	06/10/2022	06/10/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	06/10/2022	06/10/2022	Monthly	1000m	12	12	13
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	1	7	97
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	1
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	11/10/2022	30/09/2022	Monthly	1000m	0	1	93
Bush Fire Prone Land	NSW Rural Fire Service	01/11/2022	19/09/2022	Weekly	1000m	0	0	3
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment & Heritage	01/03/2017	16/12/2016	Annually	1000m	0	0	22
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	24/10/2022	24/10/2022	Weekly	10000m	-	-	-

Site Diagram

3 - 5 Help Street, Chatswood, NSW 2067



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 2319m²

Total Perimeter: 202m

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.

Scale:

0 10 20
Meters

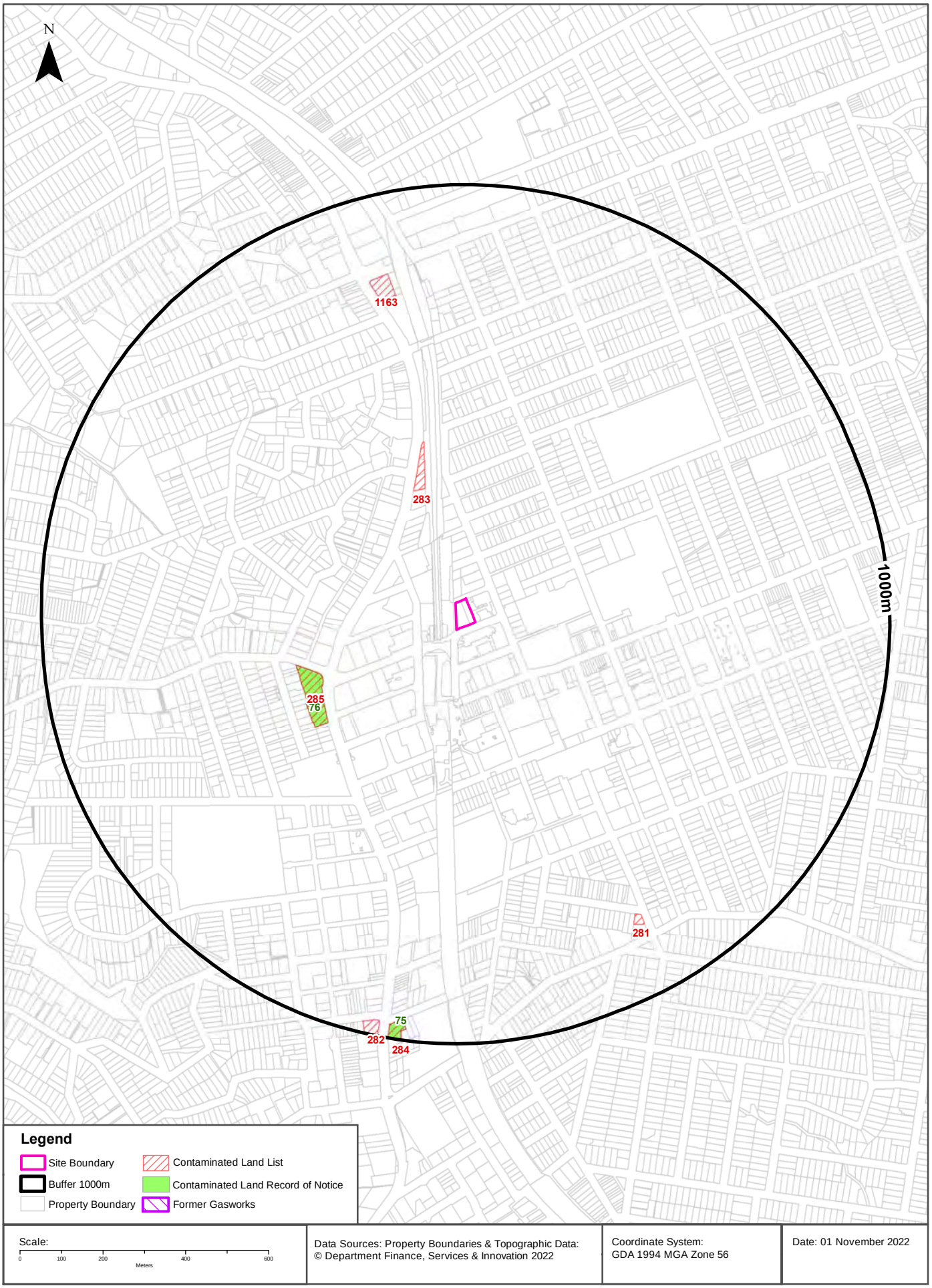
Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 56

Date: 01 November 2022

Contaminated Land

3 - 5 Help Street, Chatswood, NSW 2067



Contaminated Land

3 - 5 Help Street, Chatswood, NSW 2067

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
283	Coles Express Service Station Chatswood	877-879 Pacific Highway	Chatswood	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	284m	North
285	Chatswood Toyota	728 Pacific Highway	Chatswood	Service Station	Contamination formerly regulated under the CLM Act	Current EPA List	Premise Match	344m	South West
1163	Mobil Service Station	2 Boundary Street	Roseville	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	748m	North
281	Auto Repairs	2 Devonshire Street	Chatswood	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	801m	South East
284	Former Caltex Chatswood Service Station	607 Pacific HIGHWAY	Chatswood	Service Station	Contamination formerly regulated under the CLM Act	Current EPA List	Premise Match	949m	South
282	Caltex Service Station Chatswood	572 Pacific HIGHWAY	Chatswood	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	961m	South

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.

EPA site management class	Explanation
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

3 - 5 Help Street, Chatswood, NSW 2067

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
76	Chatswood Toyota	728 Pacific Highway	Chatswood	6 former	3228	Premise Match	344m	South West
75	Former Caltex Chatswood Service Station	607 Pacific Highway	Chatswood	8 former	3231	Premise Match	949m	South

Contaminated Land Records of Notice Data Source: Environment Protection Authority
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Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

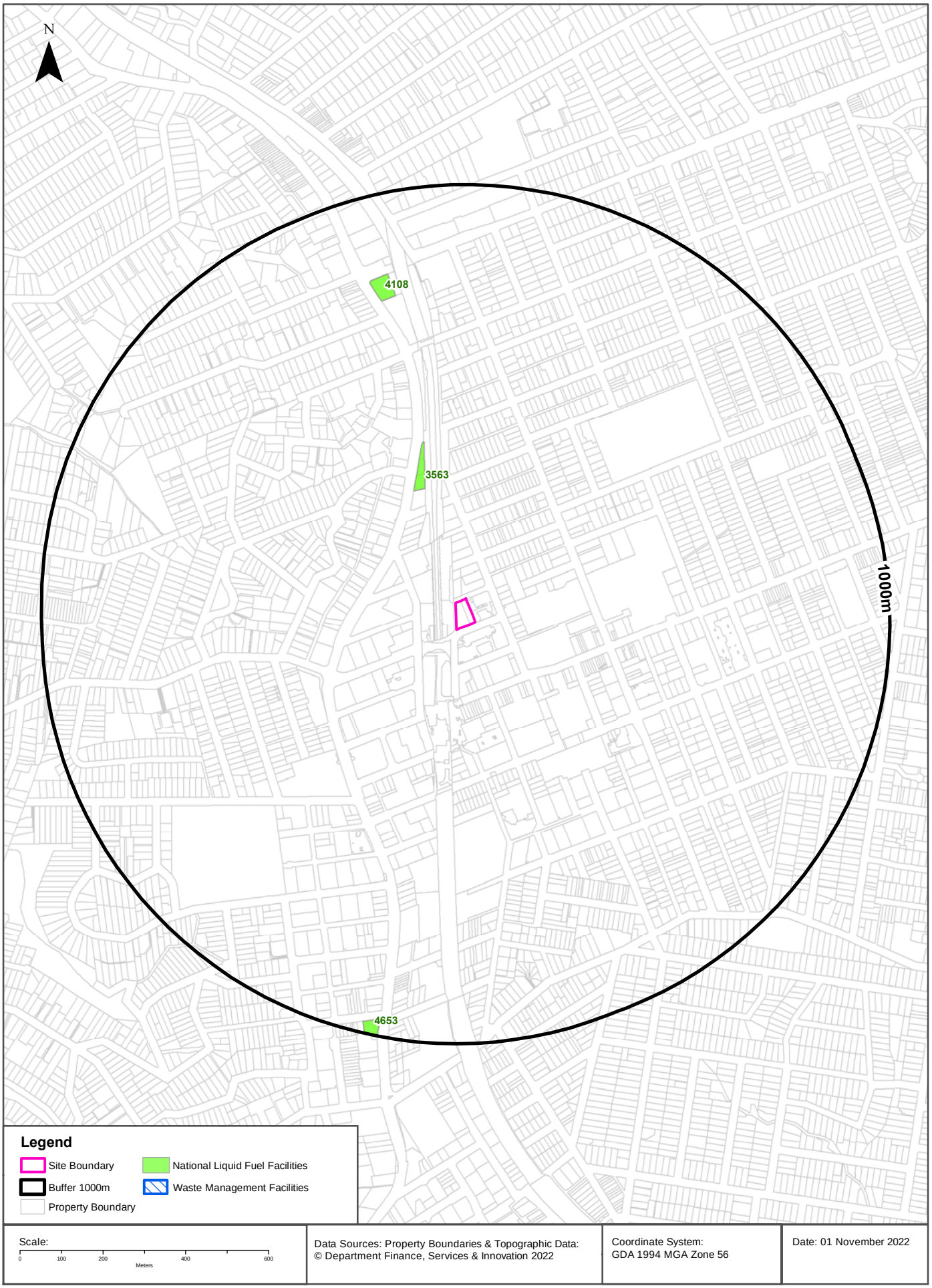
Former Gasworks within the dataset buffer:

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

Waste Management & Liquid Fuel Facilities

3 - 5 Help Street, Chatswood, NSW 2067



Waste Management & Liquid Fuel Facilities

3 - 5 Help Street, Chatswood, NSW 2067

National Waste Management Site Database

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

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

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
3563	Shell	Coles Express Chatswood	877-897 Pacific Highway	Chatswood	Petrol Station	Operational		25/07/2011	Premise Match	284m	North
4108	7-Eleven Pty Ltd	Roseville	Pacific Highway	Roseville	Petrol Station	Operational		13/07/2012	Premise Match	748m	North
4653	Caltex	Caltex Woolworths Chatswood	572 Pacific Highway	Chatswood	Petrol Station	Operational		25/07/2011	Premise Match	961m	South

National Liquid Fuel Facilities Data Source: Geoscience Australia
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PFAS Investigation & Management Programs

3 - 5 Help Street, Chatswood, NSW 2067

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

3 - 5 Help Street, Chatswood, NSW 2067

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

3 - 5 Help Street, Chatswood, NSW 2067

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

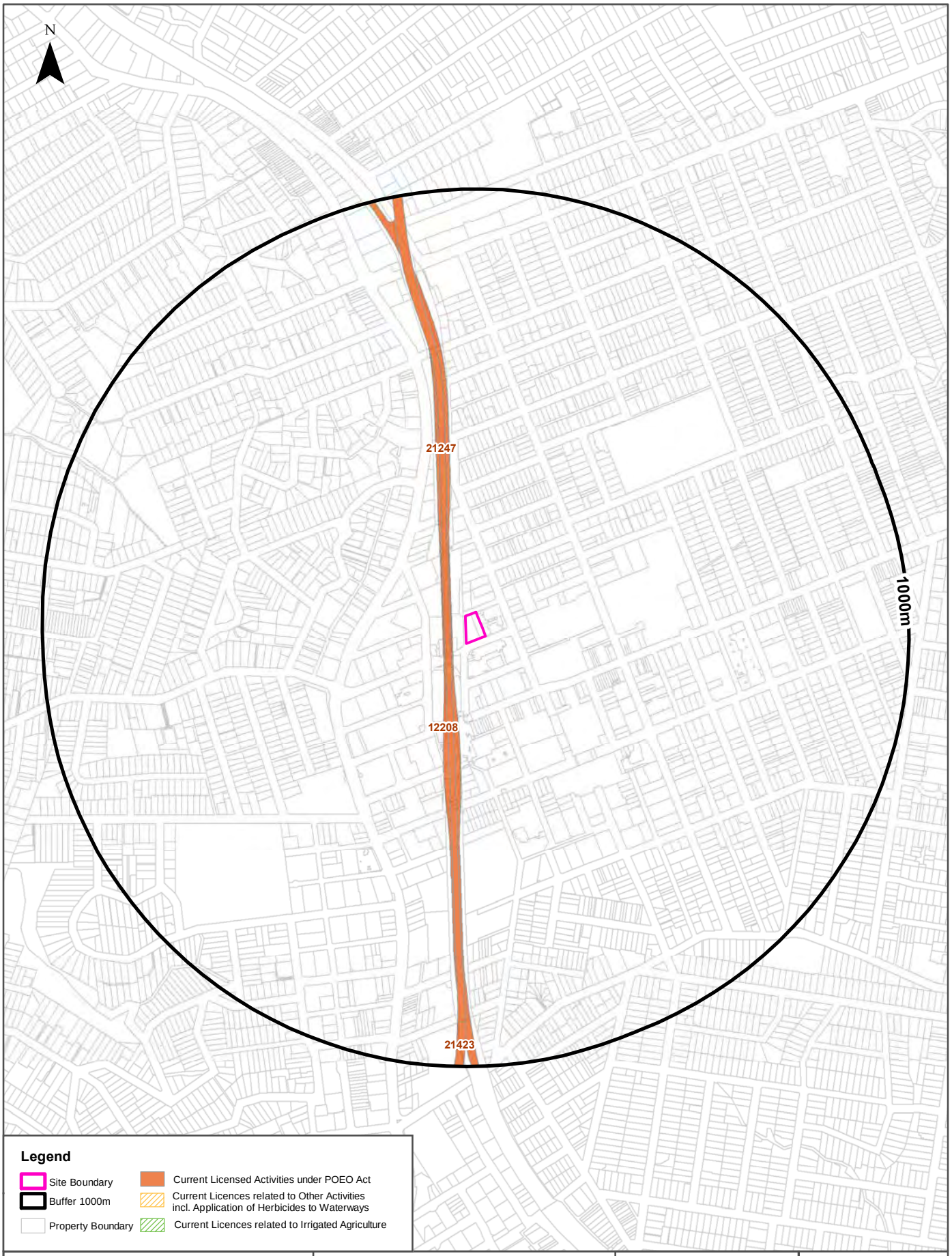
Sites within the dataset buffer:

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

3 - 5 Help Street, Chatswood, NSW 2067



EPA Activities

3 - 5 Help Street, Chatswood, NSW 2067

Licensed Activities under the POEO Act 1997

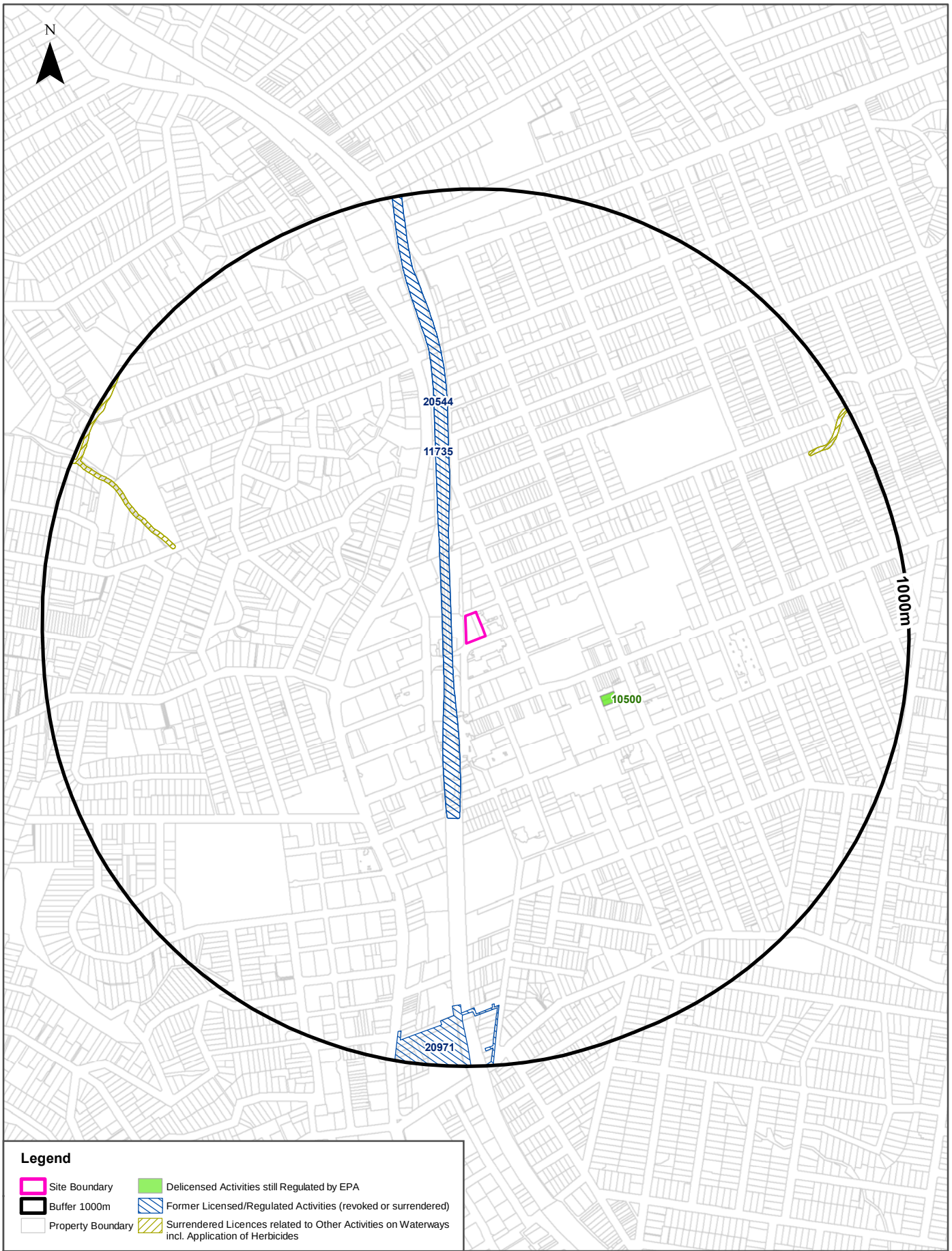
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
12208	SYDNEY TRAINS		SYDNEY TRAINS, HAYMARKET, NSW 1238		Railway systems activities	Network of Features	34m	North West
21247	Metro Trains Sydney Pty Ltd		SYDNEY METRO, ROUSE HILL, NSW 2155		Railway systems activities	Network of Features	38m	North West
21423	CPB CONTRACTORS PTY LIMITED		BETWEEN CHATSWOOD DIVE SITE AND SYDENHAM DIVE SITE, SYDNEY, NSW 2000		Railway infrastructure construction (<50,000T)	Network of Features	892m	South

POEO Licence Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

3 - 5 Help Street, Chatswood, NSW 2067



EPA Activities

3 - 5 Help Street, Chatswood, NSW 2067

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
10500	THE HOSPITALS CONTRIBUTION FUND OF AUSTRALIA LTD	HCF DENTAL CENTRE	6/13 Spring Street	CHATSWOOD	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	304m	South East

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

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

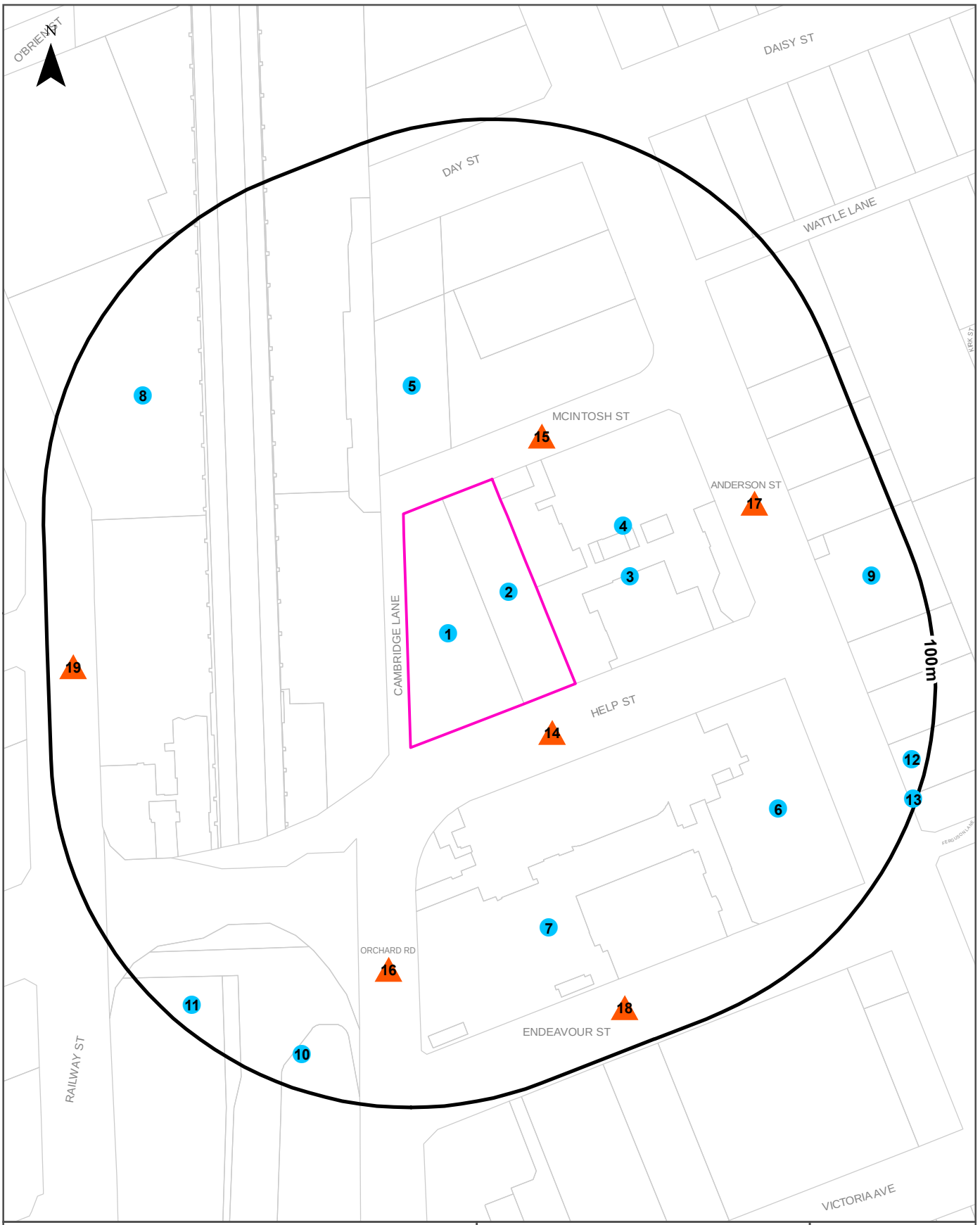
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
11735	HOCHTIEF AG	-, MACQUARIE PARK, NSW 2113	Surrendered	04/09/2002	Railway systems activities	Network of Features	34m	North
20544	JOHN HOLLAND PTY LTD	North West Rail Link - Operations Trains and Stations Project, Between First Ponds Creek, Schofields and Cudgegong Road, ROUSE HILL, NSW 2155, ROUSE HILL	Surrendered	19/12/2014	Railway systems activities	Network of Features	34m	North
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	705m	West
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	705m	West
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	705m	West
20971	JOHN HOLLAND PTY LTD	Sydney Metro City & Southwest Tunnels and Excavation Works, locations between Chatswood railway station and Sydenham railway station, SYDNEY, NSW 2000, SYDNEY, NSW	Surrendered	28/09/2017	Concrete works, Railway systems activities	Network of Features	854m	South

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Historical Business Directories

3 - 5 Help Street, Chatswood, NSW 2067



Legend

- Site Boundary
- Buffer 100m
- 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 20 40 60 80 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 01 November 2022

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

Historical Business Directories

3 - 5 Help Street, Chatswood, NSW 2067

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	INTER-COMMUNICATING SYSTEMS MFRS. &/OR INSTALLERS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	49106	1986	Premise Match	0m	On-site
	RADIO - COMMUNICATION - SYSTEMS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	78660	1986	Premise Match	0m	On-site
	RADIO - TWO-WAY RADIO TELEPHONE COMMUNICATION.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	78849	1986	Premise Match	0m	On-site
	TELECOMMUNICATIONS EQUIPMENT &/OR SYSTEM MFRS. &/OR IMPS. &/OR DISTS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	92525	1986	Premise Match	0m	On-site
	TELEPHONE SUPPLIES.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	92594	1986	Premise Match	0m	On-site
	TIMERS &/OR TIME RECORDERS MFRS. &/OR IMPS. &/OR. DISTS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	93674	1986	Premise Match	0m	On-site
	TELECOMMUNICATIONS. (T1525)	T.R Services Pty Ltd., 5 Help St., Chatswood. 2067.	79318	1982	Premise Match	0m	On-site
	FIRE PROTECTION APPLIANCES MFRS. &/OR ENGINEERS. (F2200)	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067.	30811	1982	Premise Match	0m	On-site
	INTER-COMMUNICATING SYSTEMS MFRS. &/OR INSTALLERS. (I4900)	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067.	42943	1982	Premise Match	0m	On-site
	TELEPHONE SUPPLIES. (T1675)	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067.	79397	1982	Premise Match	0m	On-site
	TIMERS &/OR TIME RECORDERS MFRS. &/OR IMPS. &/OR DISTS.(T4890)	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067.	80454	1982	Premise Match	0m	On-site
	TELECOMMUNICATIONS.	T. R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	69867	1978	Premise Match	0m	On-site
	TELEPHONE SUPPLIES	T. R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	69927	1978	Premise Match	0m	On-site
	TIMERS &/OR TIME RECORDERS MFRS. &/OR IMPS. &/OR DISTS.	T.R. Services Pty. Ltd, 5 Help St, Chatswood.2067	71039	1978	Premise Match	0m	On-site
	FIRE PROTECTION APPLIANCES MFRS. &/OR ENGINEERS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	27876	1978	Premise Match	0m	On-site
	INTER-COMMUNICATING SYSTEMS MFRS. &/OR INSTALLERS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	38280	1978	Premise Match	0m	On-site
	FIRE PROTECTION APPLIANCES MFRS. &/OR ENGINEERS.	T.R. Services Pty. Ltd., 5 Help St, Chatswood. 2067	32153	1975	Premise Match	0m	On-site
	INTER-COMMUNICATING SYSTEMS MFRS. &/OR INSTALLERS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	45266	1975	Premise Match	0m	On-site
	TELEPHONE SUPPLIES.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	82407	1975	Premise Match	0m	On-site
	TIMERS &/OR TIME RECORDERS . MFRS. &/OR IMPS. &/OR DISTS.	T.R. Services Pty. Ltd., 5 Help St., Chatswood. 2067	83572	1975	Premise Match	0m	On-site

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	HEALTH CENTRES & CLINICS (H330)	Chatswood Baby Health Centre., 5 Help St., Chatswood	315739	1970	Premise Match	0m	On-site
	OFFICE COMMUNICATION MFRS.(O 020)	T. R. Services Pty. Ltd., 5 Help St., Chatswood, 2067	344639	1970	Premise Match	0m	On-site
	INTER-COMMUNICATING SYSTEMS MFRS./INSTALLERS (I610)	T. R. Services Pty. Ltd., 5 Help St., Chatswood, 2067.	320519	1970	Premise Match	0m	On-site
	PAGING SYSTEMS	T. R. SERVICES PTY. LTD., T. R. HOUSE, 5 HELP St., CHATSWOOD	345930	1970	Premise Match	0m	On-site
	OFFICE COMMUNICATION MFRS.(O 020)	T. R. SERVICES PTY. LTD., T. R. HOUSE, 5 HELP St., CHATSWOOD, 2067	344638	1970	Premise Match	0m	On-site
	FIRE PROTECTION APPLIANCE MFRS.&/OR ENGINEERS (F200)	T.R. Services Pty. Ltd., 5 Help St., Chatswood, 2067.	303162	1970	Premise Match	0m	On-site
	TIME RECORDING CLOCK MFRS. &/OR DISTS.	T.R.Services Pty. Ltd., 5 Help St. Chatswood, 2067	369135	1970	Premise Match	0m	On-site
	TELECOMMUNICATIONS (T135)	T.R.Services Pty. Ltd., 5 Help St., Chatswood, 2067.	367559	1970	Premise Match	0m	On-site
	TELEPHONE SUPPLIES	T.R.Services Pty. Ltd., 5 Help St., Chatswood, 2067.	367608	1970	Premise Match	0m	On-site
	Health Centres & Clinics	Chatswood-Willoughby Baby Health Centre, 5a Help St., Chatswood	99854	1965	Premise Match	0m	On-site
	ELECTRICAL CONTRACTORS-LICENSED	Beam Electric Pty. Ltd., 5 Help St., Chatswood	301616	1961	Premise Match	0m	On-site
	ENGINEERS-ELECTRICAL	Beam Electric Pty. Ltd., 5 Help St., Chatswood	305377	1961	Premise Match	0m	On-site
2	MOTOR GARAGES & ENGINEERS	Hepburn, A., 3 Help St. CHATSWOOD	347359	1961	Premise Match	0m	On-site
	NURSERYMEN	Sykes Nursery, 3 Help St., Chatswood	354220	1961	Premise Match	0m	On-site
3	Chemical Mfrs &/or Imps &/or Dists	Consolidated Chemical Co., 1 Help St., Chatswood 2067	38866	1991	Premise Match	0m	East
	Insurance Brokers	McCoy K.R. & Co.Pty. Ltd., 1 Help St., Chatswood. 2067	49496	1991	Premise Match	0m	East
	INVESTMENT COUNSELLORS.	Australian Fixed Trusts, 1 Help Street, Chatswood. 2067	49299	1986	Premise Match	0m	East
	CHIROPRACTORS.	Beech, A. R., 1 Help St., Chatswood. 2067	15166	1986	Premise Match	0m	East
	CHEMICAL IMPORTERS &/OR DISTS.	Consolidated Chemical Co., 1 Help St., Chatswood. 2067	13534	1986	Premise Match	0m	East
	CHEMICAL MFRS. &/OR IMPS. &/OR DISTS.	Consolidated Chemical Co., 1 Help St., Chatswood. 2067	13625	1986	Premise Match	0m	East
	ACCOUNTANTS & AUDITORS.	Goldsmith, J. T., 1 Help St., Chatswood. 2067	507	1986	Premise Match	0m	East
	PODIATRISTS.	Harding, R. J., 1 Help St., Chatswood. 2067	75388	1986	Premise Match	0m	East
	INSURANCE BROKERS.	McCoy, K. R. & Co. Pty. Ltd., 1 Help St., Chatswood. 2067	48810	1986	Premise Match	0m	East
	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Sandy's Salon, 1 Help St., Chatswood. 2067	43075	1986	Premise Match	0m	East
	MEDICAL PRACTITIONERS.	Williams, A. E., 1 Help St., Chatswood. 2067	58248	1986	Premise Match	0m	East
	CHIROPRACTORS. (C4365)	Beech, A. R., 1 Help St., Chatswood. 2067.	16059	1982	Premise Match	0m	East
	CHEMICAL MFRS. &/OR IMPS.&/OR DISTS. (C3855)	Consolidated Chemical Co., 1 Help St., Chatswood. 2067.	14398	1982	Premise Match	0m	East
	ACCOUNTANTS & AUDITORS. (A0360)	Goldsmith, J. T., 1 Help St., Chatswood. 2067.	445	1982	Premise Match	0m	East
	CHIROPODISTS. (C4335)	Harding, R. J., 1 Help St., Chatswood. 2067.	16018	1982	Premise Match	0m	East
	BEAUTICIANS. (B1985)	Margaret Jones, 1 Help St., Chatswood. 2067.	5135	1982	Premise Match	0m	East
	INSURANCE BROKERS. (I4250)	McCoy, K. R. & Co. Pty. Ltd., 1 Help St., Chatswood. 2067.	42642	1982	Premise Match	0m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
3	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Sandras Salon, 1 Help St., Chatswood. 2067.	6477	1982	Premise Match	0m	East
	LIGHTING COMMERCIAL-INDUSTRIAL. (L4350)	Solarbrite Lighting & Industries Pty. Limited, 1 Help St., Chatswood. 2067.	45328	1982	Premise Match	0m	East
	MEDICAL PRACTITIONERS. (M2020)	Williams, A. E., 1 Help St., Chatswood. 2067.	50813	1982	Premise Match	0m	East
	CHEMICAL MFRS. &/OR DISTS. &/OR IMPS.	Consolidated Chemical Co., 1 Help St., Chatswood. 2067	12533	1978	Premise Match	0m	East
	ACCOUNTANTS & AUDITORS.	Crawford, K.J. & Co., 1 Help St., Chatswood. 2067	258	1978	Premise Match	0m	East
	ACCOUNTANTS & AUDITORS.	Goldsmith, J.T., 1 Help St., Chatswood. 2067	372	1978	Premise Match	0m	East
	CHIROPODISTS.	Harding. R. J., 1 Help St., Chatswood. 2067	14178	1978	Premise Match	0m	East
	INSURANCE BROKERS.	McCoy, K. R. & Co. Pty. Ltd., 1 Help St., Chatswood. 2067	37980	1978	Premise Match	0m	East
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Sandras Salon, 1 Help St., Chatswood. 2067	5564	1978	Premise Match	0m	East
	LIGHTING COMMERCIAL-INDUSTRIAL.	Solarbrite Lighting & Industries Pty. Limited, 1 Help St., Chatswood. 2067	40319	1978	Premise Match	0m	East
	SOLICITORS.	Duncan Barron & Co., 1 Help St., Chatswood. 2067	78258	1975	Premise Match	0m	East
	ACCOUNTANTS & AUDITORS.	Goldsmith. J. T., 1 Help St., Chatswood. 2067.	298	1975	Premise Match	0m	East
	SOLICITORS.	Hurley, C., 1 Help St., Chatswood. 2067	78399	1975	Premise Match	0m	East
	CHIROPRACTORS.	Lange Chiropratic Clinic, 1 Help St., Chatswood. 2067	16367	1975	Premise Match	0m	East
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Sandra's Salon, 1 Help St., Chatswood. 2067.	5926	1975	Premise Match	0m	East
	CHIROPODISTS.	Wyse, J. K., 1 Help St., Chatswood. 2067	16349	1975	Premise Match	0m	East
	CEMENT-PORTLAND-MFRS. &/OR DISTS. (C222)	Australian Memorial Parks of Sydney., 1 Help St., Chatswood	278975	1970	Premise Match	0m	East
	MANAGEMENT CONSULTANTS(M077)	Beale, P. & Co. (Intersearch) Pty. Ltd., 1 Help St., Chatswood	324436	1970	Premise Match	0m	East
	ENGINEERS-MARINE (E675)	Eken & Doherty., 1 Help St., Chatswood	300166	1970	Premise Match	0m	East
	ACCOUNTANTS & AUDITORS (A040)	Goldsmith, J.T., 1 Help St., Chatswood	258797	1970	Premise Match	0m	East
	SOLICITORS (S413)	Hurley, C. F. & Co., 1 Help St., Chatswood	362615	1970	Premise Match	0m	East
	SCIENTIFIC APPARATUS MFRS. &/OR DISTRIBUTORS (S155)	Jeolco (A/asia) Pty. Ltd., 1 Help St., Chatswood	359788	1970	Premise Match	0m	East
	INSTRUMENTS-SCIENTIFIC-IMPORTERS, MANUFACTURERS &/OR DISTRIBUTORS	Jeolco (A'asia.) Pty. Ltd., 1 Help St., Chatswood	319728	1970	Premise Match	0m	East
	PHOTOGRAPHERS-COMMERCIAL(P272)	Keep, Glenn A. Photography., 1a Help St., Chatswood	347906	1970	Premise Match	0m	East
	INSURANCE BROKERS (I520)	McCoy, K. R. & Son & Associates., 1 Help St., Chatswood	320063	1970	Premise Match	0m	East
	FINANCIERS/FINANCE AGENTS (F180)	McCoy, K.R. Son & Associates., 1 Help St., Chatswood	302996	1970	Premise Match	0m	East
	KINDERGARTEN SUPPLIES (K040)	Richards, A. H. & Co., 1 Help St., Chatswood	322006	1970	Premise Match	0m	East
	LACE IMPORTERS &/OR WHOLESALERS (L030)	Richards, R. H. & Co., 1 Help St., Chatswood	322322	1970	Premise Match	0m	East
	MANUFACTURERS' AGENTS (M112)	Richards, R. H. & Co., 1 Help St., Chatswood	325231	1970	Premise Match	0m	East
	EXPORTERS (E835)	Richards, R.H. & Co., 1 Help St., Chatswood	301821	1970	Premise Match	0m	East
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Sandra's Salon., 1 Help St., Chatswood	266611	1970	Premise Match	0m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
3	CHIROPODISTS (C316)	Wyse, J. K., 1 Help St., Chatswood	281709	1970	Premise Match	0m	East
	Plan Printers	Ekedo, Room 012., 1 Help St., Chatswood	133471	1965	Premise Match	0m	East
	Duplicating/Typing Specs.	Ekedo, Room 12 ,1 Help St., Chatswood	76489	1965	Premise Match	0m	East
	Architects - Naval	Eken & Doherty., 1 Help St., Chatswood	46864	1965	Premise Match	0m	East
	Engineers - Marine	Eken & Doherty., 1 Help St., Chatswood	83398	1965	Premise Match	0m	East
	TOWN-PLANNING CONSULTANTS	Granville, C. R. & Son, 1 Help St., Chatswood	152787	1965	Premise Match	0m	East
	SURVEYORS—LAND	Granville, C. R. & Son., 1 Help St., Chatswood	149319	1965	Premise Match	0m	East
	Insurance Brokers	McCoy, K. R. & Son & Associates, 1 Help St., Chatswood	104739	1965	Premise Match	0m	East
	Photographers - Commercial	Panorama Studios, 1 Help St., Chatswood	132353	1965	Premise Match	0m	East
	Heat Treatment Spec.	Rayson Industries Pty. Ltd. (Oil Heating, etc.), Home Advisory Committee, 1 Help St., Chatswood	100242	1965	Premise Match	0m	East
	Beauty Salons &/or Ladies Hairdressers	Tully, Herbert C., 1 Help St., Chatswood	51262	1965	Premise Match	0m	East
4	Real Estate Agents	Gilbert Kemp Pty. Ltd., 32 Anderson St., Chatswood 2067	60210	1991	Premise Match	0m	North East
	AUCTIONEERS REAL ESTATE	Gilbert Kemp Pty. Ltd., 32 Anderson St., Chatswood. 2067	4418	1986	Premise Match	0m	North East
	PROPERTY MANAGEMENT.	Gilbert Kemp Pty. Ltd., 32 Anderson St., Chatswood. 2067	77567	1986	Premise Match	0m	North East
	REAL ESTATE AGENTS.	Gilbert Kemp Pty. Ltd., 32 Anderson St., Chatswood. 2067	79461	1986	Premise Match	0m	North East
	DRESS FABRIC RETAILERS.	Gysbers, 28 Anderson St., Chatswood. 2067	25025	1986	Premise Match	0m	North East
	MANCHESTER SPECIALISTS &/OR RETAILERS.	Gysbers, 28 Anderson St., Chatswood. 2067	52413	1986	Premise Match	0m	North East
	ELECTRICAL SUPPLIES &/OR APPLIANCES-RETAIL.	Zap Electronics, 30 Anderson St., Chatswood. 2067	27580	1986	Premise Match	0m	North East
	PROPERTY MANAGEMENT. (P9060)	Gilbert & Kema Pty. Ltd., 32 Anderson St., Chatswood. 2067.	67295	1982	Premise Match	0m	North East
	REAL ESTATE AGENTS. (R2555)	Gilbert & Kema Pty. Ltd., 32 Anderson St., Chatswood. 2067.	68973	1982	Premise Match	0m	North East
	PROPERTY MANAGEMENT.	Gilbert & Kema Pty. Ltd., 32 Anderson St., Chatswood. 2067	60154	1978	Premise Match	0m	North East
	REAL ESTATE AGENTS &/OR VALUERS.	Gilbert & Kema Pty. Ltd., 32 Anderson St., Chatswood. 2067	61676	1978	Premise Match	0m	North East
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Raymond & Allan Pty. Ltd., 28 Anderson St., Chatswood. 2067	5485	1978	Premise Match	0m	North East
	SURVEYORS- MINING.	Glanville, C. R. & Son., 30 Anderson St., Chatswood. 2067	81452	1975	Premise Match	0m	North East
	SURVEYORS-LAND.	Glanville, C. R. & Son., 30 Anderson St., Chatswood. 2067	81410	1975	Premise Match	0m	North East
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Raymond & Allan Pty. Ltd., 28 Anderson St., Chatswood. 2067.	5824	1975	Premise Match	0m	North East
	NEWSPAPERS/PERIODICALS (N130)	North Shore Times Pty. Ltd., 30 Anderson St., Chatswood	344236	1970	Premise Match	0m	North East
	Radio &/Or Television Sales & Servicemen	Ferguson's Electronic Services., 30 Anderson St. Chatswood	138124	1965	Premise Match	0m	North East
	Photographers - Commercial	Keep, Glenn A., 30 Anderson St., Chatswood	132329	1965	Premise Match	0m	North East
	Photographers - Portrait	Keep, Glenn A., 30 Anderson St., Chatswood	132463	1965	Premise Match	0m	North East
	Newspapers/Periodicals	North Shore Times Pty. Ltd., 30 Anderson St., Chatswood	128848	1965	Premise Match	0m	North East
	Beauty Salons &/or Ladies Hairdressers	Paul of Mayfair of Chatswood., 28-30 Anderson St., Chatswood	51075	1965	Premise Match	0m	North East
5	MOTOR GARAGES &/OR ENGINEERS	Nicholson, Alex A., 3 McIntosh St., Chatswood	84136	1950	Premise Match	12m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
5	MOTOR GARAGES &/OR ENGINEERS	Nicolson, Alex A., 3 McIntosh St., Chatswood	84139	1950	Premise Match	12m	North
6	PAINTERS, PAPERHANGERS/DECORATORS	Johnson, A., 20 Anderson St., Chatswood	356161	1961	Premise Match	34m	South East
7	Insurance Brokers	Hartog Insurance Brokers Pty. Ltd. Inc, in N.S.W., Suite 6., Wallaceway Shopping Centre., Chatswood. 2067	49482	1991	Premise Match	42m	South
	Trophy Mfrs &/or Suppliers	Sydney Sporting Supplies, G3, Wallace Way Chatswood 2067	64959	1991	Premise Match	42m	South
	INSURANCE COMPANIES ¬GENERAL.	City Mutual Life Assurance Soc. Ltd., Suite 12, 2nd Floor Wallaceway Shopping Centre, Chatswood. 2067	48889	1986	Premise Match	42m	South
	INSURANCE COMPANIES-LIFE.	City Mutual Life Assurance Soc. Ltd., Suite 12, 2nd Floor Wallaceway Shopping Centre, Chatswood. 2067	48993	1986	Premise Match	42m	South
	INSURANCE CONSULTANTS.	City Mutual Life Assurance Soc. Ltd., Suite 12, 2nd Floor Wallaceway Shopping Centre, Chatswood. 2067	49037	1986	Premise Match	42m	South
	INSURANCE BROKERS.	Hartog Insurance Brokers Pty. Ltd. Inc. in N.S.W., Suite 6 Wallaceway Shopping Centre, Chatswood. 2067	48778	1986	Premise Match	42m	South
	INSURANCE CONSULTANTS.	Hartog Insurance Brokers Pty. Ltd. Inc. In N.S.W., Suite 6 Wallaceway Shopping Centre, Chatswood. 2067	49039	1986	Premise Match	42m	South
	CLOTHING-RETAIL-LADIES &/OR GIRLS WEAR.	Marnies, G14 Wallace Way, Chatswood. 2067	17535	1986	Premise Match	42m	South
	LAUNDRIES &/OR LAUNDRETTES.	Pageboy, Wallace Way, Chatswood. 2067	51230	1986	Premise Match	42m	South
	GIFT SHOPS.	Travel Things, G8 Wallace Way, Chatswood 2067	100370	1986	Premise Match	42m	South
	GROCERS - RETAIL. (G7850)	Franklins, Wallace Way, Chatswood. 2067.	37647	1982	Premise Match	42m	South
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS, (M3180)	Kams, Wallace Way, Chatswood. 2067.	52261	1982	Premise Match	42m	South
	TAKE-AWAY FOODS. (T0235)	Kams, Wallace Way, Chatswood. 2067.	78496	1982	Premise Match	42m	South
	HOBBY &/OR HANDICRAFT SUPPLIES. (H4250)	Reynolds Leather Handicraft, G1 Wallace Way, Chatswood. 2067.	40189	1982	Premise Match	42m	South
	MERCERS - MENS &/OR BOYS OUTFITTERS. (M2120)	Sagen Men's Wear, G11 Wallace Way, Chatswood. 2067.	51418	1982	Premise Match	42m	South
	RAILWAY EQUIPMENT MFRS. &/OR DISTS. (R1785)	Steel Merchants Group, Wallaceway Shopping Centre, Chatswood. 2067.	68472	1982	Premise Match	42m	South
	GROCERS-RETAIL	Franklins, Wallace Way, Chatswood. 2067	33884	1978	Premise Match	42m	South
	SEWING MACHINE SALES &/OR SERVICE	Bernina- Toyota, Wallace Way., Chatswood. 2067	76689	1975	Premise Match	42m	South
	CARPET SWEEPER MFRS.	Electrolux Pty. Ltd. Sales & Service, Wallace Way, Chatswood. 2067	13571	1975	Premise Match	42m	South
	DELICATESSENS	Hills Delicatessen, Wallace Way, Chatswood. 2067	20228	1975	Premise Match	42m	South
	SOLICITORS.	Shaw, Giugni & Gwynne., O11 Wallace Way., Chatswood. 2067	78713	1975	Premise Match	42m	South
	BOOT &/OR SHOE REPAIRERS.	Shoe Surgeon. The. K4 Wallace Way, Chatswood. 2067.	7846	1975	Premise Match	42m	South
8	Motor Garages & Engineers	Chatswood Service Station, 17 Railway St. Chatswood	122408	1965	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS	Chatswood Service Station, 17 Railway St. CHATSWOOD	346871	1961	Premise Match	55m	North West
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Chatswood Service Station, 17 Railway St. CHATSWOOD	350465	1961	Premise Match	55m	North West
	MOTOR ACCESSORIES/DEALERS	Chatswood Service Station, 17 Railway St., Chatswood	343476	1961	Premise Match	55m	North West
	MOTOR SPARE PARTS DEALERS—RETAIL	Chatswood Service Station, 17 Railway St., Chatswood	351448	1961	Premise Match	55m	North West

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8	BATTERY SERVICE STATIONS	Chatswood Service Station (K. J. McMahon), 17 Railway St., Chatswood	6589	1950	Premise Match	55m	North West
	MOTOR ACCESSORIES-DEALER	Chatswood Service Station (K. J. McMahon), 17 Railway St., Chatswood	81538	1950	Premise Match	55m	North West
	MOTOR CAR & TRUCK DEALERS-USED	Chatswood Service Station (K. J. McMahon), 17 Railway St., Chatswood	82322	1950	Premise Match	55m	North West
	MOTOR CAR &/OR TRUCK DEALERS	Chatswood Service Station (K. J. McMahon), 17 Railway St., Chatswood	82623	1950	Premise Match	55m	North West
	MOTOR ELECTRICIANS	Chatswood Service Station (K. J. McMahon), 17 Railway St., Chatswood	83089	1950	Premise Match	55m	North West
	MOTOR SPARE PARTS DEALERS-RETAIL	Chatswood Service Station (K. J. McMahon), 17 Railway St., Chatswood	86620	1950	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS	Chatswood Service Station, 17 Railway St., Chatswood	83583	1950	Premise Match	55m	North West
	MOTOR SERVICE STATIONS-PETROL, Etc.	Chatswood Service Station, 17 Railway St., Chatswood	85867	1950	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS	McMahon, K. J., 17 Railway St., Chatswood	84073	1950	Premise Match	55m	North West
9	BUILDERS & CONTRACTORS	Tasker, J., 35 Anderson St., Chatswood	276674	1961	Premise Match	75m	East
10	NEWSAGENTS.	Railway Newsagency, Railway Station, Chatswood. 2067	69625	1986	Premise Match	79m	South
	TOBACCONISTS - RETAIL.	Railway Newsagency, Railway Station, Chatswood. 2067	93768	1986	Premise Match	79m	South
	TOBACCONISTS - RETAIL. (T5150)	N.S.W. Bookstall Co, Pty. Ltd., Railway Station, Chatswood. 2067.	80527	1982	Premise Match	79m	South
	NEWSAGENTS. (N0800)	N.S.W. Bookstall Co. Pty. Ltd., Railway Station, Chatswood. 2067.	60701	1982	Premise Match	79m	South
	TOBACCONISTS-RETAIL.	N.S.W. Bookstall Co. Pty. Ltd, Railway Station, Chatswood.2067	71108	1978	Premise Match	79m	South
	NEWSAGENTS-GENERAL.	NSW Bookstall Co Pty Ltd, Railway Station Chatswood 2067	54033	1978	Premise Match	79m	South
	NEWSAGENTS-GENERAL	Chatswood Station Candy Kiosk. Railway Station Entrance., Chatswood. 2067	63458	1975	Premise Match	79m	South
	TOBACCONISTS., RETAIL	Chatswood Station Candy Kiosk., Railway Station Entrance, Chatswood. 2067	83624	1975	Premise Match	79m	South
	TOBACCONISTS-RETAIL	Chatswood Station Candy Kiosk, Railway Station Entrance, Chatswood	369222	1970	Premise Match	79m	South
	NEWSAGENTS (N100)	Chatswood Station Candy Kiosk., Railway Station Entrance., Chatswood	343429	1970	Premise Match	79m	South
	Newsagents	Chatswood Station Candy Kiosk, Railway Station Entrance, Chatswood	128068	1965	Premise Match	79m	South
	TOBACCONISTS—RETAIL	Chatswood Station Candy Kiosk, Railway Station Entrance, Chatswood	152104	1965	Premise Match	79m	South
11	Photographic Developing Printing &/or Colouring Services	Chatswood Plaza Film Service, C17, Chatswood Plaza, Chatswood 2067	57372	1991	Premise Match	82m	South West
	Optical Prescription Dispensers	Eyes Right Pty. Ltd., C5 Chatswood Plaza., Chatswood 2067	56147	1991	Premise Match	82m	South West
	HEALTH FOODS-RETAIL.	Approved Health Foods Pty. Ltd., C20 Chatswood Plaza, Chatswood. 2067	45207	1986	Premise Match	82m	South West
	OPTOMETRISTS &/OR OPTICIANS.	Avramides, A., Chatswood Plaza, Chatswood. 2067	70793	1986	Premise Match	82m	South West
	MEDICAL PRACTITIONERS.	Bender, M., Chatswood Plaza, Chatswood. 2067	53661	1986	Premise Match	82m	South West
	DELICATESSENS.	Chats Charcuterie, C23 Chatswood Plaza, Chatswood. 2067	21583	1986	Premise Match	82m	South West
	PHOTOGRAPHIC EQUIPMENT &/OR SUPPLIES - W/SALERS &/OR DEALERS.	Chatswood Plaza Film Service, C17 Chatswood Plaza, Chatswood. 2067	73265	1986	Premise Match	82m	South West

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11	CAKE SHOPS &/OR PASTRYCOOKS.	Cherry Lane Cakes, C16 Chatswood Plaza, Chatswood. 2067	11597	1986	Premise Match	82m	South West
	ACCOUNTANTS & AUDITORS.	Craik, David & Co., Chatswood Plaza, Chatswood. 2067	336	1986	Premise Match	82m	South West
	MEDICAL PRACTITIONERS.	Crea, P., Suite 3 Chatswood Plaza, Chatswood. 2067.	54361	1986	Premise Match	82m	South West
	COMPUTER CONSULTANTS.	Digital Equipment Australia Pty. Limited, Northern Tower, Chatswood Plaza, Chatswood. 2067	19293	1986	Premise Match	82m	South West
	EMPLOYMENT AGENCIES.	Drake Overload Ltd., Suite 5, 2nd Fl., Chatswood Plaza, Chatswood. 2067	28354	1986	Premise Match	82m	South West
	EMPLOYMENT AGENCIES.	Drake Personnel Ltd., Suite 5, 2nd Fl., Chatswood Plaza, Chatswood. 2067	28355	1986	Premise Match	82m	South West
	FRUITERERS &/OR GREENGROCERS.	Honey Dew Fruit Shop, The, C22 Chatswood Plaza, Chatswood. 2067	36053	1986	Premise Match	82m	South West
	INSURANCE COMPANIES ¬GENERAL.	John Hartmann Insurances Pty. Ltd., Level 7, Chatswood Plaza, Railway St., Chatswood. 2067	48927	1986	Premise Match	82m	South West
	INSURANCE COMPANIES-LIFE.	John Hartmann Insurances Pty. Ltd., Level 7, Chatswood Plaza, Railway St., Chatswood. 2067	49007	1986	Premise Match	82m	South West
	RESTAURANTS.	Lady Jades Singapore Chinese Restaurant, C28 Chatswood Plaza, Chatswood. 2067	82034	1986	Premise Match	82m	South West
	TAKE-AWAY FOODS.	Lady Jades Singapore Chinese Restaurant, C28 Chatswood Plaza, Chatswood. 2067.	91165	1986	Premise Match	82m	South West
	DENTISTS.	Lenn, T. L., Chatswood Plaza Tower, Chatswood. 2067	22897	1986	Premise Match	82m	South West
	ACCOUNTANTS & AUDITORS.	Lewis, A. B. K. Clift & Co., Chatswood Plaza Tower, Chatswood. 2067	688	1986	Premise Match	82m	South West
	PHYSIOTHERAPISTS.	McCormick, G. & J., Chatswood Plaza, Chatswood. 2067	73548	1986	Premise Match	82m	South West
	DENTISTS.	Pang, H., Chatswood Plaza, Chatswood. 2067	23138	1986	Premise Match	82m	South West
	ACCOUNTANTS & AUDITORS.	Parks, Cameron & Co, C18 Chatswood Plaza, Chatswood. 2067	847	1986	Premise Match	82m	South West
	FLORISTS-RETAIL.	Peter & Poppys, Chatswood Plaza, Chatswood. 2067	33861	1986	Premise Match	82m	South West
	CHEMISTS-PHARMACEUTICAL.	Plaza Pharmacy, C18 Chatswood Plaza, Chatswood. 2067	14711	1986	Premise Match	82m	South West
	COMPUTER CONSULTANTS.	Progeni Systems Ltd., 4th Fl. Chatswood Plaza, Chatswood. 2067	19324	1986	Premise Match	82m	South West
	DATA PROCESSING SYSTEMS &/OR EQUIPMENT.	Progeni Systems Ltd., 4th Fl. Chatswood Plaza, Chatswood. 2067	21479	1986	Premise Match	82m	South West
	INSURANCE COMPANIES ¬GENERAL.	Sun Alliance Insurance Ltd., 2nd Fl., Chatswood Plaza, Chatswood. 2067	48969	1986	Premise Match	82m	South West
	MEDICAL PRACTITIONERS.	Symington, I., Chatswood Plaza, Chatswood. 2067	57834	1986	Premise Match	82m	South West
	MEDICAL PRACTITIONERS. (M2020)	Allen, D. H., Chatswood Plaza, Chatswood. 2067.	46965	1982	Premise Match	82m	South West
	HEALTH FOODS - RETAIL. (H3000)	Approved Health Foods Pty. Ltd., C20 Chatswood Plaza, Chatswood. 2067.	39634	1982	Premise Match	82m	South West
	ACCOUNTANTS & AUDITORS. (A0360)	Arnold & Associates, Chatswood Plaza Tower, Chatswood. 2067.	139	1982	Premise Match	82m	South West
	WASTE DISPOSAL MACHINERY &EQUIPMENT. (W0999)	Bio-Jet International (Australia) Pty. Ltd., 7th Fl. South Tower, Chatswood Plaza, Chatswood. 2067.	83845	1982	Premise Match	82m	South West
	BUILDERS &/OR BUILDING CONTRACTORS. (B6920)	Cedra Constructions Pty. Ltd., 2nd Fl. Chatswood Plaza, Chatswood. 2067.	9171	1982	Premise Match	82m	South West
	CONTRACTORS GENERAL (C7560)	Cedra Constructions Pty. Ltd., 2nd Fl. Chatswood Plaza, Chatswood 2067.	17913	1982	Premise Match	82m	South West
	DELICATESSENS, (D1250)	Chats Charcuterie, C23 Chatswood Plaza, Chatswood. 2067.	19303	1982	Premise Match	82m	South West
	PHOTOGRAPHIC SUPPLIES. (P3940)	Chatswood Plaza Film Service, C17 Chatswood Plaza, Chatswood. 2067.	63842	1982	Premise Match	82m	South West

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11	CAKE SHOPS &/OR PASTRYCOOKS. (C0465)	Cherry Lane Cakes, C16 Chatswood Plaza, Chatswood. 2067.	12532	1982	Premise Match	82m	South West
	ENGINEERS - ELECTRICAL. (E6780)	Crooks, Michell, Peacock, Stewart Pty. Ltd., South Tower, Chatswood Plaza, Chatswood 2067,	27277	1982	Premise Match	82m	South West
	ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL. (E7140)	Crooks, Michell, Peacock, Stewart Pty. Ltd., South Tower, Chatswood Plaza, Chatswood 2067.	27945	1982	Premise Match	82m	South West
	ARCHITECTS. (A6570)	Crooks, Michell, Peacock, Stewart Pty. Ltd., South Tower, Chatswood Plaza, Chatswood. 2067.	3109	1982	Premise Match	82m	South West
	ENGINEERS - CIVIL. (E6420)	Crooks, Michell, Peacock, Stewart Pty. Ltd., South Tower, Chatswood Plaza, Chatswood. 2067.	26811	1982	Premise Match	82m	South West
	ENGINEERS - CONSULTING. (E6600)	Crooks, Michell, Peacock, Stewart Pty. Ltd., South Tower, Chatswood Plaza, Chatswood. 2067.	26979	1982	Premise Match	82m	South West
	ENGINEERS-CHEMICAL (E6360)	Crooks, Michell, Peacock, Stewart Pty. Ltd., South Tower, Chatswood Plaza, Chatswood. 2067.	26767	1982	Premise Match	82m	South West
	TOWN-PLANNING CONSULTANTS.(T6175)	Crooks, Michell, Peacock, Stewart Pty. Ltd., South Tower, Chatswood Plaza, Chatswood. 2067.	80987	1982	Premise Match	82m	South West
	DATA PROCESSING CONSULTANTS. (D0980)	Digital Equipment Australia Pty. Limited, Northern Tower, Chatswood Plaza, Chatswood. 2067.	18951	1982	Premise Match	82m	South West
	DATA PROCESSING EQUIPMENT MFRS. &/OR DISTS. &/OR HIRERS.(D1050)	Digital Equipment Australia Pty. Limited, Northern Tower, Chatswood Plaza, Chatswood. 2067.	19039	1982	Premise Match	82m	South West
	EMPLOYMENT AGENCIES. (E5340)	Drake Overload Ltd., Chatswood Plaza., Chatswood. 2067.	26521	1982	Premise Match	82m	South West
	EMPLOYMENT AGENCIES. (E5340)	Drake Personnel Ltd., Chatswood Plaza., Chatswood. 2067.	26522	1982	Premise Match	82m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Fringes Hairdressers, P1 Chatswood Plaza, Chatswood. 2067.	5663	1982	Premise Match	82m	South West
	FRUITERERS &/OR GREENGROCERS. (F6775)	Honey Dew Fruit Shop. The, C22 Chatswood Plaza, Chatswood.2067.	33616	1982	Premise Match	82m	South West
	RESTAURANTS. (R5180)	Lady Jades Singapore Chinese Restaurant, C28 Chatswood Plaza, Chatswood. 2067.	71148	1982	Premise Match	82m	South West
	TAKE-AWAY FOODS. (T0235)	Lady Jades Singapore Chinese Restaurant, C28 Chatswood Plaza, Chatswood. 2067.	78569	1982	Premise Match	82m	South West
	DENTISTS. (D1800)	Lenn, T. L., Chatswood Plaza Tower, Chatswood. 2067.	20487	1982	Premise Match	82m	South West
	ACCOUNTANTS & AUDITORS. (A0360)	Lewis, A. B. K. Clift & Co., Chatswood Plaza Tower, Chatswood. 2067.	600	1982	Premise Match	82m	South West
	ENGINEERS - CONSULTING. (E6600)	McMahon, Burgess & Yeates, Chatswood Plaza, Chatswood. 2067.	27038	1982	Premise Match	82m	South West
	ENGINEERS - MINING. (E7560)	McMahon, Burgess & Yeates, Chatswood Plaza, Chatswood. 2067.	28804	1982	Premise Match	82m	South West
	GEOLOGISTS - CONSULTING. (G3050)	McMahon, Burgess & Yeates, Chatswood Plaza, Chatswood. 2067.	36029	1982	Premise Match	82m	South West
	DENTISTS. (D1800)	Pang, H., Chatswood Plaza Tower, Chatswood 2067.	20692	1982	Premise Match	82m	South West
	HEALTH CENTRES &/OR CLINICS.(H2800)	Pat Walkers Reducing & Figure Perfection, Chatswood Plaza Tower, Chatswood. 2067.	39562	1982	Premise Match	82m	South West
	FLORISTS - RETAIL. (F4125)	Peter & Poppys, Chatswood Plaza, Chatswood. 2067.	31567	1982	Premise Match	82m	South West
	CHEMISTS - PHARMACEUTICAL.(C4110)	Plaza Pharmacy, C18 Chatswood Plaza, Chatswood. 2067.	15526	1982	Premise Match	82m	South West
	DATA PROCESSING CONSULTANTS. (D0980)	Progeni Systems Ltd., 8th Fl. Chatswood Plaza, Chatswood. 2067.	18968	1982	Premise Match	82m	South West
	DATA PROCESSING SYSTEMS&/OR EQUIPMENT, (D1110)	Progeni Systems Ltd., 8th Fl., Chatswood Plaza, Chatswood. 2067.	19196	1982	Premise Match	82m	South West

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11	EMPLOYMENT AGENCIES. (E5340)	Receptionist Centre of N. S. W., The, Chatswood Plaza, Chatswood. 2067.	26551	1982	Premise Match	82m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	San Remo, Chatswood Plaza Tower, Chatswood. 2067.	6472	1982	Premise Match	82m	South West
	DRILLING CONTRACTORS. (D7905)	Sondage Exploration, 4th Fl. South Tower, Chatswood Plaza, Chatswood. 2067.	23697	1982	Premise Match	82m	South West
	INSURANCE COMPANIES - GENERAL (I4400)	Sun'Alliance Insurance Ltd., Chatswood Plaza, Chatswood. 2067.	42807	1982	Premise Match	82m	South West
	WASTE DISPOSAL MACHINERY &EQUIPMENT. (W0999)	Tranfield Bio-Jet, 7th Fl. South Tower, Chatswood Plaza, Chatswood. 2067.	83856	1982	Premise Match	82m	South West
12	Engineers Marine	Doherty M J & Co Pty Ltd, 29 Anderson St., Chatswood 2067	44553	1991	Premise Match	89m	East
	Printers Instant	Snap Printing, 29 Anderson St., Chatswood. 2067	58978	1991	Premise Match	89m	East
	FLORISTS-RETAIL.	A.A.A. All North Shore Florists, 29 Anderson St., Chatswood. 2067	33601	1986	Premise Match	89m	East
	ARCHITECTS-NAVAL.	Doherty, M. J. & Co. Pty. Ltd., 29 Anderson St., Chatswood. 2067	3669	1986	Premise Match	89m	East
	ENGINEERS – MARINE.	Doherty, M. J. & Co. Pty. Ltd., 29 Anderson St., Chatswood. 2067	30693	1986	Premise Match	89m	East
	ACCOUNTANTS & AUDITORS.	Vernon, A. L. & Associates, 29 Anderson St., Chatswood. 2067	1095	1986	Premise Match	89m	East
	FLORISTS - RETAIL. (F4125)	A.A.A. All North Shore Florists, 29 Anderson St., Chatswood. 2067.	31346	1982	Premise Match	89m	East
	PHOTO COPYING SERVICES. (P3280)	Ekedo Pty. Ltd., 29 Anderson St., Chatswood. 2067.	63397	1982	Premise Match	89m	East
	PLAN PRINTERS. (P5200)	Ekedo Pty. Ltd., 29 Anderson St., Chatswood. 2067.	64379	1982	Premise Match	89m	East
	ARCHITECTS - NAVAL. (A6600)	Eken & Doherty Pty. Ltd., 29 Anderson St., Chatswood. 2067.	3297	1982	Premise Match	89m	East
	ENGINEERS - MARINE. (E7500)	Eken & Doherty Pty. Ltd., 29 Anderson St., Chatswood. 2067.	28733	1982	Premise Match	89m	East
	ENGINEERS - CONSULTING. (E6600)	Gilmour & McDougall Pty. Ltd., 29 Anderson St., Chatswood. 2067.	27002	1982	Premise Match	89m	East
	ORTHODONTISTS. (O4100)	Gregg, F. A., 29 Anderson St., Chatswood. 2067.	62026	1982	Premise Match	89m	East
	OPTOMETRISTS &/OR OPTICIANS.(O3600)	Sheridan. W. B., 29 Anderson St., Chatswood. 2067.	61936	1982	Premise Match	89m	East
	ACCOUNTANTS & AUDITORS. (A0360)	Vernon, A. L. & Associates, 29 Anderson St., Chatswood. 2067.	965	1982	Premise Match	89m	East
	FLORISTS-RETAIL.	A.A.A. All North Shore Florists, 29 Anderson St., Chatswood. 2067	28401	1978	Premise Match	89m	East
	PHOTO COPYING SERVICES.	Ekedo Pty. Ltd., 29 Anderson St., Chatswood. 2067	56442	1978	Premise Match	89m	East
	PLAN PRINTERS.	Ekedo Pty. Ltd., 29 Anderson St., Chatswood. 2067	57333	1978	Premise Match	89m	East
	ARCHITECTS-NAVAL.	Eken & Doherty Pty. Ltd., 29 Anderson St., Chatswood. 2067	3143	1978	Premise Match	89m	East
	ENGINEERS-MARINE.	Eken & Doherty Pty. Ltd., 29 Anderson St., Chatswood. 2067	25804	1978	Premise Match	89m	East
	FANCY DRESS &/OR DRESS SUIT HIRERS.	Formal Wear Hire Service Pty. Ltd., 29 Anderson St., Chatswood, 2067	27114	1978	Premise Match	89m	East
	ENGINEERS-CONSULTING.	Gilmour & McDougall Pty. Ltd., 29 Anderson St., Chatswood. 2067	24068	1978	Premise Match	89m	East
	ORTHODONTISTS.	Gregg, F. A., 29 Anderson St., Chatswood. 2067	55062	1978	Premise Match	89m	East
	ACCOUNTANTS & AUDITORS.	Vernon, A. L. & Associates, 29 Anderson St., Chatswood. 2067	863	1978	Premise Match	89m	East
	PHOTO COPYING SERVICES.	Ekedo Pty. Ltd., 29 Anderson St., Chatswood 2067	66489	1975	Premise Match	89m	East
	PLAN PRINTERS.	Ekedo Pty. Ltd., 29 Anderson St., Chatswood. 2067	67509	1975	Premise Match	89m	East
	ENGINEERS-MARINE	Eken & Doherty Pty. Ltd., 29 Anderson St., Chatswood. 2067	29798	1975	Premise Match	89m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	ARCHITECTS-NAVAL	Eken & Doherty Pty. Ltd., 29 Anderson St., Chatswood. 2067.	2869	1975	Premise Match	89m	East
	FANCY DRESS &/OR DRESS SUIT HIRERS.	Formal Wear Hire Service Pty. Ltd., 29 Anderson St., Chatswood. 2067	31324	1975	Premise Match	89m	East
	ENGINEERS-CONSULTING.	Gilmour & McDougall Pty. Ltd., 29 Anderson St., Chatswood. 2067.	27829	1975	Premise Match	89m	East
	ORTHODONTISTS.	Gregg, F A., 29 Anderson St., Chatswood. 2067	64959	1975	Premise Match	89m	East
	FLORISTS-RETAIL	North Shore Florist, 29 Anderson St., Chatswood. 2067.	33110	1975	Premise Match	89m	East
	PRINTERS-LITHOGRAPHIC (OFFSET).	Snap Instant Printing, Pty. Ltd., 29 Anderson St., Chatswood. 2067	70084	1975	Premise Match	89m	East
	ACCOUNTANTS & AUDITORS.	Vernon. A. L. & Associates, 29 Anderson St., Chatswood. 2067.	617	1975	Premise Match	89m	East
	DUPLICATING &/OR TYPING SPEC.	Ekedo., 29 Anderson St., Chatswood	292698	1970	Premise Match	89m	East
	PHOTO-COPYING SERVICES (P254)	Ekedo., 29 Anderson St., Chatswood	347754	1970	Premise Match	89m	East
	PLAN PRINTERS (P528)	Ekedo., 29 Anderson St., Chatswood	349196	1970	Premise Match	89m	East
	ARCHITECTS-NAVAL (A445)	Eken & Doherty Pty. Ltd., 29 Anderson St., Chatswood	262211	1970	Premise Match	89m	East
	ENGINEERS-CONSULTING (E550)	Gilmour & McDougail Pty. Ltd., 29 Anderson St., Chatswood	297757	1970	Premise Match	89m	East
	PRINTERS-LITHOGRAPHIC (OFFSET)(P810)	Hi-Speed Printing Service., 29 Anderson St., Chatswood	352579	1970	Premise Match	89m	East
13	BOOKSELLERS-RETAIL.	Chatswood Book & Record Exchange, 27A Anderson St., Chatswood.2067	6954	1986	Premise Match	98m	South East
	BUTCHERS-RETAIL.	Shamrock Meats, 27C Anderson St., Chatswood, 2067	10591	1986	Premise Match	98m	South East
	PODIATRISTS.	Short, C., 27A Anderson St., Chatswood. 2067	75417	1986	Premise Match	98m	South East
	BOOKSELLERS - RETAIL. (B4475)	Chatswood Book & Record Exchange. 27A Anderson St., Chatswood. 2067.	7799	1982	Premise Match	98m	South East
	GIFT SHOPS. (G3350)	Kong, R. J. Import Centre, 27C Anderson St., Chatswood. 2067.	36370	1982	Premise Match	98m	South East
	CHIROPODISTS. (C4335)	Short, C., 27A Anderson St., Chatswood. 2067.	16039	1982	Premise Match	98m	South East
	TRAVEL AGENCIES &/OR BOOKING OFFICES.	Chatswood Travel Service Pty. Ltd, 27c Anderson St, Chatswood. 2067	72271	1978	Premise Match	98m	South East
	CHIROPODISTS.	Foley. R., 27A Anderson St., Chatswood. 2067	14170	1978	Premise Match	98m	South East
	TRAVEL AGENCIES &/OR BOOKING OFFICES.	Chatswood Travel Service Pty. Ltd., 27 Anderson St., Chatswood. 2067	85003	1975	Premise Match	98m	South East
	TRAVEL AGENCIES &/OR BOOKING OFFICES.	Chatswood Travel Service, 27C Anderson St., Chatswood. 2067	85002	1975	Premise Match	98m	South East
	SOLICITORS.	Fitzsimmons, C. R., 27 Anderson St., Chatswood. 2067	78300	1975	Premise Match	98m	South East
	CHIROPODISTS.	Foley, R., 27A Anderson St., Chatswood. 2067	16286	1975	Premise Match	98m	South East
	TRAVEL AGENCIES/BOOKING OFFICES(T645)	Chatswood Travel Service, 27 Anderson St., Chatswood	371025	1970	Premise Match	98m	South East
	ACCOUNTANTS & AUDITORS (A040)	Duck, J., 27 Anderson St., Chatswood	258709	1970	Premise Match	98m	South East
	TAXATION CONSULTANTS/SPECIALISTS (T090)	Duck, J., 27 Anderson St., Chatswood	367257	1970	Premise Match	98m	South East
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Dumas., 27b Anderson St., Chatswood	265801	1970	Premise Match	98m	South East
	Paint, Varnish, Oils/Colour Merchants	Sanderson Glazehrooks Paints, 27 Anderson St., Chatswood	131031	1965	Premise Match	98m	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
14	Investment Counsellors	Ashton Campbell & Associates Pty. Ltd., Level 7/4 Help St., Chatswood. 2067	49784	1991	Road Match	0m
	Computer Software	Hyperdata Pty. Ltd., 3rd fl, 4 Help St., Chatswood 2067	40318	1991	Road Match	0m
	Photo Copying Services	Rank Xerox Copy Services, Grnd Fl., 4 Help St., Chatswood. 2067	57179	1991	Road Match	0m
	Computer Training Services	Sequel Pty, Ltd., 2nd Fl., 4 Help St., Chatswood 2067	40435	1991	Road Match	0m
	Computer Consultants	Sequel Pty. Ltd., 2nd Fl., 4 Help St, Chatswood 2067	39959	1991	Road Match	0m
	Computer Software	Systematics Pty. Limited., 3rd Fl., 4 Help St., Chatswood 2067	40387	1991	Road Match	0m
	Computer Systems	Sysygy Computers (Australia) Pty. Limited., 4 Help St., Chatswood 2067	40420	1991	Road Match	0m
	Engineers Consulting	Wallis & Spratt Pty Ltd, 4th Fl., 4 Help St., Chatswood 2067	43538	1991	Road Match	0m
	MEDICAL PRACTITIONERS.	Asher, E., 4 Help St., Chatswood. 2067	53479	1986	Road Match	0m
	FINANCIERS &/OR FINANCE AGENTS.	Business & Professional Leasing Pty. Ltd. (Finance Consultants), 4 Help St., Chatswood. 2067	32808	1986	Road Match	0m
	BROKERS-FINANCE.	Business & Professional Leasing Pty. Ltd. (Finance Consultants), 4 Help St., Chatswood.2067	7890	1986	Road Match	0m
	ARCHITECTS-NAVAL.	Hercus Marine Designs Pty. Ltd., 5th Fl., 4 Help St., Chatswood. 2067	3670	1986	Road Match	0m
	MEDICAL PRACTITIONERS.	Lippey, E., 4 Help St., Chatswood. 2067	56108	1986	Road Match	0m
	MEDICAL PRACTITIONERS.	McGlynn, R., 4 Help St., Chatswood. 2067	56271	1986	Road Match	0m
	ACCOUNTANTS & AUDITORS.	McLennon, D. B., 4 Help St., Chatswood. 2067	739	1986	Road Match	0m
	MEDICAL PRACTITIONERS.	Ng, P., 4 Help St., Chatswood. 2067	56706	1986	Road Match	0m
	PHOTO COPYING SERVICES.	Rank Xerox Copy Services, 4 Help St., Chatswood. 2067	72758	1986	Road Match	0m
	SANDWICH &/OR LUNCHEON SHOPS.	Viv's Sandwich Shop, 4 Help St., Chatswood. 2067	84427	1986	Road Match	0m
	ENGINEERS – CONSULTING.	Wallis & Spratt Pty. Ltd., 4th Fl. 4 Help St., Chatswood. 2067	28957	1986	Road Match	0m
	FINANCIERS &/OR FINANCEAGENTS. (F1950)	Business & Professional Leasing Pty. Ltd., 4 Help St, Chatswood. 2067.	30638	1982	Road Match	0m
	RADIO - TWO-WAY SALES &/OR SERVICE. (R1435)	Codan Pty. Ltd., 3rd Fl. 4 Help St., Chatswood. 2067.	68399	1982	Road Match	0m
	RADIO TRANSMITTER MFRS. (R1400)	Codan Pty. Ltd., 3rd Fl. 4 Help St., Chatswood. 2067.	68383	1982	Road Match	0m
	TELECOMMUNICATIONS. (T1525)	Codan Pty. Ltd., 3rd Fl., 4 Help St, Chatswood. 2067.	79305	1982	Road Match	0m
	ENGINEERS - CIVIL. (E6420)	Crino, Sal. R. & Associates Pty. Ltd., 5th Fl. 4 Help St, Chatswood. 2067.	26809	1982	Road Match	0m
	ENGINEERS - CONSULTING. (E6600)	Crino, Sal. R. & Associates Pty. Ltd., 5th Fl. 4 Help St, Chatswood. 2067.	26977	1982	Road Match	0m
	ENGINEERS - STRUCTURAL. (E8340)	Crino, Sal. R. & Associates Pty. Ltd., 5th FL 4 Help St, Chatswood. 2067.	29304	1982	Road Match	0m
	MEDICAL PRACTITIONERS. (M2020)	Deal. C, 4 Help St., Chatswood. 2067.	47839	1982	Road Match	0m
	MEDICAL PRACTITIONERS. (M2020)	Elliott, R., 4 Help St., Chatswood. 2067	47996	1982	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
14	ARCHITECTS - NAVAL. (A6600)	Hercus Marine Designs Pty. Ltd., 5th Fl. 4 Help St., Chatswood. 2067.	3298	1982	Road Match	0m
	SHIP BUILDERS &./OR REPAIRERS.(S2730)	International Catamarans Pty. Ltd., 5th Fl. 4 Help St., Chatswood. 2067.	74488	1982	Road Match	0m
	PHOTOGRAPHERS-COMMERCIAL. (P3480)	Keep Glenn, A. Photography, Help St., Chatswood. 2067.	63505	1982	Road Match	0m
	MEDICAL PRACTITIONERS. (M2020)	Lippey, E., 4 Help St., Chatswood. 2067.	49101	1982	Road Match	0m
	MOTELS. (M4620)	Man Friday Motor Inn, 13 Help St., Chatswood. 2067.	53649	1982	Road Match	0m
	RESTAURANTS. (R5180)	Man Friday Motor Inn, 13 Help St., Chatswood. 2067.	71312	1982	Road Match	0m
	MEDICAL PRACTITIONERS. (M2020)	McGlynn, R., 4 Help St., Chatswood. 2067.	49226	1982	Road Match	0m
	MEDICAL PRACTITIONERS. (M2020)	McNaught, P. J., 4 Help St., Chatswood. 2067.	49274	1982	Road Match	0m
	MEDICAL PRACTITIONERS. (M2020)	Ng. P., 4 Help St., Chatswood. 2067.	49591	1982	Road Match	0m
	CONVEYOR &/OR CONVEYING EQUIP. MFRS. &/OR IMPS. &/OR DISTS. (C7710)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	18018	1982	Road Match	0m
	CRANES - MOBILE & TRAVEL TOWER - PROPRIETORS &/OR HIRERS. (C8790)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	18450	1982	Road Match	0m
	CRANES -MOBILE- MFRS. &/OR IMPS. &/OR DISTS. (C8775)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	18407	1982	Road Match	0m
	ENGINEERS - DESIGNING. (E6690)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	27185	1982	Road Match	0m
	HOIST HIRERS. (H4400)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	40218	1982	Road Match	0m
	HOIST MFRS. &/OR DISTS. (H4450)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	40238	1982	Road Match	0m
	LOGGING MACHINERY - MFRS.&/OR DISTS. (L6650)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	45602	1982	Road Match	0m
	MATERIAL HANDLING EQUIPMENT MFRS. IMPS. &/OR DISTS. (M1500)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	46768	1982	Road Match	0m
	MINING MACHINERY &/OR EQUIPMENT IMPS. &/OR DISTS.&/OR MFRS. (M3960)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	52766	1982	Road Match	0m
	PNEUMATIC CONVEYOR MFRS.&/OR INSTALLERS. (P6840)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	65480	1982	Road Match	0m
	SEWAGE TREATMENT EQUIPMENT MFRS. &/OR DISTS. (S2110)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	74071	1982	Road Match	0m
	STORE &/OR PACKING ROOM EQUIPMENT MFRS. &/OR DISTS.(S7335)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	77530	1982	Road Match	0m
	WINCH MFRS. &/OR DISTS. (W4680)	Productions Equipment Sales Pty. Ltd., 4 Help St., Chatswood. 2067.	84437	1982	Road Match	0m
	ENGINEERS - MINING. (E7560)	Prok International Ltd., 2nd Fl. 4 Help St., Chatswood. 2067.	28817	1982	Road Match	0m
	DUPLICATING &/OR TYPING SPECIALISTS. (D9250)	Rank Xerox Copy Services, 4 Help St Chatswood. 2067.	24164	1982	Road Match	0m
	ARCHITECTS. (A6570)	Taylor, Bruce Pty. Ltd., 4 Help St., Chatswood. 2067.	3273	1982	Road Match	0m
	SANDWICH &/OR LUNCHEONSHOPS. (S0600)	Viv's Sandwich Shop, 4 Help St, Chatswood. 2067.	73050	1982	Road Match	0m
	ENGINEERS - CONSULTING. (E6600)	Wallis & Spratt Pty. Ltd., 4th Fl. Help St., Chatswood. 2067.	27104	1982	Road Match	0m
	FINANCIERS &/OR FINANCE AGENTS.	Business & Professional Leasing Pty. Ltd 4 Help Street, Chatswood 2067	27675	1978	Road Match	0m
	FINANCIERS &/OR FINANCE AGENTS.	Business & Professional Leasing Pty. Ltd., 4 Help St, Chatswood. 2067	27712	1978	Road Match	0m
	MOTELS.	Chatswood Motor Inn. 13 Help St., Chatswood. 2067	47198	1978	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
14	ENGINEERS-MINING.	Geo Co. Pty. Ltd., 4 Help St. Chatswood. 2067	25865	1978	Road Match	0m
	ENGINEERS-CONSULTING.	Geo Co. Pty. Ltd., 4 Help St., Chatswood. 2067	24065	1978	Road Match	0m
	GEOLOGISTS-CONSULTING.	Geo Co. Pty. Ltd., 4 Help St., Chatswood. 2067	32717	1978	Road Match	0m
	IMPORTERS.	Hong, Kim, & Co. Help St., Chatswood. 2067	36926	1978	Road Match	0m
	PHOTOGRAPHERS-COMMERCIAL.	Keep Glenn, A. Photography, Help St., Chatswood. 2067	56567	1978	Road Match	0m
	RESTAURANTS.	Man Friday Motor Inn, 13 Help St, Chatswood. 2067	63174	1978	Road Match	0m
	MOTELS.	Man Friday Motor Inn. 13 Help St., Chatswood. 2067	47230	1978	Road Match	0m
	ARCHITECTS.	Ng & Barker, 4 Help St., Chatswood. 2067	3046	1978	Road Match	0m
	SANDWICH &/OR LUNCHEON SHOPS.	Nibbles Sandwich Shop, 4 Help St., Chatswood. 2067	64533	1978	Road Match	0m
	DUPLICATING &/OR TYPING SPECIALISTS.	Rank Xerox Copy Services, 4 Help St., Chatswood. 2067	21108	1978	Road Match	0m
	ENGINEERS-CONSULTING.	Wallis & Spratt Pty. Ltd., 4 Help St., Chatswood. 2067.	24175	1978	Road Match	0m
	ADVERTISING AGENCIES.	G. K. Productions, Help St., Chatswood. 2067.	957	1975	Road Match	0m
	PHOTOGRAPHERS-COMMERCIAL	Keep Glenn. & Photography., Help St., Chatswood. 2067	66663	1975	Road Match	0m
	MOTELS (M442)	Man Friday Motor Inn., 13 Help St., Chatswood	334427	1970	Road Match	0m
	RESTAURANTS (R320)	Puttini Restaurant, 13 Help St., Chatswood	357203	1970	Road Match	0m
	Bowling Centres	Chatswood Brunswick Bowl., Help St., Chatswood	53941	1965	Road Match	0m
15	ADVERTISING CONTRACTORS-DIRECT MAIL.	Knight, Howard & Associates Pty. Ltd., 8 McIntosh St., Chatswood. 2067	1583	1986	Road Match	0m
	FUND RAISING CONSULTANTS.	Knight, Howard & Associates Pty. Ltd., 8 McIntosh St., Chatswood. 2067	36494	1986	Road Match	0m
	PUBLIC RELATIONS CONSULTANTS.	Knight, Howard & Associates Pty. Ltd., 8 Mcintosh St., Chatswood. 2067	78137	1986	Road Match	0m
	FUND RAISING CONSULTANTS.(F7025)	Knight, Howard & Associates Pty. Ltd., 8 McIntosh St., Chatswood.2067.	34104	1982	Road Match	0m
	HEALTH CENTRES & OR CLINICS	Chatswood Child Health Centre, McIntosh St., Chatswood. 2067	41620	1975	Road Match	0m
	BUILDERS &/OR BUILDING CONTRACTORS.	Glenvill Homes (Aust.) Pty. Ltd., 8 McIntosh St., Chatswood. 2067	8483	1975	Road Match	0m
	INSURANCE COMPANIES-GENERAL	Victoria Insurance Co. Ltd., 8 McIntosh St., Chatswood. 2067	45127	1975	Road Match	0m
	HEALTH CENTRES & CLINICS (H330)	Chatswood Child Health Centre., 10 Mcintosh St., Chatswood	315740	1970	Road Match	0m
	HIRE CAR SERVICES	Powell's Hire Service., 4 Macintosh St., Chatswood	62273	1950	Road Match	0m
16	BUILDERS SUPPLIERS. (B7060)	Norman Ross Ltd., Orchard St., Chatswood. 2067.	9873	1982	Road Match	38m
	DISCOUNT HOUSES. (D4040)	Norman Ross Ltd., Orchard St., Chatswood. 2067.	21604	1982	Road Match	38m
	ELECTRICAL SUPPLIES &/OR APPLIANCES - RETAIL. (E3840)	Norman Ross Ltd., Orchard St., Chatswood. 2067.	25822	1982	Road Match	38m
	FLOOR COVERING - INDUSTRIAL SPECIALISTS. (F3575)	Norman Ross Ltd., Orchard St., Chatswood. 2067.	31233	1982	Road Match	38m
	FURNITURE &/OR FURNISHINGS-RETAIL. (F7625)	Norman Ross Ltd., Orchard St., Chatswood. 2067.	34794	1982	Road Match	38m
	CAFES, TEA ROOMS &/OR COFFEE LOUNGES.	Coffee Garden, The, Orchard Rd., Chatswood. 2067	10445	1978	Road Match	38m
	BLIND MFRS.-VENETIAN (B420)	Phaumco (N.S.W.) Pty. Ltd., 85 Orchard Rd., Chatswood,	267336	1970	Road Match	38m
	Associations & Societies	Australian Red Cross Ass'n (Shop), 85 Orchard Rd, Chatswood	47623	1965	Road Match	38m
	Disposal Stores	Chatswood Aust. Red Cross Shop, 85 Orchard Rd., Chatswood	74507	1965	Road Match	38m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
16	Painters, Paperhangers/Decorators	Johnson, F. W., 81 Orchard Rd., Chatswood	131169	1965	Road Match	38m
	ASSOCIATIONS & SOCIETIES	Australian Red Cross Ass'n (Shop), 85 Orchard Rd., Chtswd	269073	1961	Road Match	38m
	DISPOSAL STORES	Chatswood Aust. Red Cross Ass'n Shop, 85 Orchard Rd., Chatswood	297269	1961	Road Match	38m
	PAINTERS, PAPERHANGERS/DECORATORS	Johnson, F. W., 81 Orchard Rd., Chatswood	356165	1961	Road Match	38m
	NURSERYMEN	Sykes, Gordon R., Orchard Rd., Chatswood	354221	1961	Road Match	38m
	LANDSCAPE GARDENERS	Clarke, D, W. Pty. Ltd., Orchard Rd., Chatswood	67445	1950	Road Match	38m
	NURSERYMEN	Clarke, D. W. Pty. Ltd. Orchard Rd., Chatswood	89044	1950	Road Match	38m
17	Photographic Developing Printing &/or Colouring Services	Rabbit Express, 19 Anderson St., Chatswood 2067	57443	1991	Road Match	55m
	TRAVEL AGENCIES &/OR BOOKING OFFICES.	Ansett, 17 Anderson St., Chatswood. 2067.	95170	1986	Road Match	55m
	TOBACCONISTS - RETAIL.	Gross Tobacco House, 21 Anderson St., Chatswood. 2067	93738	1986	Road Match	55m
	CLOTHING-RETAIL-LADIES &/OR GIRLS WEAR.	Lacoste, 11 Anderson St., Chatswood. 2067	17459	1986	Road Match	55m
	CAKE SHOPS &/OR PASTRYCOOKS.	Michaels Patisserie, 4 Anderson St., Chatswood. 2067	11810	1986	Road Match	55m
	BUTCHERS-RETAIL.	Northside Meat Markets, 6 Anderson St., Chatswood. 2067	10376	1986	Road Match	55m
	PHOTOGRAPHIC DEVELOPING, PRINTING &/OR COLOURING SERVICES.	Rabbit Express, 19 Anderson St., Chatswood. 2067	73096	1986	Road Match	55m
	PHOTOGRAPHIC EQUIPMENT &/OR SUPPLIES - W/SALERS &/OR DEALERS.	Rabbit Express, 19 Anderson St., Chatswood. 2067	73361	1986	Road Match	55m
	HEALTH FOODS-RETAIL.	Sanitarium Health Foods, 10 Anderson St., Chatswood. 2067	45397	1986	Road Match	55m
	OPTOMETRISTS &/OR OPTICIANS.	Snelson, N. F., 23 Anderson St., Chatswood. 2067	71027	1986	Road Match	55m
	DENTISTS. (D1800)	Alvarez, K. O., 11 Anderson St., Chatswood. 2067.	19948	1982	Road Match	55m
	ELECTROLYSIS SPECIALISTS. (E4560)	Brittel, B., 11 AndersonSt., Chatswood 2067.	26059	1982	Road Match	55m
	CAKE SHOPS &/OR PASTRYCOOKS. (C0465)	Celebration Patisserie, 11 Anderson St., Chatswood. 2067.	12522	1982	Road Match	55m
	PHOTOGRAPHERS - GENERAL(P3540)	Chatswood Photographers, 11 Anderson St., Chatswood. 2067.	63569	1982	Road Match	55m
	TRAVEL AGENCIES &/OR BOOKING OFFICES. (T7425)	Cook, Thomas Pty. Ltd., 11 Anderson St., Chatswood. 2067.	81819	1982	Road Match	55m
	DRESS SHOPS & ACCESSORIES.(D7450)	Dorothy Ann, 17 Anderson St., Chatswood. 2067.	22708	1982	Road Match	55m
	DRESS SHOPS & ACCESSORIES.(D7450)	Factor, Frances, 11 Anderson St., Chatswood. 2067.	22771	1982	Road Match	55m
	TOBACCONISTS - RETAIL. (T5150)	Gross Tobacco House, 21 Anderson St., Chatswood. 2067.	80511	1982	Road Match	55m
	OPTOMETRISTS &/OR OPTICIANS.(O3600)	Kaye, R., 11 Anderson St., Chatswood. 2067.	61855	1982	Road Match	55m
	BABY &/OR CHILDRENS WEAR -RETAIL. (B0080)	Mulberry Hall, 10 Anderson St., Chatswood. 2067.	4408	1982	Road Match	55m
	BUTCHERS - RETAIL. (B8040)	Parsonage Meat Markets, 6 Anderson St., Chatswood. 2067.	11372	1982	Road Match	55m
	HIRING SERVICES. (H4200)	Radio Rentals Pty. Ltd., 11 Anderson St., Chatswood. 2067.	40112	1982	Road Match	55m
	ARCHITECTS. (A6570)	Samut, W., 11 Anderson St., Chatswood. 2067.	3246	1982	Road Match	55m
	DENTISTS. (D1800)	Schwartz, B., 11 Anderson St., Chatswood, 2067.	20822	1982	Road Match	55m
	OPTOMETRISTS &/OR OPTICIANS.(O3600)	Snelson, N. F., 23 Anderson St., Chatswood. 2067.	61946	1982	Road Match	55m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
17	JEWELLERS &/OR WATCHMAKERS RETAIL. (J0550)	Symonds, R., 19 Anderson St., Chatswood. 2067.	43788	1982	Road Match	55m
	DENTISTS.	Abbott, R., 11 Anderson St., Chatswood. 2067	17856	1978	Road Match	55m
	MILLINERY-RETAIL	Adie Art Millinery, 11 Anderson St., Chatswood. 2067	46295	1978	Road Match	55m
	DENTISTS.	Alvarez. K. O., 11 Anderson St., Chatswood. 2067	17869	1978	Road Match	55m
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Anthony Hair Studio. 11 Anderson St., Chatswood. 2067	4699	1978	Road Match	55m
	ELECTROLYSIS SPECIALISTS.	Barbara Britiel, 11 Anderson St., Chatswood. 2067	23087	1978	Road Match	55m
	ELECTROLYSIS SPECIALISTS.	Brittel, B., 11 Anderson St., Chatswood. 2067	23088	1978	Road Match	55m
	BOOKSELLERS RETAIL.	Chatswood Book & Record Exchange, 11 Anderson St., Chatswood. 2067	6796	1978	Road Match	55m
	TRAVEL AGENCIES &/OR BOOKING OFFICES.	Cook, Thomas Pty. Ltd, 11 Anderson St, Chatswood. 2067	72280	1978	Road Match	55m
	DRESS SHOPS & ACCESSORIES.	Dorothy Ann, 17 Anderson St., Chatswood. 2067	20050	1978	Road Match	55m
	DRESS SHOPS & ACCESSORIES.	Factor, Frances, 11 Anderson St., Chatswood. 2067	20086	1978	Road Match	55m
	CAKE SHOPS &/OR PASTRYCOOKS.	Genevan Patisserie. 11 Anderson St., Chatswood. 2067	10809	1978	Road Match	55m
	TYRE DEALERS &/OR RETREADERS &/OR VULCANISERS	Goodyear Tyre Service, Anderson St., Chatswood. 2067	72924	1978	Road Match	55m
	DENTISTS.	Hay, R. H., 11 Anderson St., Chatswood. 2067	18136	1978	Road Match	55m
	ORTHODONTISTS.	Hay. R. H., 11 Anderson St., Chatswood. 2067	55064	1978	Road Match	55m
	ACCOUNTANTS & AUDITORS.	Jamieson. O.F. & Co., 11 Anderson St., Chatswood. 2067	456	1978	Road Match	55m
	ORTHODONTISTS.	Kinselia. P., 11 Anderson St., Chatswood. 2067	55067	1978	Road Match	55m
	DENTISTS.	Kinsella, P., 11 Anderson St., Chatswood. 2067	18216	1978	Road Match	55m
	ACCOUNTANTS & AUDITORS.	Lamond, Russell & Co., 11 Anderson St., Chatswood. 2067	501	1978	Road Match	55m
	FLORISTS-RETAIL.	Searls Flowers, 11 Anderson St., Chatswood. 2067	28613	1978	Road Match	55m
	OPTIMETRISTS-REGISTERED.	Snelson NF, 23 Anderson St, Chatswood 2067	54996	1978	Road Match	55m
	JEWELLERS &/OR WATCHMAKERS-RETAIL.	Symonds. R., 19 Anderson St., Chatswood. 2067	39011	1978	Road Match	55m
	TRAVEL AGENCIES &/OR BOOKING OFFICES.	A. & A. Travel, 11 Anderson St., Chatswood. 2067	84959	1975	Road Match	55m
	AIR SERVICE BOOKING AGENTS.	A. & A. Travel, 11 Anderson St., Chatswood. 2067.	1817	1975	Road Match	55m
	ORTHODONTISTS.	Abbott, R. H., 11 Anderson St., Chatswood. 2067	64954	1975	Road Match	55m
	ORTHODONTISTS.	Abbott, R., 11 Anderson St., Chatswood. 2067	64955	1975	Road Match	55m
	MILLINERY-RETAIL	Adie Art Millinery, 11 Anderson St., Chatswood. 2067	54053	1975	Road Match	55m
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Anthony Hair Studio, 11 Anderson St., Chatswood. 2067.	4920	1975	Road Match	55m
	ELECTROLYSIS SPECIALISTS.	Barbara Brittel, 11 Anderson St., Chatswood. 2067.	26731	1975	Road Match	55m
	ELECTROLYSIS SPECIALISTS.	Brittel, B., 11 Anderson St., Chatswood. 2067.	26732	1975	Road Match	55m
	PLAN PRINTERS.	Chatswood Plan Printers., 15 Anderson St., Chatswood. 2067	67502	1975	Road Match	55m
	SOLICITORS.	Coyle, D. & Co., 11 Anderson St., Chatswood. 2067	78208	1975	Road Match	55m
	FAN &/OR BLOWER MFRS. &/OR DISTS.	Davidson Of Australia Pty. Limited 11 Anderson St, Chatswood 2067	31264	1975	Road Match	55m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
17	DUST COLLECTION &/OR FUME EXTRACTION EQUIP. MFRS. &/OR DISTS.	Davidson of Australia Pty. Ltd. 11 Anderson St., Chatswood, 2067	24609	1975	Road Match	55m
	ENGINEERS-POWER PLANT.	Davidson of Australia Pty. Ltd., 11 Anderson St, Chatswood. 2067	29899	1975	Road Match	55m
	FAN &/OR BLOWER MFRS. &/OR DISTS.	Davidson of Australia Pty. Ltd., 11 Anderson St, Chatswood. 2067.	31286	1975	Road Match	55m
	DUST COLLECTION &/OR FUME EXTRACTION EQUIP. MFRS. &/OR DISTS.	Davidson of Australia Pty. Ltd., 11 Anderson St., Chatswood. 2067	24622	1975	Road Match	55m
	DRESS SHOPS & ACCESSORIES.	Dorothy Ann Frocks, 17 Anderson St., Chatswood. 2067	23129	1975	Road Match	55m
	DRESS SHOPS & ACCESSORIES.	Factor, Frances, 11 Anderson St., Chatswood. 2067	23157	1975	Road Match	55m
	TAKE-AWAY FOODS.	Farmer Joes Chickens., 11 Anderson St., Chatswood. 2067	81877	1975	Road Match	55m
	MERCERS-MENS &/OR BOYS OUTFITTERS.	Fletcher Jones & Staff., Anderson St., Chatswood. 2067	52137	1975	Road Match	55m
	CAKE SHOPS &/OR PASTRYCOOKS.	Genevan Patisserie, 11 Anderson St., Chatswood. 2067	12555	1975	Road Match	55m
	TYRE DEALERS, RETREADERS &/OR VULCANIZERS,	Goodyear Tyre Service, Anderson St., Chatswood. 2067	85570	1975	Road Match	55m
	SOLICITORS.	Goold., J. 15 Anderson St., Chatswood. 2067	78339	1975	Road Match	55m
	ORTHODONTISTS.	Hay, H. R. 11 Anderson St., Chatswood. 2067	64962	1975	Road Match	55m
	DENTISTS.	Hay, H. R., 11 Anderson St., Chatswood. 2067	21018	1975	Road Match	55m
	DRESS SHOPS & ACCESSORIES.	King, P., Anderson St., Chatswood. 2067	23327	1975	Road Match	55m
	DENTISTS.	Kinsella, P., 11 Anderson St., Chatswood. 2067	21103	1975	Road Match	55m
	ORTHODONTISTS.	Kinsella. P., 11 Anderson St., Chatswood. 2067	64966	1975	Road Match	55m
	ACCOUNTANTS & AUDITORS.	Lamond, Russell & Co., 11 Anderson St., Chatswood. 2067.	384	1975	Road Match	55m
	FRUITERERS &/OR GREENGROCERS.	Lindfield Supermarket, Anderson St., Chatswood. 2067.	35472	1975	Road Match	55m
	DENTISTS.	Noone, L. J., 11 Anderson St., Chatswood. 2067	21258	1975	Road Match	55m
	SOLICITORS.	Petrie, F. C. & Son., 11 Anderson St., Chatswood. 2067	78640	1975	Road Match	55m
	SOLICITORS.	Proctor, H. J., 15 Anderson St., Chatswood. 2067	78657	1975	Road Match	55m
	REAL ESTATE AGENTS &/OR VALUERS.	Richardson & Wrench Ltd., 21 Anderson St., Chatswood. 2067	72881	1975	Road Match	55m
	SOLICITORS.	Ridden, M. H. E., 15 Anderson St., Chatswood. 2067	78671	1975	Road Match	55m
	FLORISTS-RETAIL	Searls Flowers, 11 Anderson St., Chatswood. 2067.	33146	1975	Road Match	55m
	OPTOMETRISTS-REGISTERED.	Snelson. N. P., 23 Anderson St., Chatswood. 2067	64886	1975	Road Match	55m
	JEWELLERS &/OR WATCHMAKERS-RETAIL	Symonds. R., 19 Anderson St., Chatswood. 2067	46100	1975	Road Match	55m
	BOOT &/OR SHOE REPAIRERS.	Watsons' Shoe Repairs, 11 Anderson St., Chatswood. 2067.	7880	1975	Road Match	55m
	MEDICAL PRACTITIONERS.	Wilson. D. J., 11 Anderson St., Chatswood. 2067	51874	1975	Road Match	55m
	FACIAL HAIR REMOVERS (F010)	Brittel, B., 11 Anderson St., Chatswood	301955	1970	Road Match	55m
	ELECTROLYSIS (E350)	Brittel, Barbara., 113 Victoria Hse., 11 Anderson St., Chatswood	296305	1970	Road Match	55m
	CAFES, COFFEE LOUNGES, Etc. (C030)	Chatswood Chicken Spot., 11 Anderson St., Chatswood	275464	1970	Road Match	55m
	PLAN PRINTERS (P528)	Chatswood Plan Printers Co., 15 Anderson St., Chatswood	349187	1970	Road Match	55m
	NEWSPAPER PUBLISHERS (N110)	Clarion (The)., 15 Anderson St., Chatswood	343983	1970	Road Match	55m

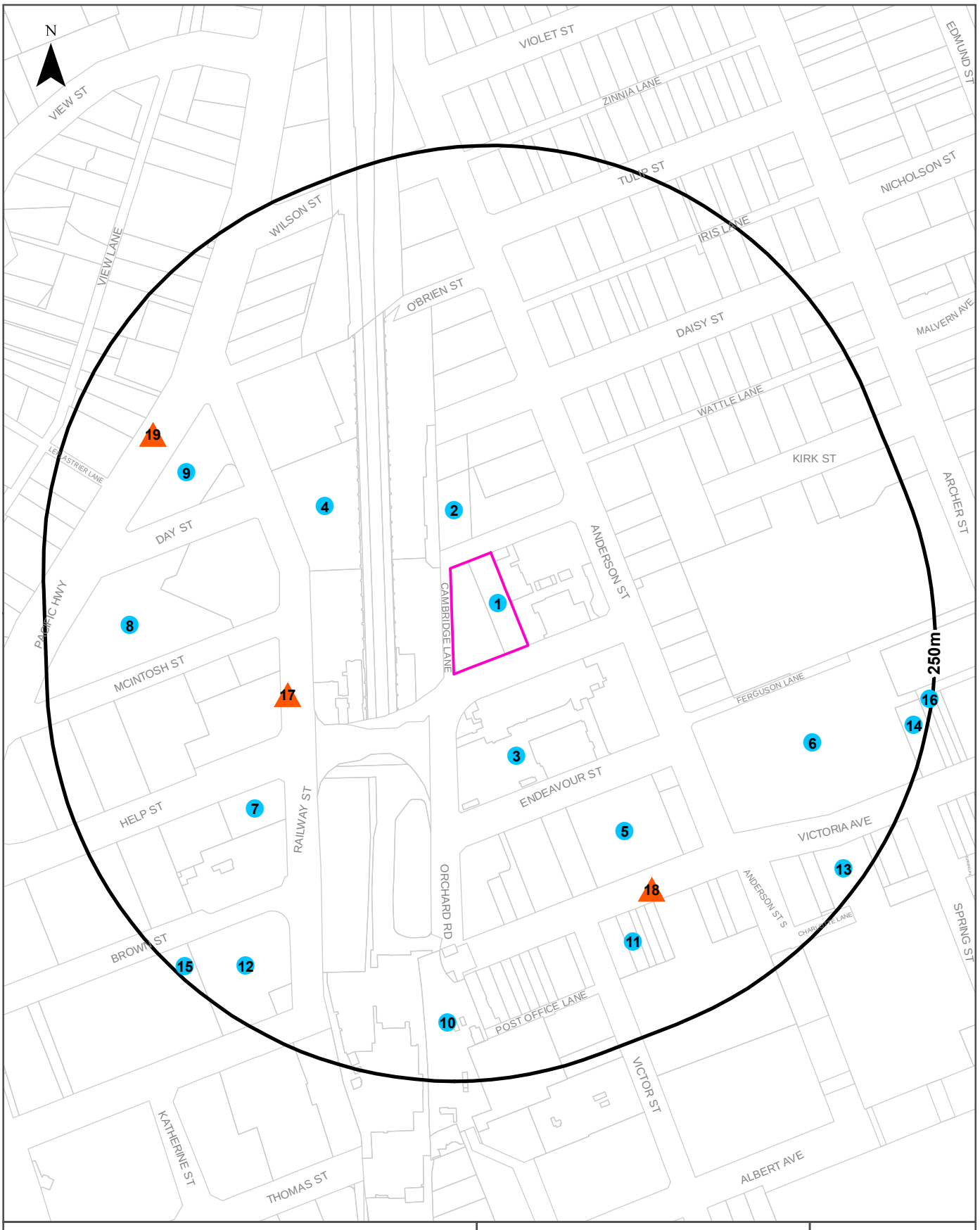
Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
17	ENGINEERS-ABATTOIRS (E470)	Davidson of AuSt. Pty. Ltd., 11 Anderson St., Chatswood	297268	1970	Road Match	55m
	ENGINEERS-POWER PLANT (E700)	Davidson of Australia Pty. Ltd., 11 Anderson St., Chatswood	300299	1970	Road Match	55m
	DUST COLLECTION EQUIPMENT MANUFACTURERS (D800)	Davidson of Australia Pty. Ltd., 11 Anderson St., Chatswood.	292840	1970	Road Match	55m
	FAN & BLOWER MANUFACTURERS &/OR DISTRIBUTORS (F040)	Davidson of Australia Pty. Ltd., 11 Anderson St., Chatswood.	302027	1970	Road Match	55m
	DRESS SHOPS (D595)	Dorothy Ann Frocks., 17 Anderson St., Chatswood	291201	1970	Road Match	55m
	CAKE SHOPS & PASTRYCOOKS (C045)	Erwin Swiss Cakes., 11 Anderson St., Chatswood	276503	1970	Road Match	55m
	SOLICITORS (S413)	Goold, J., 15 Anderson St., Chatswood	362540	1970	Road Match	55m
	REAL ESTATE AGENTS/VALUERS(R205)	Gown, Lindsay H., 15 Anderson St., CHATSWOOD	355394	1970	Road Match	55m
	ARCHITECTS (A440)	Hilyard, D & S., 15 Anderson St., Chatswood	262005	1970	Road Match	55m
	HEALTH FOOD RETAILERS (H350)	Kings' Health Foods., 6 Specialty Centre., Anderson St., South Chatswood	315984	1970	Road Match	55m
	INTERIOR DECORATORS (I620)	Maxwell, P. Decorations., 11 Anderson St., Chatswood	320571	1970	Road Match	55m
	CHIROPODISTS (C316)	North Shore Chiropody Centre., 13 Anderson St., Chatswood	281659	1970	Road Match	55m
	LINGERIE/HOSIERY SPEC. (L530)	Petah King Lingerie., 2 Speciality Centre, Anderson St. South., Chatswood,	323651	1970	Road Match	55m
	DRESS SHOPS (D595)	Simonetta Boutique., 11 Anderson St., Chatswood	291719	1970	Road Match	55m
	JEWELLERS/WATCHMAKERS-RETAIL(J060)	Symonds, Ron., 19 Anderson St., Chatswood	321315	1970	Road Match	55m
	BOOT & SHOE REPAIRERS	Watson's Shoe Repairs., 10 Victoria Hse., 11 Anderson St., Chatswood	269284	1970	Road Match	55m
	DENTISTS	Abbott, Richard, (Orthodontist), 1-7 Victoria Hse., 11 Anderson St., Chatswood	73089	1965	Road Match	55m
	Architects	Alexander, L. H. & Lloyd, I. M., 11 Anderson St., Chatswood	46541	1965	Road Match	55m
	Beauty Salons &/or Ladies Hairdressers	Anthony Hair Studio., 104 Victoria Hse., 11 Anderson St, Chatswood	50322	1965	Road Match	55m
	Psychologists	Bateman, W. C. 110 Victoria Hse.., 11 Anderson St., Chatswood	137025	1965	Road Match	55m
	Electrolysis Specialists	Brittel, Barbara., 113 Victoria Hde., 11 Anderson St Chatswood	79963	1965	Road Match	55m
	Cafes, Tea Rooms, Coffee Lounges, Etc.	Chatswood Chicken Spot., 11 Anderson St., Chatswood	60228	1965	Road Match	55m
	Dressmakers/Costumiers	Cinderella Gowns, 112 Victoria Hse., 11. Anderson St., Chatswood	75676	1965	Road Match	55m
	Management Consultants	Coneybeare Associates Pty. Ltd., 15 Anderson St., Chatswood	109001	1965	Road Match	55m
	Engineers - Abattoirs	Davidson of Aust, Pty. Ltd., 11 Anderson St., Chatswood	80587	1965	Road Match	55m
	Air Compressor Mfrs. &/or Dists.	Davidson of Aust. Pty. Ltd., 11 Anderson St., Chatswood	45621	1965	Road Match	55m
	Air Conditioning Units & Machinery Mfrs.	Davidson of Aust. Pty. Ltd., 11 Anderson St., Chatswood	45688	1965	Road Match	55m
	Dust Collection Equipment Manufacturers	Davidson of Aust. Pty. Ltd., 11 Anderson St., Chatswood	76627	1965	Road Match	55m
	Fan & Blower Manufacturers &/or Distributors	Davidson of Aust. Pty. Ltd., 11 Anderson St., Chatswood	85411	1965	Road Match	55m
	ACCOUNTANTS & AUDITORS	Donovan, W. K., 1-06 Victoria Hse., 11 Anderson St., Chatswood	43601	1965	Road Match	55m
	Frock & Coat Salons	Dorothy Ann Frocks, 17 Anderson St., Chatswood	89832	1965	Road Match	55m
	Cake Shops & Pastrycooks	Erwin Swiss Cakes., 11 Anderson St., Chatswood	61211	1965	Road Match	55m
	Real Estate Agents/Valuers	Gown, Lindsay H., 15 Anderson St. Chatswood	139084	1965	Road Match	55m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
17	Real Estate Agents/Valuers	Hamilton, R. .I & Co., 14 Anderson St., Chatswood	139086	1965	Road Match	55m
	Insurance Agents	Hamilton, R. J. & Co., 14 Anderson St., Chatswood	104296	1965	Road Match	55m
	Engineers - Constructional	Highway & General Contractor., 11 Anderson St., Chatswood	80990	1965	Road Match	55m
	Contractors - General	Highway & General Contractors Pty. Ltd. (Head Office), 211-213 Victoria Hse., 11 Anderson St., Chatswood	70277	1965	Road Match	55m
	Health Food Retailers	Kings' Health Foods, 6 Specialty Centre, Anderson St., South Chatswood	100057	1965	Road Match	55m
	ACCOUNTANTS & AUDITORS	Lamond, Russell & Co, 217 Victoria Hse., 11 Anderson St., Chatswood	43869	1965	Road Match	55m
	Interior Decorators	Maxwell Decorations, 1-09 Victoria Hse., 11 Anderson St., Chatswood	105178	1965	Road Match	55m
	Dentists	Noone, L. J., 114 Victoria Hse., 11 Anderson St., Chatswood	73638	1965	Road Match	55m
	Chiropodists	North Shore Chiropody Centre, 13 Anderson St., Chatswood	66202	1965	Road Match	55m
	Duplicating/Typing Specs.	Roys Copying Service, 11 Anderson St., Chatswood	76560	1965	Road Match	55m
	Photo - Copying Services	Roys Copying Service, 11 Anderson St., Chatswood	132193	1965	Road Match	55m
	STATIONERS—RETAIL	Roys Copying Service, 11 Anderson St., Chatswood	147686	1965	Road Match	55m
	Frock & Coat Salons	Simonetta Boutique, 11 Anderson St., Chatswood	90299	1965	Road Match	55m
	Jewellers/Watchmakers - Retail	Symonds, Ron, 19 Anderson St., Chatswood	106242	1965	Road Match	55m
	BOOT & SHOE REPAIRERS	Watson's Shoe Repairs., 10 Victoria Hse., Anderson St., Chatswood	53784	1965	Road Match	55m
	Frock & Coat Salons	Young Moderns' Teenage Fashions, 11 Anderson St., Chtswd.	90399	1965	Road Match	55m
	JOINERY MANUFACTURERS	Levido & Sons, 13 Anderson St., Chatswood	329919	1961	Road Match	55m
	WEDDING RECEPTION SPECIALISTS	“Shangri-La”, Anderson St., Chatswood	112595	1950	Road Match	55m
	CATERERS	Hostess Catering Services Pty. Ltd., Anderson St., Chatswood	20622	1950	Road Match	55m
	CATERERS	Shangri-La Caterers, Anderson St., Chatswood	20686	1950	Road Match	55m
18	RESTAURANTS.	Cork & Fork Steakhouse., Endeavour St., Chatswood. 2067	73659	1975	Road Match	81m
19	Market Research Services	BIS-Shrapnel Pty Ltd, 11th Fl., South Tower Chatswood Plaza, Railway St., Chatswood 2067	51306	1991	Road Match	86m
	Computer Software	Hornet Computer Systems., Suite 8, Level 7 Chatswood Plaza, Railway St., Chatswood 2067	40316	1991	Road Match	86m
	Printers Instant	Kwik-Kopy Printing Centre, Chatswood Plaza, Railway St., Chatswood. 2067	58944	1991	Road Match	86m
	MEDICAL PRACTITIONERS.	Hunyor. A. B. L., Railway St., Chatswood. 2067	43231	1978	Road Match	86m
	MILK, FRUIT JUICE BARS/CONFECTIONERS	Kings Milk Bar., 10 Railway St., Chatswood	330774	1970	Road Match	86m
	Milk, Fruit Juice Bars/Confectioners	Kings Milk Bar, 10 Railway St., Chatswood	115194	1965	Road Match	86m
	MILK, FRUIT JUICE BARS/CONFECTIONERS	Kings Milk Bar, 10 Railway St., Chatswood	339234	1961	Road Match	86m
	MEDICAL PRACTITIONERS	Pigott, F. P., Railway St., Chatswood	73611	1950	Road Match	86m

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Dry Cleaners, Motor Garages & Service Stations

3 - 5 Help Street, Chatswood, NSW 2067



Legend

- Site Boundary
- Buffer 250m
- 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: 01 November 2022

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

Historical Business Directories

3 - 5 Help Street, Chatswood, NSW 2067

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 & ENGINEERS.	Hepburn A., 3 Help St Chatswood	29139	1962	Premise Match	0m	On-site
	MOTOR GARAGES & ENGINEERS	Hepburn, A., 3 Help St. CHATSWOOD	347359	1961	Premise Match	0m	On-site
	MOTOR GARAGES & ENGINEERS (M636).	Hepburn, A., 3 Help St., Chatswood	65383	1959	Premise Match	0m	On-site
	MOTOR GARAGE/ENGINEERS.	Hepburn A., 3 Help St Chatswood	4263	1958	Premise Match	0m	On-site
	MOTOR GARAGES &/OR ENGINEERS.	Hepburn A., 3 Help St Chatswood	57789	1956	Premise Match	0m	On-site
	MOTOR GARAGES &/OR ENGINEERS.	Hepburn A., 3 Help St Chatswood	49392	1954	Premise Match	0m	On-site
	MOTOR GARAGES &/OR ENGINEERS.	Hepburn A., 3 Help St., Chatswood	40114	1953	Premise Match	0m	On-site
2	MOTOR GARAGES &/OR ENGINEERS.	Nicolson Alex A., 3 McIntosh St., Chatswood	61198	1956	Premise Match	12m	North
	MOTOR GARAGES &/OR ENGINEERS.	Nicolson Alex A., 3 Mcintosh St Chatswood	49757	1954	Premise Match	12m	North
	MOTOR GARAGES &/OR ENGINEERS.	Nicolson Alex A. (Nicholson Bros.), 3 McIntosh St Chatswood	40424	1953	Premise Match	12m	North
	MOTOR GARAGES &/OR ENGINEERS.	Nicholson Alex A., 3 Mcintosh St Chatswood	32003	1952	Premise Match	12m	North
	MOTOR GARAGES &/OR ENGINEERS.	Nicolson Alex A. (Nicholson Bros.)., 3 Mcintosh St Chatswood	32004	1952	Premise Match	12m	North
	MOTOR GARAGES &/OR ENGINEERS	Nicholson, Alex A., 3 McIntosh St., Chatswood	84136	1950	Premise Match	12m	North
	MOTOR GARAGES &/OR ENGINEERS	Nicolson, Alex A., 3 McIntosh St., Chatswood	84139	1950	Premise Match	12m	North
	MOTOR GARAGES &/OR ENGINEERS.	Nicholson, Alex A., 3 Mcintosh St., Chatswood	22675	1948-49	Premise Match	12m	North
3	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners., R1 Wallace Way, Chatswood 2067	23648	1976	Premise Match	42m	South
4	MOTOR GARAGES & ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	41896	1969	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS	Chatswood Service Station., 17 Railway St Chatswood	21245	1968	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	6898	1967	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	55854	1966	Premise Match	55m	North West
	Motor Garages & Engineers	Chatswood Service Station, 17 Railway St. Chatswood	122408	1965	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS	Chatswood Service Station., 17 Railway St Chatswood	43610	1964	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	29132	1962	Premise Match	55m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
4	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Chatswood Service Station., 17 Railway St Chatswood	38037	1962	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS	Chatswood Service Station, 17 Railway St. CHATSWOOD	346871	1961	Premise Match	55m	North West
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Chatswood Service Station, 17 Railway St. CHATSWOOD	350465	1961	Premise Match	55m	North West
	MOTOR SERVICE STATIONS-PETROL,. OIL, ETC.	Chatswood Service Station., 17 Railway St Chatswood	24083	1959	Premise Match	55m	North West
	MOTOR GARAGES & ENGINEERS	Chatswood Service Station., 17 Railway St., Chatswood	13834	1959	Premise Match	55m	North West
	MOTOR GARAGE/ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	828	1958	Premise Match	55m	North West
	MOTOR SERVICE STATIONS-PETROL, ETC.	Chatswood Service Station., 17 Railway St Chatswood	9450	1958	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS.	Chatswood Service Station., 17 Railway St., Chatswood	57424	1956	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS.	Chatswood Service Station., 17 Railway St., Chatswood	49048	1954	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	39806	1953	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	31473	1952	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS	Chatswood Service Station, 17 Railway St., Chatswood	83583	1950	Premise Match	55m	North West
	MOTOR SERVICE STATIONS-PETROL, Etc.	Chatswood Service Station, 17 Railway St., Chatswood	85867	1950	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS	McMahon, K. J., 17 Railway St., Chatswood	84073	1950	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS.	Chatswood Service Station., 17 Railway St Chatswood	17892	1948-49	Premise Match	55m	North West
	MOTOR SERVICE STATIONS-PETROL, ETC.	Chatswood Service Station., 17 Railway St Chatswood	23177	1948-49	Premise Match	55m	North West
	MOTOR GARAGES &/OR ENGINEERS.	Mcmahon K. J., 17 Railway St Chatswood	22591	1948-49	Premise Match	55m	North West
5	DRY CLEANERS, PRESSERS/DYERS	Milford Dry Cleaning Service., 433 Victoria Ave Chatswood	20674	1968	Premise Match	101m	South East
	DRY CLEANERS, PRESSERS/ DYERS	Milford Dry Cleaning Service., 433 Victoria Ave Chatswood	6230	1967	Premise Match	101m	South East
6	DRY CLEANERS, PRESSERS &/OR DYERS.	Elite., 405 Victoria Ave., Chatswood. 2067	46733	1980	Premise Match	112m	East
	DRY CLEANERS, PRESSERS &/OR DYERS.	Tasman Dry Cleaners., 405 Victoria Av., Chatswood 2067	7309	1972	Premise Match	112m	East
	DRY CLEANERS, PRESSERS/ DYERS	Milford Dry Cleaning Service., 413 Victoria Ave Chatswood	55282	1966	Premise Match	112m	East
	Dry Cleaners, Pressers/Dyers	Milford Dry Cleaning Service, 413 Victoria Ave., Chatswood	76249	1965	Premise Match	112m	East
	DRY CLEANERS, PRESSERS/ DYERS.	Milford Dry Cleaning Service., 413 Victoria Ave Chatswood	43090	1964	Premise Match	112m	East
	DRY CLEANERS, PRESSERS/DYERS.	Manns Dry Cleaning Service., 413 Victoria Ave Chatswood	24829	1962	Premise Match	112m	East
	DRY CLEANERS, PRESSERS / DYERS	Manns Dry Cleaning Service, 413 Victoria Ave., Chatswood	299177	1961	Premise Match	112m	East
	DRY CLEANERS, PRESSERS/DYERS	Manns Dry Cleaning Service., 413 Victoria Ave Chatswood	10124	1959	Premise Match	112m	East
	DRY CLEANERS, PRESSERS & DYERS	Manns Dry Cleaning Service., 413 Victoria Ave Chatswood	309	1958	Premise Match	112m	East
	DRY CLEANERS, PRESSERS & DYERS.	Manus Dry Cleaning Service., 413 Victoria Ave Chatswood	54900	1956	Premise Match	112m	East
	DRY CLEANERS, PRESSERS & DYERS.	Manns Dry Cleaning Service., 413 Victoria Ave., Chatswood	44440	1954	Premise Match	112m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
6	DRY CLEANERS, PRESSERS & DYERS.	Manns Dry Cleaning Service., 413 Victoria Ave Chatswood	36264	1953	Premise Match	112m	East
	DRY CLEANERS, PRESSERS & DYERS.	Manns Dry Cleaning Service., 413 Victoria Ave., Chatswood	27166	1952	Premise Match	112m	East
	DRY CLEANERS, PRESSERS & DYERS	Manns Dry Cleaning Service, 413 Victoria Ave., Chatswood	35485	1950	Premise Match	112m	East
	DRY CLEANERS, PRESSERS & DYERS.	Manns Dry Cleaning Service., 413 Victoria Ave Chatswood	17343	1948-49	Premise Match	112m	East
7	DRY CLEANERS, PRESSERS &/OR DYERS.	Wallace Way Laundrette., 2 Help St., Chatswood. 2067.	35593	1979	Premise Match	123m	South West
8	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Sundell Motors Chatswood Pty. Ltd., 821 Pacific Hghwy, Chatswood. 2067	34203	1984	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Sundell Motors Pty. Ltd., 821 Pacific H'way., Chatswood 2067	21653	1983	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Sundell Motors Pty. Ltd., 821 Pacific H'way., Chatswood. 2067.	57643	1982	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Sundell Motors Pty. Ltd., 821 Pacific H'way., Chatswood 2067	8232	1981	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Sundell Motors Pty. Ltd., 821 Pacific H'way., Chatswood. 2067	58914	1980	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Sundell Motors Pty. Ltd., 821 Pacific Highway., Chatswood. 2067.	46412	1979	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Sundell Motors Pty. Ltd., 821 Pacific H'way, Chatswood. 2067	50892	1978	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Sundell Motors Pvt Ltd., 821 Pacific H'way., Chatswood. 2067	34965	1976	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS.	Sundell Motors Pty. Ltd., 821 Pacific H'way. Chatswood. 2067	59593	1975	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	7826	1972	Premise Match	134m	West
	MOTOR GARAGES &/OR ENGINEERS.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	56513	1971	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS(M6S6)	Sundell Motors Pty. Ltd., 821-843 Pacific Highway. CHATSWOOD	338682	1970	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	41912	1969	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	21261	1968	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	6914	1967	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghway., Chatswood	55870	1966	Premise Match	134m	West
	Motor Garages & Engineers	Sundell Motors Pty. Ltd., 821-843 Pacific Highway., Chatswood	122423	1965	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS	Sundell Motors Pty. Ltd., 821-843 Pacific Highway Chatswood	43625	1964	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy Chatswood	29147	1962	Premise Match	134m	West
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	38048	1962	Premise Match	134m	West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
8	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Sundell Motors Pty. Ltd., 821-843 Pacific Highway. Chatswood	351136	1961	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS	Sundell Motors Pty. Ltd., 821-843 Pacific Highway., Chatswood.	348231	1961	Premise Match	134m	West
	MOTOR GARAGES & ENGINEERS	Sandell Motors Pty Ltd., 821-843 Pacific Hghwy., Chatswood	13846	1959	Premise Match	134m	West
	MOTOR SERVICE STATIONS-PETROL,. OIL, ETC.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	24093	1959	Premise Match	134m	West
	MOTOR GARAGE/ENGINEERS.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	5041	1958	Premise Match	134m	West
	MOTOR SERVICE STATIONS-PETROL, ETC.	Sundell Motors Pty. Ltd., 821-843 Pacific Hghwy., Chatswood	9854	1958	Premise Match	134m	West
9	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	New Age Service Station (Ampol)., 847 Pacific H'way., Chatswood 2067	15207	1983	Premise Match	145m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	New Age Service Station, (Ampol), 847 Pacific H'way., Chatswood. 2067.	57285	1982	Premise Match	145m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	New Age Service Station (Ampol)., 847 Pacific H'way., Chatswood 2067	3841	1981	Premise Match	145m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	New Age Service Station., 847 Pacific Highway., Chatswood. 2067	58585	1980	Premise Match	145m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	New Age Service Station., 847 Pacific Highway., Chatswood. 2067.	46071	1979	Premise Match	145m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	New Age Service Station, 847 Pacific H'way, Chatswood. 2067	50579	1978	Premise Match	145m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	New Age Service Station., 847 Pacific H'way., Chatswood 2067	30529	1976	Premise Match	145m	North West
	MOTOR GARAGES &/OR ENGINEERS.	New Age Service Station., 847 Pacific H'way., Chatswood 2067	59312	1975	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS(M6S6)	New Age Service Station Enterprises Pty. Ltd., 847 Pacific Highway. CHATSWOOD	338322	1970	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS.	New Age Service Station Enterprises Pty Ltd., 847 Pacific Hghwy Chatswood	41908	1969	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS	New Age Service Station, Enterprises Pty Ltd., 847 Pacific Hghwy., Chatswood	21257	1968	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS.	New Age Service Station., Enterprises Pty Ltd., 847 Pacific Hghwy., Chatswood	6910	1967	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS.	New Age Service Station. Enterprises Pty. Ltd., 847 Pacific Hghway., Chatswood	55866	1966	Premise Match	145m	North West
	Motor Garages & Engineers	New Age Service Station Enterprises Pty. Ltd., 847 Pacific Highway. Chatswood	122420	1965	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS	New Age Service Station., Enterprises Pty Ltd 847 Pacific Highway Chatswood	43622	1964	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS.	New Age Service Station., 847 Pacific Hghwy, Chatswood	29126	1962	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS.	New Age Service Station., 847 Pacific Hghwy., Chatswood	29143	1962	Premise Match	145m	North West
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	New Age Service Station., 847 Pacific Hghwy., Chatswood	38045	1962	Premise Match	145m	North West
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	New Age Service Station 847 Pacific Highway. CHATSWOOD	350902	1961	Premise Match	145m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
9	MOTOR GARAGES & ENGINEERS	New Age Service Station, 847 Pacific Highway. CHATSWOOD	347776	1961	Premise Match	145m	North West
	MOTOR GARAGES & ENGINEERS	New Age Service Station., 847 Pacific Hghwy., Chatswood	13843	1959	Premise Match	145m	North West
	MOTOR SERVICE STATIONS-PETROL,. OIL, ETC.	New Age Service Station., 847 Pacific Hghwy., Chatswood	24090	1959	Premise Match	145m	North West
	MOTOR GARAGE/ENGINEERS.	New Age Service Station., 847 Pacific Hghwy., Chatswood	4642	1958	Premise Match	145m	North West
	MOTOR SERVICE STATIONS-PETROL, ETC.	New Age Service Station., 847 Pacific Hghwy., Chatswood	9719	1958	Premise Match	145m	North West
10	DRY CLEANERS, PRESSERS &/OR DYERS.	Valet Dry Cleaners & Laundry., 6 Dalton St., Chatswood 2067	23867	1976	Premise Match	170m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Valet Dry Cleaners & Laundry, 6 Dalton St., Chatswood. 2067	24391	1975	Premise Match	170m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Valet Dry Cleaners & Laundry., 6 Dalton St., Chatswood 2067	7333	1972	Premise Match	170m	South
	MOTOR GARAGES & ENGINEERS.	Devlin A. D. & Co., 12 Dalton St Chatswood	29136	1962	Premise Match	170m	South
	MOTOR GARAGES & ENGINEERS	Devlin, A. D. & Co., 12 Dalton St CHATSWOOD	347049	1961	Premise Match	170m	South
	MOTOR GARAGE/ENGINEERS.	Devlin A. D. And Co., 12 Dalton St Chatswood	970	1958	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS.	Deevlin A. D., And Co 12 Dalton St Chatswood	57558	1956	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS.	Devlin A. D. And Co., 12 Dalton St Chatswood	49176	1954	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS.	Devlin A. O. And Co., 12 Dalton St Chatswood	39921	1953	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS.	Hutton And Russell., 14 Dalton St Chatswood	40164	1953	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS.	Devlin A. D. And Co., 12 Dalton St Chatswood	31571	1952	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS.	Hutton And Russell., 14 Dalton St Chatswood	31782	1952	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS	Devlin, A. D. and Co., 12 Dalton St., Chatswood	83684	1950	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS	Hutton & Russell, 14 Dalton St., Chatswood	83902	1950	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS	Hutton and Russell, 14 Dalton St., Chatswood	83904	1950	Premise Match	170m	South
	MOTOR GARAGES &/OR ENGINEERS.	Devlin A. D. And Co., 12 Dalton St Chatswood	17979	1948-49	Premise Match	170m	South
11	MOTOR SERVICE STATIONS-PETROL, Etc.	Curtis, H. W. (The Avenue Filling Station), 398 Victoria Ave., Chatswood	85909	1950	Premise Match	175m	South East
	MOTOR SERVICE STATIONS-PETROL, ETC.	Curtis H. W (The Avenue Filling Station)., 398 Victoria Ave., Chatswood	23206	1948-49	Premise Match	175m	South East
12	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners Pty. Ltd., 467 Victoria Ave Chatswood. 2067.	35447	1979	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS &/OR DYERS	Lindfield Laundry & Dry Cleaners Pty. Ltd., 467 Victoria Ave., Chatswood. 2067	20858	1978	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners., 467 Victoria Ave., Chatswood 2067	23649	1976	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners, 467 Victoria Ave., Chatswood. 2067	24175	1975	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners., 467 Victoria Ave., Chatswood 2067	3029	1972	Premise Match	181m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
12	DRY CLEANERS, PRESSERS/DYERS.	Renova Dry Cleaners., 465 Victoria Ave Chatswood	24886	1962	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS / DYERS	Renova Dry Cleaners, 465 Victoria Ave., Chatswood	299242	1961	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS/DYERS	Renova Dry Cleaners., 465 Victoria Ave Chatswood	13232	1959	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS & DYERS	Renova Dry Cleaners., 465 Victoria Ave Chatswood	363	1958	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Renova Dry Cleaners., 465 Victoria Ave Chatswood	54955	1956	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Renova Dry Cleaners (Mrs.V.M.Umino)., 465 Victoria Ave., Chatswood	44506	1954	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Renova Dry Cleaners., 465 Victoria Ave Chatswood	36331	1953	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Renova Dry Cleaners (Mrs. V. M. Umino.)., 465 Victoria Ave., Chatswood	27251	1952	Premise Match	181m	South West
	DRY CLEANERS, PRESSERS & DYERS	Renova Dry Cleaners (Mrs. V. M. Umino), 465 Victoria Ave., Chatswood	35641	1950	Premise Match	181m	South West
13	DRY CLEANERS, PRESSERS/ DYERS	Marcel Poincare & Co., 352 Victoria Ave Chatswood	37202	1969	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS/DYERS	Marcel Poincare & Co., 352 Victoria Ave Chatswood	20661	1968	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS/ DYERS	Marcel Poincare & Co., 352 Victoria Ave Chatswood	6217	1967	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS/ DYERS	Marcel Poincare & Co., 352 Victoria Ave Chatswood	55269	1966	Premise Match	216m	South East
	Dry Cleaners, Pressers/Dyers	Marcel Poincare & Co., 352 Victoria Ave., Chatswood	76240	1965	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS/ DYERS.	Marcel Poincare & Co., 352 Victoria Ave Chatswood	43081	1964	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS/DYERS.	Marcel Poincare & Co., 352 Victoria Ave Chatswood	24831	1962	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS/DYERS	Marcel Poincare & Co., 352 Victoria Ave Chatswood	10126	1959	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS & DYERS	Marcel Poincare & Co., 352 Victoria Ave Chatswood	311	1958	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS & DYERS.	Marcel Poincare & Co., 352 Victoria Ave Chatswood	54902	1956	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS & DYERS.	Marcel Poincare & Co., 352 Victoria Ave Chatswood	44442	1954	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS & DYERS.	Marcel Poincare Sc Co., 352 Victoria Ave Chatswood	36266	1953	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS & DYERS.	Marcel Poincare & Co., 352 Victoria Ave Chatswood	27168	1952	Premise Match	216m	South East
	DRY CLEANERS, PRESSERS & DYERS.	Marcel Poincare., 352 Victoria Ave Chatswood	17344	1948-49	Premise Match	216m	South East
14	DRY CLEANERS, PRESSERS &/OR DYERS.	Country Club Dry Cleaners., 395 Victoria Ave., Chatswood 2067	23457	1976	Premise Match	229m	East
	DRY CLEANERS, PRESSERS &/OR DYERS.	Littles., 401 Victoria Ave., Chatswood 2067	23660	1976	Premise Match	229m	East
	DRY CLEANERS, PRESSERS &/OR DYERS.	Country Club Dry Cleaners, 395 Victoria Ave., Chatswood. 2067	23982	1975	Premise Match	229m	East
	DRY CLEANERS, PRESSERS &/OR DYERS.	Littles, 401 Victoria Ave., Chatswood. 2067	24185	1975	Premise Match	229m	East
	DRY CLEANERS, PRESSERS &/OR DYERS.	Mark Mayne., 401 Victoria Ave., Chatswood 2067	7116	1972	Premise Match	229m	East
15	DRY CLEANERS, PRESSERS &/OR DYERS.	Mayne. M., 501 Victoria Ave., Chatswood 2067	23688	1976	Premise Match	233m	South West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Mayne. M., 501 Victoria Ave., Chatswood. 2067	24213	1975	Premise Match	233m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
15	DRY CLEANERS, PRESSERS & DYERS.	Benjamin A. J. Pty. Ltd., 479-495 Victoria Ave Chatswood	44305	1954	Premise Match	233m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Benjamin A. J. Pty. Ltd., 479-495 Victoria Ave Chatswood	36111	1953	Premise Match	233m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Benjamin A. J. Pty. Ltd., 479-495 Victoria Ave., Chatswood	26968	1952	Premise Match	233m	South West
	DRY CLEANERS, PRESSERS & DYERS	Benjamin, A. J. Pty. Ltd., 479-495 Victoria Ave., Chatswood	35119	1950	Premise Match	233m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Benjamin A. J Pty. Ltd., 479-495 Victoria Ave Chatswood	17080	1948-49	Premise Match	233m	South West
16	DRY CLEANERS, PRESSERS &/OR DYERS.	Mayne Mark Pty. Ltd., 391 Victoria Ave., Chatswood 2067	7126	1972	Premise Match	246m	East
	DRY CLEANERS, PRESSERS/ DYERS	Mark Mayne Pty. Ltd., 391 Victoria Ave Chatswood	6218	1967	Premise Match	246m	East
	DRY CLEANERS, PRESSERS/ DYERS	Mark Mayne Pty. Ltd., 391 Victoria Ave Chatswood	55270	1966	Premise Match	246m	East
	Dry Cleaners, Pressers/Dyers	Mark Mayne Pty. Ltd., 391 Victoria Ave., Chatswood	76241	1965	Premise Match	246m	East
	DRY CLEANERS, PRESSERS/ DYERS.	Mark Mayne Pty. Ltd., 391 Victoria Ave Chatswood	43082	1964	Premise Match	246m	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
17	MOTOR GARAGE & SERVICE STATIONS.	Ampol Chatswood Service Station, Railway St., Chatswood. 2067	64315	1989	Road Match	86m
	MOTOR GARAGES & SERVICE STATIONS.	Ampol Chatswood Service Station, Railway St., Chatswood.2067	65825	1988	Road Match	86m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	New Age Service Station., Railway St Chatswood	16563	1972	Road Match	86m
18	DRY CLEANERS, PRESSERS &/OR DYERS.	Spruce Goose Dry Cleaners., Victoria Ave., Chatswood. 2067.	35543	1979	Road Match	154m
19	MOTOR GARAGES & SERVICE STATIONS.	Ampol Self Serve, Pacific Hwy., Chatswood. 2067	18531	1993	Road Match	181m
	Motor Garages & Service Stations	Ampol Self Serve, Pacific H'way, Chatswood 2067	53498	1991	Road Match	181m
	MOTOR GARAGES & SERVICE STATIONS.	Grace Service Centre, Pacific Hghwy, Chatswood. 2067	11654	1990	Road Match	181m
	MOTOR GARAGE & SERVICE STATIONS.	Artarmon Self Serve Mobil, Pacific Hghwy, Chatswood. 2067	64428	1989	Road Match	181m
	MOTOR GARAGE & SERVICE STATIONS.	Grace Service Centre, Pacific Hghwy, Chatswood. 2067	65135	1989	Road Match	181m
	MOTOR GARAGES & SERVICE STATIONS.	Artarmon Self Serve Mobil., Pacific Hghwy, Chatswood. 2067	53529	1988	Road Match	181m
	MOTOR GARAGES & SERVICE STATIONS.	Grace Service Centre, Pacific Hghwy, Chatswood. 2067	59374	1988	Road Match	181m
	MOTOR GARAGES & SERVICE STATIONS.	Artarmon Self Serve Mobil, Pacific H'way., Chatswood. 2067	63974	1986	Road Match	181m
	MOTOR GARAGES & SERVICE STATIONS.	Grace Service Centre, Pacific H'way., Chatswood. 2067	64805	1986	Road Match	181m
	MOTOR GARAGES & SERVICE STATIONS.	Artarmon Self Serve Mobil., Pacific Hghwy Chatswood. 2067	38994	1985	Road Match	181m
	MOTOR GARAGES & SERVICE STATIONS.	Grace Service Centre, Pacific Hghwy, Chatswood. 2067	44901	1985	Road Match	181m
	MOTOR GARAGES &/OR ENGINEERS.	Golden Fleece Chatswood., Pacific Hghwy., Chatswood 2067	7819	1972	Road Match	181m
	MOTOR GARAGES &/OR ENGINEERS.	Moriarty Road Service Station., Pacific Hghwy., Chatswood	7824	1972	Road Match	181m
	MOTOR GARAGES &/OR ENGINEERS.	Moriarty Road Service Station., Pacific Hghwy., Chatswood	56510	1971	Road Match	181m
	MOTOR GARAGES & ENGINEERS(M6S6)	Moriarty Road Service Station., Pacific Highway., CHATSWOOD	338286	1970	Road Match	181m
	MOTOR GARAGES & ENGINEERS.	Moriarty Road Service Station., Pacific Hghwy Chatswood	41906	1969	Road Match	181m
	MOTOR GARAGES & ENGINEERS	Moriarty Road Service Station., Pacific Hghwy., Chatswood	21255	1968	Road Match	181m
	MOTOR GARAGES & ENGINEERS.	Moriarty Road Service Station., Pacific Hghwy., Chatswood	6908	1967	Road Match	181m
	MOTOR GARAGES & ENGINEERS.	Moriarty Road Service Station., Pacific Hghwy., Chatswood	55864	1966	Road Match	181m

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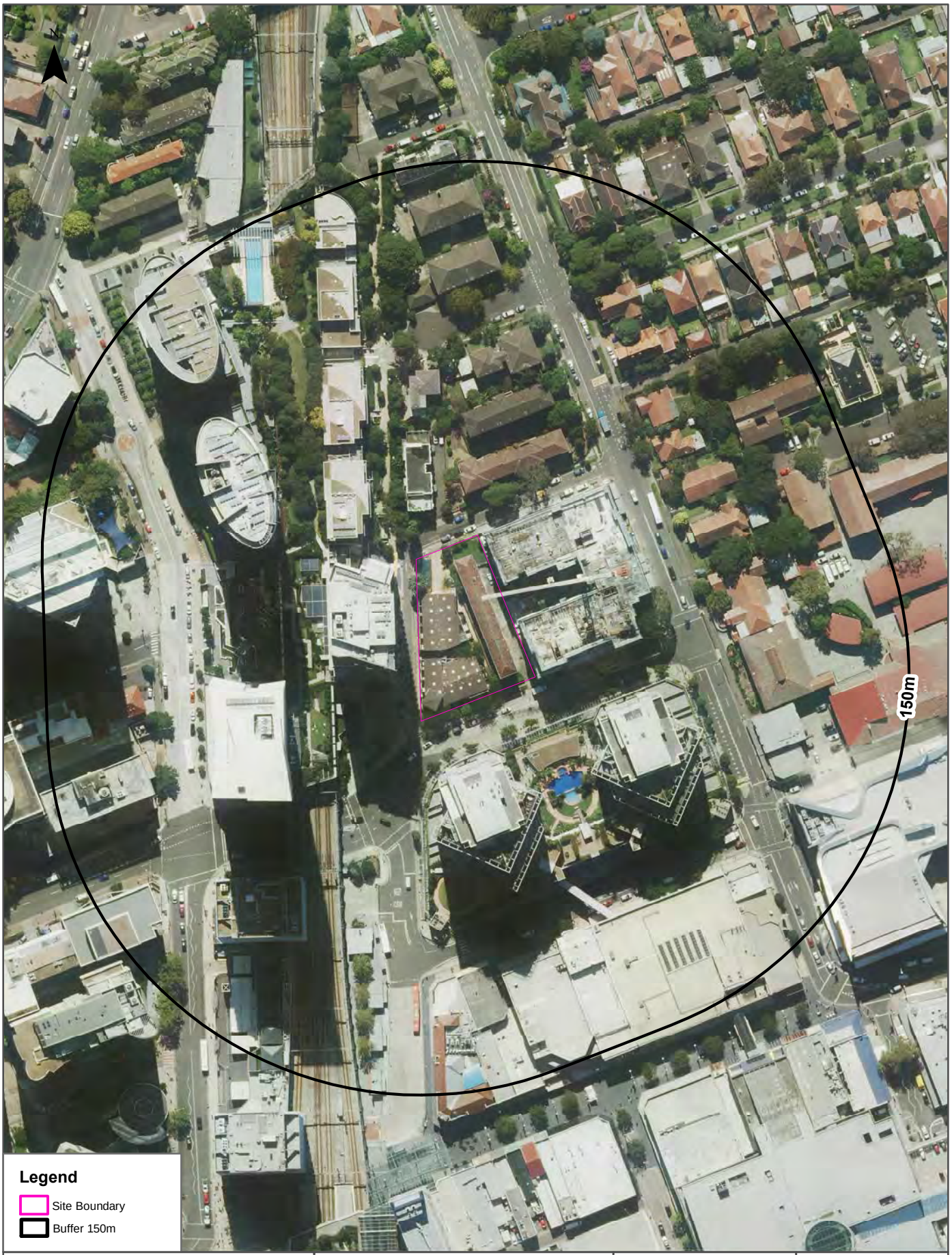
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0 20 40 60 80 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2011

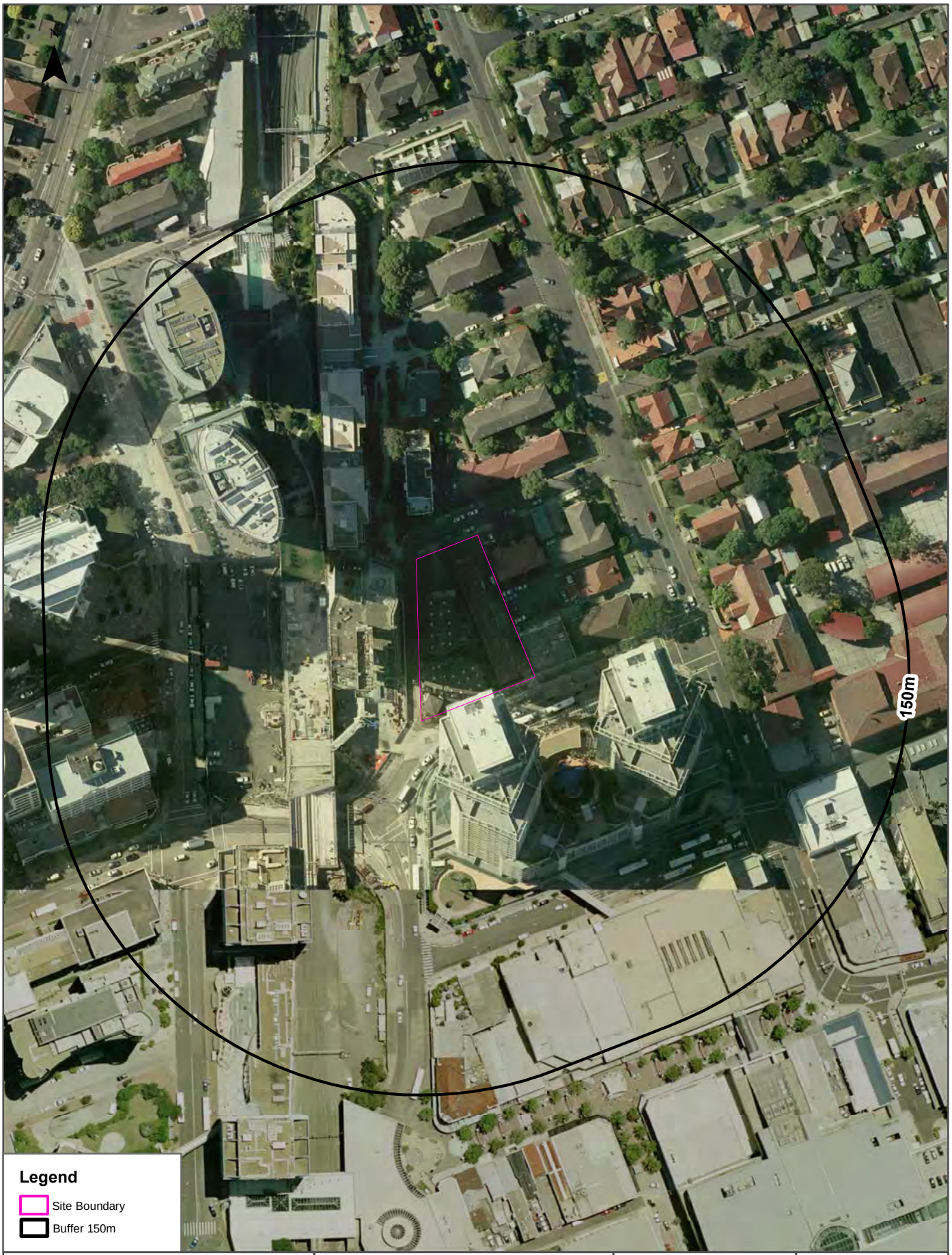
3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2005

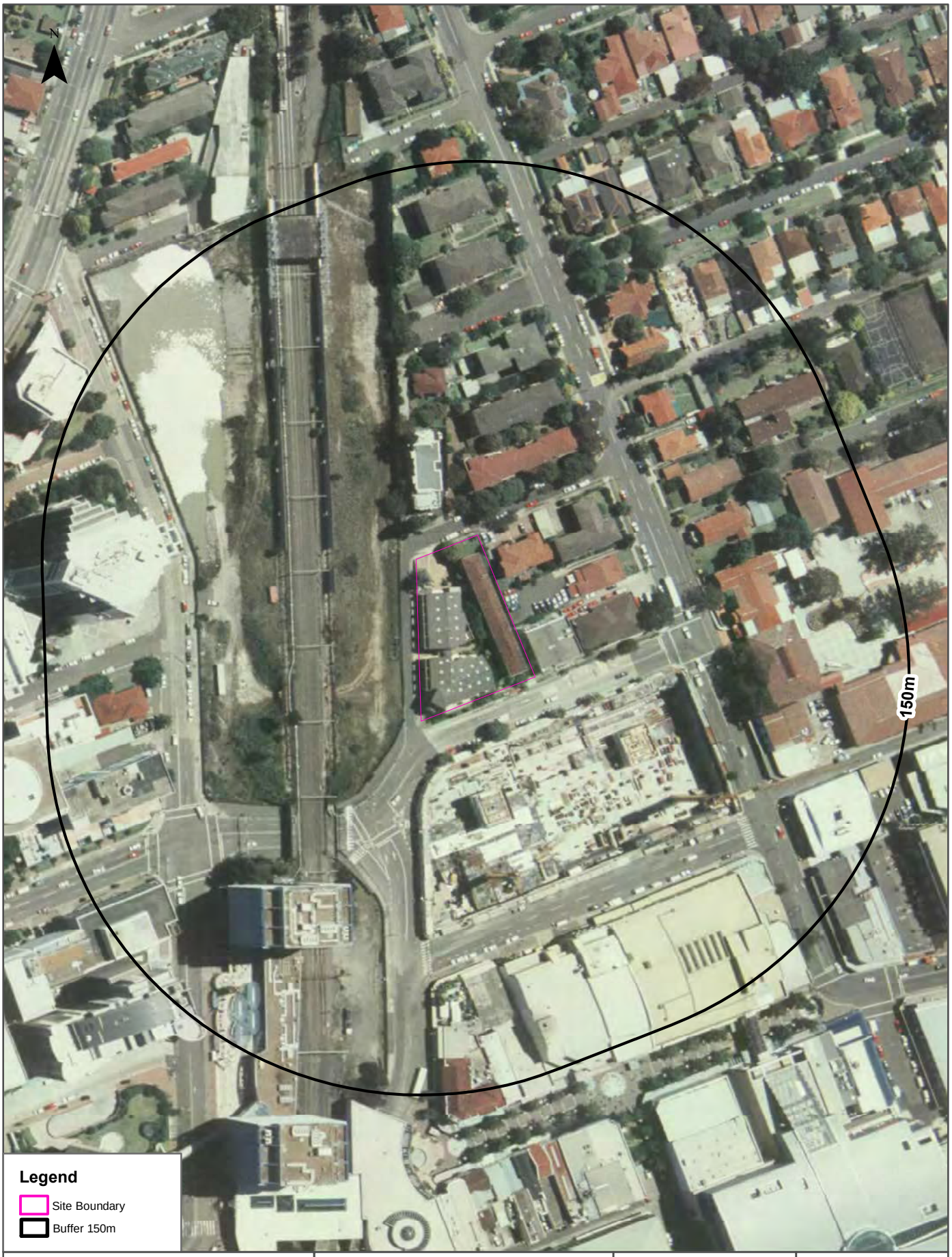
3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2000

3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 1994

3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 31 October 2022
0 20 40 60 80 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1991

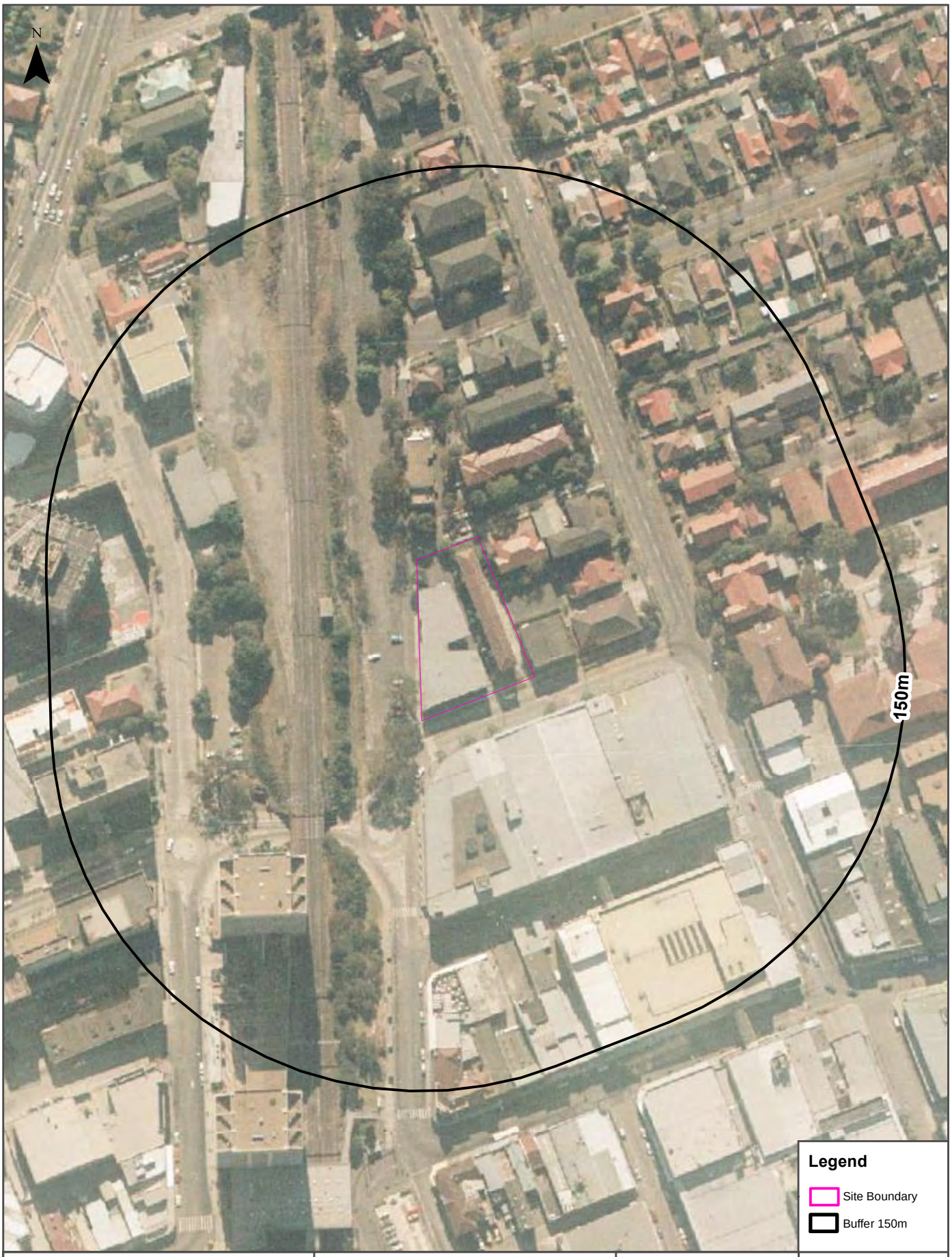
3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1986

3 - 5 Help Street, Chatswood, NSW 2067



Scale: 0 20 40 60 80 Meters	Data Source Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 31 October 2022

Aerial Imagery 1982

3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1978

3 - 5 Help Street, Chatswood, NSW 2067



Scale:
0 20 40 60 80
Meters

Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 31 October 2022

Aerial Imagery 1970

3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

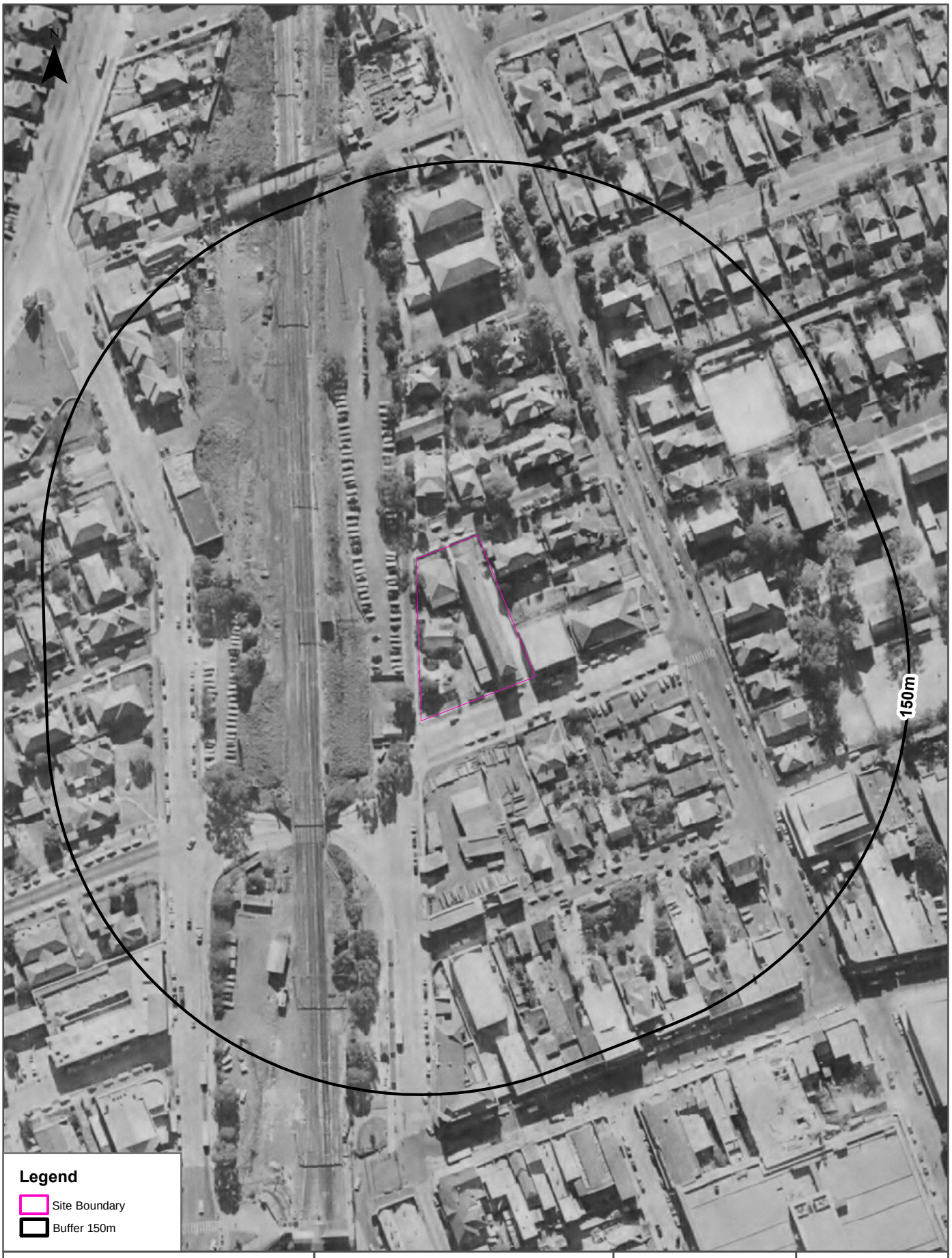
Aerial Imagery 1965

3 - 5 Help Street, Chatswood, NSW 2067



Aerial Imagery 1961

3 - 5 Help Street, Chatswood, NSW 2067



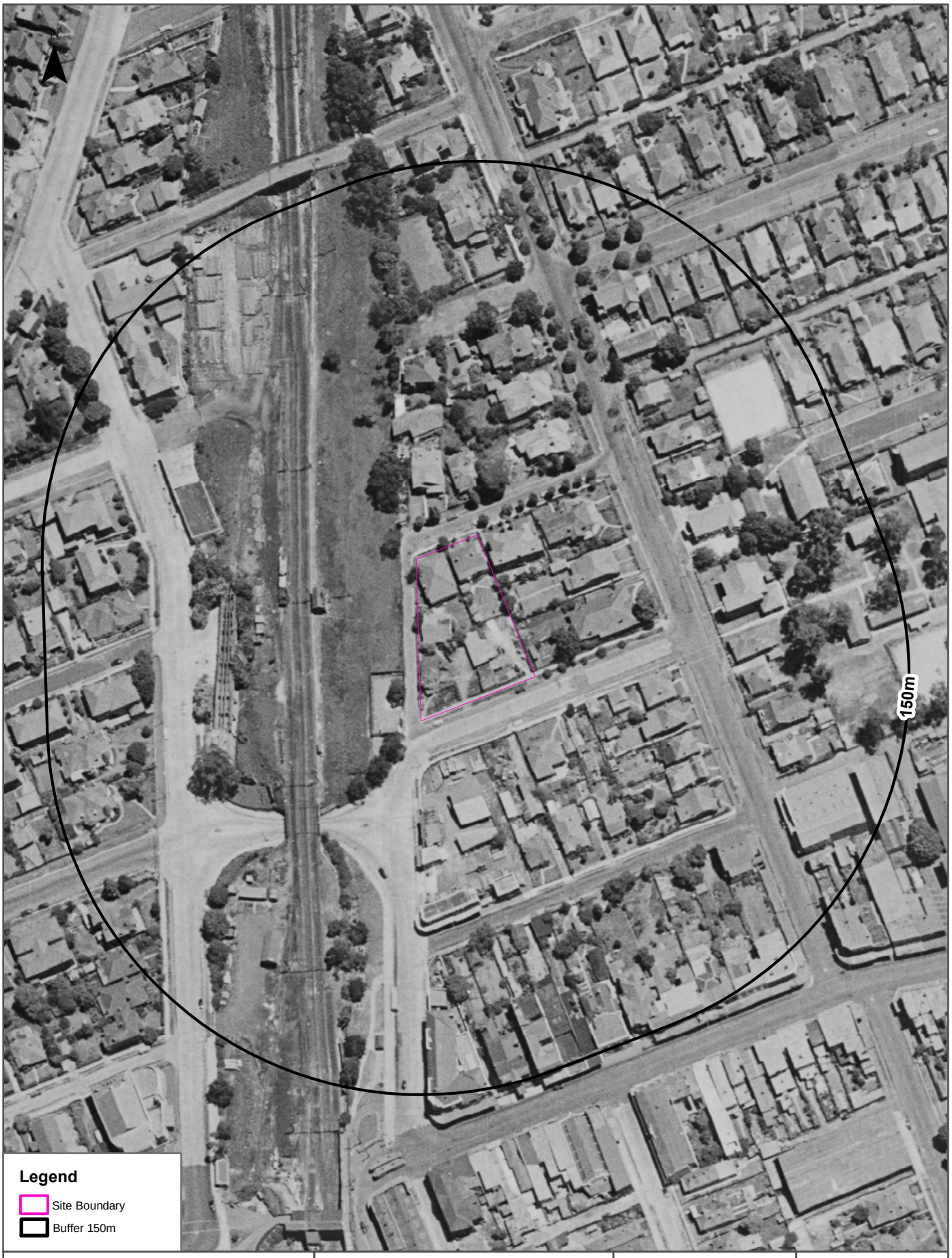
Data Sources: Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 01 November 2022

Aerial Imagery 1955, 1956

3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1951

3 - 5 Help Street, Chatswood, NSW 2067



Scale:
0 20 40 60 80
Meters

Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 31 October 2022

Aerial Imagery 1943

3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 01 November 2022
0 20 40 60 80 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 1930

3 - 5 Help Street, Chatswood, NSW 2067

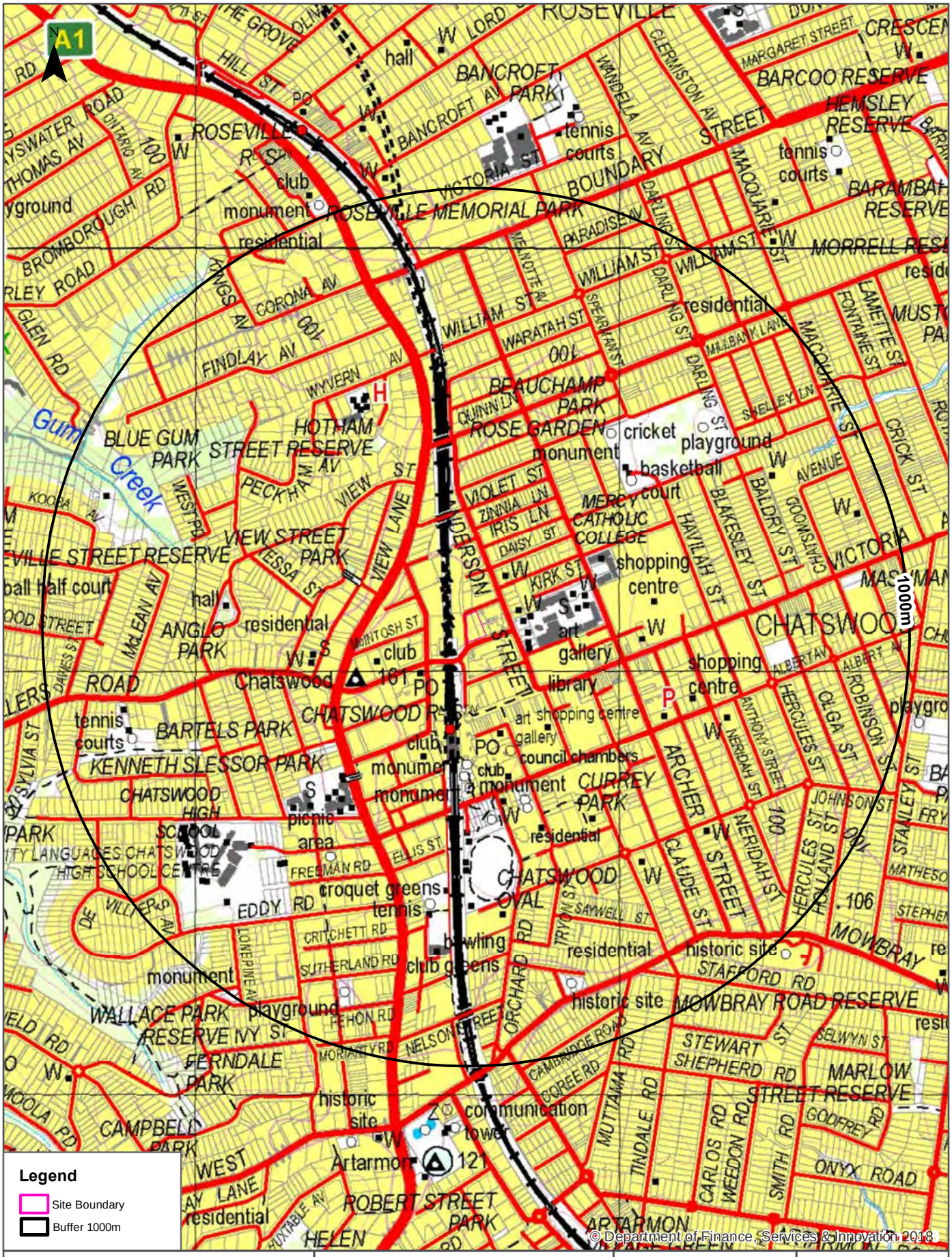


Scale:	Data Sources: Aerial Imagery: © Geoscience Australia	Coordinate System: GDA 1994 MGA Zone 56	Date: 01 November 2022

0 20 40 60 80
Meters

Topographic Map 2015

3 - 5 Help Street, Chatswood, NSW 2067



Scale: 0 140 280 420 560 Meters

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

Coordinate System: GDA 1994 MGA Zone 56

Date: 01 November 2022

Historical Map 1975

3 - 5 Help Street, Chatswood, NSW 2067



Scale:	Data Sources: NATMAP 1:100,000 Topographic Maps Geoscience Australia	Coordinate System: GDA 1994 MGA Zone 56	Date: 01 November 2022

0 280 560 840 1,120 Meters

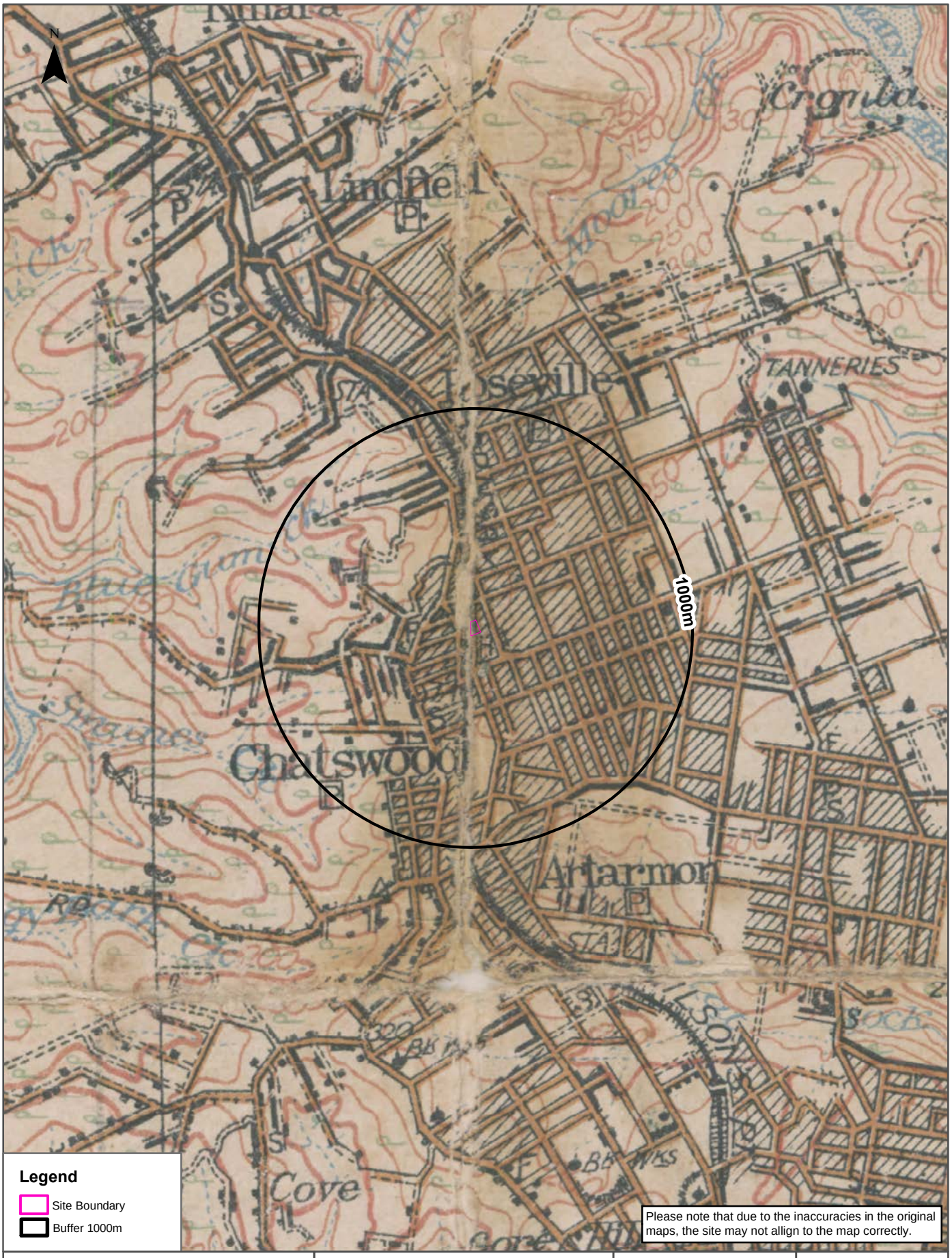
Historical Map c.1936

3 - 5 Help Street, Chatswood, NSW 2067



Historical Map c.1917

3 - 5 Help Street, Chatswood, NSW 2067



Scale: 0 280 560 840 1,120 Meters

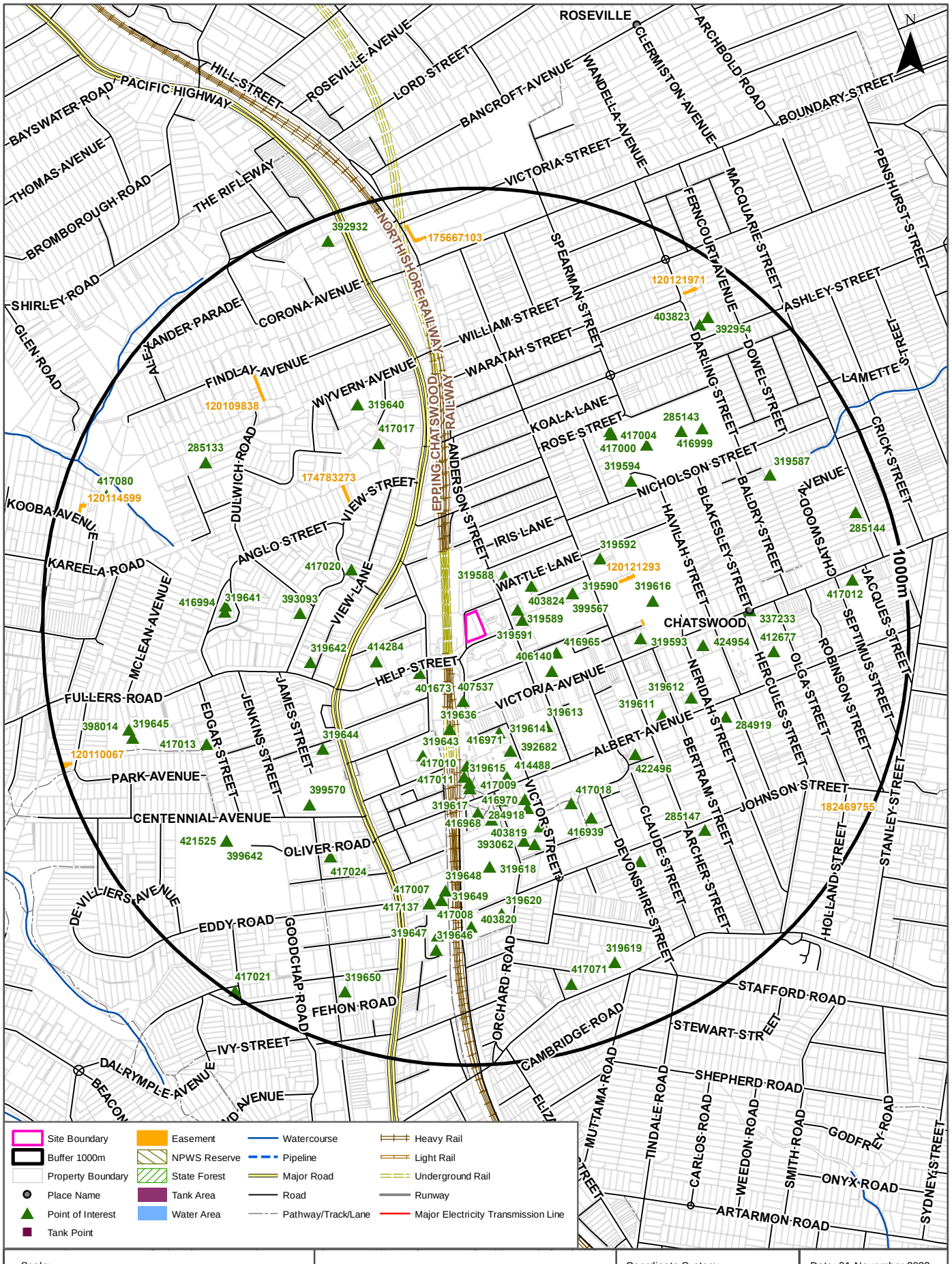
Data Sources: Australia 1:63360
Produced by Australian Section Imperial General Staff

Coordinate System:
GDA 1994 MGA Zone 56

Date: 01 November 2022

Topographic Features

3 - 5 Help Street, Chatswood, NSW 2067



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 01 November 2022

Topographic Features

3 - 5 Help Street, Chatswood, NSW 2067

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
319589	Place Of Worship	PRESBYTERIAN CHURCH	92m	East
319591	Combined Primary-Secondary School	ST PIUS X COLLEGE	93m	East
319588	Place Of Worship	CHRISTIAN BROTHERS	106m	North East
401673	Post Office	WEST CHATSWOOD POST OFFICE	132m	South West
407537	Transport Interchange	CHATSWOOD BUS INTERCHANGE	139m	South
403824	Retirement Village	ST ANDREW'S LODGE	144m	North East
416965	Art Gallery	ART SPACE ON THE CONCOURSE	172m	East
406140	Library	CHATSWOOD LIBRARY	178m	South East
319636	Railway Station	CHATSWOOD RAILWAY STATION	208m	South
414284	Club	CHATSWOOD CLUB (THE)	217m	West
319614	Post Office	CHATSWOOD POST OFFICE	225m	South
399567	Primary School	OUR LADY OF DOLOURS CATHOLIC PRIMARY SCHOOL	227m	East
319590	Place Of Worship	CATHOLIC CHURCH	227m	East
319613	Shopping Centre	WESTFIELD CHATSWOOD	259m	South East
416971	Art Gallery	FOYER EXHIBITION SPACE	277m	South
392682	Local Government Chambers	WILLOUGHBY CITY COUNCIL	277m	South
319643	Club	CHATSWOOD RSL CLUB	287m	South
417010	Monument	THE BOER WAR MEMORIAL	291m	South
417020	Park	VIEW STREET PARK	291m	North West
417011	Monument	Monument	317m	South
319592	High School	MERCY CATHOLIC COLLEGE	319m	North East
319615	Park	GARDEN OF REMEMBRANCE	331m	South
414488	Club	GORDON SOCIAL AND RECREATION CLUB	331m	South
417009	Monument	CROSS OF REMEMBRANCE	346m	South
319593	Place Of Worship	CHURCH OF CHRIST	367m	East
319642	Place Of Worship	ANGLICAN CHURCH	371m	West
284918	Place Of Worship	BAPTIST CHURCH	383m	South
393093	Nursing Home	JAPARA FOREST VIEW	391m	West
416967	Sports Court	BASKETBALL	396m	South
319617	Park	CHATSWOOD PARK	404m	South
319616	Shopping Centre	CHATSWOOD CHASE SYDNEY	404m	East

Map Id	Feature Type	Label	Distance	Direction
416970	Sports Court	Sports Court	417m	South
319644	Park	KENNETH SLESSOR PARK	423m	South West
416968	Sports Court	CHATSWOOD SKATE PARK	423m	South
417018	Park	CURREY PARK	446m	South East
422496	General Hospital	CHATSWOOD PRIVATE HOSPITAL	452m	South East
417017	Park	HOTHAM STREET RESERVE	456m	North West
319611	Police Station	CHATSWOOD POLICE STATION	459m	South East
416966	Community Facility	DOUGHERTY COMMUNITY CENTRE	468m	South
319594	Sports Court	BASKETBALL COURT	479m	North East
393062	Nursing Home	DOUGHERTY APARTMENTS	488m	South
416939	Community Facility	THE HUB COMMUNITY GARDEN	498m	South East
403819	Retirement Village	DOUGHERTY APARTMENTS	503m	South
319612	Shopping Centre	CHATSWOOD VILLAGE	509m	East
424954	General Hospital	VISION EYE INSTITUTE CHATSWOOD	515m	East
417005	Monument	REG MCMAHON SUN DIAL MEMORIAL	526m	North East
417004	Park	BEAUCHAMP PARK ROSE GARDEN	531m	North East
399570	Primary School	CHATSWOOD PUBLIC SCHOOL	533m	South West
319618	Sports Field	CHATSWOOD OVAL	533m	South
319640	General Hospital	HIRONDELLE PRIVATE HOSPITAL	560m	North West
417000	Sports Field	CRICKET	564m	North East
416994	Community Facility	CHATSWOOD GIRL GUIDES HALL	568m	West
319641	Park	ANGLO PARK	569m	West
319648	Community Facility	CHATSWOOD CROQUET CLUB	588m	South
417024	Picnic Area	WHITTON PARK	600m	South West
284919	Place Of Worship	CHRISTIAN SCIENTIST CHURCH	600m	East
417008	Sports Field	CROQUET GREENS	612m	South
319649	Sports Field	CROQUET GREENS	612m	South
417007	Sports Court	TENNIS	624m	South
417137	Sports Court	TENNIS COURTS	624m	South
337233	Suburb	CHATSWOOD	628m	East
285143	Park	BEAUCHAMP PARK	646m	North East
319620	Community Facility	WYLLIE LODGE	646m	South
284917	Place Of Worship	SEVENTH DAY ADVENTIST CHURCH	647m	South East
417013	Park	BARTELS PARK	659m	South West
403820	Retirement Village	CHAPMAN CLOSE	673m	South
412677	Community Medical Centre	CHATSWOOD COMMUNITY HEALTH CENTRE	682m	East
416999	Picnic Area	PLAYGROUND	688m	North East

Map Id	Feature Type	Label	Distance	Direction
285147	Place Of Worship	SALVATION ARMY CHURCH	693m	South East
319647	Sports Field	BOWLING GREENS	697m	South
285133	Park	BLUE GUM PARK	714m	North West
319646	Club	CHATSWOOD BOWLING CLUB	730m	South
421525	High School	SATURDAY SCHOOL OF COMMUNITY LANGUAGES CHATSWOOD H	735m	South West
399642	High School	CHATSWOOD HIGH SCHOOL	735m	South West
319587	Place Of Worship	SYNAGOGUE	766m	North East
319645	Sports Court	TENNIS COURTS	821m	West
398014	Community Facility	CHATSWOOD TENNIS CLUB	825m	West
319619	Nursing Home	COLUMBIA AGED CARE SERVICES-WILLOWOOD CENTRE	832m	South East
417071	Historic Site	HILTON	844m	South
403823	Retirement Village	ASHLEY HOUSE APARTMENTS	859m	North East
319650	Picnic Area	SUTHERLAND PARK	874m	South
417012	Park	MASHMAN PARK	877m	East
392954	Nursing Home	PATHWAYS ASHLEY HOUSE	886m	North East
417080	Community Facility	CHATSWOOD HALL BLUE GUM PARK	895m	West
285144	Place Of Worship	ARMENIAN APOSTOLIC CHURCH	921m	East
392932	Community Home	BUPA ROSEVILLE	944m	North
417021	Monument	WALLACE PARK MEMORIAL PLAQUE	990m	South West

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

3 - 5 Help Street, Chatswood, NSW 2067

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
N/A	No records in buffer					

Tanks Data Source: © Land and Property Information (2015)
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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
120121293	Primary	Undefined		288m	East
174783273	Primary	Right of way	4m	380m	North West
120109838	Primary	Undefined		696m	North West
175667103	Primary	Right of way	Var	886m	North
120121971	Primary	Undefined		897m	North East
120114599	Primary	Undefined		935m	West
120110067	Primary	Undefined		976m	West
182469755	Primary	Right of way	Var.	998m	South East

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

3 - 5 Help Street, Chatswood, NSW 2067

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

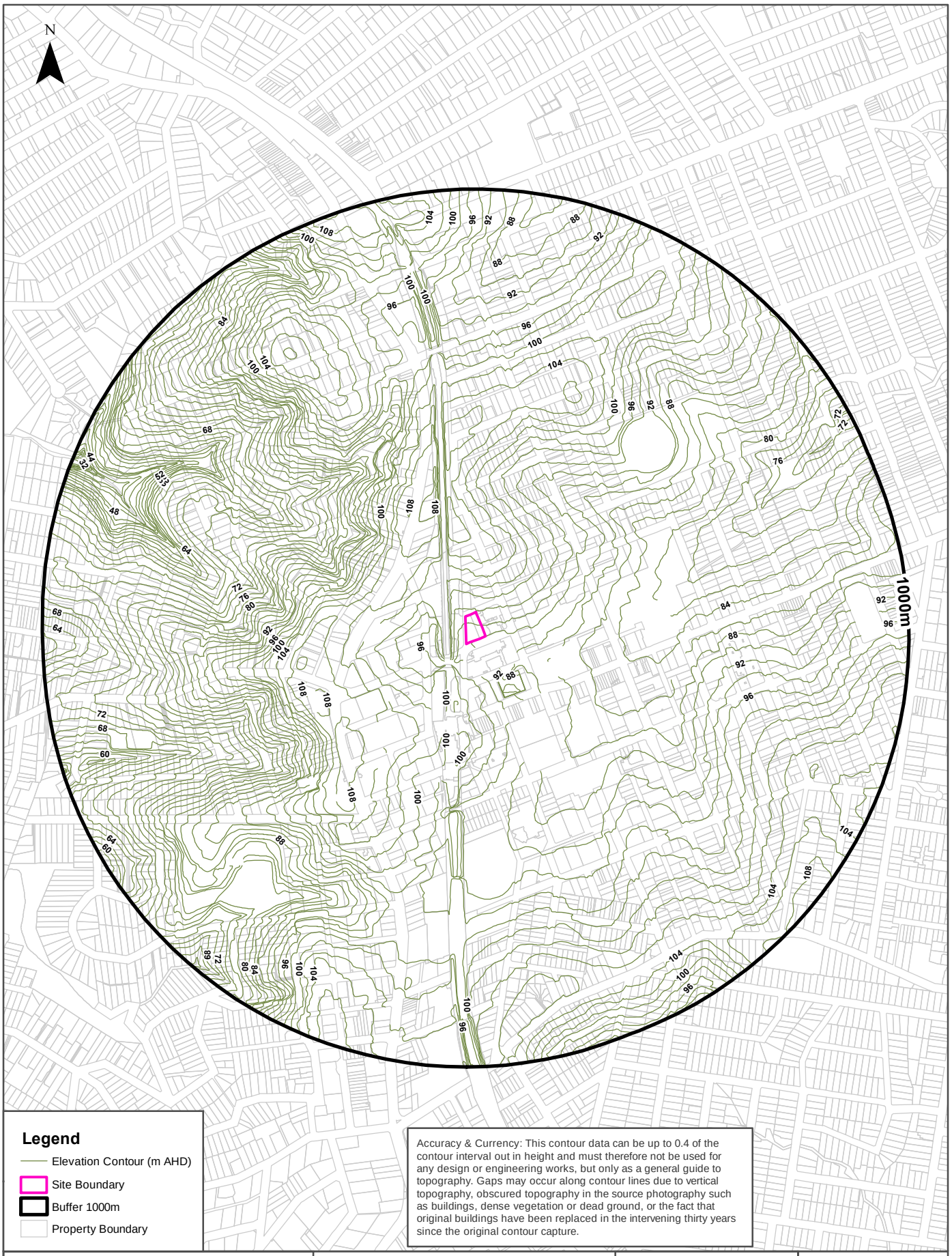
What NPWS Reserves exist within the dataset buffer?

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)

3 - 5 Help Street, Chatswood, NSW 2067



Hydrogeology & Groundwater

3 - 5 Help Street, Chatswood, NSW 2067

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

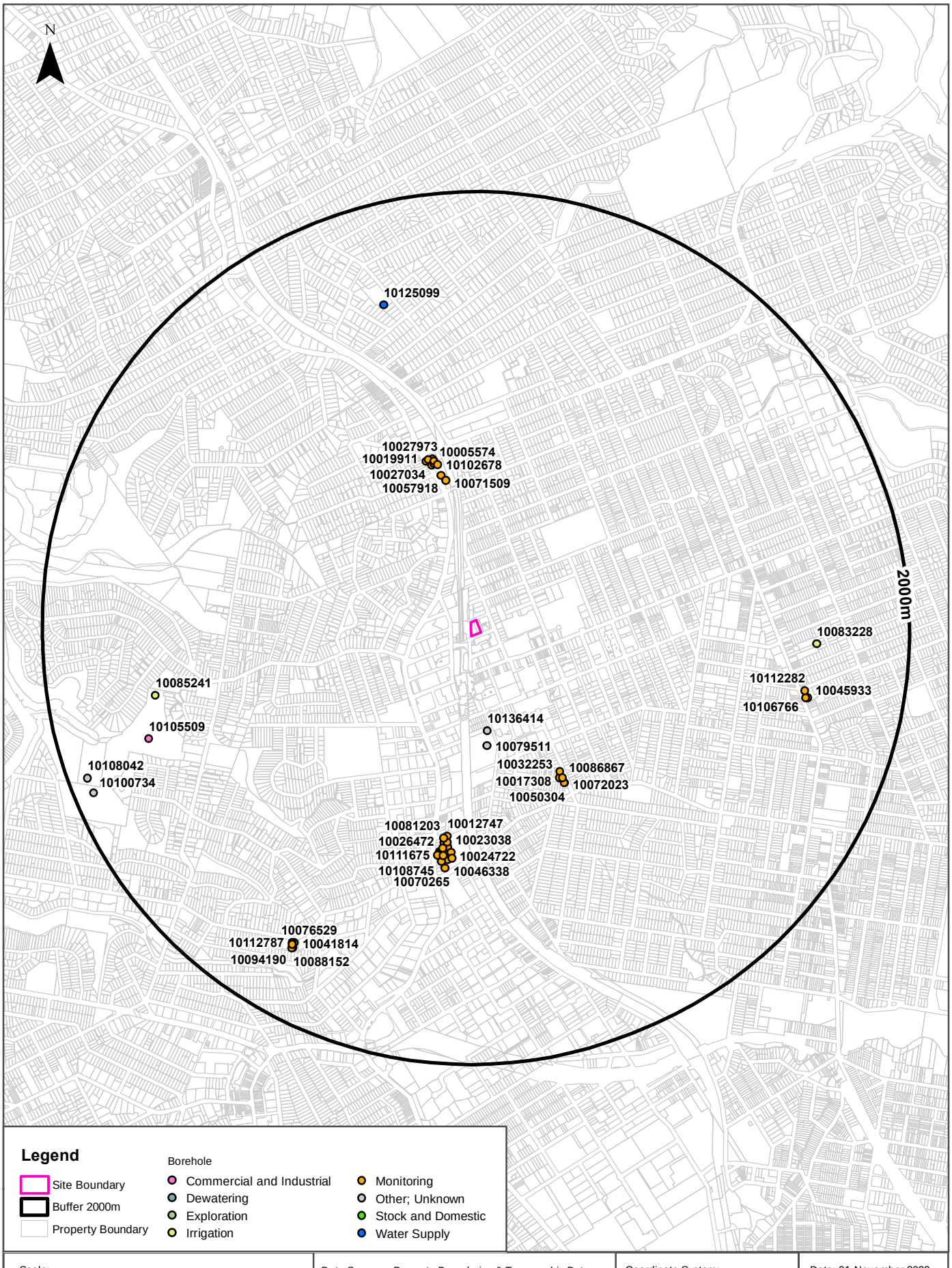
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

3 - 5 Help Street, Chatswood, NSW 2067



Hydrogeology & Groundwater

3 - 5 Help Street, Chatswood, NSW 2067

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
10136414	GW107757	Other	Unknown	29/07/2005	162.60		AHD	1360	0.300	25.60	450m	South
10079511	GW029731	Other	Unknown	01/04/1967	21.60		AHD				519m	South
10071509	GW114838	Monitoring	Functional	30/07/2011	9.70		AHD			3.90	666m	North
10057918	GW114837	Monitoring	Functional	30/07/2011	5.00		AHD			2.60	694m	North
10102678	GW114836	Monitoring	Functional	30/07/2011	15.00		AHD			8.80	746m	North
10032253	GW112963	Monitoring	Functional	15/03/2012	9.00		AHD				749m	South East
10063446	GW113511	Monitoring	Functional	01/09/2004	8.00		AHD				751m	North
10083448	GW113508	Monitoring	Functional	01/09/2004	7.50		AHD				756m	North
10078846	GW113509	Monitoring	Functional	01/09/2004	3.00		AHD				757m	North
10027034	GW113506	Monitoring	Functional	31/08/2004	3.10		AHD				760m	North
10038857	GW113505	Monitoring	Functional	31/08/2004	8.00		AHD				760m	North
10005574	GW113513	Monitoring	Functional	01/09/2004	2.80		AHD				765m	North
10093128	GW113512	Monitoring	Functional	31/08/2004	8.00		AHD				766m	North
10017308	GW112964	Monitoring	Functional	15/03/2012	2.00		AHD				772m	South East
10019911	GW113514	Monitoring	Functional	06/09/2004	8.60		AHD				774m	North
10027973	GW113510	Monitoring	Functional	31/08/2004	7.80		AHD				779m	North
10053818	GW113507	Monitoring	Functional	31/08/2004	7.60		AHD				780m	North
10086867	GW112965	Monitoring	Functional	15/03/2012	9.00		AHD				781m	South East
10050304	GW111333	Monitoring	Functional	24/01/2011	9.00		AHD				806m	South East
10072023	GW111332	Monitoring	Functional	24/01/2011	3.20		AHD				806m	South East
10012747	GW112743	Monitoring	Functional	23/03/2009	11.00		AHD				942m	South
10081203	GW112742	Monitoring	Functional	24/03/2009	11.00		AHD				952m	South
10072206	GW112745	Monitoring	Functional	23/03/2009	12.00		AHD				971m	South
10062038	GW112744	Monitoring	Functional	24/03/2013	11.00		AHD				975m	South
10023038	GW112747	Monitoring	Functional	25/03/2009	12.00		AHD				993m	South
10114028	GW112746	Monitoring	Functional	23/03/2013	12.00		AHD				1000m	South
10062528	GW112753	Monitoring	Functional	27/08/2013	10.50		AHD				1010m	South
10024722	GW112749	Monitoring	Functional	08/04/2009	6.50		AHD				1014m	South
10026472	GW112756	Monitoring	Functional	23/03/2013	11.00		AHD				1016m	South
10019889	GW112754	Monitoring	Functional	18/03/2009	11.00		AHD				1027m	South
10114303	GW112748	Monitoring	Functional	25/03/2009	12.00		AHD				1034m	South

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
10111675	GW112755	Monitoring	Functional	23/03/2009	11.00		AHD				1036m	South
10095436	GW112751	Monitoring	Functional	16/03/2009	6.00		AHD				1042m	South
10046338	GW112750	Monitoring	Functional	09/04/2009	6.00		AHD				1052m	South
10108745	GW111773	Monitoring	Functional	16/03/2012	5.50		AHD				1063m	South
10070265	GW112752	Monitoring	Functional	16/03/2009	6.00		AHD				1091m	South
10085241	GW033711	Irrigation	Proposed	01/11/1966	13.40		AHD	Fresh			1498m	West
10125099	GW108792	Water Supply	Functioning	25/05/2007	174.00		AHD	2800	0.300	65.00	1532m	North
10112282	GW114502	Monitoring	Functional	28/10/2010	8.00		AHD			2.50	1536m	East
10106766	GW114504	Monitoring	Functional	28/10/2010	8.00		AHD			2.50	1547m	East
10045933	GW114503	Monitoring	Functional	28/10/2010	8.00		AHD			2.50	1557m	East
10083228	GW026513	Irrigation	Unknown	01/12/1966	64.00		AHD	Fresh			1569m	East
10105509	GW102744	Commercial and Industrial	Unknown	03/11/1994	39.00		AHD		1.900		1578m	West
10041814	GW114204	Monitoring	Functional	02/06/2010	13.80		AHD				1652m	South West
10076529	GW114205	Monitoring	Functional	16/08/2010	10.00		AHD				1656m	South West
10112787	GW114206	Monitoring	Functional	16/08/2010	8.00		AHD				1664m	South West
10088152	GW114207	Monitoring	Functional	16/08/2010	2.00		AHD				1675m	South West
10094190	GW114203	Monitoring	Functional	02/06/2010	13.85		AHD				1680m	South West
10100734	GW033631	Other	Proposed	01/12/1966	14.00		AHD	Fresh			1908m	South West
10108042	GW103133	Other	Unknown	25/09/1990	46.00		AHD	Fresh	4.500	12.50	1908m	West

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

3 - 5 Help Street, Chatswood, NSW 2067

Driller's Logs

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

NGIS Bore ID	Drillers Log	Distance	Direction
10136414	0.00m-1.40m FILL 1.40m-4.30m CLAY:BROWN,RED, WHITE 4.30m-5.10m SHALE; BROWN,WEATHERED 5.10m-5.50m CLAY BROWN 5.50m-16.80m SHALE GREY 16.80m-18.50m SANDSTONE GREY,SHALE GREY 18.50m-28.70m SANDSTONE GREY 28.70m-29.00m SANDSTONE GREY,FRACTURED 29.00m-42.40m SANDSTONE L/GREY 42.40m-42.80m SILTSTONE D/GREY 42.80m-51.10m SANDSTONE L/GREY 51.10m-65.70m SANDSTONE L/GREY,QUARTZ 65.70m-66.70m SHALE,GREY,SILTY 66.70m-74.60m SANDSTONE L/GREY 74.60m-76.10m SANDSTONE L/GREY 76.10m-76.30m SHALE L/GREY,SOFT 76.30m-88.00m SANDSTONE L/GREY 88.00m-88.60m SHALE,SILTY,D/GREY 88.60m-162.60m SANDSTONE L/GREY,GREY	450m	South
10079511	0.00m-3.45m Clay Red Sandy 0.00m-3.45m Gravel 0.00m-3.45m Boulders Large 3.45m-6.70m Ironstone Gravel 3.45m-6.70m Clay Red Yellow Puggy Sandy 6.70m-17.98m Shale Grey Black Hard 17.98m-21.64m Sandstone Grey Very Fractured Medium-coarse 17.98m-21.64m Clay Bands	519m	South
10071509	0.00m-0.20m SAND GRAVEL 0.20m-1.60m COMPACTED BALLAST,SAND GRAVEL 1.60m-2.80m CLAY RED YELLOW 2.80m-3.90m CLAY RED GREY 3.90m-6.00m CLAY RED/WHITE,SOME WET ROCKS 6.00m-7.00m ROCK AND CLAY RED WEATHERED 7.00m-7.50m ROCK WHITE WEATHERED 7.50m-8.00m SHALE ORANGE WHEATHERED 8.00m-9.70m SHALE MUDDY WEATHERED	666m	North
10057918	0.00m-0.20m GRAVEL COMPACTED 0.20m-1.40m NON DESTRUCTIVE EXCAVATIONS,GRAVEL 1.40m-2.50m CLAY YELLOW 2.50m-3.80m CLAY RED GREY 3.80m-5.00m CLAY RED, WEATHERED ROCK	694m	North
10102678	0.00m-0.60m COMPACTED GRAVEL / BALLAST 0.60m-2.00m COMPACTED GRAVEL / BALLAST 2.00m-2.20m CLAY LIGHT RED BROWN 2.20m-3.00m CLAY WHITE RED 3.00m-4.50m CLAY GREY VERY HARD 4.50m-6.00m CLAY GREY 6.00m-9.00m SHALE GREY VERY HARD CLAY 9.00m-15.00m SHALE VERY WEATHERED GREY SHALE	746m	North
10050304	0.00m-0.17m CONCRETE 0.17m-2.80m FILL,SILTY SANDY CLAY,ORANGE BROWN 2.80m-3.00m SILTY CLAY,LIGHT GREY MOTT.RED.BROWN 3.00m-9.00m SHALE,GREY WEATHERED	806m	South East
10072023	0.00m-0.18m CONCRETE 0.18m-2.80m FILL,SILTY SANDY CLAY,ORANGE BROWN 2.80m-3.00m SILTY CLAY,LIGHT GREY MOTTLED RED/BROWN 3.00m-3.20m SHALE GREY WEATHERED	806m	South East
10108745	0.00m-0.20m CONCRETE 0.20m-0.80m FILL,CLAY YELLOW/ BROWN,SOME BRICK 0.80m-2.40m CLAY YELLOW BROWN,DRY,LOOSE,L/PLAS. 2.40m-4.30m CLAY BROWN/GREY/RED,STIFF,L/PLAST.IRONSTONE 4.30m-6.00m CLAY GREY/RED,DRY,HARD,L/PLASTICITY	1063m	South

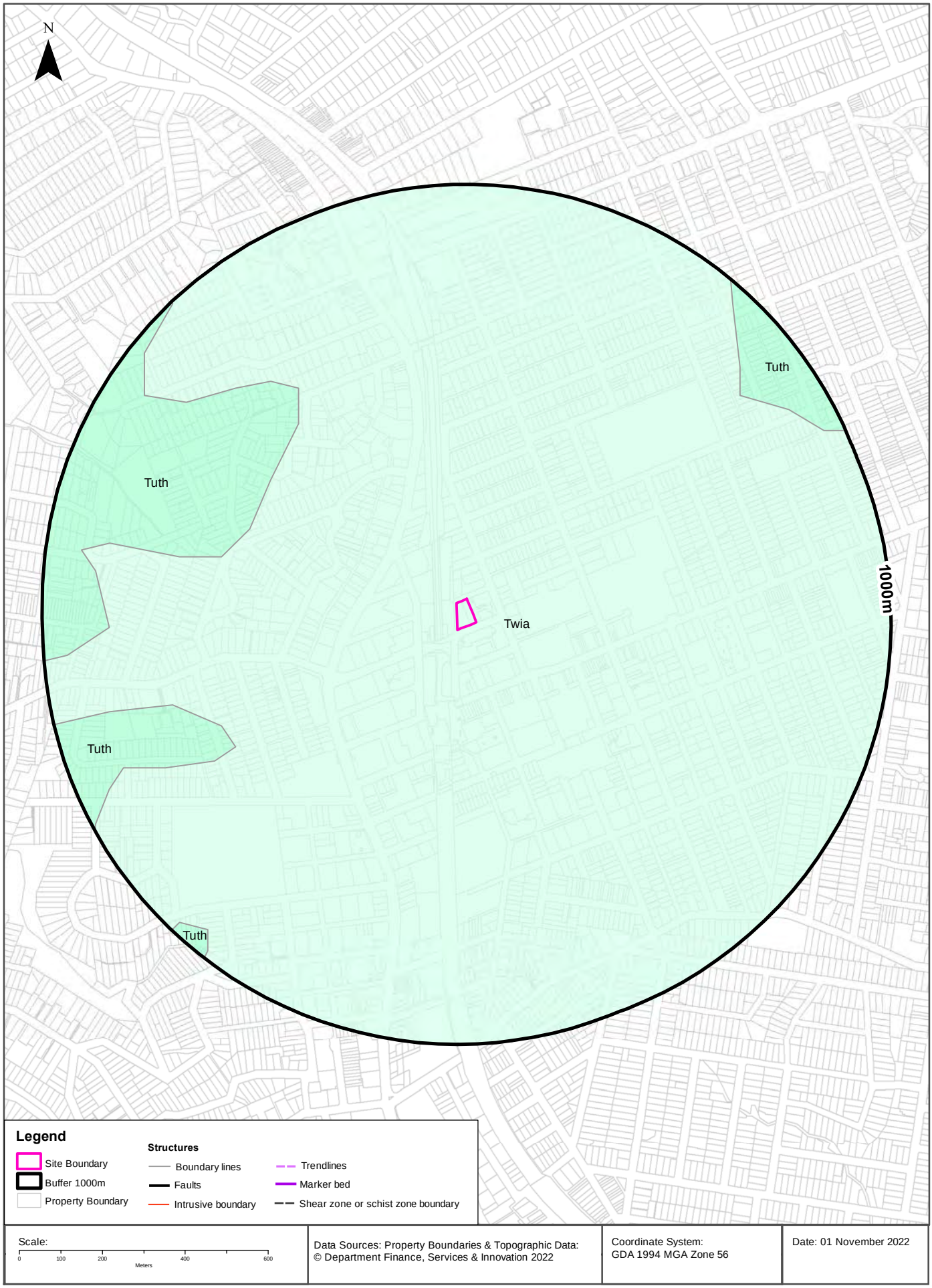
NGIS Bore ID	Drillers Log	Distance	Direction
10085241	0.00m-0.60m Sandstone Red 0.60m-0.91m Clay Yellow 0.91m-5.48m Sandstone Red 5.48m-6.09m Sandstone Yellow 6.09m-8.22m Sandstone White 8.22m-8.53m Sand White Water Supply 8.53m-10.97m Sandstone White 10.97m-11.27m Sand Grey Water Supply 11.27m-13.41m Sandstone White Hard	1498m	West
10125099	0.00m-4.00m clay 4.00m-15.00m shale 15.00m-52.00m sandstone, grey 52.00m-54.00m sandstone, quartz 54.00m-70.00m sandstone, grey 70.00m-75.00m sandstone, quartz 75.00m-76.00m shale 76.00m-80.00m sandstone, shale bands 80.00m-89.00m sandstone, grey 89.00m-90.00m shale 90.00m-94.00m sandstone, siltstone band 94.00m-110.00m sandstone, grey 110.00m-112.00m sandstone, quartz 112.00m-130.00m sandstone, grey 130.00m-131.00m sitlstone 131.00m-132.00m sandstone, grey 132.00m-135.50m sandstone, quartz 135.50m-145.00m sandstone, grey 145.00m-152.20m sandstone, quartz 152.20m-161.00m sandstone, grey 161.00m-168.00m sandstone, quartz 168.00m-174.00m sandstone, grey	1532m	North
10112282	0.00m-0.20m FILL GRAVEL,LOOSE DRY 0.20m-0.60m FILL, SILTY CLAY VERY SOFT 0.60m-1.60m FILL SILTY CLAY, SOFT, MOIST 1.60m-4.30m RESIDUAL CLAY STIFF 4.30m-5.00m RESIDUAL CLAY VERY STIFF 5.00m-7.00m RESIDUAL SANDY CLAY 7.00m-8.00m RESIDUAL CLAYEY SAND,DENSE,MOIST,SANDSTONE	1536m	East
10106766	0.00m-0.20m FILL, GRAVEL,LOOSE,DRY,PURPLE ,COARSE 0.20m-0.40m FILL.SILTY CLAY VERY SOFT,MOIST,LOW PLASTICITY 0.40m-1.40m FILL SILTY CLAY,SOFT,MOIST 1.40m-5.00m RESIDUAL CLAY STIFF BEC. VERY STIFF 5.00m-6.00m RESIDUAL CLAY VEY STIFF,MOIST 6.00m-8.00m RESIDUAL SANDY CLAY STIFF BEC.SOFT	1547m	East
10045933	0.00m-0.20m FILL, GRAVEL 0.20m-0.40m FILL, SILTY CLAY 0.40m-1.60m FILL SILTY CLAY SOFT MOIST 1.60m-5.00m RESIDUAL CLAY VERY STIFF BELOW 2.5m 5.00m-6.00m RESIDUAL CLAY VERY STIFF MOIST,GREY RED 6.00m-7.00m SANDY CLAY BECOMING SOFT,BEC.MOIST 7.00m-8.00m RESIDUAL CLAYEY SAND,DENSE,MOIST,DARK GREY	1557m	East
10083228	0.00m-9.14m Clay Soil 9.14m-12.19m Sandstone White Soft 12.19m-13.71m Shale Water Supply 13.71m-22.86m Sandstone White Soft 22.86m-31.08m Sandstone 31.08m-35.05m Sandstone White 35.05m-36.57m Shale 36.57m-39.01m Sandstone White 39.01m-39.62m Shale 39.62m-57.91m Sandstone White 57.91m-59.43m Sandstone White Soft Water Supply 59.43m-60.35m Shale Sandy 60.35m-64.00m Driller	1569m	East
10105509	0.00m-1.00m CLAY FILL 1.00m-11.00m SANDSTONE BROWN 11.00m-18.00m SANDSTONE WHITE 18.00m-21.00m SANDSTONE WHITE WITH SHALE 21.00m-29.00m SANDSTONE WHITE WITH SHALE 29.00m-31.00m CLAY STIFF GREY SANDY 31.00m-39.00m SANDSTONE GREY WITH CLAY	1578m	West
10100734	0.00m-1.21m Topsoil 1.21m-2.68m Sandstone Red Soft 2.68m-2.74m Sand Water Supply 2.74m-4.87m Sandstone Red 4.87m-6.70m Sandstone Yellow 6.70m-8.83m Sandstone White 8.83m-11.27m Sandstone Water Supply 11.27m-14.02m Sandstone White Water Supply	1908m	South West

NGIS Bore ID	Drillers Log	Distance	Direction
10108042	0.00m-1.20m SANDY SOIL 1.20m-5.40m IRONSTONE WITH BANDS OF CLAY 5.40m-8.90m YELLOW SANDSTONE 8.90m-20.10m GREY SANDSTONE 20.10m-20.30m GREY SANDSTONE W.B. 20.30m-41.90m SANDSTONE GREY 41.90m-43.00m SANDSTONE GREY W.B. 43.00m-46.00m SANDSTONE GREY	1908m	West

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

3 - 5 Help Street, Chatswood, NSW 2067



Geology

3 - 5 Help Street, Chatswood, NSW 2067

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Twia	Ashfield Shale	Black to light grey shale and laminite.	/Wianamatta Group//Ashfield Shale//	Middle Triassic (base) to Middle Triassic (top)	Shale	0m
Tuth	Hawkesbury Sandstone	Medium- to coarse-grained quartz sandstone with minor shale and laminite lenses.	/Ungrouped Triassic units//Hawkesbury Sandstone//	Anisian (base) to Anisian (top)	Sandstone	529m

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

3 - 5 Help Street, Chatswood, NSW 2067

Naturally Occurring Asbestos Potential

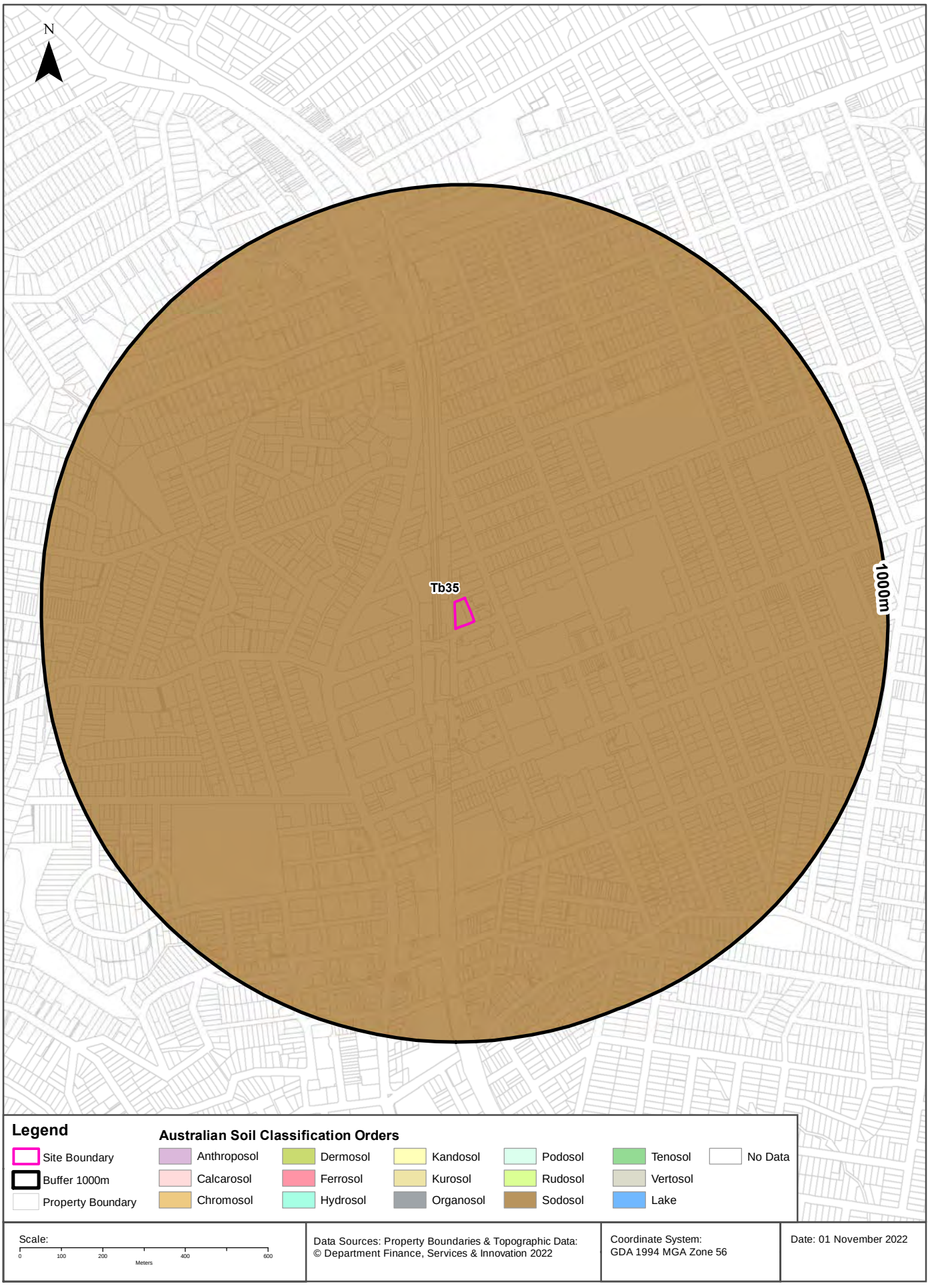
Naturally Occurring Asbestos Potential within the dataset buffer:

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

3 - 5 Help Street, Chatswood, NSW 2067



Soils

3 - 5 Help Street, Chatswood, NSW 2067

Atlas of Australian Soils

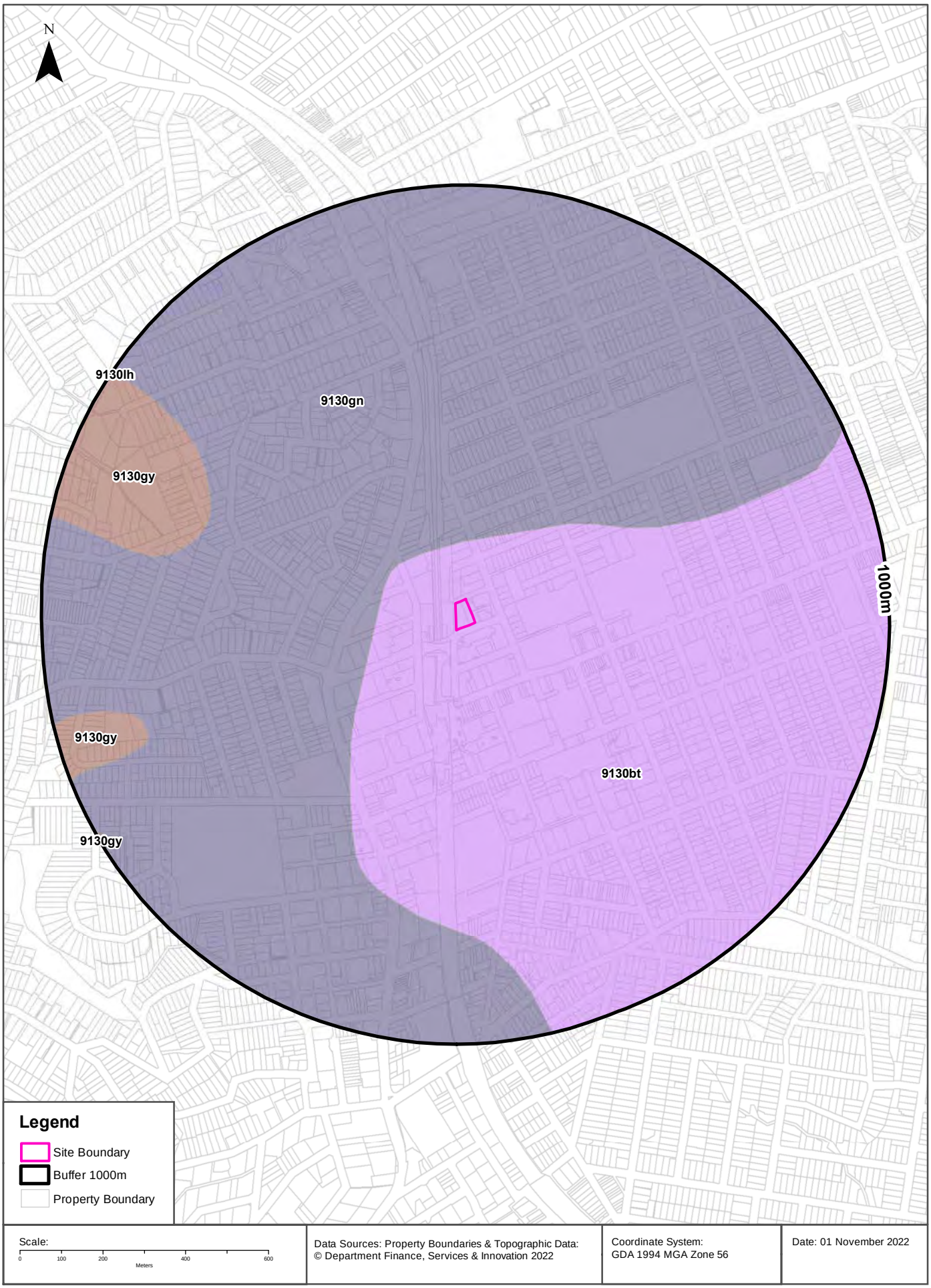
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Tb35	Sodosol	Dissected plateau remnants--flat to undulating ridge tops with moderate to steep side slopes: chief soils are hard acidic yellow and yellow mottled soils (Dy3.41), (Dy2.21), and (Dy2.41) and hard acidic red soils (Dr2.21); many shallow profiles occur and profile thickness varies considerably over short distances. Associated are: (Gn3.54), (Gn3.14), and possibly other (Gn3) soils; (Db1.2) soils on some ridges; (Dy5.81) soils in areas transitional to unit Mb2; soils common to unit Mb2; and eroded lateritic remnants. Small areas of other soils are likely. Flat ferruginous shale or sandstone fragments are common on and/or in and/or below the soils of this unit.	0m	On-site

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

3 - 5 Help Street, Chatswood, NSW 2067



Soils

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Soil Landscapes of Central and Eastern NSW

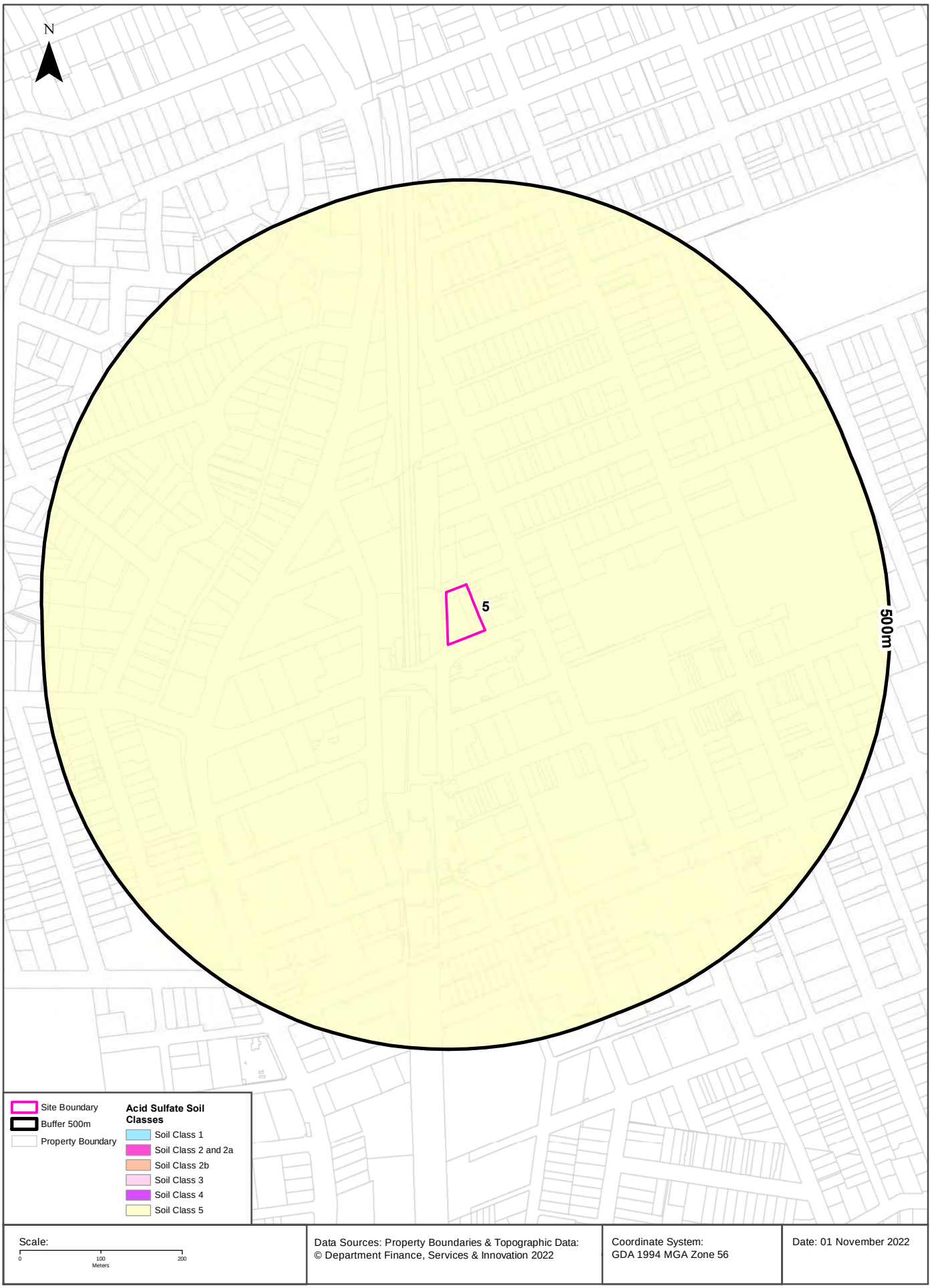
Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9130bt	Blacktown	0m	On-site
9130gn	Glenorie	136m	North West
9130gy	Gymea	629m	North West
9130lh	Lucas Heights	983m	North West

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

3 - 5 Help Street, Chatswood, NSW 2067



Acid Sulfate Soils

3 - 5 Help Street, Chatswood, NSW 2067

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
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	Willoughby Local Environmental Plan 2012

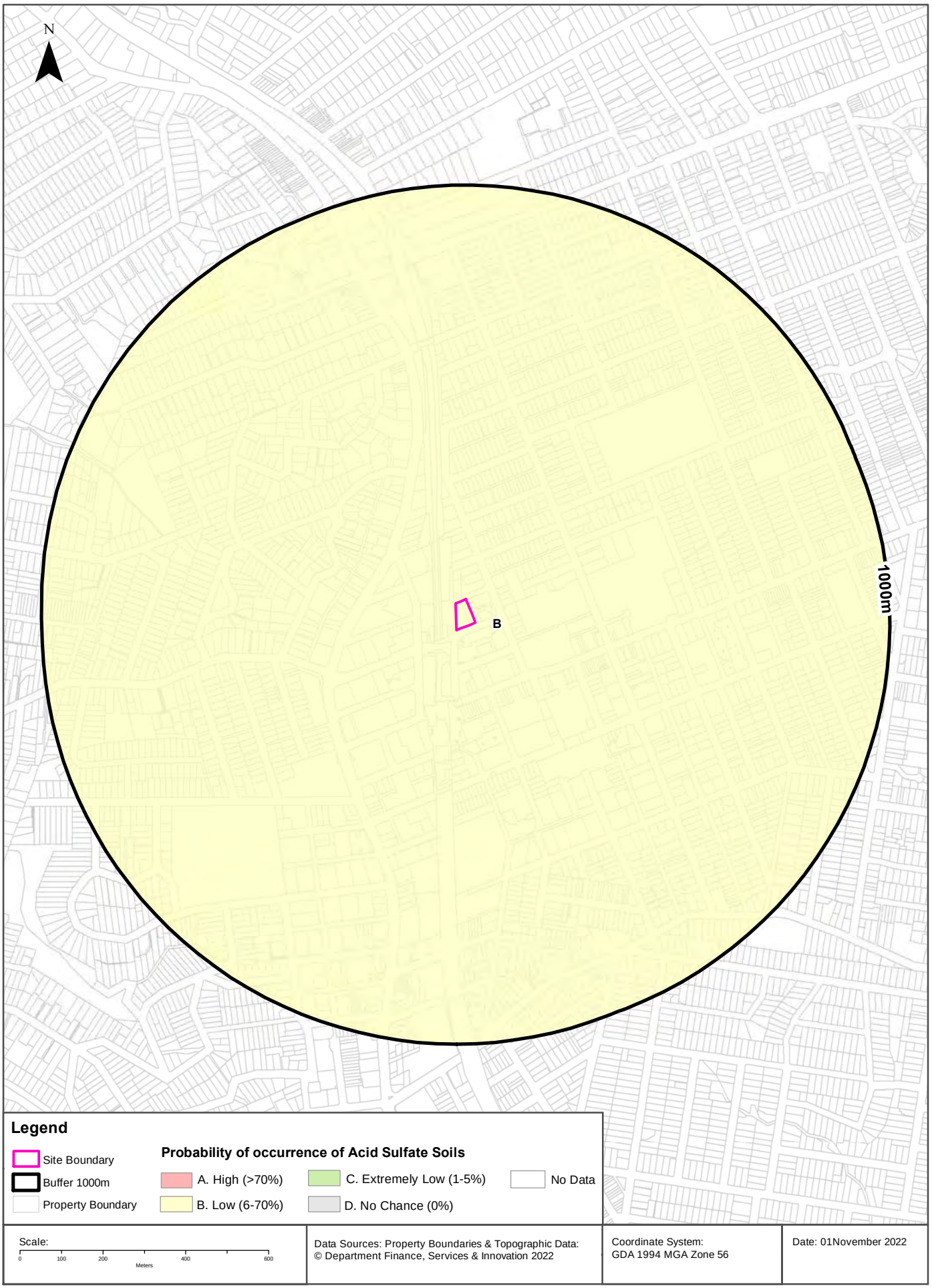
If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
None				

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Atlas of Australian Acid Sulfate Soils

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Acid Sulfate Soils

3 - 5 Help Street, Chatswood, NSW 2067

Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site

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

3 - 5 Help Street, Chatswood, NSW 2067

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A		

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

Mining

3 - 5 Help Street, Chatswood, NSW 2067

Mining Subsidence Districts

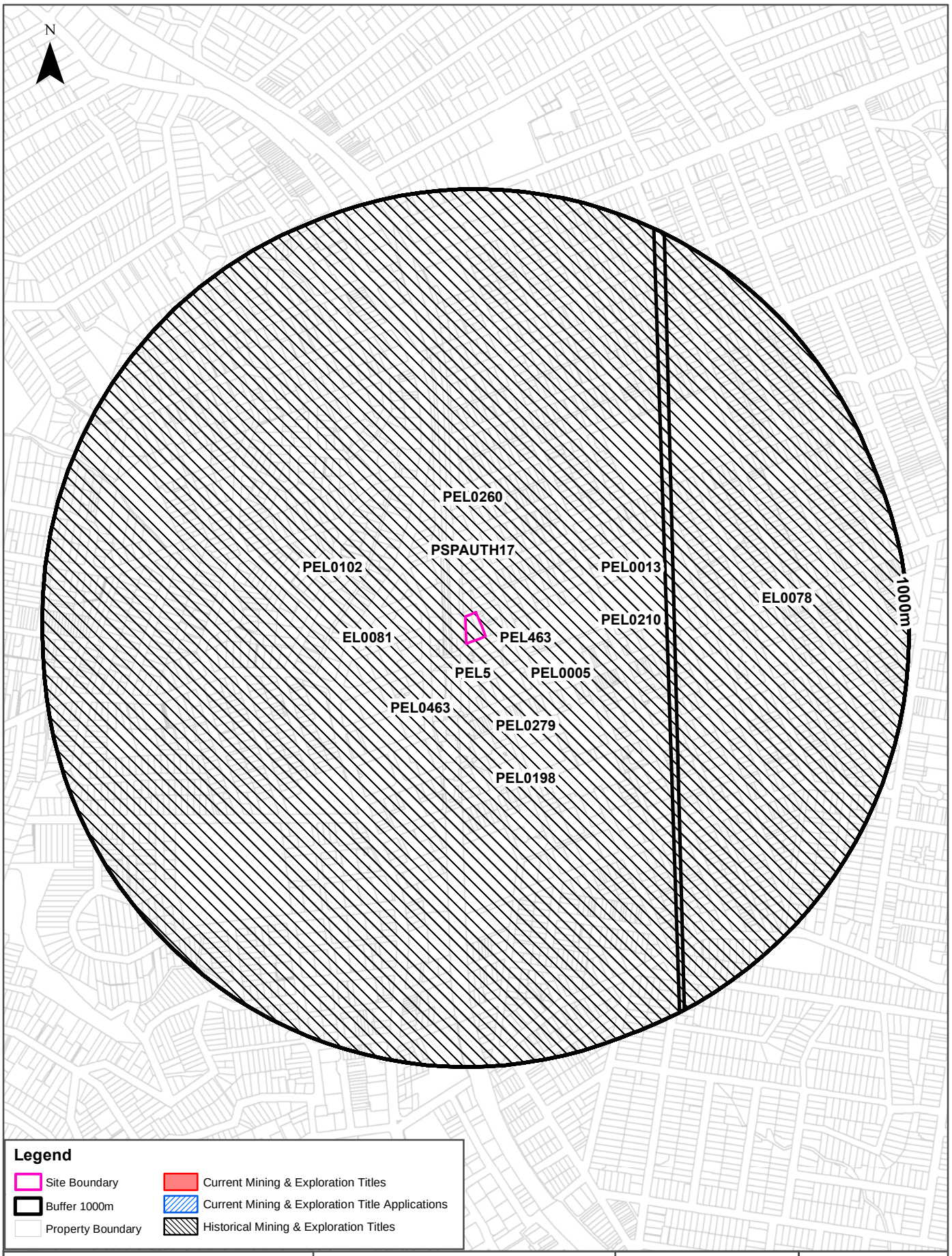
Mining Subsidence Districts within the dataset buffer:

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

3 - 5 Help Street, Chatswood, NSW 2067



Mining

3 - 5 Help Street, Chatswood, NSW 2067

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

3 - 5 Help Street, Chatswood, NSW 2067

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL0081	CONTINENTAL OIL CO OF AUSTRALIA LIMITED	19670201	19680201	MINERALS		0m	On-site
PEL0463	DART ENERGY (APOLLO) PTY LTD	20091010	20150603	PETROLEUM	Petroleum	0m	On-site
PSPAUTH17	MACQUARIE ENERGY PTY LTD	20070803	20080703	PETROLEUM	Petroleum	0m	On-site
PEL0279	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	19910504	19931111	PETROLEUM	Petroleum	0m	On-site
PEL0013	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0005	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20150403	PETROLEUM	Petroleum	0m	On-site
PEL0102	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0210	THE AUSTRALIAN GAS LIGHT COMPANY (AGL), NORTH BULLI COLLIERIES PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL0198	JOHN STREVENS (TERRIGAL) NL			PETROLEUM	Petroleum	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
PEL463	DART ENERGY (APOLLO) PTY LTD			MINERALS		0m	On-site
PEL5	AGL UPSTREAM INVESTMENTS PTY LIMITED			MINERALS		0m	On-site
EL0078	CONTINENTAL OIL CO OF AUSTRALIA LIMITED	19670201	19680201	MINERALS		429m	East

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

State Environmental Planning Policy

3 - 5 Help Street, Chatswood, NSW 2067

State Significant Precincts

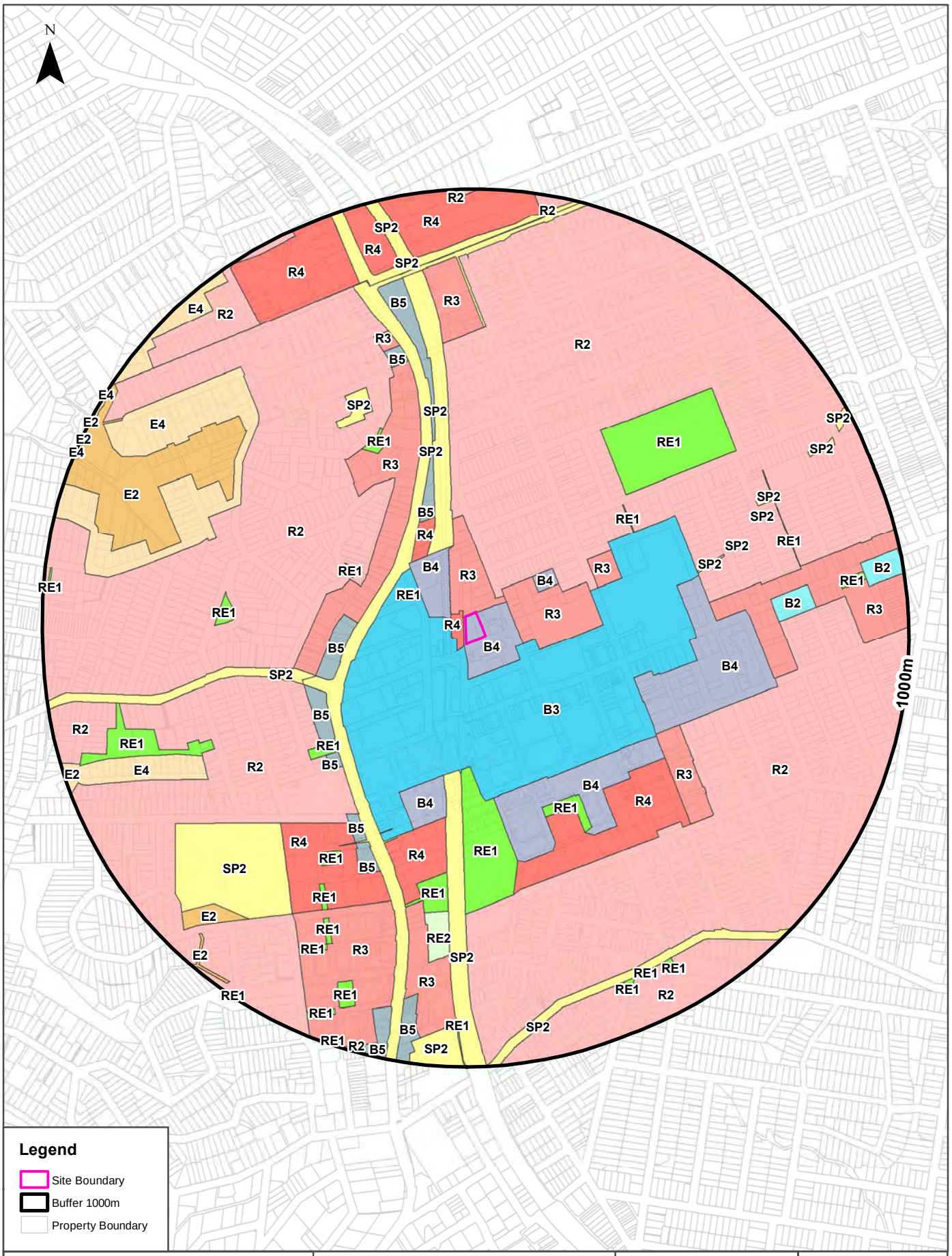
What SEPP State Significant Precincts exist within the dataset buffer?

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

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EPI Planning Zones

3 - 5 Help Street, Chatswood, NSW 2067



Environmental Planning Instrument

3 - 5 Help Street, Chatswood, NSW 2067

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
B4	Mixed Use		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		0m	On-site
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		0m	North
R4	High Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		6m	West
B3	Commercial Core		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		6m	South East
B4	Mixed Use		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		35m	North West
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		56m	North East
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		75m	East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		136m	North West
B4	Mixed Use		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		154m	North East
SP2	Infrastructure	Railway	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		166m	North
R4	High Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		169m	North West
SP2	Infrastructure	Classified Road	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		174m	West
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		208m	North West
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		247m	North
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		253m	North West
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		256m	West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		281m	North West
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		288m	North East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		290m	South
SP2	Infrastructure	Railway	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		299m	South
B4	Mixed Use		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		316m	South
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		352m	South West
B4	Mixed Use		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		362m	East
B4	Mixed Use		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		362m	South East
SP2	Infrastructure	Classified Road	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		364m	West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		387m	South West
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		396m	South West
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		396m	South West

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R4	High Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		413m	South
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		416m	North
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		416m	North East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		425m	South East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		436m	North West
R4	High Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		449m	South East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		450m	North East
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		462m	South East
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		477m	South West
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		502m	South East
R4	High Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		507m	South West
SP2	Infrastructure	Stormwater Management	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		521m	East
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		522m	South West
SP2	Infrastructure	Hospital	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		525m	North West
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		533m	East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		542m	South
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		546m	West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		572m	South West
E4	Environmental Living		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		594m	North West
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		611m	North
SP2	Infrastructure	Educational Establishment	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		611m	South West
SP2	Infrastructure	Stormwater Management	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		614m	East
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		616m	South
E2	Environmental Conservation		Willoughby Local Environmental Plan 2012	13/06/2014	13/06/2014	05/03/2021	Amendment No 1	618m	North West
RE2	Private Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		633m	South
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		634m	South
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		639m	North
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		644m	West
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		653m	North
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		659m	South West
B2	Local Centre		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		678m	East
E4	Environmental Living		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		679m	South West
SP2	Infrastructure	Stormwater Management	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		710m	East
SP2	Infrastructure	Stormwater Management	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		711m	North East

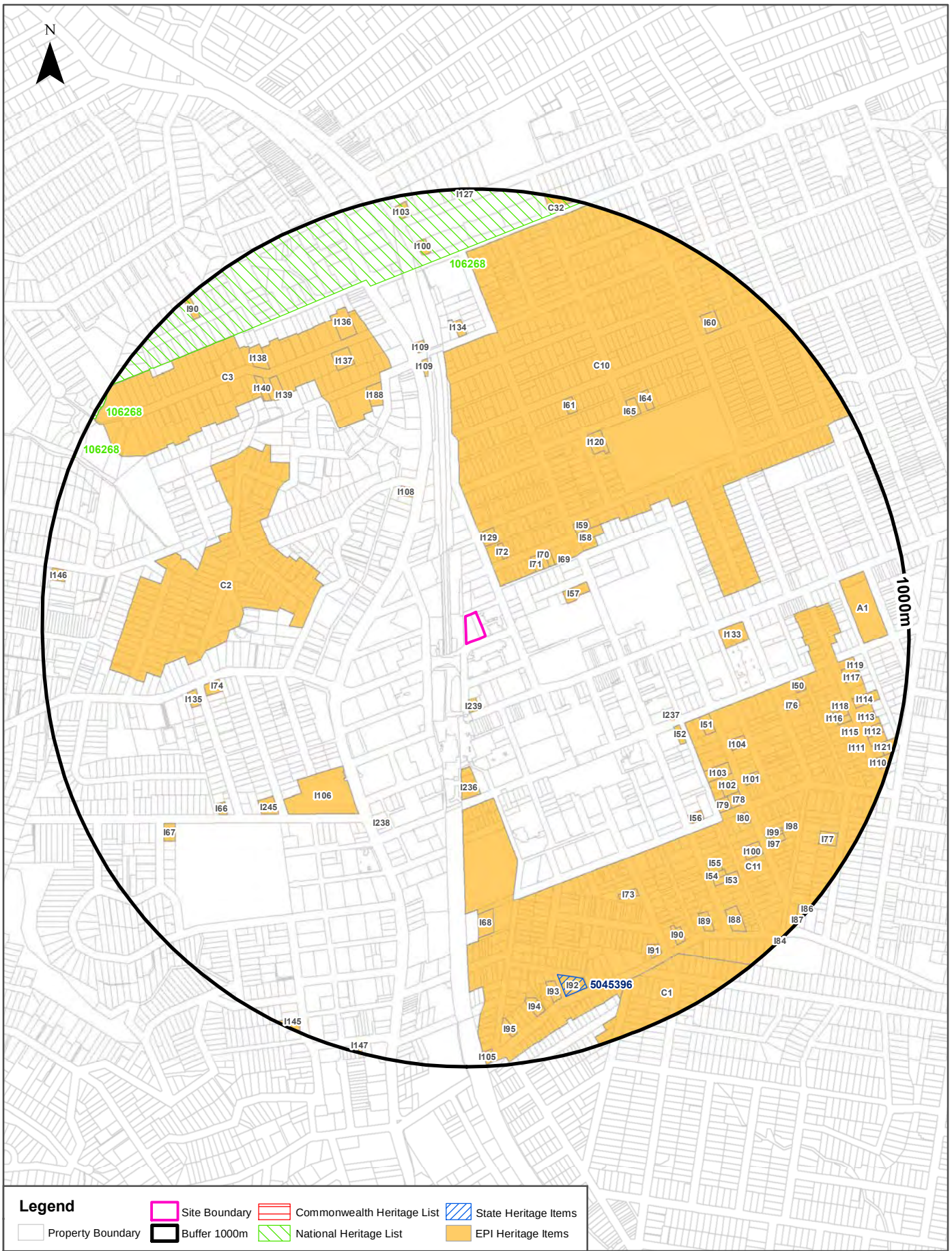
Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		723m	South West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		750m	East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		783m	South West
SP2	Infrastructure	Classified Road	Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	05/11/2021	Amendment No 21	812m	North
R4	High Density Residential		Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	05/11/2021	Amendment No 21	823m	North West
E2	Environmental Conservation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		829m	South West
R4	High Density Residential		Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	05/11/2021	Amendment No 21	831m	North
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		834m	South
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		839m	West
SP2	Infrastructure	Railway Infrastructure	Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	05/11/2021	Amendment No 21	840m	North
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		841m	South
R2	Low Density Residential		Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	05/11/2021	Amendment No 21	843m	North West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		844m	East
R4	High Density Residential		Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	05/11/2021	Amendment No 21	849m	North
SP2	Infrastructure	Stormwater Management	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		869m	North East
B5	Business Development		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		875m	South
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		876m	South East
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		876m	South East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		877m	South East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		879m	South East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		896m	South
SP2	Infrastructure	Electricity Transmission & Distribution	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		897m	South
B2	Local Centre		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		901m	East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		917m	South
E2	Environmental Conservation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		928m	South West
E4	Environmental Living		Ku-ring-gai Local Environmental Plan 2015	05/11/2021	05/11/2021	05/11/2021	Map Amendment No 1	938m	North West
SP2	Infrastructure	Stormwater Management	Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		956m	North East
R2	Low Density Residential		Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	05/11/2021	Amendment No 21	957m	North
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		976m	South
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		980m	South
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		982m	West
E2	Environmental Conservation		Ku-ring-gai Local Environmental Plan 2015	05/11/2021	05/11/2021	05/11/2021	Map Amendment No 1	990m	North West
W1	Natural Waterways		Ku-ring-gai Local Environmental Plan 2015	05/03/2015	02/04/2015	05/11/2021		990m	North West

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		990m	South West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	21/12/2012	31/01/2013	05/03/2021		997m	South

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Heritage Items

3 - 5 Help Street, Chatswood, NSW 2067



Legend

Property Boundary	Site Boundary	Commonwealth Heritage List	State Heritage Items
	Buffer 1000m	National Heritage List	EPI Heritage Items

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data:
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Heritage - NSW Crown Copyright - Planning & Environment

Coordinate System:
GDA 1994 MGA Zone 56

Date: 01 November 2022

Heritage

3 - 5 Help Street, Chatswood, NSW 2067

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
106268	National Trust Urban Conservation Areas of Kur-ring-gai	Pacific Hwy Wahroonga NSW	1/13/020/0060	Historic	Nominated place		810m	North

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
5045396	Hilton	313-315 Mowbray Road Chatswood	WILLOUGHBY	02/04/1999	00374	879	811m	South

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
C10	North Chatswood	Conservation Area - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	83m	North East
I239	Orchard Tavern (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	129m	South
I72	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	140m	North

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I129	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	156m	North
I71	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	169m	North East
I70	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	189m	North East
I69	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	203m	North East
I57	Our Lady of Dolours Church (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	207m	East
I236	Garden of Remembrance	Item - Landscape	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	290m	South
I58	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	295m	North East
I59	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	301m	North East
I108	Boarding house (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	310m	North West
C2	Blue Gum	Conservation Area - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	343m	West
C11	South Chatswood	Conservation Area - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	370m	South East
I106	Chatswood Public School	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	412m	South West
I238	Old Fire Station	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	452m	South West
I120	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	464m	North East
I237	Angophora costata (tree)	Item - Landscape	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	467m	South East
I52	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	491m	South East
I61	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	517m	North East
C3	Findlay and Wyvem Avenues	Conservation Area - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	525m	North West
I51	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	538m	East
I188	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	538m	North West
I133	Community Hospital	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	549m	East
I109	Commercial buildings	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	570m	North
I245	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	581m	South West
I74	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	587m	West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I65	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	591m	North East
I103	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	606m	South East
I104	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	623m	South East
I64	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	625m	North East
I109	Commercial buildings	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	627m	North
I68	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	628m	South
I56	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	637m	South East
I135	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	645m	West
I134	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	651m	North
I137	House (including original interiors and grounds)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	652m	North West
I102	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	655m	South East
I79	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	666m	South East
I139	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	670m	North West
I78	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	683m	South East
I66	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	683m	South West
I73	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	686m	South East
I140	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	687m	North West
I101	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	692m	South East
I136	House (including original interiors and grounds)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	714m	North West
I76	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	723m	East
I80	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	727m	South East
I50	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	731m	East
I138	House (including original interiors and circular driveway)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	745m	North West
I55	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	753m	South East

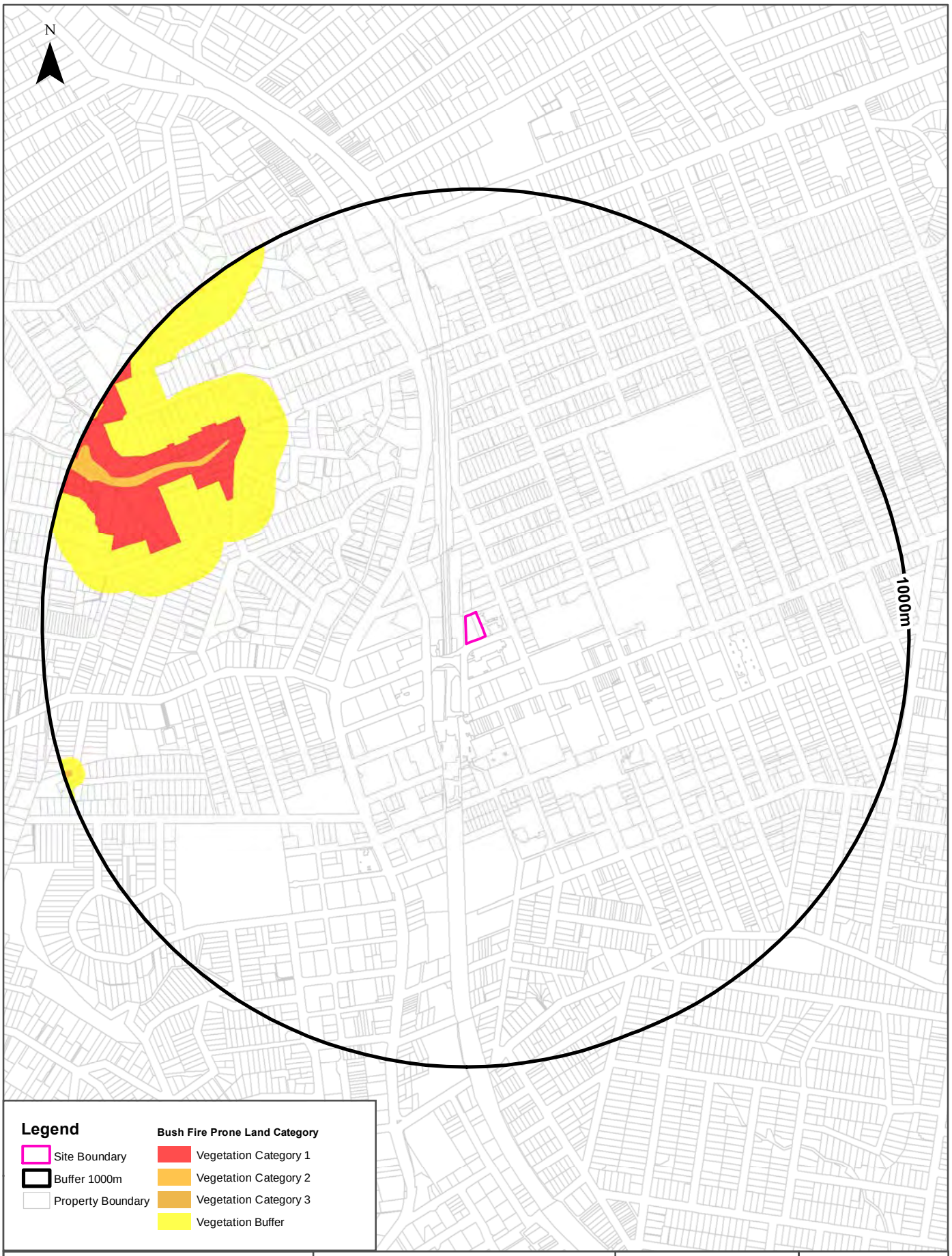
Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I54	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	773m	South East
I100	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	784m	South East
I53	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	787m	South East
I67	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	808m	South West
I99	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	808m	South East
I92	House and curtilage 'Hilton' (including original interiors, driveway and front fence)	Item - General	State	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	811m	South
I90	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	812m	South East
I98	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	813m	South East
I97	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	819m	South East
I91	House (including original interiors and front fence)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	821m	South East
I93	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	821m	South
I89	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	825m	South East
I118	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	830m	East
I116	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	838m	East
I119	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	842m	East
A1	Caroma site	Item - Archaeological	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	844m	East
I94	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	848m	South
I117	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	849m	East
I115	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	849m	East
I100	Ku-ring-gai Court, residential flat building	Item - General	Local	Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	15/07/2022	852m	North
I60	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	854m	North East
I88	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	858m	South East
C1	Artamon	Conservation Area - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	876m	South East
I114	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	877m	East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I95	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	888m	South
I113	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	902m	East
I77	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	914m	South East
I112	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	919m	East
I111	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	933m	East
I103	Beresford, dwelling house	Item - General	Local	Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	15/07/2022	945m	North
I90	Dwelliing house	Item - General	Local	Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	15/07/2022	947m	North West
I146	House (including original interiors, Bunya Pine and Moreton Bay Fig)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	949m	West
I105	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	959m	South
I121	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	963m	East
C32	Clanville Conservation Area	Conservation Area - General	Local	Ku-ring-gai Local Environmental Plan 2015	05/03/2015	02/04/2015	15/07/2022	965m	North
I110	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	965m	East
I145	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	970m	South West
I87	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	973m	South East
I147	Terrace house (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	980m	South
I127	Walthamstow, dwelling house	Item - General	Local	Ku-ring-gai Local Environmental Plan 2015	18/06/2021	28/06/2021	15/07/2022	986m	North
I86	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	993m	South East
I84	House 'Windsor Gardens' (including original interiors and garden)	Item - General	State	Willoughby Local Environmental Plan 2012	14/01/2022	14/01/2022	14/01/2022	997m	South East

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Natural Hazards - Bush Fire Prone Land

3 - 5 Help Street, Chatswood, NSW 2067



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2022. Property Boundaries: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 01 November 2022

Natural Hazards

3 - 5 Help Street, Chatswood, NSW 2067

Bush Fire Prone Land

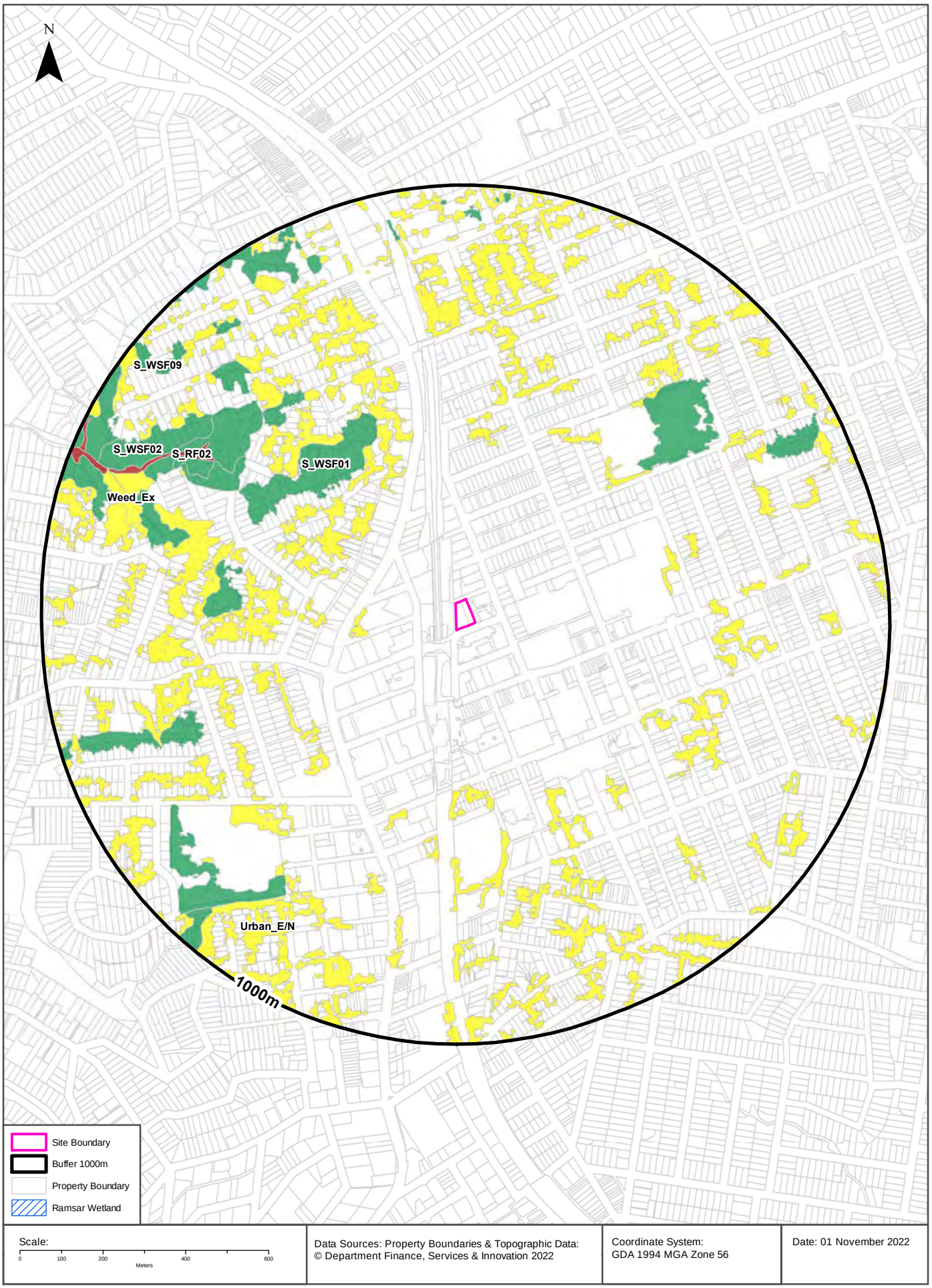
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	518m	North West
Vegetation Category 1	618m	North West
Vegetation Category 2	694m	North West

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

Ecological Constraints - Vegetation & Ramsar Wetlands

3 - 5 Help Street, Chatswood, NSW 2067



Ecological Constraints

3 - 5 Help Street, Chatswood, NSW 2067

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Dir
Urban_E/N	Urban_E/N: Urban Exotic/Native			00: Not assessed	00: Not assessed	0: Not assessed	Urban Exotic/Native	213m	West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		24: Urban and hard surface	24: Urban mixed use	4: Very high	E.salignaE.pilularis/S.glomullifera/E.paniculata/A.costata	391m	North West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		15: Grassy natives and exotics	31: Parkland open understorey	4: Very high	E.salignaE.pilularis/S.glomullifera/E.paniculata/A.costata	524m	North East
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		24: Urban and hard surface	24: Urban mixed use	4: Very high	E.saligna/S.glomuliferaE.pilularis	592m	North West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		10: Mesic/rainforest	13: Weeds	2: Moderate	E.saligna/S.glomuliferaE.pilularis	620m	North West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		15: Grassy natives and exotics	24: Urban mixed use	4: Very high	E.saligna/S.glomuliferaE.pilularis	652m	West
S_RF02	S_RF02: Coastal Sandstone Gallery Rainforest			10: Mesic/rainforest	13: Weeds	2: Moderate	C.apetalum/T.laurina/C.serratifolia	677m	North West
S_WSF02	S_WSF02: Coastal Enriched Sandstone Moist Forest			10: Mesic/rainforest	13: Weeds	2: Moderate	E.pilularis/S.glomuliferaA.costata/E.resinifera	718m	North West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		11: Semi sheltered dry/mesic	20: Previously cleared 1943	3: High	E.salignaE.pilularis/S.glomullifera/E.paniculata/A.costata	723m	South West
S_WSF02	S_WSF02: Coastal Enriched Sandstone Moist Forest			10: Mesic/rainforest	25: Edge disturbances only	1: Low	E.pilularis/S.glomuliferaA.costata/E.resinifera	755m	North West
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90%cover	782m	West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		24: Urban and hard surface	31: Parkland open understorey	4: Very high	E.salignaE.pilularis/S.glomullifera/E.paniculata/A.costata	805m	North East
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest	Blue Gum High Forest (possible)	11: Semi sheltered dry/mesic	24: Urban mixed use	4: Very high	E.salignaE.pilularis/S.glomullifera/E.paniculata/A.costata	848m	North West
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest	Blue Gum High Forest (possible)	24: Urban and hard surface	24: Urban mixed use	4: Very high	E.salignaE.pilularis/S.glomullifera/E.paniculata/A.costata	864m	North West
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest		Turpentine Ironbark Forest (possible)	11: Semi sheltered dry/mesic	24: Urban mixed use	4: Very high	E.resinifera/E.pilularis/A.costata/S.glomulifera	880m	North West
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest	Sydney Turpentine Ironbark Forest	Turpentine Ironbark Forest (possible)	11: Semi sheltered dry/mesic	24: Urban mixed use	3: High	E.paniculata/S.glomuliferaE.resinifera/E.punctata	880m	North
S_WSF01	S_WSF01: Blue Gum High Forest	Blue Gum High Forest		20: Weeds and exotics	20: Previously cleared 1943	3: High	E.saligna/S.glomuliferaE.pilularis	894m	South West
S_RF02	S_RF02: Coastal Sandstone Gallery Rainforest			10: Mesic/rainforest	13: Weeds	3: High	C.apetalum/T.laurina/C.serratifolia	900m	North West

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Dir
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest	Sydney Turpentine Ironbark Forest	Turpentine Ironbark Forest (possible)	24: Urban and hard surface	24: Urban mixed use	4: Very high	E.paniculata/S.glomuliferaE.resinifera/E.punctata	912m	North
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest	Sydney Turpentine Ironbark Forest	Turpentine Ironbark Forest (possible)	11: Semi sheltered dry/mesic	24: Urban mixed use	4: Very high	E.resinifera/E.pilularis/A.costata/S.glomulifera	935m	North West
S_WSF02	S_WSF02: Coastal Enriched Sandstone Moist Forest			10: Mesic/rainforest	13: Weeds	3: High	E.pilularis/S.glomuliferaA.costata/E.resinifera	965m	West
S_RF02	S_RF02: Coastal Sandstone Gallery Rainforest			10: Mesic/rainforest	13: Weeds	1: Low	C.apetalum/T.laurina/C.serratifolia	965m	North West

Native Vegetation of the Sydney Metropolitan Area : NSW Office of Environment and Heritage
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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

3 - 5 Help Street, Chatswood, NSW 2067

Groundwater Dependent Ecosystems Atlas

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

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

3 - 5 Help Street, Chatswood, NSW 2067

Inflow Dependent Ecosystems Likelihood

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

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

3 - 5 Help Street, Chatswood, NSW 2067

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	Heleioporus australiacus	Giant Burrowing Frog	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Pseudophryne australis	Red-crowned Toadlet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Anous stolidus	Common Noddy	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna carneipes	Flesh-footed Shearwater	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Ardenna grisea	Sooty Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	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	Calidris alba	Sanderling	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Endangered	
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Endangered Population, Vulnerable	Category 3	Endangered	
Animalia	Aves	Calyptorhynchus banksii banksii	Red-tailed Black-Cockatoo (coastal subspecies)	Critically Endangered	Category 2	Not Listed	
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	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cuculus optatus	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Diomedea exulans	Wandering Albatross	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Erythrotriorchis radiatus	Red Goshawk	Critically Endangered	Category 2	Vulnerable	
Animalia	Aves	Esacus magnirostris	Beach Stone-curlew	Critically Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Eudyptula minor	Little Penguin	Endangered Population	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	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	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	Category 3	Critically Endangered	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa limosa	Black-tailed Godwit	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Menura alberti	Albert's Lyrebird	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Nettapus coromandelianus	Cotton Pygmy-Goose	Endangered	Not Sensitive	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	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pachycephala olivacea	Olive Whistler	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	Phaethon lepturus	White-tailed Tropicbird	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Polytelis anthopeplus monarchoides	Regent Parrot (eastern subspecies)	Endangered	Category 3	Vulnerable	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Vulnerable	Not Sensitive	Endangered	
Animalia	Aves	Pterodroma solandri	Providence Petrel	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stercorarius longicaudus	Long-tailed Jaeger	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Stercorarius parasiticus	Arctic Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stercorarius pomarinus	Pomarine Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sula dactylatra	Masked Booby	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa incana	Wandering Tattler	Not Listed	Not Sensitive	Not Listed	JAMBA
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	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Gastropoda	Pommerhelix duralensis	Dural Land Snail	Endangered	Not Sensitive	Endangered	
Animalia	Insecta	Petalura gigantea	Giant Dragonfly	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Megaptera novaeangliae	Humpback Whale	Vulnerable	Not Sensitive	Vulnerable	
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	Perameles nasuta	Long-nosed Bandicoot	Endangered Population	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Not Listed	Not Sensitive	Endangered	
Animalia	Mammalia	Petaurus australis	Yellow-bellied Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pseudomys gracilicaudatus	Eastern Chestnut Mouse	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
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	
Animalia	Reptilia	Dermochelys coriacea	Leatherback Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Eretmochelys imbricata	Hawksbill Turtle	Not Listed	Not Sensitive	Vulnerable	
Animalia	Reptilia	Myuchelys bellii	Western Sawshelled Turtle, Bell's Turtle	Endangered	Not Sensitive	Vulnerable	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Uvidicolus sphyrurus	Border Thick-tailed Gecko	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Varanus rosenbergi	Rosenberg's Goanna	Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Camarophyllopsis kearneyi		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe anomala var. ianthinomarginata		Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Fungi	Flora	Hygrocybe aurantipes		Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe austropratensis		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe collucera		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe griseoramosa		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe lanecovensis		Endangered	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe reesiae		Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe rubronivea		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia clunies-rossiae	Kanangra Wattle	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia gordonii		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia terminalis subsp. Eastern Sydney	Sunshine wattle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Allocasuarina portuensis	Nielsen Park She-oak	Endangered	Category 3	Endangered	
Plantae	Flora	Amperea xiphoclada var. pedicellata		Extinct	Not Sensitive	Extinct	
Plantae	Flora	Asterolasia buxifolia		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Caladenia tessellata	Thick Lip Spider Orchid	Endangered	Category 2	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Chamaesyce psammogeton	Sand Spurge	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Cryptostylis hunteriana	Leafless Tongue Orchid	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Darwinia biflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Davidsonia jerseyana	Davidson's Plum	Endangered	Category 2	Endangered	
Plantae	Flora	Deyeuxia appressa		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Epacris purpurascens var. purpurascens		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Epacris sparsa	Sparse Heath	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus camfieldii	Camfield's Stringybark	Vulnerable	Not Sensitive	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 pulverulenta	Silver-leafed Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Genoplesium baueri	Bauer's Midge Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Grammitis stenophylla	Narrow-leaf Finger Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Grevillea caleyi	Caley's Grevillea	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Grevillea hilliana	White Yiel Yiel	Endangered	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Haloragodendron lucasii		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Hibbertia puberula		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Hibbertia spanantha	Julian's Hibbertia	Critically Endangered	Category 2	Critically Endangered	
Plantae	Flora	Hibbertia superans		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Not Sensitive	Extinct	
Plantae	Flora	Lasiopetalum joyceae		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Leptospermum deanei		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	Melaleuca biconvexa	Biconvex Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca deanei	Deane's Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Microtis angusii	Angus's Onion Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Persoonia hirsuta	Hairy Geebung	Endangered	Category 3	Endangered	
Plantae	Flora	Persoonia laxa		Extinct	Not Sensitive	Extinct	
Plantae	Flora	Pimelea curviflora var. curviflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Prostanthera marifolia	Seaforth Mintbush	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Rhizanthella slateri	Eastern Australian Underground Orchid	Vulnerable	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Sarcochilus hartmannii	Hartman's Sarcochilus	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca glandulosa		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Thelymitra atronitida	Black-hooded Sun Orchid	Critically Endangered	Category 2	Not Listed	
Plantae	Flora	Thesium australe	Austral Toadflax	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Triplarina imbricata	Creek Triplarina	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Wilsonia backhousei	Narrow-leafed Wilsonia	Vulnerable	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.

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

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

Summary of Owners Report

Address: - 3-5 Help Street, Chatswood, NSW 2067

Description: - Strata Plan 52320 & Strata Plan 134

As regards to Strata Plan 52320: -

Date of Acquisition and term held	Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
11.08.1913 (1913 to 1957)	George Charles Wilkes (Carter now Taxi Cab Proprietor)	Volume 2365 Folio 24
11.02.1957 (1957 to 1968)	James Charle Petorie (Solicitor) Charles Harvey (Farmer) (Section 94 Application not investigated)	Volume 2365 Folio 24
03.05.1968 (1968 to 1972)	The National Mutual Life Association of Australasia Limited	Volume 2365 Folio 24
10.12.1972 (1972 to 1987)	T.R. Services Pty. Ltd	Volume 2365 Folio 24
18.11.1987 (1987 to 1988)	Tolipo Pty Limited	Volume 2365 Folio 24
07.12.1988 (1988 to 1994)	North City Developments Pty. Limited	Volume 2365 Folio 24 Now 41/2602
23.09.1994 (1994 to 1996)	Pemtex Pty Ltd	41/2602
14.06.1996	Registration of Strata Plan No. 52320	
	Continued as to the Common Property Only: -	
14.06.1996 (1996 to Date)	# The Owners – Strata Plan No. 52320	41/2602 Now CP/SP52320

 # Denotes current registered proprietor(s)

Leases: -

- 03.05.1968 (L67972): Lease to T.R. Services Pty. Ltd. Merged in Fee Simple.

Easements: - NIL

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

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

As regards to Strata Plan 134: -

Date of Acquisition and term held	Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
11.08.1919 (1919 to 1941)	Catherine Sarah Stephens (Spinster)	Volume 2062 Folio 130
13.03.1941 (1941 to 1941)	Public Trustee (Transmission Application not investigated)	Volume 2062 Folio 130
02.06.1941 (1941 to 1949)	George Charles Wilkes (Taxi Cab Proprietor)	Volume 2062 Folio 130
17.01.1949 (1949 to 1960)	George Charles Wilkes (Junior) (Taxi Driver)	Volume 2062 Folio 130
25.05.1960 (1960 to 1962)	Paul Archer (Builder) Illeana Archer (Married Woman)	Volume 2062 Folio 130 Now Volume 9191 Folio 178
04.07.1962	Registration of Strata Plan No. 134	
	Continued as to the Common Property Only: -	
04.07.1962 (1962 to Date)	# The Proprietors – Strata Plan No. 134 Now # The Owners – Strata Plan No. 134	Volume 9191 Folio 178 Then Volume 8498 Folio 134 Now CP/SP135

 # Denotes current registered proprietor(s)

Leases: - NIL

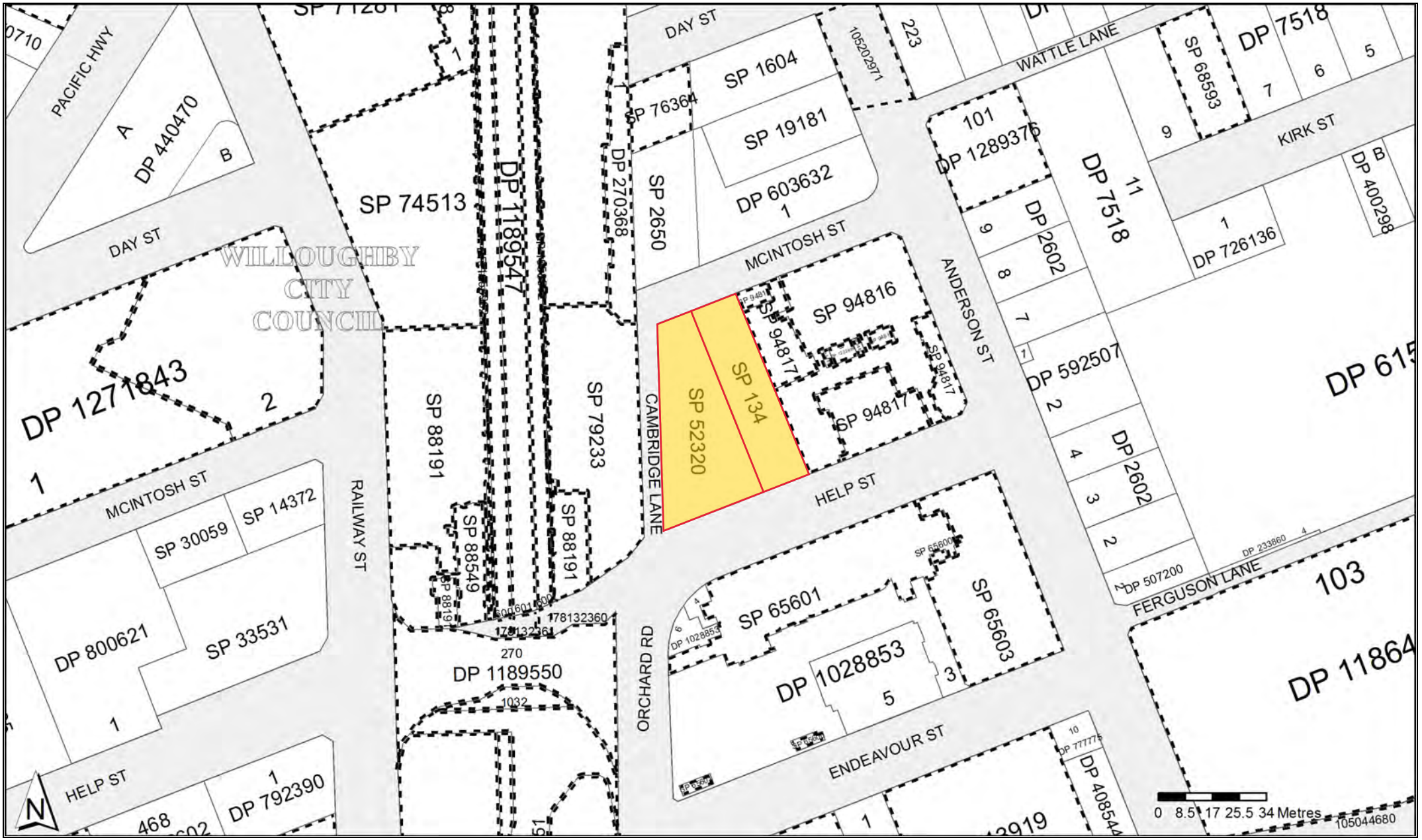
Easements: - NIL

Yours Sincerely,
Taylor Wilson
15th January 2025

Cadastral Records Enquiry Report : SP 52320

Ref : 3-5 Help Street, Chatswood

Locality : CHATSWOOD
Parish : WILLOUGHBY
LGA : WILLOUGHBY
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

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FORM 1

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

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COUNCIL'S CERTIFICATE

WILLOUGHBY CITY COUNCIL (Name of Council)

having satisfied itself that the requirements of the Strata Titles Act, 1973 (other than the requirements for the registration of plans) have been complied with, approves of the proposed

- strata plan
- ~~strata plan of subdivision~~

illustrated herein

~~* Council does not object to the encroachment of the building beyond the alignment of~~

* This approval is given on the condition that [illegible]

is/are subject to the restriction on user referred to in section 39 of the Strata Titles Act 1973

Date 1-4-96

Subdivision No. 94/0005

General Manager/Authorised Person

* Complete or delete if inapplicable

SURVEYOR'S CERTIFICATE

I, ANTHONY TODARELLO

of P.O. BOX 774, RYDE 2112

a surveyor registered under the Surveyors Act 1929, hereby certify that:

(1) each applicable requirement of Schedule 1A to the Strata titles Act 1973 has been met.

(2) *(a) the building encroaches on a public place:
*(b) the building encroaches on land (other than a public place) in respect of which encroachment an appropriate easement.....
*has been created by registered +
*is to be created under section 88B of the Conveyancing Act 1919.

(3) the survey information recorded in any accompanying location plan is accurate.

Signature

Date 14-2-96

* Delete if inapplicable

+ State whether dealing or plan, and quote registered number

This is sheet 1 of my Plan in 5 sheets.

PLAN OF SUBDIVISION OF LOT 41, D.P. 2602

LGA WILLOUGHBY Locality : CHATSWOOD

Parish : WILLOUGHBY County : CUMBERLAND

Reduction Ratio 1:400 Lengths are in metres

STRATA PLAN 52320

Registered : 16.4.1996

C.A. : Nº 94/0005 OF 1.4.1996

Purpose : STRATA PLAN

Ref. Map : U 0952 - 323*

Last Plan : DP 2602

Name of, and *address for service of notices on, the body corporate
*Address required on original strata plan only.

THE PROPRIETORS
STRATA PLAN Nº 52320
Nº 5 HELP STREET
CHATSWOOD 2067

Signatures, seals and statements of intention to create easements, restrictions on the use of land or positive covenants.

PURSUANT TO SEC. 88B OF THE CONVEYANCING ACT 1919 AND SECTION 73 STRATA TITLES ACT 1973 IT IS INTENDED TO CREATE
1. RESTRICTION AS TO USER.

The Common Seal of PEMTEX PTY LIMITED (ACN: 064 721 339) was hereunto affixed upon the 12th of April 1996 by the authority of the Board of Directors in the presence of:

SECRETARY

DIRECTOR

SIGNED, SEALED AND DELIVERED

by [illegible]

as attorney for Challenge Bank
[illegible] power of attorney
[illegible] Book 4004 no. 217 in
[illegible]

MARTIN SMETHILLS
MANAGER BANKING

[illegible] MANAGER, NSW

By executing this instrument the attorney states that the attorney has not received notice of revocation of the power of attorney

Ø - DENOTES BALCONY
Ø - DENOTES COURTYARD

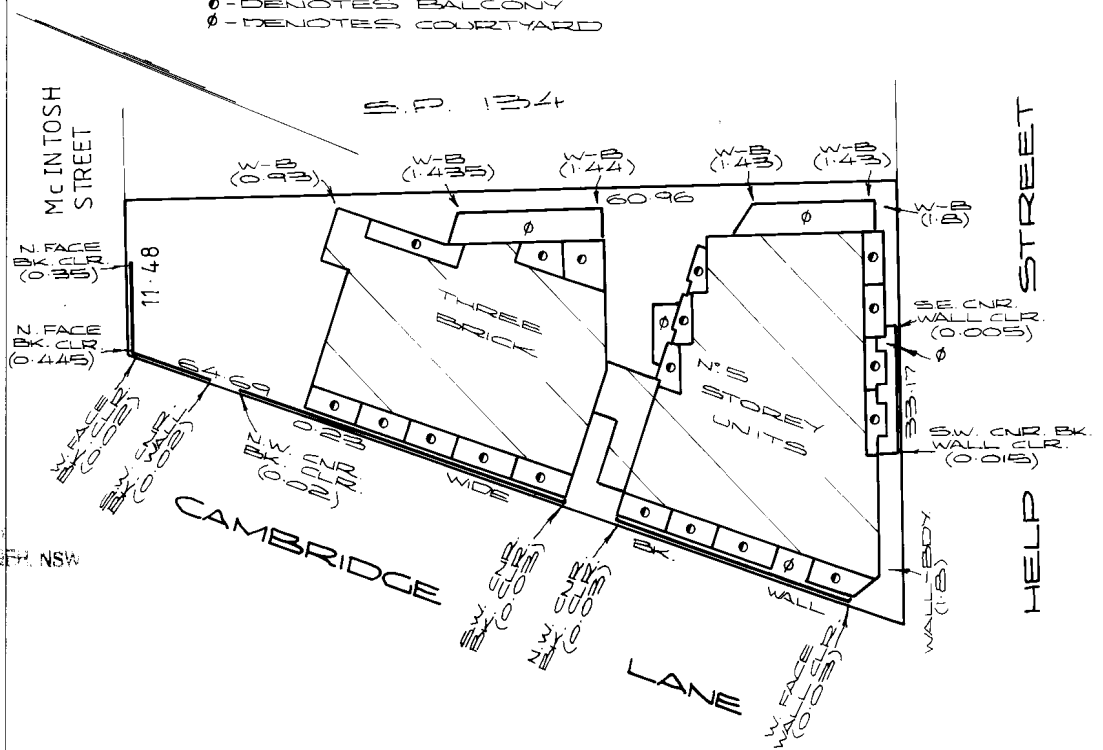


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SURVEYOR'S REFERENCE: 3106-1

Plan Drawing only to appear in this space

Plan Drawing only to appear in this space

FORM 2

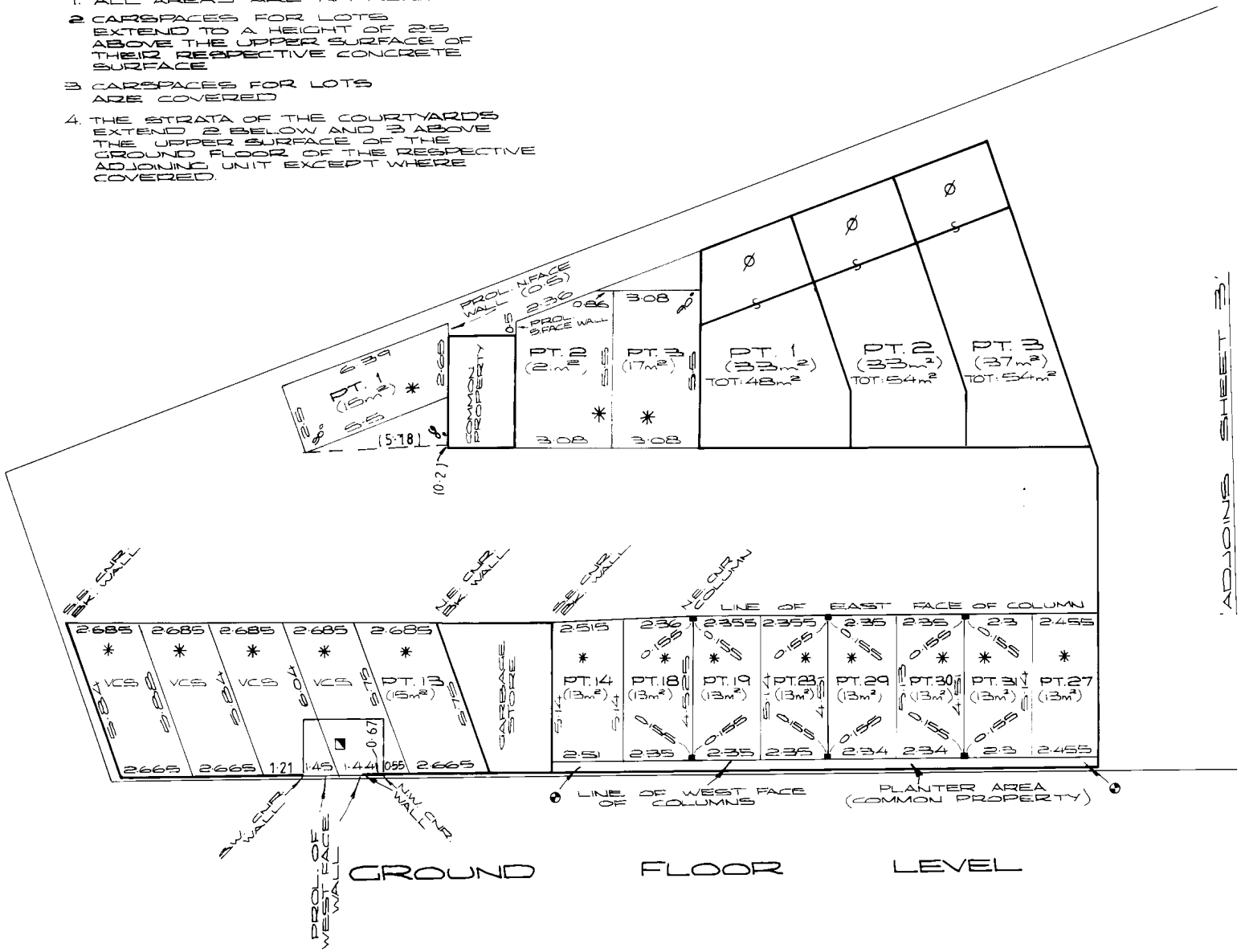
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Sheet No. 2 of 5 Sheets

STRATA PLAN 52320

Ø - DENOTES COURTYARD.
* - DENOTES CARSPACE
VCS - VISITORS CAR SPACE (COMMON PROPERTY)
▙ - LANDSCAPED AREA (COMMON PROPERTY)
◕ - DENOTES RESTRICTION AS TO USER

NOTES:
1. ALL AREAS ARE APPROXIMATE
2. CARSPACES FOR LOTS EXTEND TO A HEIGHT OF 2.5 ABOVE THE UPPER SURFACE OF THEIR RESPECTIVE CONCRETE SURFACE
3. CARSPACES FOR LOTS ARE COVERED
4. THE STRATA OF THE COURTYARDS EXTEND 2 BELOW AND 3 ABOVE THE UPPER SURFACE OF THE GROUND FLOOR OF THE RESPECTIVE ADJOINING UNIT EXCEPT WHERE COVERED.



UNIT ENTITLEMENT	
LOT	U.E.
1	24
2	24
3	24
4	22
5	22
6	22
7	22
8	22
9	22
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11	22
12	22
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35	32
AGGREGATE: 1004	

Reduction Ratio 1: 150

Lengths are in metres

Surveyor Registered under Surveyors Act 1929

General Manager/Authorised Person

SURVEYOR'S REFERENCE: 3106-1

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FORM 2

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Sheet No. 3 of 5 Sheets

STRATA PLAN 52320

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GROUND FLOOR LEVEL

NOTE:
1. ALL AREAS ARE APPROXIMATE
Ø - DENOTES COURTYARD
2. THE STRATA OF THE COURTYARDS EXTEND 2 BELOW AND 3 ABOVE THE UPPER SURFACE OF THE GROUND FLOOR OF THE RESPECTIVE ADJOINING UNIT EXCEPT WHERE COVERED

Reduction Ratio 1:150

Lengths are in metres

Surveyor Registered under Surveyors Act 1929

General Manager/Authorised Person

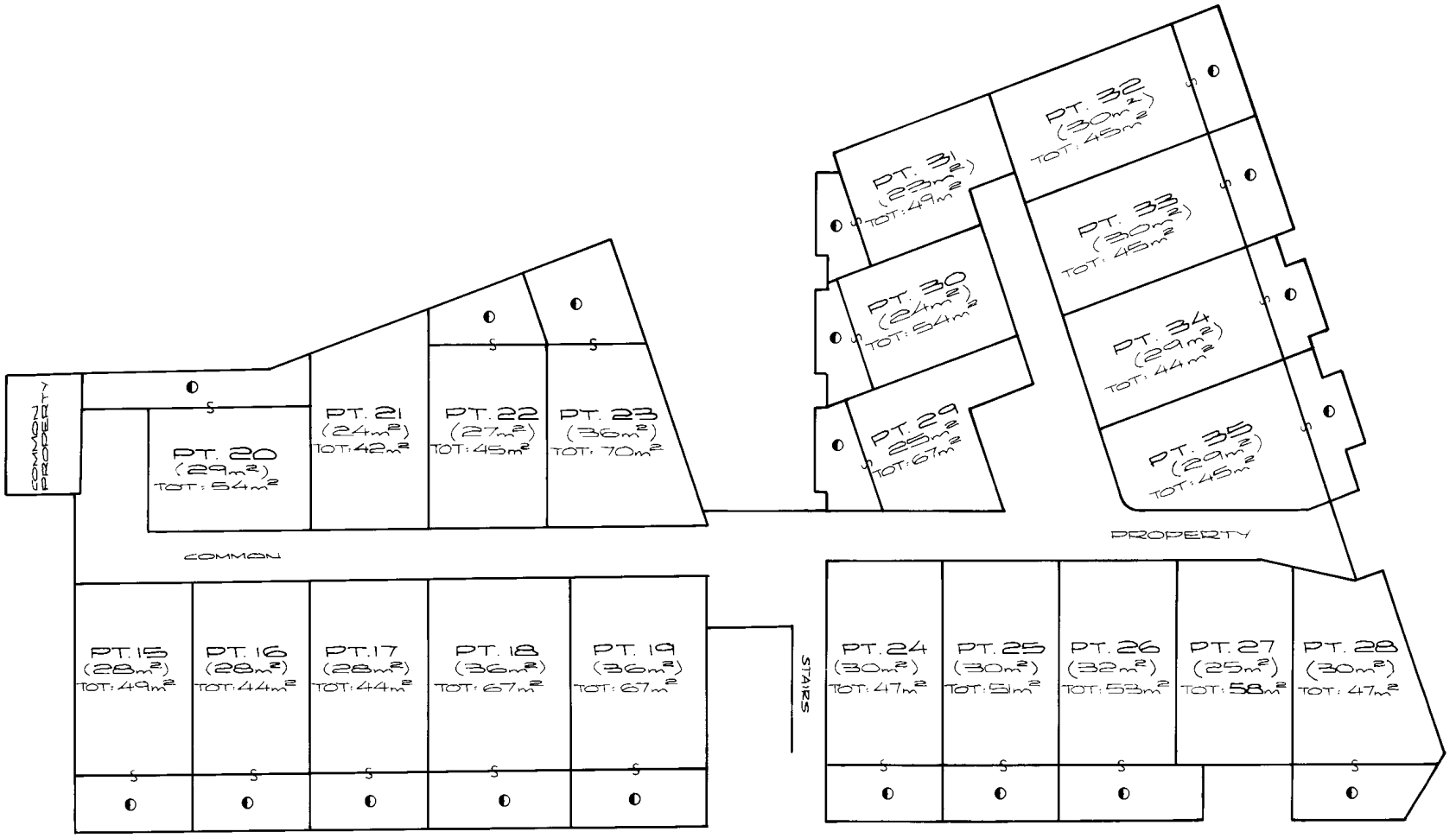
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STRATA PLAN 52320

*OFFICE USE ONLY

NOTES:
◐ – DENOTES BALCONY
1. ALL AREAS ARE APPROXIMATE
2 BALCONIES EXTEND TO A HEIGHT OF 2·5 ABOVE THE UPPER SURFACE OF THEIR RESPECTIVE FLOORS EXCEPT WHERE COVERED.



FIRST FLOOR LEVEL

Reduction Ratio 1: 150 **Lengths are in metres**

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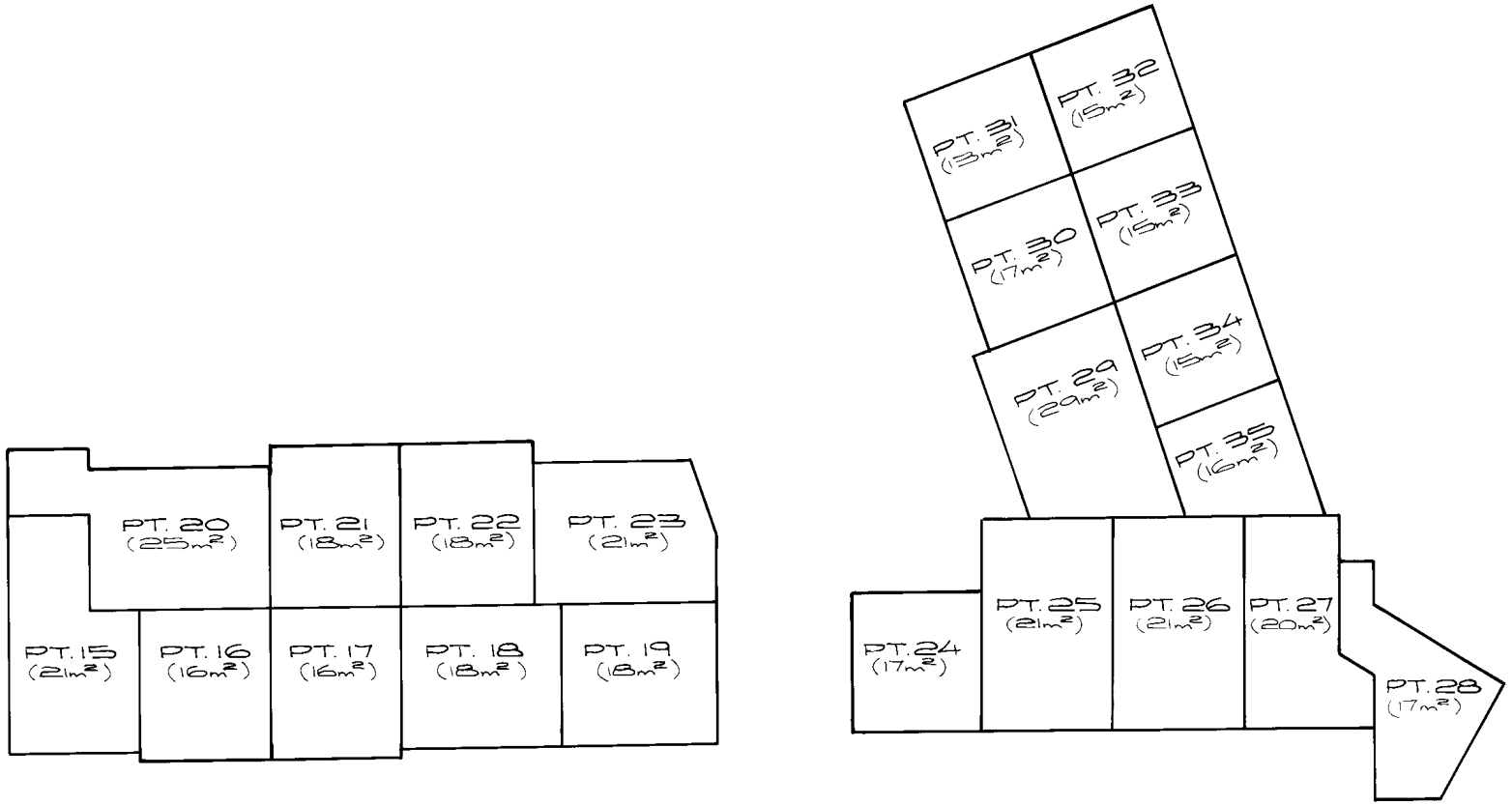
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STRATA PLAN 52320

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NOTE:

1. ALL AREAS ARE APPROXIMATE



SECOND FLOOR LEVEL

Reduction Ratio 1: 150

Lengths are in metres

Surveyor Registered under Surveyors Act 1929

General Manager/Authorised Person

SURVEYOR'S REFERENCE: 3106-1

Req:R640145 /Doc:SP 0052320 P /Rev:17-Apr-1996 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:50 /Seq:5 of 5
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

Req:R640009 /Doc:SP 0000134 P /Rev:30-Nov-2018 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:1 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

Form 1

STRATA PLAN

OFFICE USE ONLY

STRATA PLAN 134

Mun./~~Shire~~/~~City~~ Willoughby

Locality ...Chatswood

Reference to Title ~~Vol 2062 Fol 130~~ now Vol. 9191 Fol. 178.

Parcel comprises(a) Whole of (b) Lot 40

in Deposited Plan No 2602

Registered: 24/7

C.A.: 2 of 14/3/1962

Ref Map: WILLOUGHBY SHT 11

Last Plan: D.P. 2602

Parish Willoughby County Cumberland

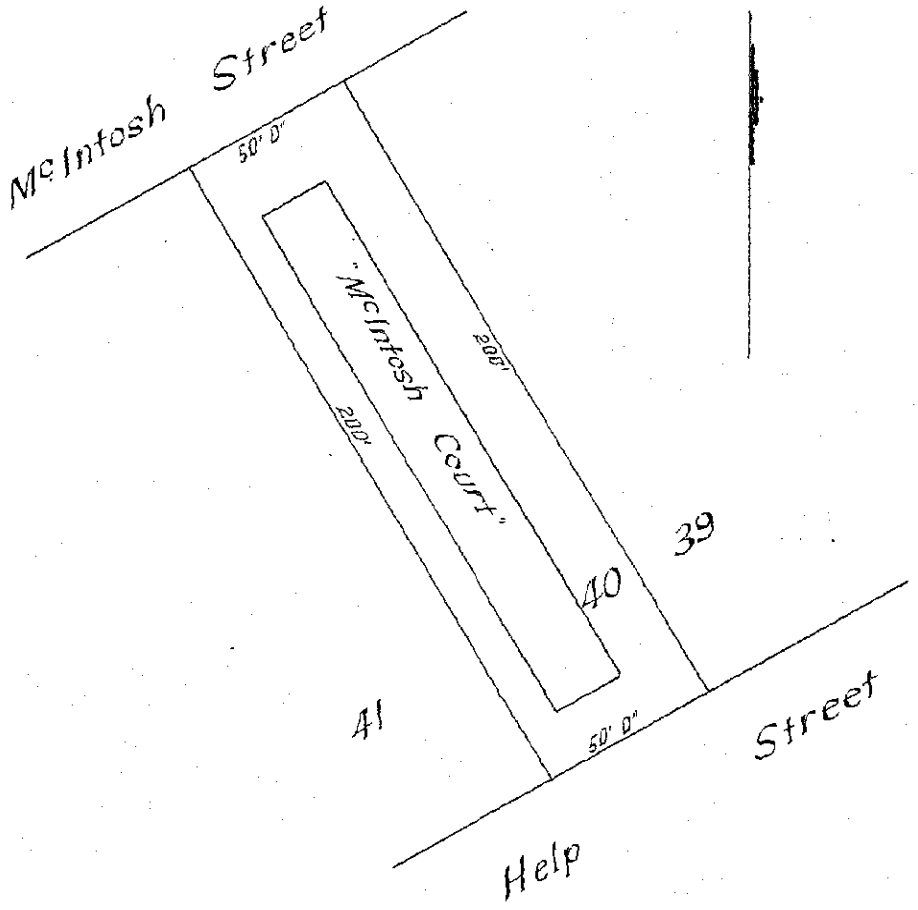
The address for service of notices on the body corporate is – No 3 "McIntosh Court" Help Street Chatswood

(a) State if whole or part.

(b) Refer to number of Lot, Allotment, or Portion and to the Deposited Plan, Town, or as the case may be

External surface boundaries of the parcel and location of the building in relation thereto to be delineated in space opposite

Appn 5875 Pt. of 200 ac. & Por 29 (Pt.) Grd. to Isaac Nichols on 18th December 1854
Vol. 9191 Fol. 178.



Scale: 40 feet to an inch

Schedule of Unit Entitlement		OFFICE USE ONLY Current C's of T.
Lot No.	Unit Entitlement	Vol. Fol.
1	425	9227-202
2	425	9227-203
3	375	9227-204
4	375	9227-205
5	425	9227-206
6	425	9227-207
7	425	9227-208
8	425	9227-209
9	375	9227-210
10	375	9227-211
AGGREGATE		

I, Cedric Richard Glanville

of 1 Help Street, Chatswood

a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that:

(1) the building erected on the parcel described above is within the external boundaries of the parcel(c) ~~subject to those (a) of the said Act~~; (2)(c) ~~eaves or guttering of the building project beyond such external boundaries and an appropriate easement has been granted as an appurtenance of the parcel by registered Transfer No.~~

Dated 6th February 1962

Signature C R Glanville

(c) Delete if inappropriate

Approved by the Council for the purposes of the Conveyancing (Strata Titles) Act, 1961.

Date 14th March 1962

Subdivision No. [illegible]

Council Clerk

Req:R640009 /Doc:SP 0000134 P /Rev:30-Nov-2018 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:2 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

Strata Plan No 134
Annexure

Schedule of Unit Entitlement		Office use only Current C/s of T.
Lot No	Unit Entitlement	Vol. Fol
11	425	9227-212
12	425	9227-213
13	425	9227-214
14	425	9227-215
15	375	9227-216
16	375	9227-217
17	425	9227-218
18	425	9227-219
19	25	9227-220
20	25	9227-221
21	30	9227-222
22	25	9227-223
23	25	9227-224
24	25	9227-225
25	25	9227-226
26	30	9227-227
27	25	9227-228
Aggregate	7585 /	

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

STRATA PLAN 134

FEET	INCHES	METRES
3	-	0.915
8	6	2.59
8	10	2.69
9	6	2.895
10	6 1/2	3.215
10	8	3.25
50	-	15.24
200	-	60.96

SQ FT	SQ M
49.7	4.6
58.4	5.4
216	20.1
220	20.4
296	27.5
495	46
497	46.2
580	53.9
582	54.1
584	54.3
600	55.7
601	55.8
604	56.1

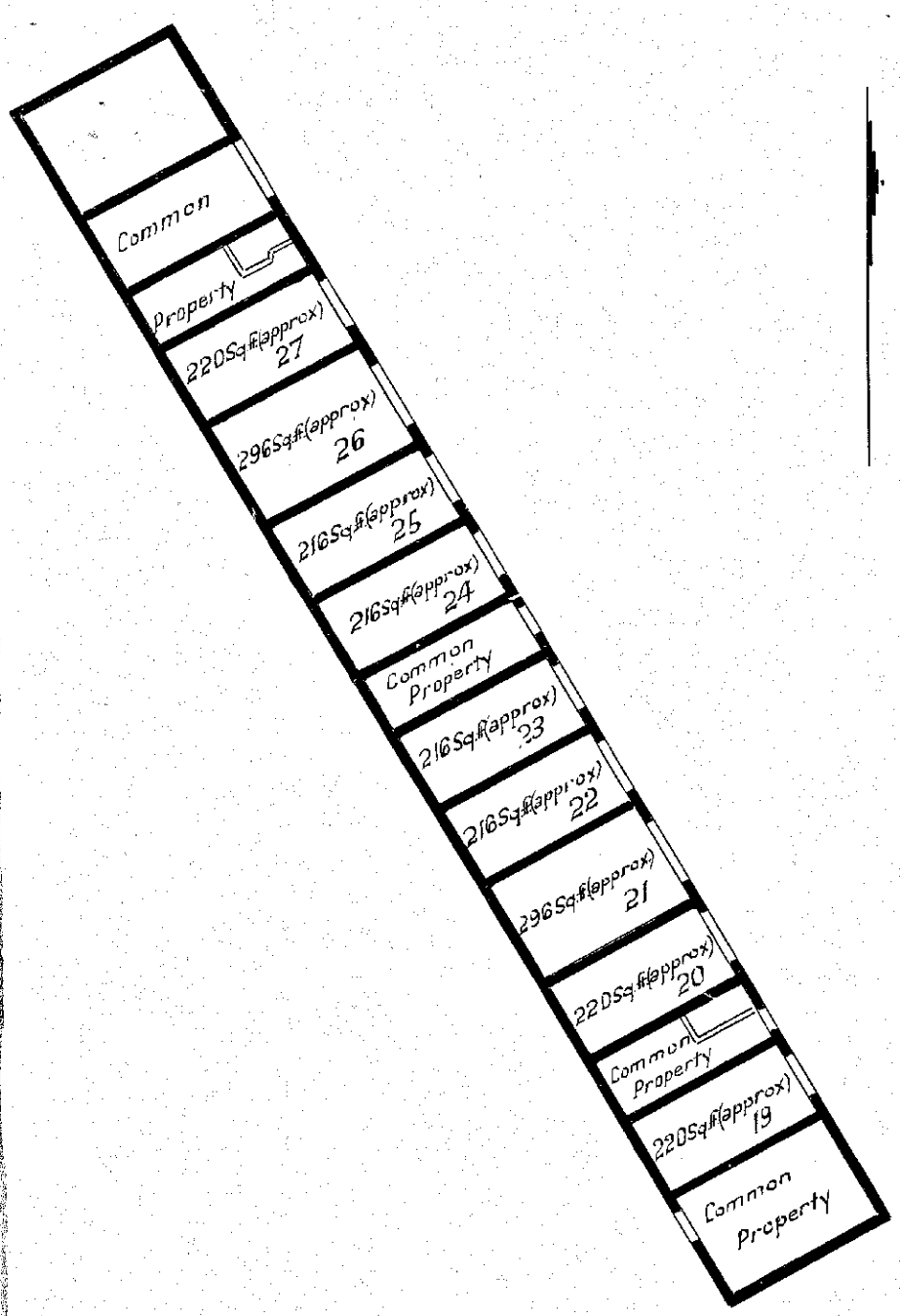
H. J. Reid
Council Clerk

No. 2. 14/9/62.

Req:R640009 /Doc:SP 0000134 P /Rev:30-Nov-2018 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:3 of 6
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Strata Plan No 134

Basement



Council Clerk

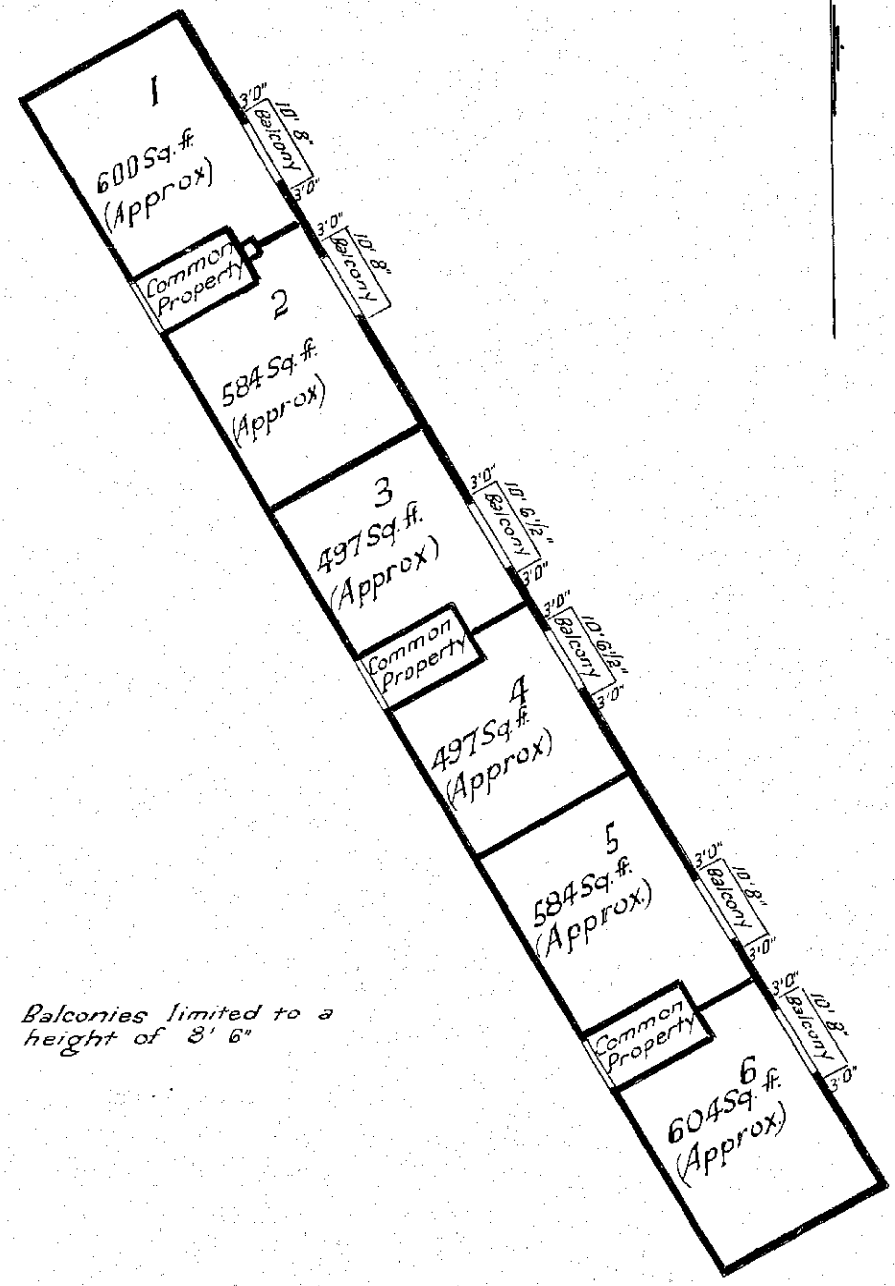
No. 2. 14/3/62

Req:R640009 /Doc:SP 0000134 P /Rev:30-Nov-2018 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:4 of 6
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

Sheet 4 of 6 Sheets

Strata Plan Nº 134

Ground Floor



Balconies limited to a height of 8' 6"

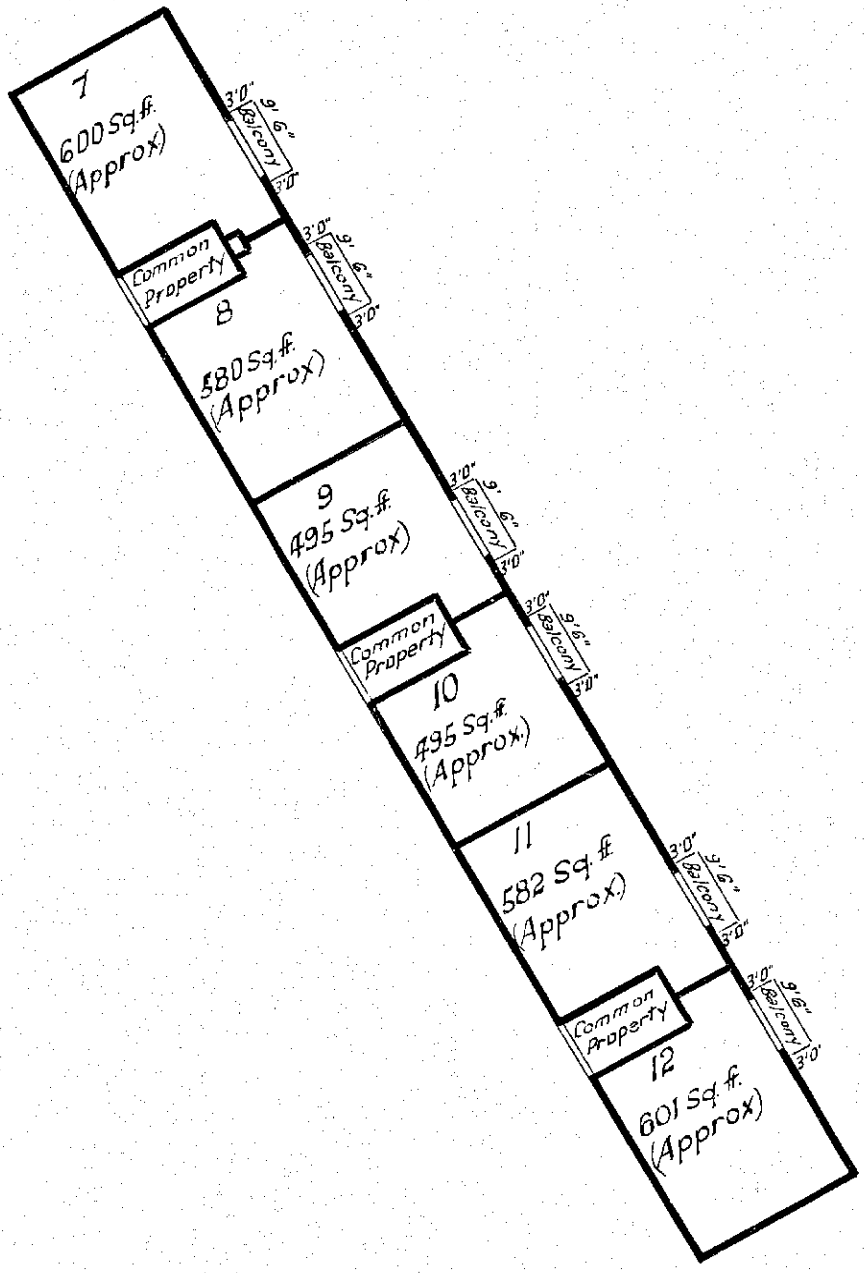
F. J. Reid
Council Clerk

No. 3. 12/3/62.

Req:R640009 /Doc:SP 0000134 P /Rev:30-Nov-2018 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:5 of 6
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Strata Plan No 134

First Floor



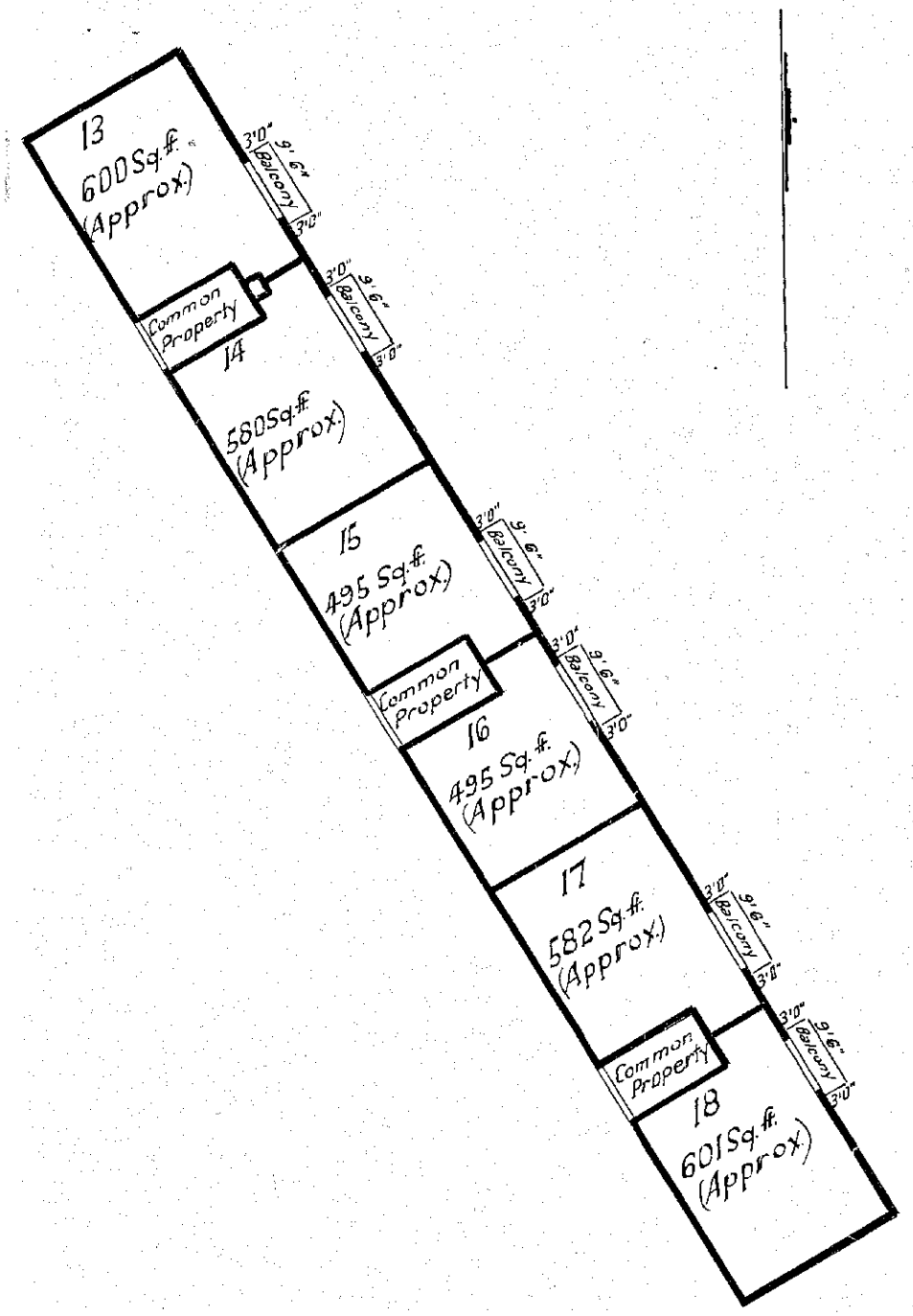
H. Reid
Council Clerk
No. 2. 14/3/62.

Req:R640009 /Doc:SP 0000134 P /Rev:30-Nov-2018 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:6 of 6
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Strata Plan No 134

Sheet 6 of 6 Sheets

Second Floor



Areas of lots shown include area of balconies. (Surveyor phoned Cty.)

J. J. Reis
Council Clerk
No. 2. 12/3/63.

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/1/2025 1:35PM

FOLIO: 41/2602

First Title(s): OLD SYSTEM
Prior Title(s): VOL 2365 FOL 24

Recorded	Number	Type of Instrument	C.T. Issue
2/3/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
14/2/1990	Y788101	TRANSFER OF MORTGAGE	FOLIO CREATED EDITION 1
28/6/1990	Z100015	DEPARTMENTAL DEALING	
23/5/1991	Z658383	SUB-MORTGAGE	
23/11/1992	E913525	TRANSFER OF MORTGAGE	EDITION 2
23/8/1993	I584452	CAVEAT	
1/8/1994	U491025	WITHDRAWAL OF CAVEAT	
1/8/1994	U491026	DISCHARGE OF MORTGAGE	
1/8/1994	U491027	CAVEAT	
23/9/1994	U647000	WITHDRAWAL OF CAVEAT	
23/9/1994	U647001	TRANSFER BY MORTGAGEE UNDER POWER OF SALE	
23/9/1994	U647002	MORTGAGE	EDITION 3
9/2/1995	O6134	VARIATION OF MORTGAGE	EDITION 4
3/3/1995	O61999	DISCHARGE OF MORTGAGE	
3/3/1995	O62000	MORTGAGE	EDITION 5
13/3/1996	2013146	DEPARTMENTAL DEALING	
16/4/1996	SP52320	STRATA PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Received: 15/01/2025 13:35:53

Req:R640005 /Doc:DL U647001 /Rev:18-Mar-2010 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:1 of 1
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street Chatswood

97-01T

TRANSFER

Section 58 Real Property Act, 1900

U 647001 M

Office of State Revenue use only

(A) **LAND TRANSFERRED**

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

FOLIO IDENTIFIER 41/2602

(B) **LODGED BY**

L.T.O. Box	Name, Address or DX and Telephone
	REFERENCE (max. 15 characters):

(C) **TRANSFEROR** **ROSSFIELD NOMINEES PTY LTD (ACN 000 351 173)**
being the mortgagee in MORTGAGE Y280700 dated 30 December 1988 from the registered proprietor of the above Land

(D) acknowledges receipt of the consideration of **$2,000,000.00** and in exercise of power of sale under that Mortgage transfers an estate in fee simple in the above Land to the Transferee.
~~and as regards the land specified above transfers to the Transferee an estate in fee simple~~

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

(F) **TRANSFEREE**

T P

PEMTEX PTY LTD (ACN 064 721 339)

(G) **TENANCY:**

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATED** 22 JULY 1994

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

The common seal of **ROSSFIELD NOMINEES PTY LIMITED** (ACN 000 351 173) was hereunto affixed pursuant to an order of the Board of Directors, in the presence of:

ROSSFIELD NOMINEES PTY. LIMITED THIS IS A COPY OF THE COMMON SEAL

~~Signature of Witness~~

~~Name of Witness (BLOCK LETTERS)~~

~~Address of Witness~~

Secretary

~~Signature of Transferor~~

Director

Signed in my presence by the Transferee who is personally known to

~~Signature of Witness~~

~~Name of Witness (BLOCK LETTERS)~~

~~Address of Witness~~

may be accepted for registration subject to requisition

lodged for registration 20/9/94

J. K. Osborne (J. K. Osborne)

~~Signature of Transferee~~ Solicitor

LETVJH207.7.JB

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only)

Ausdoc Commercial and Law Stationers 1991

OFF M ~~Y280700~~ Y280700
OFF M Y788100

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: CP/SP52320

SEARCH DATE	TIME	EDITION NO	DATE
15/1/2025	1:35 PM	7	25/1/2018

LAND

THE COMMON PROPERTY IN THE STRATA SCHEME BASED ON STRATA PLAN 52320 WITHIN THE PARCEL SHOWN IN THE TITLE DIAGRAM

AT CHATSWOOD
LOCAL GOVERNMENT AREA WILLOUGHBY
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM SHEET 1 SP52320

FIRST SCHEDULE

THE OWNERS - STRATA PLAN NO. 52320
ADDRESS FOR SERVICE OF DOCUMENTS:
THE OWNERS-STRATA PLAN 52320
LOCKED BAG 1919
ST LEONARDS
NSW 1590

SECOND SCHEDULE (5 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 SP52320 RESTRICTION(S) ON THE USE OF LAND
3 AN69252 CONSOLIDATION OF REGISTERED BY-LAWS
4 AN69252 INITIAL PERIOD EXPIRED
* 5 AN186381 THIS STRATA SCHEME IS THE SUBJECT OF A STRATA RENEWAL PLAN FOR WHICH THE REQUIRED LEVEL OF SUPPORT HAS BEEN RECEIVED - SEE SECTION 176 STRATA SCHEMES DEVELOPMENT ACT 2015

SCHEDULE OF UNIT ENTITLEMENT (AGGREGATE: 1004)

STRATA PLAN 52320

LOT	ENT	LOT	ENT	LOT	ENT	LOT	ENT
1	24	2	24	3	24	4	22
5	22	6	22	7	22	8	22
9	22	10	22	11	22	12	22
13	24	14	24	15	32	16	32
17	32	18	34	19	34	20	32
21	32	22	32	23	34	24	32
25	32	26	32	27	34	28	32
29	34	30	34	31	34	32	32
33	32	34	32	35	32		

END OF PAGE 1 - CONTINUED OVER

FOLIO: CP/SP52320 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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Req:R640046 /Doc:CT 09191-178 CT /Rev:10-Jan-2011 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:38 /Seq:1 of 2
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09191178

M

NEW SOUTH WALES

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

[redacted]TIFICATE OF TITLE

[redacted]PERTY ACT, 1900, as amended.

Vol. 9191 Fol. 178

1st Edition issued 1-6-1962.

MMc J9937

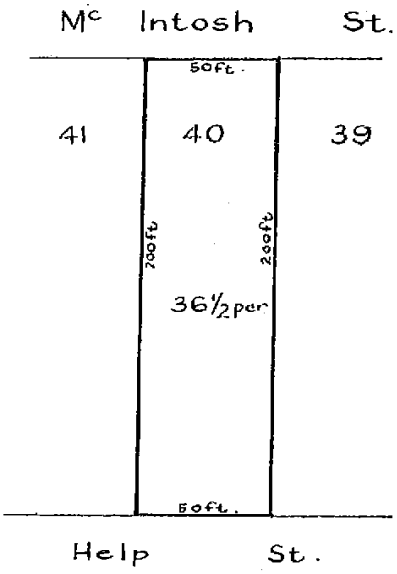
(Page 1) Vol. 9191 Fol. 178

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 Davenport

Registrar-General.

PLAN SHOWING LOCATION OF LAND



J9937

Scale: 60feet to an inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 40, Deposited Plan 2602, at Chatswood, Municipality Willoughby, Parish Willoughby County Cumberland.

Registrar General.

FIRST SCHEDULE (Continued overleaf)

PAUL ARCHER, of Lindfield, Builder, and ILLEANA ARCHER, 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.

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.

Vol. 9191 Fol 178

70929 | 62 ST 1609 V. C. N. BIGHT, GOVERNMENT PRINTER

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General

H997421 STRATA PLAN

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
Mortgage	H997421	23-2-1962.	to Southern Pacific Insurance Company Limited Part Certificate C.T. for Lands Vol 5° 134. being whole. This deed is cancelled as to the whole by ~~Deposited~~ State Plan No. 13-4 Date 1.6.27 Vol. 9227 Fol 202 & 228 respectively	12-6-1962	Jmwatson	

REGISTRAR GENERAL

(Page 2 of 2 pages)

FORM No. 184A

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

Req:R640046 /Doc:CT 09191-178 CT /Rev:10-Jan-2011 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:38 /Seq:2 of 2
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

CERTIFICATE OF TITLE

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

TORRENS TITLE

CANCELLED

Vol. 8498 Fol. 134

SEE AUTO FOLIO

Edition Issued 6-12-1974

Appln.No.5875 OS

Prior Title Vol.9191 Fol.178

8498 Fol. 134

(Page 1) Vol.

I certify that The Proprietors - Strata Plan No. 134 is the registered proprietor of an Estate in Fee Simple in the common property in the strata scheme relating to the Strata Plan so numbered, within the land herein described, subject nevertheless to the exceptions encumbrances and interests recorded hereon and to the reservations and conditions, if any, contained in the Crown grant.

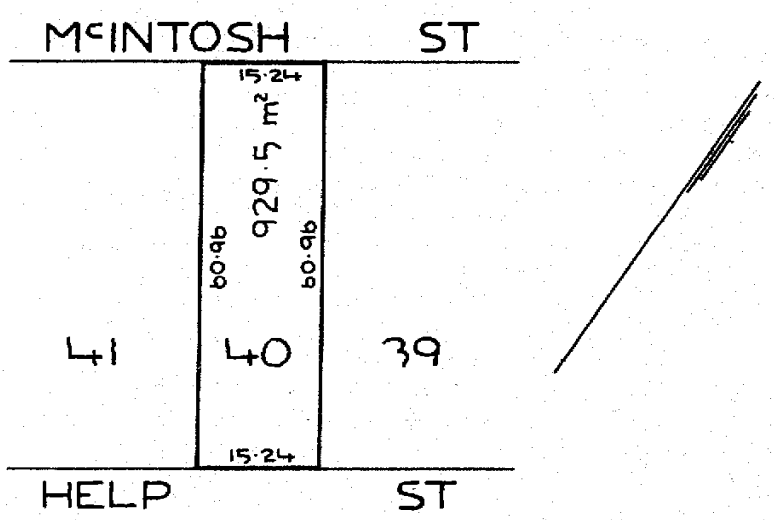
S

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

REDUCTION RATIO 1:800



ADDRESS FOR SERVICE OF NOTICES 3 HELP ST., CHATSWOOD. 2067.

S LAND REFERRED TO Lot 40 in Deposited Plan 2602 at Chatswood in the Municipality of Willoughby Parish of Willoughby and County of Cumberland, being part of Portion 294 granted to Isaac Nichols on 18-12-1805.

GRY EXCEPTIONS ENCUMBRANCES AND INTERESTS REFERRED TO Nil.

SCHEDULE OF UNIT ENTITLEMENT Aggregate unit entitlement: 7585

Lot No.	Strata Plan No.	Unit Entitlement	Lot No.	Strata Plan No.	Unit Entitlement
1	134	425	21	134	30
2	"	425	22	"	25
3	"	375	23	"	25
4	"	375	24	"	25
5	"	425	25	"	25
6	"	425	26	"	30
7	"	425	27	"	25
8	"	425			
9	"	375			
10	"	375			
11	"	425			
12	"	425			
13	"	425			
14	"	425			
15	"	375			
16	"	375			
17	"	425			
18	"	425			
19	"	25			
20	"	25			

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 AN

RG 2/94

Req:R640008 /Doc:CT 08498-134 CT /Rev:04-Mar-2011 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:3 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

Req:R640008 /Doc:CT 08498-134 CT /Rev:04-Mar-2011 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:4 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

Vol. 8498 Fol. 134

AFTER REGN REFER ALL DLGS & PLANS TO ST30

RECORDINGS (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

TORRENS TITLE
Register

Vol. 8498 Fol. 134

Issued 1-7-1970 CANCELLED

See new edition

Fol. 134

I certify that The Proprietors—Strata Plan No. 134 is the registered proprietor of an Estate in Fee Simple in the common property in the Strata Plan so numbered subject nevertheless to the exceptions, encumbrances and interests recorded hereon.

Registrar General.

(Page 1) Vol. 8498

ADDRESS FOR SERVICE OF NOTICES: See Strata Plan above referred to.

EXCEPTIONS ENCUMBRANCES AND INTERESTS REFERRED TO

1. Reservations and conditions, if any, contained in the Crown grant of the land comprised in the Strata Plan above referred to.
2. Easements, if any, benefiting or burdening the parcel and restrictions as to user, if any, burdening the parcel and other interests notified on the Strata Plan above referred to by virtue of the provisions of the Conveyancing (Strata Titles) Act, 1961.

SCHEDULE OF UNIT ENTITLEMENT: See Strata Plan above referred to.

Registrar General.

CANCELLED
See new edition issued 6-12-74
Vol 8498 Fol 134

REGISTRAR GENERAL

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

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Req:R640008 /Doc:CT 08498-134 CT /Rev:04-Mar-2011 /NSW LRS /Pgs:ALL /Prt:15-Jan-2025 13:36 /Seq:2 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:3-5 Help Street? Chatswood

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: CP/SP134

SEARCH DATE	TIME	EDITION NO	DATE
15/1/2025	1:35 PM	-	-

VOL 8498 FOL 134 IS THE CURRENT CERTIFICATE OF TITLE

LAND

THE COMMON PROPERTY IN THE STRATA SCHEME BASED ON STRATA PLAN 134 WITHIN THE PARCEL SHOWN IN THE TITLE DIAGRAM

AT CHATSWOOD
LOCAL GOVERNMENT AREA WILLOUGHBY
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM SHEET 1 SP134

FIRST SCHEDULE

THE OWNERS - STRATA PLAN NO. 134
ADDRESS FOR SERVICE OF DOCUMENTS:
3 HELP ST
CHATSWOOD 2067

SECOND SCHEDULE (3 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
* 2 ATTENTION IS DIRECTED TO BY-LAWS SET OUT IN SCHEDULE 2 STRATA SCHEMES MANAGEMENT REGULATION 2016
* 3 ATTENTION IS DIRECTED TO CLAUSE 3 SCHEDULE 4 STRATA SCHEMES (FREEHOLD DEVELOPMENT) ACT 1973 REGARDING BOUNDARIES BETWEEN LOTS AND COMMON PROPERTY IN STRATA SCHEMES REGISTERED BEFORE 1-7-1974

SCHEDULE OF UNIT ENTITLEMENT (AGGREGATE: 7585)

STRATA PLAN 134

LOT	ENT	LOT	ENT	LOT	ENT	LOT	ENT
1	425	2	425	3	375	4	375
5	425	6	425	7	425	8	425
9	375	10	375	11	425	12	425
13	425	14	425	15	375	16	375
17	425	18	425	19	25	20	25
21	30	22	25	23	25	24	25
25	25	26	30	27	25		

END OF PAGE 1 - CONTINUED OVER

FOLIO: CP/SP134 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.

Copyright © Office of the Registrar-General 2025 Received: 15/01/2025 13:35:23

From: Licensing
To: Michael Koerner
Subject: SafeWork NSW: 00773816 –Site Search application – Result not found [ref:_00D281hl6J._5004a9rns8:ref]
Date: Wednesday, December 7, 2022 8:28:27 AM

Tax Invoice.pdf

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

Dear Michael

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

I refer to your application for a Site Search for Schedule 11 Hazardous Chemicals on premises, received by SafeWork NSW on 14 November 2022 for the following site: 3-5 Help Street, Chatswood NSW.

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

If you have any further information or if you have any questions, please use one of the following options, quoting the SafeWork NSW enquiry reference number: 00773816

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

Kind regards

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

<!--[if !vml]--> 

We are always looking for ways that we can improve our services. You may be contacted by email in the next few weeks to complete a short survey and provide us with your feedback on what we did well and where we can improve. If you do not wish to participate in our surveys, please email us at:

licensingQA@customerservice.nsw.gov.au and we will ensure that you are not contacted.

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APPENDIX E

Borehole Logs, Field Notes

F3.04 – Groundwater Sampling Field Record

Site / Project: 3-5 Hale St Chatswood		Bore ID Number: BH 1
Client:		Job No. 30175022
Person Sampling: Michael Kearney, Angus Cadogan		Initials: MK, AC

Bore / Site Details

Bore Condition / Locked? ✓ Yes	Type Protect. Cap / Cover: GAT	Bore Depth (bTOC): ~~16.400m~~
Inner casing/screen type & diameter: 50mm ϕ	Screen interval (bgl): -	SWL (bTOC) 10.942 m
WL Measurement Point TOC	RL of measurement point (mAHD)	SWL Date/Time 13/04/23
Other Observations on Bore/Site: water infiltration in monitoring well		

Bore Purge Data

Purge method: Peri	Bore Volume (L):	Purge Date: 13/04/23
Purge rate (L/min):	Total Purge volume (L):	LNAPL / PSH Thickness (mm) (None) .....mm

Purge Field Physicochemical Measurements:

	Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Reading 6	Reading 7	Reading 8
Start Time:	12:14	1224	1229	1234	1239	1244		
DO (mg/L) ±10% (or ±0.2 if DO<2 mg/L) mg/L	1.95	2.16	2.63	2.98	2.90	2.89		
%	21.8	24.4	29.4	33.1	32.1	32.0		
EC (µS/Cm) ±3%	3206	3206	3204	3201	3195	3197		
pH ±0.1	5.58	5.62	5.66	5.67	5.65	5.66		
Eh (mV) ±10mV	29.7	14.4	6.2	1.3	1.3	-2.6		
Temp (°C)	20.0	19.9	20.0	19.4	19.8	19.9		
SWL (m) after	10.971	10.96	10.953	10.964	10.974	10.969		
Cum. Volume (L)						8L		
Water Colour	Clear	"	"	"	"	"		
Turbidity ±10%	L	"	"	"	"	"		
Other Observations / Notes	-	-	-	-	-	-		

Sample Container & Preservation Data

Number of sample container: (Include QC samples)	1	2	3	4	5
Container Volume					
Container Type					
Filtration					
Preservation					
Sample Number (for Lab ID):					
QC Dup Sample No.:					

F3.04 – Groundwater Sampling Field Record

Site / Project:	Bore ID Number: B403
Client:	Job No.
Person Sampling: Angus Gudgeon	Initials: AG

Bore / Site Details

Bore Condition / Locked? ✓	Type Protect. Cap / Cover:	Bore Depth (bTOC): 25.13
Inner casing/screen type & diameter: 50mm	Screen interval (bgl):	SWL (bTOC) 14.94
WL Measurement Point TOC	RL of measurement point (mAHD)	SWL Date/Time 13/04/23
Other Observations on Bore/Site		

Bore Purge Data

Purge method: Bladder	Bore Volume (L):	Purge Date:
Purge rate (L/min):	Total Purge volume (L):	LNAPL / PSH Thickness (mm) *None* / .....mm

Purge Field Physicochemical Measurements:

	Reading1	Reading 2	Reading 3	Reading 4	Reading 5	Reading 6	Reading 7	Reading 8
Start Time:	1330	1335	1340	1345	1350	1355	1400	
DO (mg/L) ±10% (or ±0.2 if DO<2 mg/L)	2.00 22.5	5.40 60.4	7.32 78.6	4.86 94.7	4.85 103.2	9.66 104.7	9.87 102.9	
EC (µS/Cm) ±3%	1841	1802	1799	1802	~~1822~~ 1811	1825	1840	
pH ±0.1	6.17	5.97	5.97	6.01	6.06	6.09	6.10	
Eh (mV) ±10mV	27.3	73.9	86.7	80.8	64.1	52.3	43.8	
Temp (°C)	20.0	19.6	19.6	19.6	19.5	19.5	19.5	
SWL (m) after	13.121	15.871	16.363	16.90	17.516	17.805	18.099	
Cum. Volume (L)	0	0.75L	1.5L	2.25L	3L	3.75	4.5	
Water Colour	Light Grey/Brown	Light Grey	=	=				
Turbidity ±10%	Low	"						
Other Observations / Notes	L grey tinge							

Sample Container & Preservation Data

	1	2	3	4	5
Number of sample container: (Include QC samples)					
Container Volume					
Container Type					
Filtration					
Preservation					

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH01
FILE / JOB NO : 301351072
SHEET : 1 OF 3

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331647.190, N: 6259120.800 (56 MGA94) SURFACE ELEVATION : 94.400 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 23/11/22 DATE COMPLETED : 23/11/22 DATE LOGGED : 23/11/22 LOGGED BY : RKC CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T		H E F	Not Encountered	0.50m D 1.00m 1.50m SPT 3, 5, 5 N=10 1.95m 2.00m D 2.50m 3.00m SPT 6, 8, 9 N=17 3.45m 4.50m SPT 8, 25, 25 N=50 4.95m 6.00m SPT 16, 20, 23 N=42 6.45m	0.0 94.4 1.0 93.4 2.0 92.4 3.0 91.4 4.0 90.4 5.0 89.4 6.0 88.4 7.0 87.4 8.0 86.4		CI-CH CI-CH CI-CH	0.10m CONCRETE 0.20m FILL: SAND: grey, fine to coarse grained sand SILTY CLAY: grey, medium to high plasticity, trace sub-rounded to angular gravel, trace rootlets 0.80m SILTY CLAY: brown, grey, medium to high plasticity, trace rootlets 2.00m SILTY CLAY: grey, medium to high plasticity, with ironstone gravel 4.00m SILTY CLAY: dark grey, medium to high plasticity, with inferred siltstone, extremely weathered to highly weathered gravel 7.08m Continued as Cored Drill Hole	M D M	F St	FILL RESIDUAL SOIL WEATHERED ROCK

See Explanatory Notes for details of abbreviations & basis of descriptions.

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Cardno

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:02 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH01
FILE / JOB NO : 301351072
SHEET : 2 OF 3

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331647.190, N: 6259120.800 (56 MGA94) SURFACE ELEVATION : 94.400 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 23/11/22 DATE COMPLETED : 23/11/22 DATE LOGGED : 23/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING					MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL (-0.1) L (-0.3) M (-1.0) H (-3.0) VH (-10.0) EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 *94.4*						
					1.0 *93.4*						
					2.0 *92.4*						
					3.0 *91.4*						
					4.0 *90.4*						
					5.0 *89.4*						
					6.0 *88.4*						
					7.0 *87.4*		7.08m START CORING AT 7.08m				
HQ	20% Water LOSS	0% LOSS	90	7.65m UCS =14 MPa 7.90m			7.26m SILTY CLAY (CI-CH): grey, medium to high plasticity, with inferred siltstone, extremely weathered to highly weathered gravel (WEATHERED ROCK) SILTSTONE: dark grey, 5% sandstone laminated at 0-5 degrees, grey, fine grained	SW			7.33: BP 0° CN PR S 7.41: DB 7.53: DB 7.60: DB 7.62: DB 7.66: DB 7.91: DB
					8.0 *86.4*						

See Explanatory Notes for details of abbreviations & basis of descriptions.

CARDNO NSW/ACT PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH01
FILE / JOB NO : 301351072
SHEET : 3 OF 3

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331647.190, N: 6259120.800 (56 MGA94) | SURFACE ELEVATION : 94.400 (AHD) | ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 | MOUNTING : Track | CONTRACTOR : Stratacore | DRILLER : JS

DATE STARTED : 23/11/22 | DATE COMPLETED : 23/11/22 | DATE LOGGED : 23/11/22 | LOGGED BY : RKC | CHECKED BY : TH

CASING DIAMETER : | BARREL (Length) : 3.00 m | BIT : Stepped | BIT CONDITION : good

DRILLING

PROGRESS: DRILLING & CASING; WATER; (CORE LOSS RUN %); DRILL DEPTH; RQD (%); SAMPLES & FIELD TESTS

DRILLING & CASING	WATER	(CORE LOSS RUN %)	DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS
HQ	20% Water LOSS	0% LOSS	9.00	90	Is(50) d=0.87 a=1.06 MPa
HQ	100% Water LOSS	0% LOSS	11.40	85	Is(50) d=1.11 a=1.03 MPa; 10.55m UCS =12 MPa 10.67m; Is(50) d=0.44 a=1.75 MPa
HQ	100% Water LOSS	0% LOSS	12.00	85	
HQ	100% Water LOSS	0% LOSS	15.00	80	Is(50) d=0.86 a=0.7 MPa; 14.52m UCS =16 MPa 14.77m; Is(50) d=0.38 a=0.89 MPa

MATERIAL

DEPTH (m) / RL (m AHD); GRAPHIC LOG; DESCRIPTION — ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable); Weathering; ESTIMATED STRENGTH Is(50) (● - Axial, ○ - Diametral; VL -0.1, L -0.3, M -1.0, H -3.0, VH -10.0, EH)

DEPTH (m)	RL (m AHD)	DESCRIPTION	Weathering
8.0	86.4	SILTSTONE: dark grey, 5% sandstone laminated at 0-5 degrees, grey, fine grained *(continued)*	SW
9.0	85.4		
10.0	84.4		
11.0	83.4		
12.0	82.4		HW
13.0	81.4		SW
14.0	80.4		F
15.0	79.4	15.00m BOREHOLE BH01 TERMINATED AT 15.00 m Target depth	
16.0	78.4		

FRACTURES

NATURAL FRACTURE (mm): 20, 40, 100, 300, 1000

ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other

8.08: DB
8.13: DB
8.18: DB
8.21: DB
8.26: DB
8.32: BP 0° Clay CT PR S
8.35: DB
8.38-8.41: JT 70° CN PR S
8.44: DB
8.46: BP 0° Fe SN PR S
8.48: DB
8.51: DB
8.53: DB
8.56: DB
8.58: DB
8.61: DB
8.63: BP 0° CN PR S
8.68: DB
8.74: DB
8.77: DB
8.80-8.83: JT 40° CN PR S
8.83-8.87: JT 50° CN IR S
8.87: BP 0° CN PR S
8.92: BP 0° CN PR S
8.95: DB
8.97: DB
9.05: DB
9.10: DB
9.16: DB
9.21: BP 10° CN PR S
9.28-9.33: JT 30 - 90° CN IR S
9.39: DB
9.43: DB
9.49: DB
9.51-9.52: JT 90° CN PR S
9.56: DB
9.58: DB
9.66: DB
9.71: DB
9.74: DB
9.78-9.93: JT 70° CN PR S
10.06: SZ
10.11: SZ
10.23: HB
10.32: HB
10.37: DB
10.39: DB
10.42: DB
10.43-10.51: JT 40 - 90° CN IR S
10.57: DB
10.69: DB
10.75: DB
10.76-10.86: JT 75° CN IR S
10.86-10.89: JT 55° CN PR S
10.95: DB
11.10-11.13: JT 20 - 50° CN UN S
11.22-11.26: JT 30° CN PR S
11.29: DB
11.33: DB
11.41: EWS
11.75-11.79: JT 40° CN PR S
11.85-11.89: JT 50° CN PR S
11.90: BP 0° CN PR S
12.10: BP 10° CN PR S
12.14-12.17: JT 30° Clay FLD IR S
12.20-12.24: JT 30° CN IR S
12.27: DB
12.30: DB
12.32: DB
12.44-12.52: JT 85 - 90° CN IR S
12.56: DB
12.59: DB
12.86: BP 15° CN PR S
12.89-12.95: JT 20 - 50° CN IR S
13.25: DB
13.61: DB
14.09: DB
14.38: DB
14.88: DB

See Explanatory Notes for details of abbreviations & basis of descriptions.

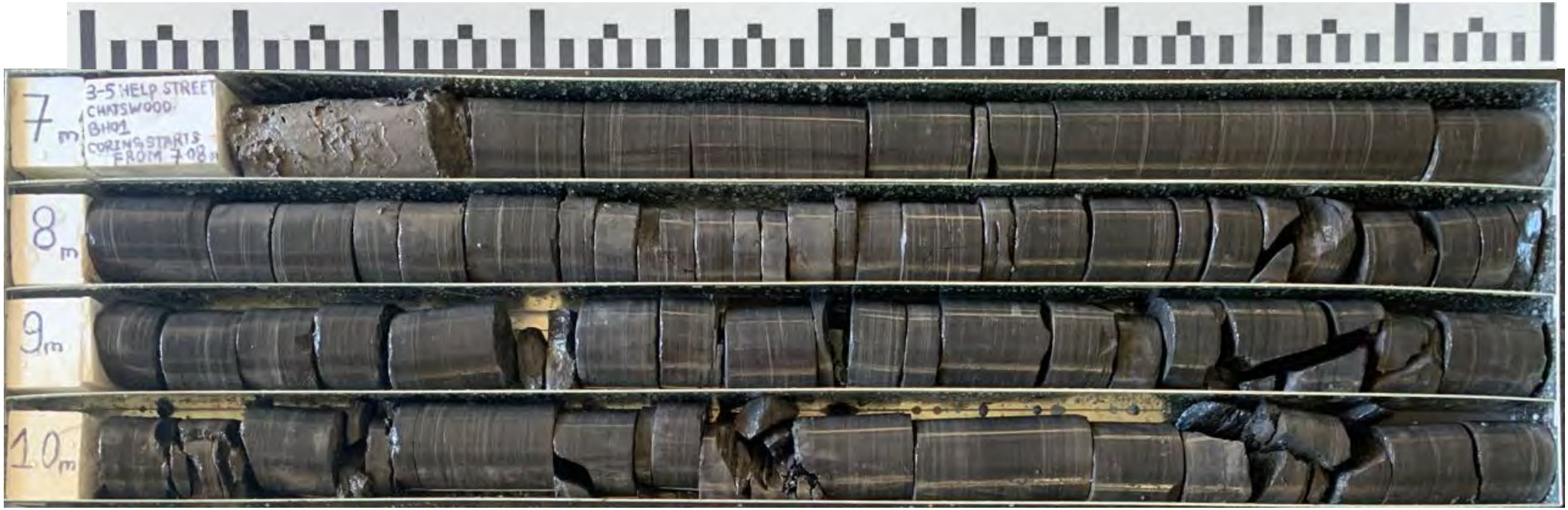
CARDNO NSW/ACT PTY LTD

Cardno

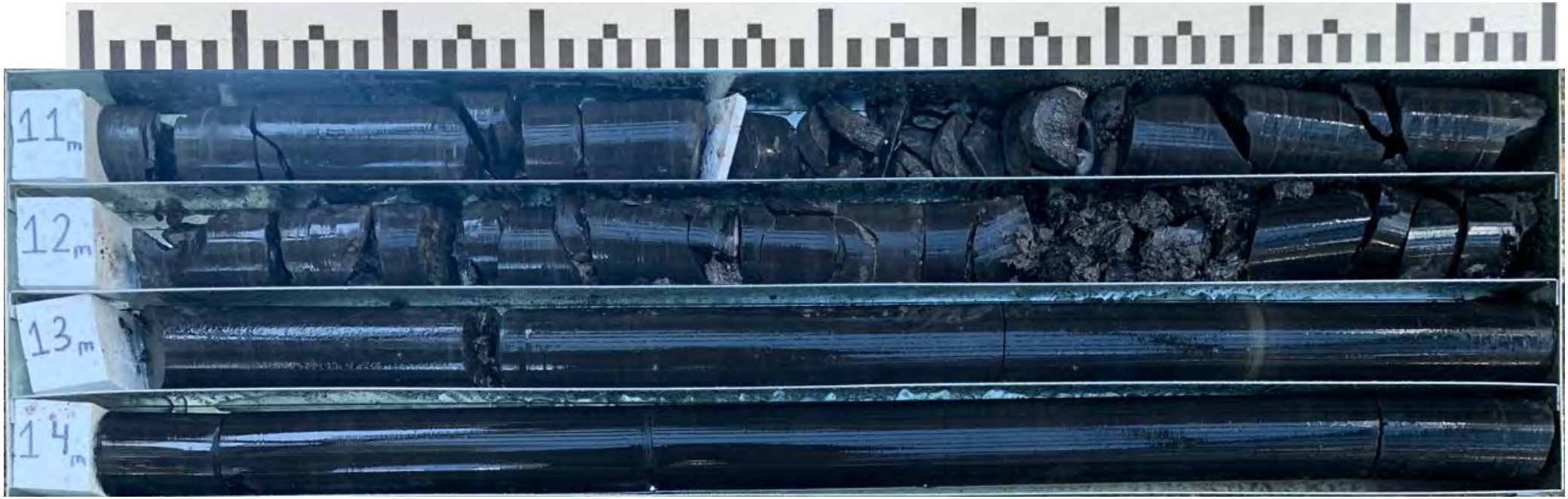
File: 301351072 BH01 3 OF 3

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

Cardno now Stantec	TITLE: Borehole Core Photographs – BH01 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **23/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 2 7.08 – 11m (3.92 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



Cardno now Stantec	TITLE: Borehole Core Photographs – BH01 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **23/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 2 OF 2 11.0 – 15.0m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



Cardno now Stantec	TITLE: Borehole SPT Photographs – BH01 **3-5 Help ST, Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **23/12/2022**	INCLINATION: **-90 degree**	SPT PHOTO: **1.5-1.95**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH02
FILE / JOB NO : 301351072
SHEET : 1 OF 4

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331675.964, N: 6259082.994 (56 MGA94) SURFACE ELEVATION : 92.900 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 22/11/22 DATE COMPLETED : 22/11/22 DATE LOGGED : 22/11/22 LOGGED BY : RKC CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T		H F	Not Encountered	0.50m D 1.00m SPT 8, 30/150mm HB N=R 1.30m 3.00m SPT 6, 12,16 N=28 3.45m 4.50m SPT 14, 25, 26 N=51 4.95m	0.0 92.9 1.0 91.9 2.0 90.9 3.0 89.9 4.0 88.9 5.0 87.9 6.0 86.9 7.0 85.9 8.0 84.9		CI-CH CI-CH	0.10m CONCRETE 0.20m SILTY CLAY: grey, medium to high plasticity SILTY CLAY: grey, medium to high plasticity, with ironstone gravel 4.00m CLAYEY GRAVEL: pale grey to grey, brown, fine to medium gravel, medium to high plasticity clay, inferred as siltstone bedrock 5.55m Continued as Cored Drill Hole	D M D	St VSt	RESIDUAL SOIL WEATHERED ROCK

See Explanatory Notes for details of abbreviations & basis of descriptions.

CARDNO NSW/ACT PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:02 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH02
FILE / JOB NO : 301351072
SHEET : 2 OF 4

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331675.964, N: 6259082.994 (56 MGA94) SURFACE ELEVATION : 92.900 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 22/11/22 DATE COMPLETED : 22/11/22 DATE LOGGED : 22/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 92.9						
					1.0 91.9						
					2.0 90.9						
					3.0 89.9						
					4.0 88.9						
					5.0 87.9						
							5.55m START CORING AT 5.55m				
HQ		0% LOSS 6.00	100		6.0 86.9		SILTY CLAY (CI-CH): grey, medium to high plasticity, with fine to coarse grained gravel, with fine to coarse grained sand (WEATHERED ROCK) 5.85m	EW			
		5% LOSS	63				SILTSTONE: grey, fine grained, bedded at 20 degrees, with 10% sandstone laminated at 20 degrees, fine grained, grey	HW			5.94: HB 6.03: DB 6.06: DB 6.15: DB 6.23: BP 10° CN PR S 6.23-6.26: SM
							6.43m	EW HW			
							CORE LOSS 0.15m (6.43-6.58) 6.58m				
				Is(50) d=0.62 a=0.9 MPa	7.0 85.9		SILTSTONE: grey, fine grained, bedded at 20 degrees, with 10% sandstone laminated at 20 degrees, fine grained, grey	EW HW EW HW EW			6.57-6.64: SM 6.67-6.68: SM 6.71-6.72: SM 6.77: BP 5° CN PR S 6.81: BP 5° CN PR S 6.83-6.85: SM 6.90: HB 7.08: BP 10° CN PR S 7.11: DB 7.15: BP 10 - 15° CN PR S 7.18: BP 15° CN IR S 7.20: DB 7.23: BP 10° CN PR S 7.31: BP 10° CN PR S 7.37-7.42: JT 40° CN PR S 7.52: DB 7.59: DB 7.60-7.66: JT 60° CN PR S
							7.10m SILTSTONE: grey, fine grained, 5% sandstone laminated at 35 degrees, fine grained, grey 7.43m	HW EW			
							SILTSTONE: grey, fine grained, less than 5% sandstone laminated at 0-5 degrees, fine grained, grey	SW F			
					8.0 84.9						

See Explanatory Notes for details of abbreviations & basis of descriptions.

CARDNO NSW/ACT PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH02
FILE / JOB NO : 301351072
SHEET : 3 OF 4

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331675.964, N: 6259082.994 (56 MGA94) SURFACE ELEVATION : 92.900 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 22/11/22 DATE COMPLETED : 22/11/22 DATE LOGGED : 22/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING

PROGRESS: DRILLING & CASING; WATER

(CORE LOSS RUN %) / DRILL DEPTH

RQD (%)

SAMPLES & FIELD TESTS

DEPTH (m) / RL (m AHD)

MATERIAL

GRAPHIC LOG

DESCRIPTION
ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)

Weathering

ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral
VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH

FRACTURES

NATURAL FRACTURE (mm)
20 40 100 300 1000

ADDITIONAL DATA
(joints, partings, seams, zones, etc)
Description, orientation, infilling or coating, shape, roughness, thickness, other

DRILL DEPTH	(CORE LOSS RUN %)	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	DESCRIPTION	Weathering
	5% LOSS	63		8.0 / 84.9	SILTSTONE: grey, fine grained, less than 5% sandstone laminated at 0-5 degrees, fine grained, grey *(continued)*	F
			Is(50) d=0.38 a=1.08 MPa			
9.00						
	0% LOSS	86	Is(50) d=0.15 a=0.32 MPa	9.0 / 83.9		
			Is(50) d=0.66 a=1.32 MPa			
			10.55m UCS =22 MPa 10.84m	10.0 / 82.9		
			Is(50) d=0.95 a=1.17 MPa	11.0 / 81.9		
12.00						
	0% LOSS	85		12.0 / 80.9		
			Is(50) d=0.54 a=0.88 MPa	13.0 / 79.9		
				14.0 / 78.9		
			Is(50) d=0.45 a=1.54 MPa		14.25m SILTSTONE: grey to dark grey, fine grained, with 30% sand in matrix, fine grained	
15.10					14.95m	
	0% LOSS	100	15.22m UCS =25 MPa 15.41m Is(50) d=0.76 a=1.83 MPa	15.0 / 77.9	15.10m SANDSTONE: grey, fine grained	
					SILTSTONE: grey, fine grained, with 5% of sandstone laminated at 0 degree, fine grained, grey	
					15.74m	
				16.0 / 76.9	SANDSTONE: grey, fine to medium grained, with 10% carbonaceous lamination at 0-10 degrees	

HQ

NATURAL FRACTURE (mm) / ADDITIONAL DATA

7.71: DB
7.73: DB
7.81: DB
7.88: BP 5 - 10° CN PR S
7.92: BP 5 - 10° CN PR S
8.05: DB
8.16: DB
8.20: DB
8.31: BP 15 - 20° CN PR S
8.35: BP 15 - 20° CN PR S
8.40: DB
8.43: DB
8.74: DB
8.85: BP 5° CN PR S
9.15: BP 0 - 5° CN PR S
9.17: BP 0 - 5° CN PR S
9.19: BP 0 - 5° CN PR S
9.33: BP 0 - 30° CN PR S
9.35: BP 0 - 30° CN PR S
9.37: BP 0 - 30° CN PR S
9.39: BP 0 - 30° CN PR S
9.53: DB
9.78-9.82: JT 50° CN PR S
9.91: HB
9.93: HB
10.00-10.32: JT 80° CN PR S
10.32: DB
10.37: DB
10.57: DB
10.86: BP 5 - 30° Clay UN S
11.13-11.16: JT 10 - 60° CN IR S
11.29-11.34: JT 20 - 50° CN PR S
11.34-11.50: 50° CN UN S
11.64: DB
11.82: DB
11.92: DB
11.95: HB
12.01: BP 5° CN PR S
12.15-12.21: JT 45° CN PR S
12.25-12.34: JT 50° CN PR S
12.36-12.41: JT 50° CN PR S
12.39-12.46: JT 60° CN PR S
12.46-12.49: JT 45° CN PR S
12.62: DB
12.81: DB
13.27: DB
13.57: DB
13.62: DB
13.66: DB
13.69: DB
13.72: DB
13.77: DB
13.79: DB
13.85: DB
13.92: BP 0° CN PR S
14.11: DB
14.20: DB
14.40: DB
14.59: DB
14.67: DB
14.73: DB
14.91: DB
15.03: DB
15.10: DB
15.22: DB
15.61: DB
15.70: DB
15.78: BP 0 - 5° CN PR S
15.80: BP 0 - 5° CN PR S
15.92: DB

See Explanatory Notes for details of abbreviations & basis of descriptions.

CARDNO NSW/ACT PTY LTD

Cardno

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH02
FILE / JOB NO : 301351072
SHEET : 4 OF 4

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331675.964, N: 6259082.994 (56 MGA94) SURFACE ELEVATION : 92.900 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 22/11/22 DATE COMPLETED : 22/11/22 DATE LOGGED : 22/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING						MATERIAL			FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
HQ		0% LOSS	100	Is(50) d=0.99 a=4.72 MPa	16.0 *76.9*		SANDSTONE: grey, fine to medium grained, with 10% carbonaceous lamination at 0-10 degrees *(continued)*	F			16.66: DB 16.89: DB
							16.70m				
					17.0 *75.9*		INTERLAMINATED SANDSTONE AND SILTSTONE: pale grey to grey, sandstone 50% and siltstone 50% at 0-10 degrees, fine to medium grained sandstone, pale grey and grey siltstone				
							17.15m				
							INTERLAMINATED SANDSTONE AND SILTSTONE: sandstone 70% and siltstone 30% at 0-10 degrees, fine to medium grained sandstone, pale grey and grey siltstone				
		18.00					18.00m				
					18.0 *74.9*		BOREHOLE BH02 TERMINATED AT 18.00 m Target depth				
					19.0 *73.9*						
					20.0 *72.9*						
					21.0 *71.9*						
					22.0 *70.9*						
					23.0 *69.9*						
					24.0 *68.9*						

See Explanatory Notes for details of abbreviations & basis of descriptions.

CARDNO NSW/ACT PTY LTD

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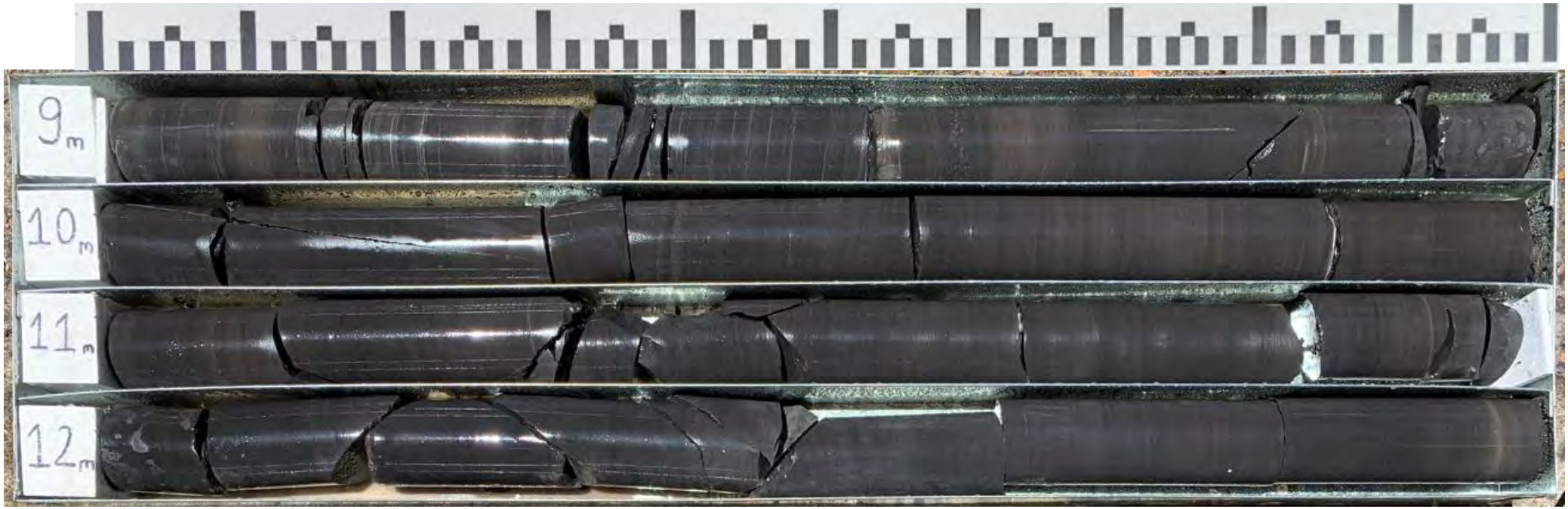
File: 301351072 BH02 4 OF 4

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

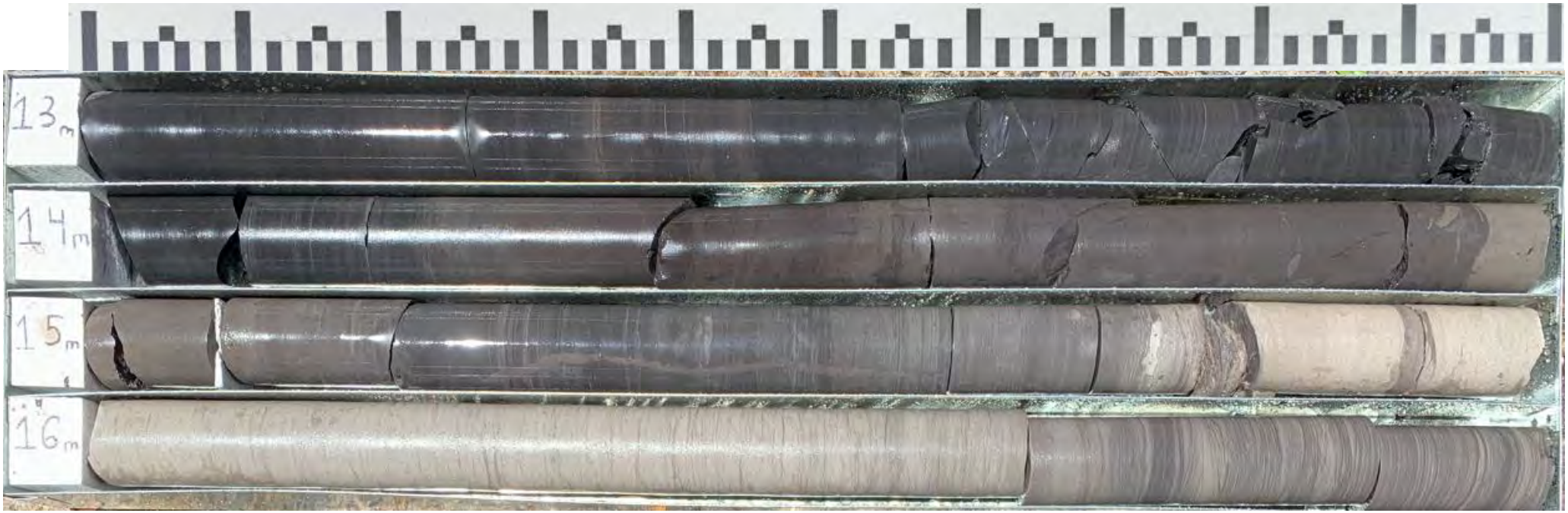
Cardno now Stantec	TITLE: Borehole Core Photographs – BH02 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **22/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 4 5.60 – 9m (3.4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



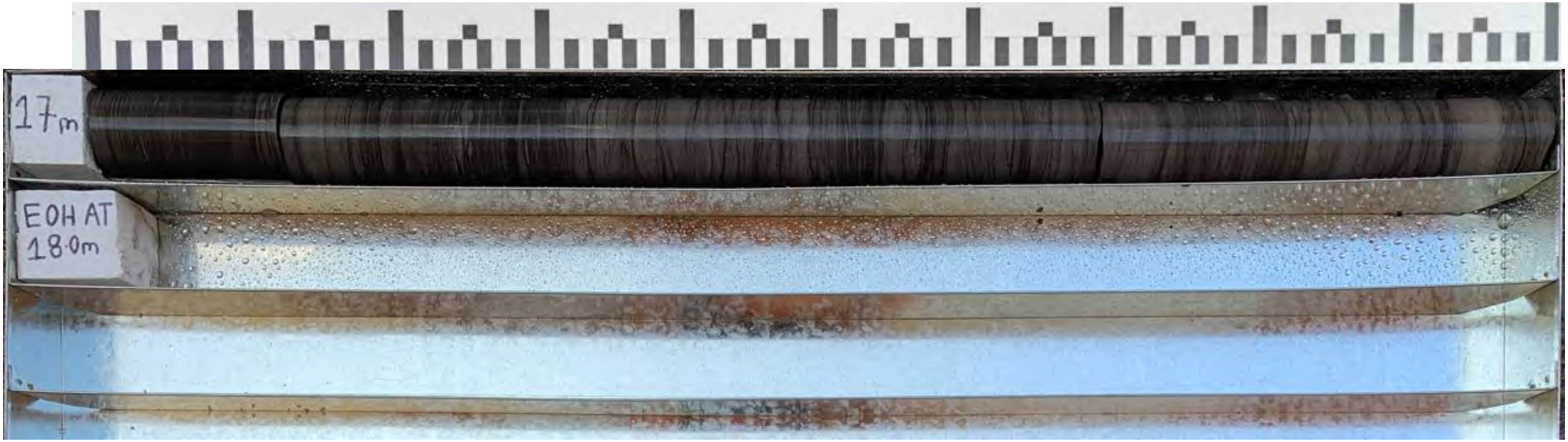
Cardno now Stantec	TITLE: Borehole Core Photographs – BH02 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **22/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 2 OF 4 9 – 13m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



Cardno now Stantec	TITLE: Borehole Core Photographs – BH02 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **22/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 3 OF 4 13– 17m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



Cardno now Stantec	TITLE: Borehole Core Photographs – BH02 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **22/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 4 OF 4 17– 18m (1 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



Cardno now Stantec	TITLE: Borehole SPT Photographs – BH02 **3-5 Help ST, Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **22/12/2022**	INCLINATION: **-90 degree**	SPT PHOTO: **1.0-1.45**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH03
FILE / JOB NO : 301351072
SHEET : 1 OF 6

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331670.308, N: 6259125.514 (56 MGA94) SURFACE ELEVATION : 92.600 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 21/11/22 DATE COMPLETED : 21/11/22 DATE LOGGED : 21/11/22 LOGGED BY : RKC CHECKED BY : TH

DRILLING | MATERIAL

PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T					0.0 92.6			FILL: SILTY SAND: dark brown, fine to medium grained sand, grass covered	M		TOPSOIL
					0.20m						
							CI-CH	SILTY CLAY: pale brown to pale grey, medium to high plasticity			RESIDUAL SOIL
					0.50m						
								SILTY CLAY: pale grey, brown and pale brown, medium to high plasticity, trace gravel			
				1.00m SPT 3, 6, 6 N=12	1.0 91.6					St	
				1.45m							
		F			2.0 90.6		CI-CH				
				3.00m SPT 6, 8, 8 N=16	3.0 89.6					VSt	
			Not Encountered	3.45m					D		
					4.0 88.6			CLAYEY GRAVEL: pale grey and grey, fine to medium gravel, inferred weathered siltstone, very low strength			WEATHERED ROCK
				4.50m SPT 8, 12, 16 N=28							
	Water			4.95m	5.0 87.6					H	
		H									
				5.50m SPT 16, 20, 25 N=45							
				5.95m	6.0 86.6						
					6.50m			SILTSTONE: grey, fine grained, named as clayet silt, low to medium plasticity			BEDROCK
	Water	VH			7.0 85.6						
					7.10m			Continued as Cored Drill Hole			
					8.0 84.6						

See Explanatory Notes for details of abbreviations & basis of descriptions.

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RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:02 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH03
FILE / JOB NO : 301351072
SHEET : 2 OF 6

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331670.308, N: 6259125.514 (56 MGA94) SURFACE ELEVATION : 92.600 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 21/11/22 DATE COMPLETED : 21/11/22 DATE LOGGED : 21/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : Good

DRILLING					MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 92.6						
					1.0 91.6						
					2.0 90.6						
					3.0 89.6						
					4.0 88.6						
					5.0 87.6						
					6.0 86.6						
					7.0 85.6		7.10m START CORING AT 7.10m				
HQ	Water	0% LOSS	91	Is(50) d=0.48 a=1.44 MPa			SANDSTONE: grey, fine to medium grained, massive	MW			7.27: DB
							7.43m				7.43: BP 0° PR S
							SILTSTONE: grey, bedded at 5-15 degrees, thinly laminated	SW			7.55: JT 10° PR RF 7.65: BP 0° PR S
					8.0 84.6						7.86: BP 5° PR S

See Explanatory Notes for details of abbreviations & basis of descriptions.

CARDNO NSW/ACT PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH03
FILE / JOB NO : 301351072
SHEET : 3 OF 6

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331670.308, N: 6259125.514 (56 MGA94) SURFACE ELEVATION : 92.600 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 21/11/22 DATE COMPLETED : 21/11/22 DATE LOGGED : 21/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : Good

DRILLING

PROGRESS: DRILLING & CASING; WATER

(CORE LOSS RUN %) / DRILL DEPTH

RQD (%)

SAMPLES & FIELD TESTS

DEPTH (m) / RL (m AHD)

MATERIAL

GRAPHIC LOG

DESCRIPTION
ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)

Weathering

ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral
VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH

FRACTURES

NATURAL FRACTURE (mm)
20 40 100 300 1000

ADDITIONAL DATA
(joints, partings, seams, zones, etc)
Description, orientation, infilling or coating, shape, roughness, thickness, other

DEPTH (m) / RL (m AHD)	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DESCRIPTION	Weathering	ADDITIONAL DATA
8.0 84.6	0% LOSS	91		SILTSTONE: grey, bedded at 5-15 degrees, thinly laminated *(continued)*	F	8.16: JT 45° PR S 8.23: BP 10° PR S 8.33: BP 10° PR S 8.35: BP 10° PR S 8.42: BP 10° PR S 8.45: BP 10° PR S 8.53: JT 45° IR RF 8.58: JT 15° IR RF 8.60: HB 8.65: JT 10° IR RF 8.68: JT 10° IR RF
9.0 83.6	9.32					9.16: JT 15° IR RF 9.20: JT 15° IR RF 9.22: HB 9.25: DB 9.32: DB 9.37: BP 0° PR S 9.44: BP 0° PR S 9.65: JT 20° PR RF 9.75: BP 5° PR S 9.84: BP 5° PR S 9.90: JT 30° PR S
	0% LOSS	90	Is(50) d=0.35 a=1.27 MPa			
10.0 82.6			10.00m UCS =12 MPa 10.24m			10.23: JT 45° PR RF 10.38: JT 45° IR RF 10.45: DB 10.57: JT 60° PR RF 10.68: JT 30° IR RF 10.88: DB
11.0 81.6			Is(50) d=0.6 a=1.72 MPa			11.15: JT 45° PR RF 11.20: DB 11.38: BP 5° PR S 11.45: JT 5° PR RF 11.50: HB 11.70: DB 11.84: HB
12.0 80.6	12.27					12.06: BP 5° PR S
	0% LOSS	93	Is(50) d=0.25 a=1.19 MPa			12.28: JT 5° PR RF 12.30: JT 5° PR RF 12.43: BP 0° PR S 12.44: BP 0° PR S 12.81: JT 45° PR S
13.0 79.6						13.18: BP 0° PR S
14.0 78.6				14.27m SILTSTONE: pale grey, massive		13.80: JT 45° PR RF 13.95: CS 14.06: JT 15° IR RF 14.21: HB 14.26: BP 40° PR RF
			Is(50) d=0.62 a=3.47 MPa			14.90: HB
15.0 77.6	15.24			15.24m		15.10: BP 30° PR RF
	0% LOSS	95		SILTSTONE: pale grey to grey, bedded at 0-15 degrees, thinly laminated		15.24: DB 15.26: DB
			15.61m UCS =50 MPa 15.81m			15.60: HB
16.0 76.6						15.96: HB

HQ — Water — Water

See Explanatory Notes for details of abbreviations & basis of descriptions.

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RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH03
FILE / JOB NO : 301351072
SHEET : 4 OF 6

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331670.308, N: 6259125.514 (56 MGA94) SURFACE ELEVATION : 92.600 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 21/11/22 DATE COMPLETED : 21/11/22 DATE LOGGED : 21/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : Good

DRILLING					MATERIAL			FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
HQ		0% LOSS DRILL DEPTH	95	Is(50) d=0.81 a=2.39 MPa	16.0 76.6		16.15m	F			16.05: BP 0° PR S
							SANDSTONE: pale grey, fine to medium grained, massive				16.29: JT 5° PR RF 16.31: JT 10° PR RF 16.34: JT 10° IR RF
				Is(50) d=1.31 a=4.83 MPa							16.88: DB
					17.0 75.6		17.00m SILTSTONE: pale grey to grey, bedded at 0-15 degrees, thinly laminated				17.50: HB
					18.0 74.6						18.10: HB 18.21: BP 10° PR RF
		18.46 0% LOSS	96	Is(50) d=0.89 a=4.35 MPa							18.46: DB 18.53: HB
				UCS =74.8 MPa							
											18.89: HB
					19.0 73.6						19.07: HB 19.22: HB
							19.51m SANDSTONE: pale grey, medium to coarse grained, bedded at 10-20 degrees				19.49: JT 5° PR RF 19.51: BP 0° PR S
				Is(50) d=0.97 a=1.57 MPa							19.65: HB
					20.0 72.6						19.90: HB 20.06: HB
					21.0 71.6						21.08: HB
				Is(50) d=1.17 a=1.48 MPa							21.33: HB
		21.57 0% LOSS	98								21.57: BP 15° PR RF
											21.86: BP 10° PR RF
					22.0 70.6						22.12: DB
					23.0 69.6						
				Is(50) d=1.51 a=1.77 MPa							23.63: HB 23.66: HB
					24.0 68.6						

See Explanatory Notes for details of abbreviations & basis of descriptions.

CARDNO NSW/ACT PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH03
FILE / JOB NO : 301351072
SHEET : 5 OF 6

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331670.308, N: 6259125.514 (56 MGA94) SURFACE ELEVATION : 92.600 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 21/11/22 DATE COMPLETED : 21/11/22 DATE LOGGED : 21/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : Good

DRILLING					MATERIAL			FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION: ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral (VL -0.1, L -0.3, M -1.0, H -3.0, VH -10.0, EH)	NATURAL FRACTURE (mm) (20, 40, 100, 300, 1000)	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
HQ		0% LOSS	98		24.0 68.6		SANDSTONE: pale grey, medium to coarse grained, bedded at 10-20 degrees *(continued)*	F			24.53: HB 24.63: HB 24.64: DB 24.80: end of run
		24.77									
		0% LOSS	100	Is(50) d=1.06 a=1.88 MPa	25.0 67.6						25.11: BP 0 - 5° SN PR RF 25.17: BP 0 - 5° CN PR RF
					26.0 66.6						26.07: BP 0 - 5° CN PR RF 26.11: HB
				Is(50) d=1.11 a=1.64 MPa			26.52m				
							INTERLAMINATED SANDSTONE AND SILTSTONE: sandstone 50% and siltstone 50% at 0-10 degrees, fine to coarse grained sandstone, pale grey and grey siltstone				26.56: BP 0 - 5° CN PR S 26.59: BP 0 - 5° CN PR S
							26.90m				26.82: DB
					27.0 65.6		SANDSTONE: pale grey, medium to coarse grained, bedded at 10-20 degrees				
				Is(50) d=1.13 a=1.94 MPa							
		27.82									27.82: end of run
		0% LOSS	100		28.0 64.6						
											28.71: HB
					29.0 63.6						
				Is(50) d=1.77 a=1.37 MPa							
					30.0 62.6						30.05: HB
		30.85									30.85: end of run
		0% LOSS	100	Is(50) d=2.14 a=2.17 MPa	31.0 61.6						
				Is(50) d=2 a=2.07 MPa							31.79: HB
					32.0 60.6						

See Explanatory Notes for details of abbreviations & basis of descriptions.

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RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH03
FILE / JOB NO : 301351072
SHEET : 6 OF 6

PROJECT : Proposed Mixed Use Redevelopment GI
LOCATION : 3-5 Help St Chatswood

POSITION : E: 331670.308, N: 6259125.514 (56 MGA94) SURFACE ELEVATION : 92.600 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : TI3 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : JS

DATE STARTED : 21/11/22 DATE COMPLETED : 21/11/22 DATE LOGGED : 21/11/22 LOGGED BY : RKC CHECKED BY : TH

CASING DIAMETER : BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : Good

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
HQ		0% LOSS 33.96	100	Is(50) d=2.06 a=2.11 MPa	32.0 60.6		SANDSTONE: pale grey, medium to coarse grained, bedded at 10-20 degrees *(continued)*	F			32.11: DB 32.54: DB 32.65: DB 32.70: DB 32.75: DB 32.86: DB 32.91: DB 33.00: DB 33.23: DB 33.54: DB 33.68: DB
					33.0 59.6						
					33.96m						
					34.0 58.6		BOREHOLE BH03 TERMINATED AT 33.96 m Target depth				
					35.0 57.6						
					36.0 56.6						
					37.0 55.6						
					38.0 54.6						
					39.0 53.6						
					40.0 52.6						

See Explanatory Notes for details of abbreviations & basis of descriptions.

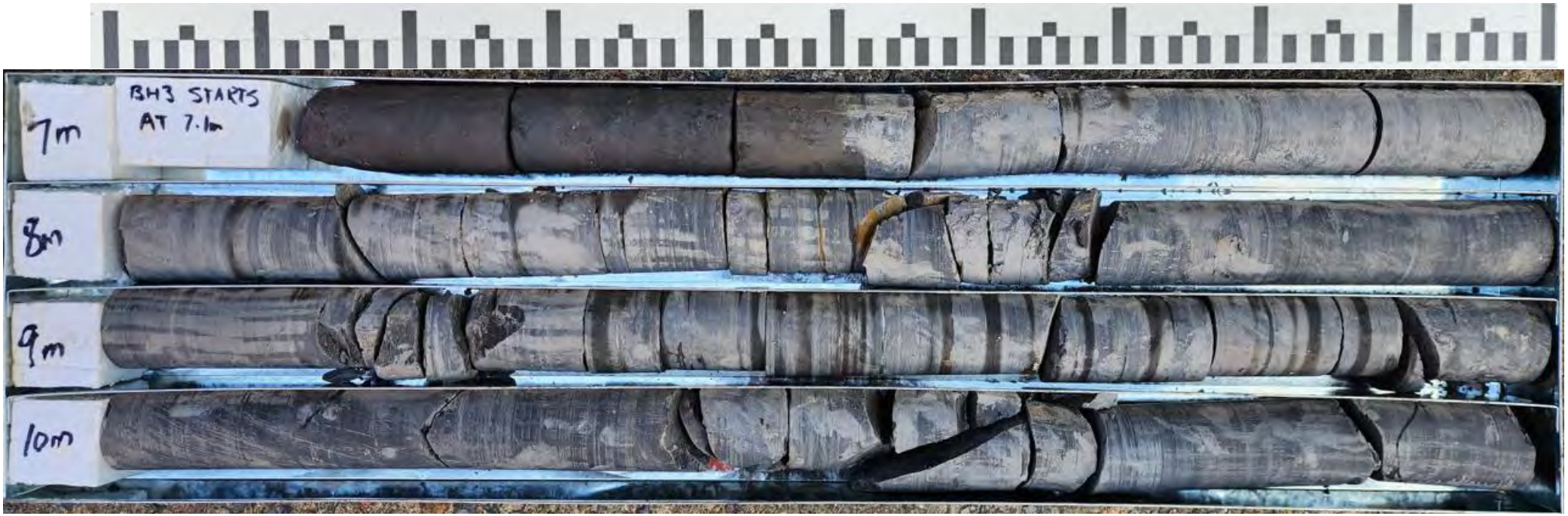
CARDNO NSW/ACT PTY LTD

Cardno

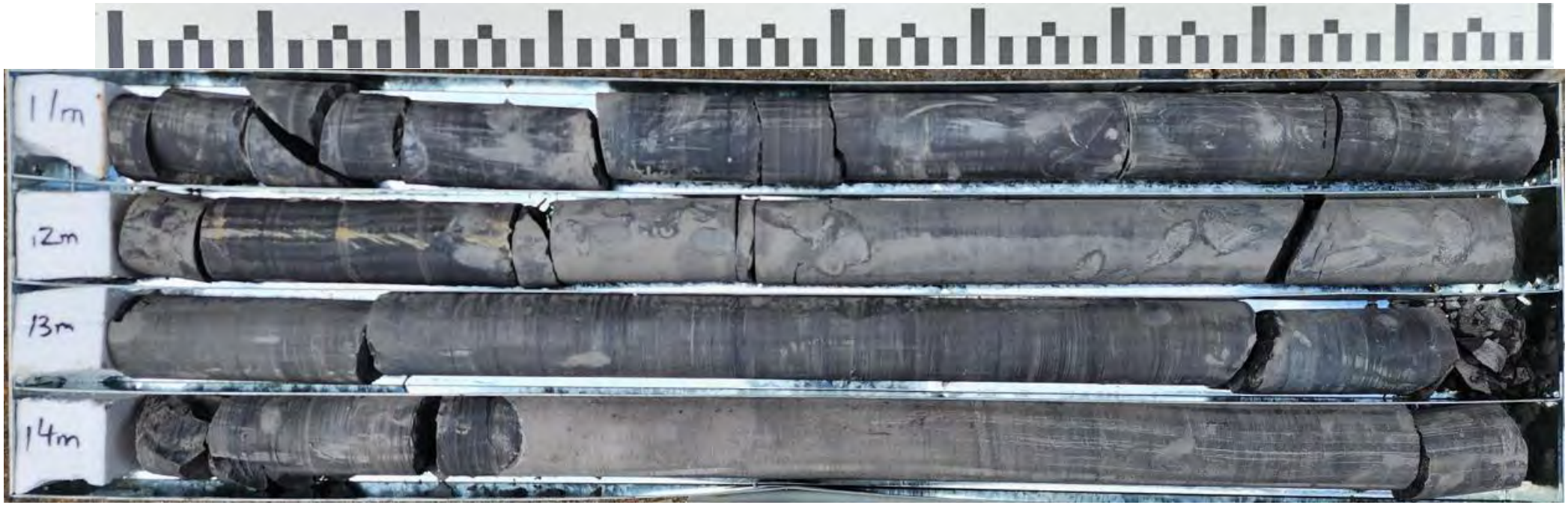
File: 301351072 BH03 6 OF 6

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 301351072 3-5 HELP ST. CHATWOOD.GPJ <<DrawingFile>> 22/Dec/2022 15:01 10.03.00.09 Cardno M6E

Cardno now Stantec	TITLE: Borehole Core Photographs – BH03 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **21/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 7 7.1– 11m (3.9 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



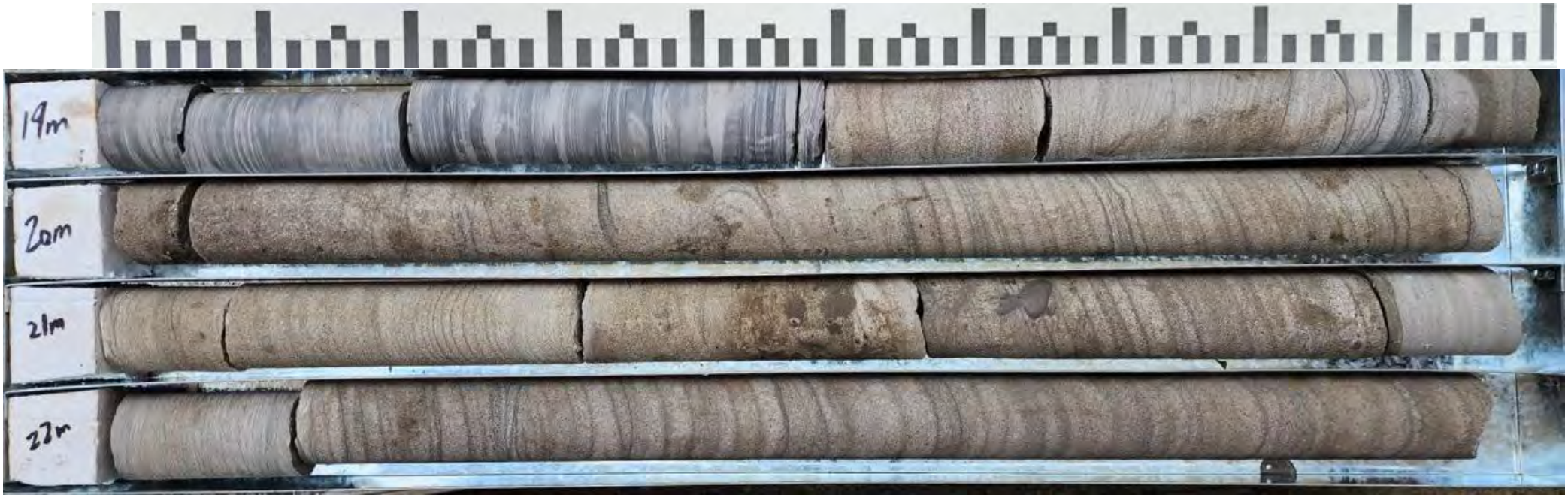
Cardno now Stantec	TITLE: Borehole Core Photographs – BH03 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **21/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 2 OF 7 11– 15m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



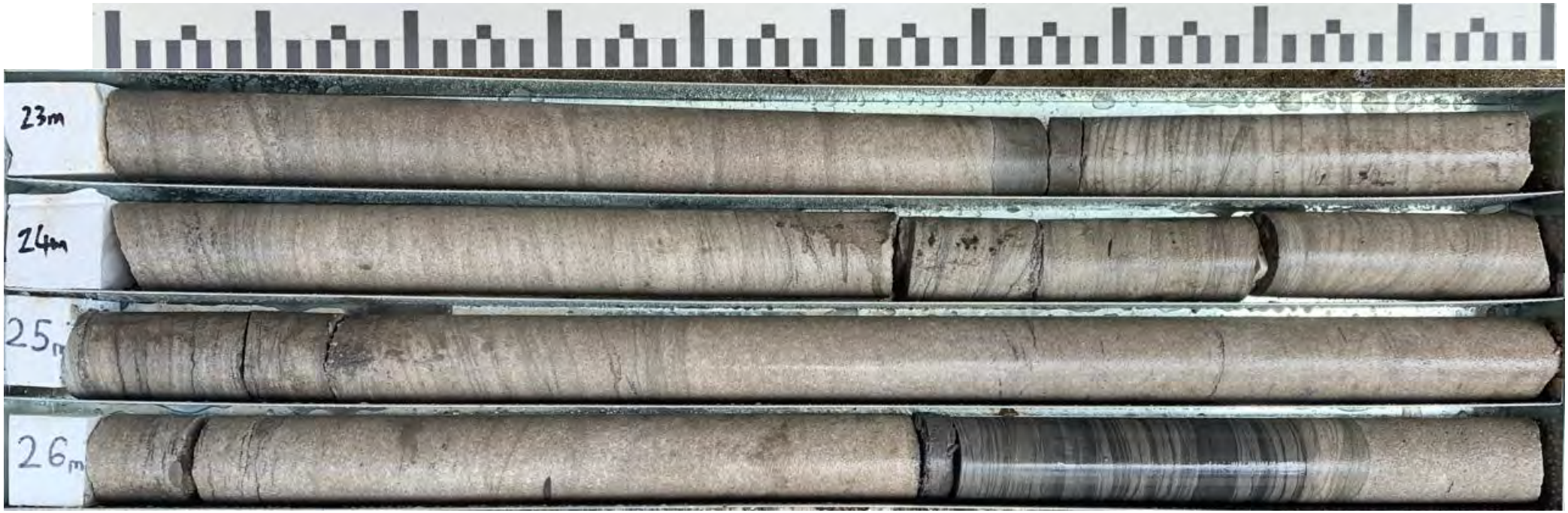
Cardno now Stantec	TITLE: Borehole Core Photographs – BH03 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **21/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 3 OF 7** **15– 19m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



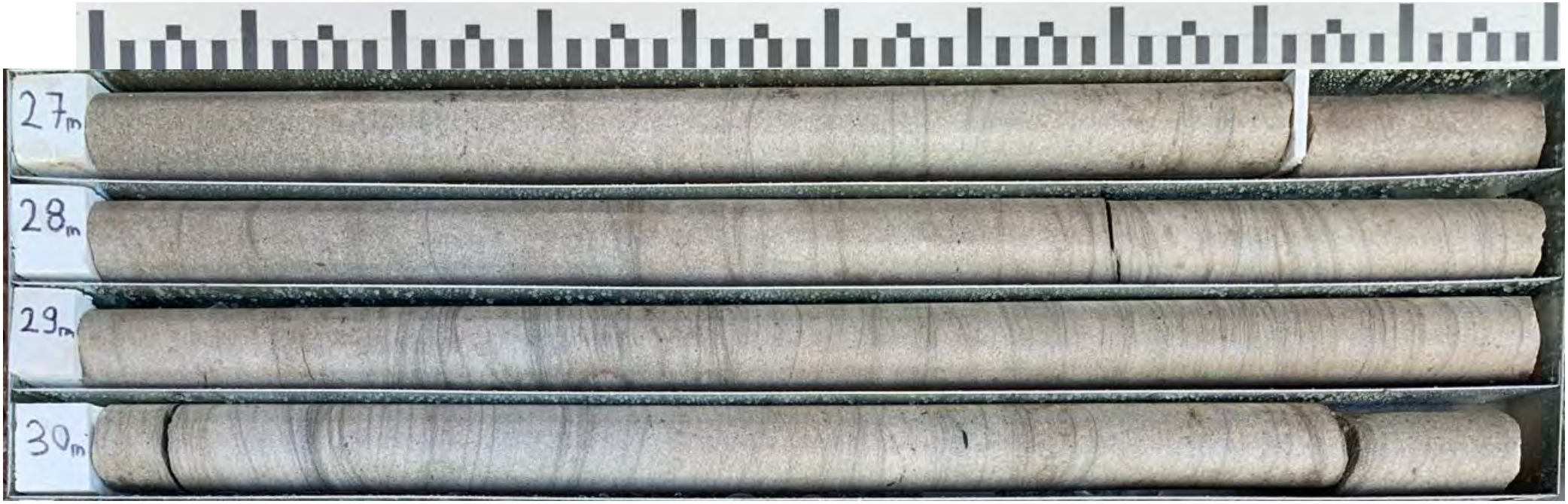
Cardno now Stantec	TITLE: Borehole Core Photographs – BH03 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **21/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 4 OF 7 19– 23m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



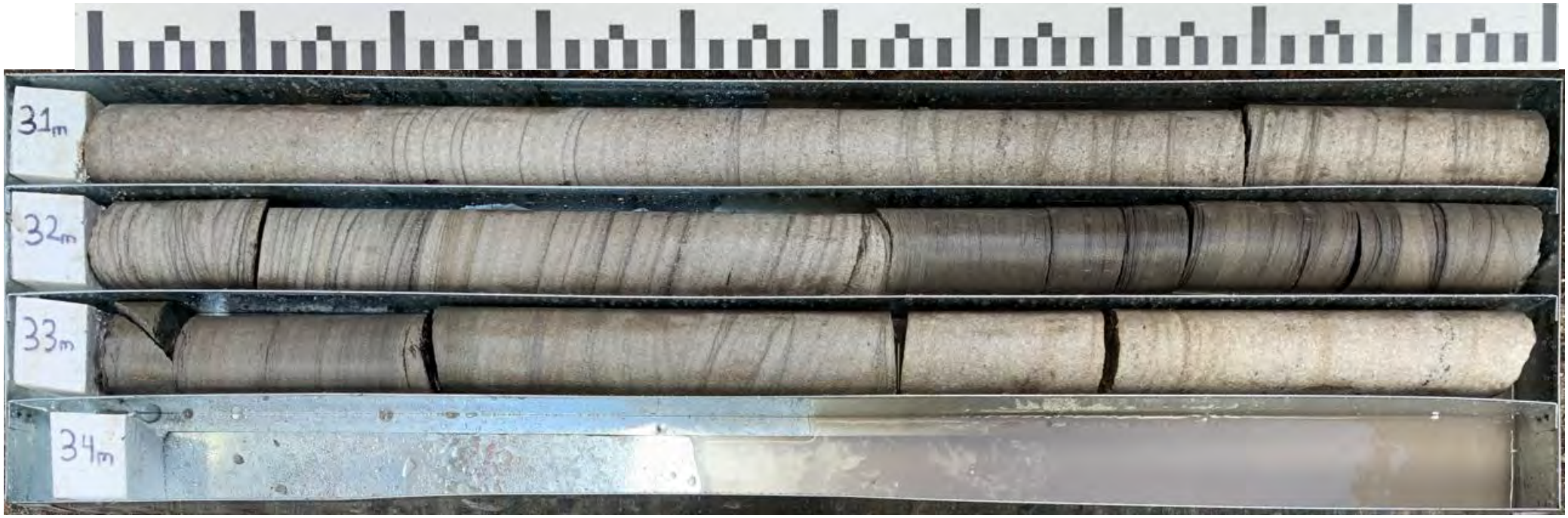
Cardno now Stantec	TITLE: Borehole Core Photographs – BH03 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **21/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 5 OF 7 23– 27m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



Cardno now Stantec	TITLE: Borehole Core Photographs – BH03 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **21/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 6 OF 7 27– 31m (4 m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



Cardno now Stantec	TITLE: Borehole Core Photographs – BH03 **3-5 Help St Chatswood**			
	PROJECT NO: **301351072**	TEST DATE: **21/11/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 7 OF 7 31– 33.96m (2.96m Length)**
	DRILL RIG: **TI3**	CONTRACTOR: **Stratacore**	LOGGED BY: **RKC**	CHECKED BY: **TH**



APPENDIX F

Results Tables

	TRH					CRC Care TRH Fractions							Asbestos	
	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C6-C10	C10-C16	C16-C34	C34-C40	C10 - C40 (Sum of total)	F1: C6-C10 less BTEX	F2: >C10-C16 less NAPHTHALENE	Detected (D) / Not Detected (ND)	Asbestos (w/w%)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Commen	%
LOR	20	20	45	45	110	20	25	90	120	210	25	25		
NEPM 2013 EIL UR/POS, Site specific														
NEPM 2013 ESL UR/POS, Coarse Soil 0-2m		120					120	300	2800		180			
NEPM 2013 HIL, Residential A														0.01
NEPM 2013 HIL, Residential B														0.04
Site ID	**Field ID**	**Sampled Date**												
3 - 5 Help Street, Chatswood	HA01_0.1	13/04/2023	<20	<20	130	79	210	<20	<25	180	<120	<210	<25	<25	ND	<0.001
	HA02_0.7		<20	<20	<45	<45	<110	<20	<25	<90	<120	<210	<25	<25	-	-
	HA03_0.1		<20	<20	<45	<45	<110	<20	<25	<90	<120	<210	<25	<25	ND	<0.001

			BTEX							Metals								pH		
			Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	pH (F)	pH (Fox)	Reaction Rate
			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	pH Unit	pH Unit	-
LOR			0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.6	1	0.3	0.5	0.5	1	0.05	0.5	2	0.1	0.1	0
NEPM 2013 EIL UR/POS, Site specific											100		410	230	1100		270	770			
NEPM 2013 ESL UR/POS, Coarse Soil 0-2m				50	85	70			105												
NEPM 2013 HIL, Residential A											100	20		6000	300	40	400	7400			
NEPM 2013 HIL, Residential B											500	150		30000	1200	120	1200	60000			
Site ID	**Field ID**	**Sampled Date**																			
3 - 5 Help Street, Chatswood	HA01_0.1	13/04/2023	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	9	0.4	13	21	130	0.12	5.8	180	N.A.	N.A.	N.A.
	HA02_0.7		<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	6	<0.3	16	<0.5	18	<0.05	1.2	5.3	7.4	6.5	1
	HA03_0.1		<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	8	0.4	15	15	77	<0.05	2.6	89	N.A.	N.A.	N.A.

			PAH																					
			Naphthalene	2-methylnaphthalene	1-methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Benzo(a)pyrene TEQ (Zero LOR)	Benzo(a)pyrene TEQ (Half LOR)	Benzo(a)pyrene TEQ (Full LOR)	PAHs (Sum of total)
			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
LOR			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.8
NEPM 2013 EIL UR/POS, Site specific			170																					
NEPM 2013 ESL UR/POS, Coarse Soil 0-2m																	0.7							
NEPM 2013 HIL, Residential A																						3		300
NEPM 2013 HIL, Residential B																						4		400
Site ID	**Field ID**	**Sampled Date**																						
3 - 5 Help Street, Chatswood	HA01_0.1	13/04/2023	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	1.4	0.5	3.6	4.3	2.5	2.5	1.4	3.2	2.7	1.8	0.5	1.8	4.2	4.2	4.2	27
	HA02_0.7		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8
	HA03_0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.3	0.2	0.2	<0.1	0.2	0.2	0.1	<0.1	0.1	<0.2	0.3	0.2	1.3

	Organochlorine Pesticides																							
	4,4-DDE	a-BHC	Aldrin	Lindane (gamma BHC)	Alpha Chlordane	Gamma Chlordane	Beta BHC	Delta BHC	DDD	DDT	Dieldrin	Alpha Endosulfan	Beta Endosulfan	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Isodrin	Mirex	Total CLP OC Pesticides
	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
LOR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1
NEPM 2013 EIL UR/POS, Site specific										180														
NEPM 2013 ESL UR/POS, Coarse Soil 0-2m																								
NEPM 2013 HIL, Residential A					50										10			6		10	300			
NEPM 2013 HIL, Residential B					90										20			10		15	500			
Site ID	**Field ID**	**Sampled Date**																						
3 - 5 Help Street, Chatswood	HA01_0.1	13/04/2023	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
	HA02_0.7		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
	HA03_0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1

	Organophosphorous Pesticides												Polychlorinated Biphenyls									
	Dichlorvos	Dimethoate	Diazinon (Dimpylate)	Fenitrothion	Malathion	Chlorpyrifos	Parathion-ethyl (Parathion)	Bromophos Ethyl	Methidathion	Ethion	Azinphos-methyl (Guthion)	Total OP Pesticides	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1262	Arochlor 1268	Total PCBs (Arochlors)
	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
LOR	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.7	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1
NEPM 2013 EIL UR/POS, Site specific																						
NEPM 2013 ESL UR/POS, Coarse Soil 0-2m																						
NEPM 2013 HIL, Residential A						160																1
NEPM 2013 HIL, Residential B						340																1
Site ID	**Field ID**	**Sampled Date**																				
3 - 5 Help Street, Chatswood	HA01_0.1	13/04/2023	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1
	HA02_0.7		<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1
	HA03_0.1		<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1

			Halogenated Phenols						VOC		
			2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2-chlorophenol	Pentachlorophenol	2346&2356-Tetrachlorophenol	3/4-Methylphenol (m/p-cresol)	TOTAL VOCS
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.001	0.001	0.01
ANZECC 2000 Irrigation - Short-term trigger value											
Managing Risk in Recreational Water 2008 (Health)				20	200		300	10			
Buildings & Structures (AS2159-2009)											
NEPM 2013 Table 1C GILs, Drinking Water				20	200		300	10			
NEPM 2013 Table 1C GILs, Fresh Waters				3	120		340	3.6			
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)			0.5	20	160	34	490	10			
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m											
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m											
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m											
Site ID	**Field ID**	**Date**									
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.001	<0.001	<0.01
	BH03	**13 Apr 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.001	<0.001	<0.01

				Solvents								
				Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR				10	5	5	10	0.5	2	2	2	10
ANZECC 2000 Irrigation - Short-term trigger value												
Managing Risk in Recreational Water 2008 (Health)												
Buildings & Structures (AS2159-2009)												
NEPM 2013 Table 1C GILs, Drinking Water												
NEPM 2013 Table 1C GILs, Fresh Waters												
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m												
Site ID	**Field ID**	**Date**										
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**		<10	<5	<5	<10	<0.5	<2	<2	<2	<10
	BH03	**13 Apr 2023**		<10	<5	<5	<10	<0.5	<2	<2	<2	<10

			TPH			CRC Care TPH Fractions					
			C6 - C9	C10 - C14	C15 - C28	C29-C36	C6-C10	C10-C16	C16-C34	C34-C40	F1: C6-C10 less BTEX	F2: >C10-C16 less NAPHTHALENE
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR			40	50	200	200	50	60	500	500	50	60
ANZECC 2000 Irrigation - Short-term trigger value												
Managing Risk in Recreational Water 2008 (Health)												
Buildings & Structures (AS2159-2009)												
NEPM 2013 Table 1C GILs, Drinking Water												
NEPM 2013 Table 1C GILs, Fresh Waters												
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m											10,000	10,000
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m											10,000	10,000
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m											10,000	10,000
Site ID	**Field ID**	**Date**										
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**	<40	<50	<200	<200	<50	<60	<500	<500	<50	<60
	BH03	**13 Apr 2023**	<40	<50	<200	<200	<50	<60	<500	<500	<50	<60

				BTEX				
			Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Total BTEX	Xylene Total
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ug/L
LOR			0.5	0.5	0.5	0.5	1	0.5	3	1.5
ANZECC 2000 Irrigation - Short-term trigger value										
Managing Risk in Recreational Water 2008 (Health)				1	800	300				600
Buildings & Structures (AS2159-2009)										
NEPM 2013 Table 1C GILs, Drinking Water				1	800	300				600
NEPM 2013 Table 1C GILs, Fresh Waters				950				350		
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)				950				350		
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m				8,000						
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m				8,000						
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m				9,000						
Site ID	**Field ID**	**Date**								
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<3	<1.5
	BH03	**13 Apr 2023**	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<3	<1.5

			MAH							
			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
LOR			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ANZECC 2000 Irrigation - Short-term trigger value											
Managing Risk in Recreational Water 2008 (Health)										30	
Buildings & Structures (AS2159-2009)											
NEPM 2013 Table 1C GILs, Drinking Water										30	
NEPM 2013 Table 1C GILs, Fresh Waters											
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)											
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m											
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m											
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m											
Site ID	**Field ID**	**Date**									
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	BH03	**13 Apr 2023**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

			Metals							
			Arsenic (filtered)	Cadmium (filtered)	Chromium (III+VI) (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR			1	0.1	1	1	1	0.1	1	5
ANZECC 2000 Irrigation - Short-term trigger value			20,000	50	1,000	5,000	5,000	1	2,000	5,000
Managing Risk in Recreational Water 2008 (Health)			70	20		20,000	100	10	20	
Buildings & Structures (AS2159-2009)										
NEPM 2013 Table 1C GILs, Drinking Water			10	2		2,000	10	1	20	
NEPM 2013 Table 1C GILs, Fresh Waters				0.2		1.4	3.4	0.06	11	8
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)				0.2		1.4	3.4	0.6	11	8
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m										
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m										
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m										
Site ID	**Field ID**	**Date**								
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**	<1	<0.1	<1	<1	<1	<0.1	8	59
	BH03	**13 Apr 2023**	<1	<0.1	<1	1	<1	<0.1	7	49

				PAH							
				Naphthalene	2-methylnaphthalene	1-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ANZECC 2000 Irrigation - Short-term trigger value													
Managing Risk in Recreational Water 2008 (Health)													
Buildings & Structures (AS2159-2009)													
NEPM 2013 Table 1C GILs, Drinking Water													
NEPM 2013 Table 1C GILs, Fresh Waters				16									
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)				16							0.4		
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m													
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m													
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m													
Site ID	**Field ID**	**Date**											
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	BH03	**13 Apr 2023**		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

				PAH						
				Benz(a)anthracene	Chrysene	Benzo(k)fluoranthene	Benzo(b+j)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	PAHs (Sum of total)
				µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L
LOR				0.1	0.1	0.1	0.1	0.0001	0.1	0.1	0.1	1
ANZECC 2000 Irrigation - Short-term trigger value												
Managing Risk in Recreational Water 2008 (Health)								0.00001				
Buildings & Structures (AS2159-2009)												
NEPM 2013 Table 1C GILs, Drinking Water								0.00001				
NEPM 2013 Table 1C GILs, Fresh Waters												
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m												
Site ID	**Field ID**	**Date**										
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**		<0.1	<0.1	<0.1	<0.1	<0.0001	<0.1	<0.1	<0.1	<1
	BH03	**13 Apr 2023**		<0.1	<0.1	<0.1	<0.1	<0.0001	<0.1	<0.1	<0.1	<1

			Phenols							VOCs	
			2,4-dimethylphenol	2,4-dinitrophenol	2-methylphenol	2-nitrophenol	4-chloro-3-methylphenol	4-nitrophenol	Cresol (Total)	Phenol	2-Nitropropane	trans-1,4-Dichloro-2-butene
			µg/L	µg/L	µg/L	µg/L	µg/L	ug/L	mg/L	µg/L	mg/L	µg/L
LOR			0.5	2	0.5	0.5	2	1	0.0015	0.5	0.1	1
ANZECC 2000 Irrigation - Short-term trigger value												
Managing Risk in Recreational Water 2008 (Health)												
Buildings & Structures (AS2159-2009)												
NEPM 2013 Table 1C GILs, Drinking Water												
NEPM 2013 Table 1C GILs, Fresh Waters				45						320		
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)			2	45		2				320		
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m												
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m												
Site ID	**Field ID**	**Date**										
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**	<0.5	<2	<0.5	<0.5	<2	<1	<0.0015	<0.5	<0.1	<1
	BH03	**13 Apr 2023**	<0.5	<2	<0.5	<0.5	<2	<1	<0.0015	<0.5	<0.1	<1

				Chlorinated Hydrocarbons									
				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
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ANZECC 2000 Irrigation - Short-term trigger value													
Managing Risk in Recreational Water 2008 (Health)									30				3
Buildings & Structures (AS2159-2009)													
NEPM 2013 Table 1C GILs, Drinking Water									30				3
NEPM 2013 Table 1C GILs, Fresh Waters							6,500						
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)							6,500						
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m													
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m													
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m													
Site ID	**Field ID**	**Date**											
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	BH03	**13 Apr 2023**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

				Chlorinated Hydrocarbons									
				1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5
ANZECC 2000 Irrigation - Short-term trigger value													
Managing Risk in Recreational Water 2008 (Health)										3			
Buildings & Structures (AS2159-2009)													
NEPM 2013 Table 1C GILs, Drinking Water										3			
NEPM 2013 Table 1C GILs, Fresh Waters													
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)													
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m													
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m													
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m													
Site ID	**Field ID**	**Date**											
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5
	BH03	**13 Apr 2023**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5

				Chlorinated Hydrocarbons										
				Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR				5	0.5	0.5	0.5	5	0.5	0.5	0.5	0.5	0.5	0.3
ANZECC 2000 Irrigation - Short-term trigger value														
Managing Risk in Recreational Water 2008 (Health)								4	0.7		50			0.3
Buildings & Structures (AS2159-2009)														
NEPM 2013 Table 1C GILs, Drinking Water								4	0.7		50			0.3
NEPM 2013 Table 1C GILs, Fresh Waters														
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)														
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m														
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m														
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m														
Site ID	**Field ID**	**Date**												
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**		<5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
	BH03	**13 Apr 2023**		<5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3

				Halogenated Hydrocarbons												
				1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dibromoethane	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Bromomethane	Chlorobenzene	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane
				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
LOR				0.5	0.5	0.5	0.5	0.5	0.3	0.5	0.5	0.5	10	0.5	5	5	1
ANZECC 2000 Irrigation - Short-term trigger value																	
Managing Risk in Recreational Water 2008 (Health)							1,500		40					300			
Buildings & Structures (AS2159-2009)																	
NEPM 2013 Table 1C GILs, Drinking Water				30	30		1,500		40				1	300			
NEPM 2013 Table 1C GILs, Fresh Waters				3	85		160	260	60								
ANZG (2018) Freshwater 95% toxicant DGVs / ANZECC 2000 Fresh Water (95%)				10	170		160	260	60								
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=2m, <4m																	
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=4m, <8m																	
NEPM 2013 GW HSL Residential A&B, for Vapour Intrusion, Sand (x10) >=8m																	
Site ID	**Field ID**	**Date**															
3 - 5 Help Street, Chatswood	**BH01**	**13 Apr 2023**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<10	<0.5	<5	<5	<1
	BH03	**13 Apr 2023**		<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<10	<0.5	<5	<5	<1

APPENDIX G

Laboratory Reports

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Miichael.Koerner
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET VIC 3000
Telephone	0476 978 773
Facsimile	(Not specified)
Email	michael.koerner@cardno.com.au
Project	**301351072**
Order Number	**301351072**
Samples	5

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE246098 R0**
Date Received	13/4/2023
Date Reported	21/4/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane MCDERMOTT
Inorganic/Metals Chemist

VOC's in Soil [AN433] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
TRH C6-C9	mg/kg	20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
TRH C10-C14	mg/kg	20	<20	<20	<20
TRH C15-C28	mg/kg	45	**130**	<45	<45
TRH C29-C36	mg/kg	45	**79**	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**180**	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**210**	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	**0.5**	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	**1.4**	<0.1	<0.1
Anthracene	mg/kg	0.1	**0.5**	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**3.6**	<0.1	**0.3**
Pyrene	mg/kg	0.1	**4.3**	<0.1	**0.3**
Benzo(a)anthracene	mg/kg	0.1	**2.5**	<0.1	**0.2**
Chrysene	mg/kg	0.1	**2.5**	<0.1	**0.2**
Benzo(b&j)fluoranthene	mg/kg	0.1	**3.2**	<0.1	**0.2**
Benzo(k)fluoranthene	mg/kg	0.1	**1.4**	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	**2.7**	<0.1	**0.2**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**1.8**	<0.1	**0.1**
Dibenzo(ah)anthracene	mg/kg	0.1	**0.5**	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	**1.8**	<0.1	**0.1**
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	**4.2**	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	**4.2**	<0.3	**0.3**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	**4.2**	<0.2	**0.2**
Total PAH (18)	mg/kg	0.8	**27**	<0.8	**1.3**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**27**	<0.8	**1.3**

OC Pesticides in Soil [AN420] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1

Field pH for Acid Sulphate Soil [AN104] Tested: 21/4/2023

PARAMETER	UOM	LOR	HA02_0.7 SOIL - 13/4/2023 SE246098.002
pHf	pH Units	-	**7.4**
pHfox	pH Units	-	**6.5**
Reaction Rate (pHfox)*	No unit	-	**1**
pH Difference*	pH Units	-10	**0.9**

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Arsenic, As	mg/kg	1	9	6	8
Cadmium, Cd	mg/kg	0.3	0.4	<0.3	0.4
Chromium, Cr	mg/kg	0.5	13	16	15
Copper, Cu	mg/kg	0.5	21	<0.5	15
Lead, Pb	mg/kg	1	130	18	77
Nickel, Ni	mg/kg	0.5	5.8	1.2	2.6
Zinc, Zn	mg/kg	2	180	5.3	89

Mercury in Soil [AN312] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Mercury	mg/kg	0.05	**0.12**	<0.05	<0.05

Moisture Content [AN002] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA02_0.7 SOIL - 13/4/2023 SE246098.002	HA03_0.1 SOIL - 13/4/2023 SE246098.003
% Moisture	%w/w	1	**19.0**	**22.2**	**17.7**

Fibre Identification in soil [AS4964/AN602] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Asbestos Detected	No unit	-	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Total Sample Weight*	g	1	**736**	**541**
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD

VOCs in Water [AN433] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
Benzene	µg/L	0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5
Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5
Chloromethane	µg/L	5	<5	<5
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3
Bromomethane	µg/L	10	<10	<10
Chloroethane	µg/L	5	<5	<5
Trichlorofluoromethane	µg/L	1	<1	<1
Acetone (2-propanone)	µg/L	10	<10	<10
Iodomethane	µg/L	5	<5	<5
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5
Acrylonitrile	µg/L	0.5	<0.5	<0.5
Dichloromethane (Methylene chloride)	µg/L	5	<5	<5
Allyl chloride	µg/L	2	<2	<2
Carbon disulfide	µg/L	2	<2	<2
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5
Vinyl acetate*	µg/L	10	<10	<10
MEK (2-butanone)	µg/L	10	<10	<10
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5
Bromochloromethane	µg/L	0.5	<0.5	<0.5
Chloroform (THM)	µg/L	0.5	<0.5	<0.5
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5
Dibromomethane	µg/L	0.5	<0.5	<0.5
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5
2-nitropropane	µg/L	100	<100	<100
Bromodichloromethane (THM)	µg/L	0.5	<0.5	<0.5
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5
Dibromochloromethane (THM)	µg/L	0.5	<0.5	<0.5
2-hexanone (MBK)	µg/L	5	<5	<5
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5
Chlorobenzene	µg/L	0.5	<0.5	<0.5
Bromoform (THM)	µg/L	0.5	<0.5	<0.5
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5

VOCs in Water [AN433] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
Bromobenzene	µg/L	0.5	<0.5	<0.5
n-propylbenzene	µg/L	0.5	<0.5	<0.5
2-chlorotoluene	µg/L	0.5	<0.5	<0.5
4-chlorotoluene	µg/L	0.5	<0.5	<0.5
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5
tert-butylbenzene	µg/L	0.5	<0.5	<0.5
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5
sec-butylbenzene	µg/L	0.5	<0.5	<0.5
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5
n-butylbenzene	µg/L	0.5	<0.5	<0.5
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5
Total VOC	µg/L	10	<10	<10

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
Benzene (F0)	µg/L	0.5	<0.5	<0.5
TRH C6-C9	µg/L	40	<40	<40
TRH C6-C10	µg/L	50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
Naphthalene	µg/L	0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
TRH C10-C14	µg/L	50	<50	<50
TRH C15-C28	µg/L	200	<200	<200
TRH C29-C36	µg/L	200	<200	<200
TRH >C10-C16	µg/L	60	<60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500
TRH C10-C40	µg/L	320	-	-

Speciated Phenols in Water [AN420] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
Phenol	µg/L	0.5	<0.5	<0.5
2-methyl phenol (o-cresol)	µg/L	0.5	<0.5	<0.5
3/4-methyl phenol (m/p-cresol)	µg/L	1	<1	<1
Total Cresol	µg/L	1.5	<1.5	<1.5
2-chlorophenol	µg/L	0.5	<0.5	<0.5
2,4-dimethylphenol	µg/L	0.5	<0.5	<0.5
2,6-dichlorophenol	µg/L	0.5	<0.5	<0.5
2,4-dichlorophenol	µg/L	0.5	<0.5	<0.5
2,4,6-trichlorophenol	µg/L	0.5	<0.5	<0.5
2-nitrophenol	µg/L	0.5	<0.5	<0.5
4-nitrophenol	µg/L	1	<1	<1
2,4,5-trichlorophenol	µg/L	0.5	<0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	µg/L	1	<1	<1
Pentachlorophenol	µg/L	0.5	<0.5	<0.5
2,4-dinitrophenol	µg/L	2	<2	<2
4-chloro-3-methylphenol	µg/L	2	<2	<2

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
Arsenic	µg/L	1	<1	<1
Cadmium	µg/L	0.1	<0.1	<0.1
Chromium	µg/L	1	<1	<1
Copper	µg/L	1	<1	1
Lead	µg/L	1	<1	<1
Nickel	µg/L	1	8	7
Zinc	µg/L	5	59	49

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH01 WATER - 13/4/2023 SE246098.004	BH03 WATER - 13/4/2023 SE246098.005
Mercury	mg/L	0.0001	<0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN104	pHF is determined on an extract of approximately 2g of as received sample in approximately 10 mL of deionised water with pH determined after standing 30 minutes.
AN104	pHFox is determined on an extract of approximately 2g of as received sample with a few mLs of 30% hydrogen peroxide (adjusted to pH 4.5 to 5.5) with the extract reaction being rated from slight to extreme, with pH determined after reaction is complete and extract has cooled. Referenced to ASS Laboratory Methods Guidelines , method 23Af-Bf, 2004. 0 No Reaction 1 Slight Reaction 2 Moderate Reaction 3 Strong/High Reaction 4 Extreme/Vigorous Reaction (gas evolution and heat generation)
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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STATEMENT OF QA/QC PERFORMANCE

SE246098 R0

CLIENT DETAILS

Contact	Miichael.Koerner
Client	STANTEC AUSTRALIA PTY LTD
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Telephone	0476 978 773
Facsimile	(Not specified)
Email	michael.koerner@cardno.com.au
Project	**301351072**
Order Number	**301351072**
Samples	5

LABORATORY DETAILS

Manager	Huong Crawford
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Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE246098 R0**
Date Received	13 Apr 2023
Date Reported	21 Apr 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	1 item
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	3 Soil, 2 Water	Type of documentation received	COC
Date documentation received	14/4/2023@3:34pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	13.5C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE246098 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Fibre Identification in soil

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277266	13 Apr 2023	13 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
HA03_0.1	SE246098.003	LB277266	13 Apr 2023	13 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023

Field pH for Acid Sulphate Soil

Method: ME-(AU)-[ENV]AN104

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA02_0.7	SE246098.002	LB277406	13 Apr 2023	13 Apr 2023	11 May 2023	21 Apr 2023	11 May 2023	21 Apr 2023

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277266	13 Apr 2023	13 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277266	13 Apr 2023	13 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH01	SE246098.004	LB277062	13 Apr 2023	13 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	19 Apr 2023
BH03	SE246098.005	LB277062	13 Apr 2023	13 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	19 Apr 2023

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277301	13 Apr 2023	13 Apr 2023	11 May 2023	20 Apr 2023	11 May 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277301	13 Apr 2023	13 Apr 2023	11 May 2023	20 Apr 2023	11 May 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277301	13 Apr 2023	13 Apr 2023	11 May 2023	20 Apr 2023	11 May 2023	21 Apr 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277287	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	25 Apr 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277287	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	25 Apr 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277287	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	25 Apr 2023	21 Apr 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH01	SE246098.004	LB277067	13 Apr 2023	13 Apr 2023	20 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH03	SE246098.005	LB277067	13 Apr 2023	13 Apr 2023	20 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023

Speciated Phenols in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH01	SE246098.004	LB277067	13 Apr 2023	13 Apr 2023	04 May 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH03	SE246098.005	LB277067	13 Apr 2023	13 Apr 2023	04 May 2023	19 Apr 2023	29 May 2023	21 Apr 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref

HOLDING TIME SUMMARY

SE246098 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277303	13 Apr 2023	13 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277303	13 Apr 2023	13 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277303	13 Apr 2023	13 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH01	SE246098.004	LB277059	13 Apr 2023	13 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	20 Apr 2023
BH03	SE246098.005	LB277059	13 Apr 2023	13 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	20 Apr 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277279	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	30 May 2023	21 Apr 2023

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH01	SE246098.004	LB277067	13 Apr 2023	13 Apr 2023	20 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH03	SE246098.005	LB277067	13 Apr 2023	13 Apr 2023	20 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277286	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	27 Apr 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277286	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	27 Apr 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277286	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	27 Apr 2023	21 Apr 2023

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH01	SE246098.004	LB277074	13 Apr 2023	13 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH03	SE246098.005	LB277074	13 Apr 2023	13 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA01_0.1	SE246098.001	LB277286	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	27 Apr 2023	21 Apr 2023
HA02_0.7	SE246098.002	LB277286	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	27 Apr 2023	21 Apr 2023
HA03_0.1	SE246098.003	LB277286	13 Apr 2023	13 Apr 2023	27 Apr 2023	20 Apr 2023	27 Apr 2023	21 Apr 2023

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH01	SE246098.004	LB277074	13 Apr 2023	13 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH03	SE246098.005	LB277074	13 Apr 2023	13 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	99
	HA02_0.7	SE246098.002	%	60 - 130%	93
	HA03_0.1	SE246098.003	%	60 - 130%	104

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	90
	HA02_0.7	SE246098.002	%	60 - 130%	92
	HA03_0.1	SE246098.003	%	60 - 130%	90
d14-p-terphenyl (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	106
	HA02_0.7	SE246098.002	%	60 - 130%	108
	HA03_0.1	SE246098.003	%	60 - 130%	104

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HA01_0.1	SE246098.001	%	70 - 130%	90
	HA02_0.7	SE246098.002	%	70 - 130%	92
	HA03_0.1	SE246098.003	%	70 - 130%	90
d14-p-terphenyl (Surrogate)	HA01_0.1	SE246098.001	%	70 - 130%	106
	HA02_0.7	SE246098.002	%	70 - 130%	108
	HA03_0.1	SE246098.003	%	70 - 130%	104
d5-nitrobenzene (Surrogate)	HA01_0.1	SE246098.001	%	70 - 130%	94
	HA02_0.7	SE246098.002	%	70 - 130%	100
	HA03_0.1	SE246098.003	%	70 - 130%	94

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH01	SE246098.004	%	40 - 130%	88
	BH03	SE246098.005	%	40 - 130%	82
d14-p-terphenyl (Surrogate)	BH01	SE246098.004	%	40 - 130%	100
	BH03	SE246098.005	%	40 - 130%	89
d5-nitrobenzene (Surrogate)	BH01	SE246098.004	%	40 - 130%	89
	BH03	SE246098.005	%	40 - 130%	81

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	97
	HA02_0.7	SE246098.002	%	60 - 130%	91
	HA03_0.1	SE246098.003	%	60 - 130%	103

Speciated Phenols in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	BH01	SE246098.004	%	40 - 130%	116
	BH03	SE246098.005	%	40 - 130%	102
d5-phenol (Surrogate)	BH01	SE246098.004	%	20 - 90%	72
	BH03	SE246098.005	%	20 - 90%	63

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	73
	HA02_0.7	SE246098.002	%	60 - 130%	71
	HA03_0.1	SE246098.003	%	60 - 130%	77
d4-1,2-dichloroethane (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	71
	HA02_0.7	SE246098.002	%	60 - 130%	66
	HA03_0.1	SE246098.003	%	60 - 130%	73
d8-toluene (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	70
	HA02_0.7	SE246098.002	%	60 - 130%	71
	HA03_0.1	SE246098.003	%	60 - 130%	75

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH01	SE246098.004	%	40 - 130%	90
	BH03	SE246098.005	%	40 - 130%	88
d4-1,2-dichloroethane (Surrogate)	BH01	SE246098.004	%	40 - 130%	84

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	BH03	SE246098.005	%	40 - 130%	87
d8-toluene (Surrogate)	BH01	SE246098.004	%	40 - 130%	100
	BH03	SE246098.005	%	40 - 130%	98

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	73
	HA02_0.7	SE246098.002	%	60 - 130%	71
	HA03_0.1	SE246098.003	%	60 - 130%	77
d4-1,2-dichloroethane (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	71
	HA02_0.7	SE246098.002	%	60 - 130%	66
	HA03_0.1	SE246098.003	%	60 - 130%	73
d8-toluene (Surrogate)	HA01_0.1	SE246098.001	%	60 - 130%	70
	HA02_0.7	SE246098.002	%	60 - 130%	71
	HA03_0.1	SE246098.003	%	60 - 130%	75

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH01	SE246098.004	%	40 - 130%	90
	BH03	SE246098.005	%	40 - 130%	88
d4-1,2-dichloroethane (Surrogate)	BH01	SE246098.004	%	60 - 130%	84
	BH03	SE246098.005	%	60 - 130%	87
d8-toluene (Surrogate)	BH01	SE246098.004	%	40 - 130%	100
	BH03	SE246098.005	%	40 - 130%	98

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB277062.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB277301.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277279.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	91

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277279.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	73
		d14-p-terphenyl (Surrogate)	%	-	76

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB277279.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277279.001		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	71
		2-fluorobiphenyl (Surrogate)	%	-	73
		d14-p-terphenyl (Surrogate)	%	-	76

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277067.001		Naphthalene	µg/L	0.1	<0.1
		2-methylnaphthalene	µg/L	0.1	<0.1
		1-methylnaphthalene	µg/L	0.1	<0.1
		Acenaphthylene	µg/L	0.1	<0.1
		Acenaphthene	µg/L	0.1	<0.1
		Fluorene	µg/L	0.1	<0.1
		Phenanthrene	µg/L	0.1	<0.1
		Anthracene	µg/L	0.1	<0.1
		Fluoranthene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1
		Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	86
		2-fluorobiphenyl (Surrogate)	%	-	82
		d14-p-terphenyl (Surrogate)	%	-	74

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277279.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	89

Speciated Phenols in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB277067.001	Phenol	µg/L	0.5	<0.5
	2-methyl phenol (o-cresol)	µg/L	0.5	<0.5
	3/4-methyl phenol (m/p-cresol)	µg/L	1	<1
	2-chlorophenol	µg/L	0.5	<0.5
	2,4-dimethylphenol	µg/L	0.5	<0.5
	2,6-dichlorophenol	µg/L	0.5	<0.5
	2,4-dichlorophenol	µg/L	0.5	<0.5
	4-chloro-3-methylphenol	µg/L	2	<2
	2,4,6-trichlorophenol	µg/L	0.5	<0.5
	2-nitrophenol	µg/L	0.5	<0.5
	4-nitrophenol	µg/L	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Speciated Phenols in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277067.001		2,4,5-trichlorophenol	µg/L	0.5	<0.5
		2,3,4,6/2,3,5,6-tetrachlorophenol	µg/L	1	<1
		Pentachlorophenol	µg/L	0.5	<0.5
		2,4-dinitrophenol	µg/L	2	<2
	Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	128
		d5-phenol (Surrogate)	%	-	117

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB277303.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB277059.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB277279.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB277067.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277286.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	82
		d8-toluene (Surrogate)	%	-	89
		Bromofluorobenzene (Surrogate)	%	-	84
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277074.001	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5
		1,2-dichloropropane	µg/L	0.5	<0.5
		cis-1,3-dichloropropene	µg/L	0.5	<0.5
		trans-1,3-dichloropropene	µg/L	0.5	<0.5
		1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
		Chloromethane	µg/L	5	<5
		Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3

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Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277074.001	Halogenated Aliphatics	Bromomethane	µg/L	10	<10
		Chloroethane	µg/L	5	<5
		Trichlorofluoromethane	µg/L	1	<1
		1,1-dichloroethene	µg/L	0.5	<0.5
		Iodomethane	µg/L	5	<5
		Dichloromethane (Methylene chloride)	µg/L	5	<5
		Allyl chloride	µg/L	2	<2
		trans-1,2-dichloroethene	µg/L	0.5	<0.5
		1,1-dichloroethane	µg/L	0.5	<0.5
		cis-1,2-dichloroethene	µg/L	0.5	<0.5
		Bromochloromethane	µg/L	0.5	<0.5
		1,2-dichloroethane	µg/L	0.5	<0.5
		1,1,1-trichloroethane	µg/L	0.5	<0.5
		1,1-dichloropropene	µg/L	0.5	<0.5
		Carbon tetrachloride	µg/L	0.5	<0.5
		Dibromomethane	µg/L	0.5	<0.5
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
		1,1,2-trichloroethane	µg/L	0.5	<0.5
		1,3-dichloropropane	µg/L	0.5	<0.5
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
		1,2,3-trichloropropane	µg/L	0.5	<0.5
		trans-1,4-dichloro-2-butene	µg/L	1	<1
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	<0.5
		Bromobenzene	µg/L	0.5	<0.5
		2-chlorotoluene	µg/L	0.5	<0.5
		4-chlorotoluene	µg/L	0.5	<0.5
		1,3-dichlorobenzene	µg/L	0.5	<0.5
		1,4-dichlorobenzene	µg/L	0.3	<0.3
		1,2-dichlorobenzene	µg/L	0.5	<0.5
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5
	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5
		o-xylene	µg/L	0.5	<0.5
		Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
		n-propylbenzene	µg/L	0.5	<0.5
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5
		tert-butylbenzene	µg/L	0.5	<0.5
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5
		sec-butylbenzene	µg/L	0.5	<0.5
		p-isopropyltoluene	µg/L	0.5	<0.5
		n-butylbenzene	µg/L	0.5	<0.5
	Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10
		MtBE (Methyl-tert-butyl ether)	µg/L	2	<2
		Vinyl acetate*	µg/L	10	<10
		MEK (2-butanone)	µg/L	10	<10
		MIBK (4-methyl-2-pentanone)	µg/L	5	<5
		2-hexanone (MBK)	µg/L	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	102

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277074.001	Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5
		Bromodichloromethane (THM)	µg/L	0.5	<0.5
		Dibromochloromethane (THM)	µg/L	0.5	<0.5
		Bromoform (THM)	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277286.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	82

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277074.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	102

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Field pH for Acid Sulphate Soil

Method: ME-(AU)-[ENV]AN104

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246098.002	LB277406.014	pHf	pH Units	-	7.4	7.1	30	4
		pHfox	pH Units	-	6.5	6.5	30	1

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246125.042	LB277062.011	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	120

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.003	LB277301.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE246245.001	LB277301.021	Mercury	mg/kg	0.05	<0.05	<0.05	167	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.003	LB277287.011	% Moisture	%w/w	1	16.7	15.8	36	5
SE246243.007	LB277287.016	% Moisture	%w/w	1	18.5	18.8	35	2

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246098.003	LB277279.025		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.14	30	13
SE246243.004	LB277279.022		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.004	LB277279.022		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.13	30	2
SE246243.007	LB277279.019		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	3

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.004	LB277279.023	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.004	LB277279.023		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE246243.007	LB277279.019		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246098.003	LB277279.021		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.3	0.2	73	23
			Pyrene	mg/kg	0.1	0.3	0.2	67	17
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.1	100	20
			Chrysene	mg/kg	0.1	0.2	0.1	91	21
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	0.2	92	14
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	0.2	0.1	98	15
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.1	<0.1	131	7
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.1	0.1	121	15
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	129	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.2	0.2	97	13
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.3	<0.3	112	2
			Total PAH (18)	mg/kg	0.8	1.3	1.0	39	27
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
SE246243.004	LB277279.023		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	0.1	0.1	123	12
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	191	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.1	0.1	109	27
			Pyrene	mg/kg	0.1	0.2	0.3	71	22

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.004	LB277279.023		Benzo(a)anthracene	mg/kg	0.1	0.1	0.1	110	26
			Chrysene	mg/kg	0.1	0.2	0.2	83	22
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.1	0.2	96	24
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	190	0
			Benzo(a)pyrene	mg/kg	0.1	0.1	0.2	94	22
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.1	0.1	116	19
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.1	0.2	96	17
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	0.2	112	13
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.2	0.3	90	22
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	0.3	108	9
			Total PAH (18)	mg/kg	0.8	1.1	1.6	37	37 †
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE246243.007	LB277279.019		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246113.001	LB277067.021	Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
		Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
		Fluorene	µg/L	0.1	<0.1	<0.1	200	0
		Phenanthrene	µg/L	0.1	<0.1	<0.1	200	0
		Anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Chrysene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246113.001	LB277067.021	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.4	0.4	30	7
			2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.4	30	6
			d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.4	30	5

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246098.003	LB277279.025		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	14
SE246243.004	LB277279.022		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	2
SE246243.007	LB277279.019		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	4

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.003	LB277303.014	Arsenic, As	mg/kg	1	8	8	42	9
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	8.8	13	35	37 ②
		Copper, Cu	mg/kg	0.5	20	24	32	17
		Nickel, Ni	mg/kg	0.5	10	12	34	18
		Lead, Pb	mg/kg	1	24	27	34	12
		Zinc, Zn	mg/kg	2	46	52	34	12
SE246245.001	LB277303.021	Arsenic, As	mg/kg	1	1100	1200	30	8
		Cadmium, Cd	mg/kg	0.3	4.5	4.0	37	11
		Chromium, Cr	mg/kg	0.5	8.8	8.4	36	4
		Copper, Cu	mg/kg	0.5	9.3	8.2	36	12
		Nickel, Ni	mg/kg	0.5	0.9	0.9	84	4
		Lead, Pb	mg/kg	1	26	26	34	0
		Zinc, Zn	mg/kg	2	2.7	2.9	101	5

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246125.042	LB277059.019	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Trace Metals (Dissolved) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN318

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246125.042	LB277059.019		Copper	µg/L	1	<1	<1	200	0
			Lead	µg/L	1	<1	<1	200	0
			Nickel	µg/L	1	<1	<1	200	0
			Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246098.003	LB277279.021		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246243.004	LB277279.023		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	187	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246243.007	LB277279.019		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246095.007	LB277067.021		TRH C10-C14	µg/L	50	<50	<50	200	0
			TRH C15-C28	µg/L	200	<200	<200	200	0
			TRH C29-C36	µg/L	200	<200	<200	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<60	<60	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0
SE246113.001	LB277067.022		TRH C10-C14	µg/L	50	<50	<50	200	0
			TRH C15-C28	µg/L	200	<200	<200	200	0
			TRH C29-C36	µg/L	200	<200	<200	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<60	<60	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.004	LB277286.022	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.004	LB277286.022	Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.8	8.3	50	6
			d8-toluene (Surrogate)	mg/kg	-	8.5	8.6	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	8.2	50	3
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE246243.007	LB277286.019	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.3	50	6
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.0	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.0	8.0	50	1
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245980.001	LB277074.026	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	0.0	30	8
			d8-toluene (Surrogate)	µg/L	-	0.0	0.0	30	4
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	0.0	30	1
		Totals	Total BTEX	µg/L	3	<3	<3	200	0
SE245980.004	LB277074.027	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	0.0	30	6
			d8-toluene (Surrogate)	µg/L	-	0.0	0.0	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	0.0	30	1
		Totals	Total BTEX	µg/L	3	<3	<3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246243.004	LB277286.022		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.8	8.3	30	6
			d8-toluene (Surrogate)	mg/kg	-	8.5	8.6	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	8.2	30	3
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE246243.007	LB277286.019		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.3	30	6
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.0	30	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.0	8.0	30	1
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Volatile Petroleum Hydrocarbons in Water (continued) — **Method: ME-(AU)-[ENV]AN433**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245980.001	LB277074.026		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	0.0	30	8
			d8-toluene (Surrogate)	µg/L	-	0.0	0.0	30	4
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	0.0	30	1
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0
SE245980.004	LB277074.027		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	0.0	30	6
			d8-toluene (Surrogate)	µg/L	-	0.0	0.0	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	0.0	30	1
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277301.002	Mercury	mg/kg	0.05	0.19	0.2	80 - 120	94

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277279.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	81
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	85
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	81
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	82
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	91
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	92
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	86

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277279.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	93
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	92
		Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	74
		Ethion	mg/kg	0.2	1.7	2	60 - 140	84
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277279.002		Naphthalene	mg/kg	0.1	4.8	4	60 - 140	121
		Acenaphthylene	mg/kg	0.1	4.7	4	60 - 140	117
		Acenaphthene	mg/kg	0.1	5.3	4	60 - 140	131
		Phenanthrene	mg/kg	0.1	4.9	4	60 - 140	123
		Anthracene	mg/kg	0.1	4.8	4	60 - 140	119
		Fluoranthene	mg/kg	0.1	4.8	4	60 - 140	120
		Pyrene	mg/kg	0.1	5.5	4	60 - 140	138
		Benzo(a)pyrene	mg/kg	0.1	5.0	4	60 - 140	126
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	91
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277067.002		Naphthalene	µg/L	0.1	39	40	60 - 140	97
		Acenaphthylene	µg/L	0.1	45	40	60 - 140	111
		Acenaphthene	µg/L	0.1	44	40	60 - 140	110
		Phenanthrene	µg/L	0.1	46	40	60 - 140	116
		Anthracene	µg/L	0.1	49	40	60 - 140	123
		Fluoranthene	µg/L	0.1	51	40	60 - 140	127
		Pyrene	µg/L	0.1	52	40	60 - 140	130
		Benzo(a)pyrene	µg/L	0.1	54	40	60 - 140	135
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.5	0.5	40 - 130	96
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.6	0.5	40 - 130	110
		d14-p-terphenyl (Surrogate)	µg/L	-	0.6	0.5	40 - 130	116

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277279.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	97

Speciated Phenols in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277067.002		Phenol	µg/L	0.5	55	40	60 - 140	136
		2,4-dichlorophenol	µg/L	0.5	54	40	60 - 140	134
		2,4,6-trichlorophenol	µg/L	0.5	49	40	60 - 140	122
		Pentachlorophenol	µg/L	0.5	34	40	60 - 140	86
	Surrogates	2,4,6-Tribromophenol (Surrogate)	µg/L	-	6.2	5	40 - 130	125

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Speciated Phenols in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277067.002	Surrogates	d5-phenol (Surrogate)	µg/L	-	2.5	2	40 - 130	123

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277303.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	102
	Cadmium, Cd	mg/kg	0.3	3.8	4.81	70 - 130	78
	Chromium, Cr	mg/kg	0.5	36	38.31	80 - 120	95
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	106
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	96
	Lead, Pb	mg/kg	1	92	89.9	80 - 120	102
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277059.002	Arsenic	µg/L	1	20	20	80 - 120	100
	Cadmium	µg/L	0.1	20	20	80 - 120	100
	Chromium	µg/L	1	19	20	80 - 120	95
	Copper	µg/L	1	19	20	80 - 120	94
	Lead	µg/L	1	20	20	80 - 120	101
	Nickel	µg/L	1	20	20	80 - 120	99
	Zinc	µg/L	5	19	20	80 - 120	97

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277279.002		TRH C10-C14	mg/kg	20	47	40	60 - 140	118
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	106
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	72
	TRH F Bands	TRH >C10-C16	mg/kg	25	47	40	60 - 140	116
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	92
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	65

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277067.002		TRH C10-C14	µg/L	50	1200	1200	60 - 140	96
		TRH C15-C28	µg/L	200	1500	1200	60 - 140	123
		TRH C29-C36	µg/L	200	1600	1200	60 - 140	131
	TRH F Bands	TRH >C10-C16	µg/L	60	1300	1200	60 - 140	108
		TRH >C16-C34 (F3)	µg/L	500	1500	1200	60 - 140	127
		TRH >C34-C40 (F4)	µg/L	500	830	600	60 - 140	138

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277286.002	Monocyclic	Benzene	mg/kg	0.1	5.0	5	60 - 140	100
	Aromatic	Toluene	mg/kg	0.1	4.7	5	60 - 140	94
		Ethylbenzene	mg/kg	0.1	4.6	5	60 - 140	91
		m/p-xylene	mg/kg	0.2	8.6	10	60 - 140	86
		o-xylene	mg/kg	0.1	4.7	5	60 - 140	93
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
		d8-toluene (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.2	10	70 - 130	92

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277074.002	Halogenated	1,1-dichloroethene	µg/L	0.5	54	45.45	60 - 140	118
	Aliphatics	1,2-dichloroethane	µg/L	0.5	50	45.45	60 - 140	111
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	51	45.45	60 - 140	111
	Halogenated	Chlorobenzene	µg/L	0.5	52	45.45	60 - 140	115
	Monocyclic	Benzene	µg/L	0.5	53	45.45	60 - 140	116
	Aromatic	Toluene	µg/L	0.5	53	45.45	60 - 140	116
		Ethylbenzene	µg/L	0.5	52	45.45	60 - 140	114
		m/p-xylene	µg/L	1	100	90.9	60 - 140	112
		o-xylene	µg/L	0.5	51	45.45	60 - 140	111
	Trihalomethan	Chloroform (THM)	µg/L	0.5	56	45.45	60 - 140	124

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277286.002		TRH C6-C10	mg/kg	25	100	92.5	60 - 140	112
		TRH C6-C9	mg/kg	20	90	80	60 - 140	112
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.2	10	70 - 130	92
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	76	62.5	60 - 140	122

Volatile Petroleum Hydrocarbons in Water — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277074.002		TRH C6-C10	µg/L	50	940	946.63	60 - 140	99
		TRH C6-C9	µg/L	40	780	818.71	60 - 140	95
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	630	639.67	60 - 140	98

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245996.001	LB277301.004	Mercury	mg/kg	0.05	0.18	<0.05	0.2	81

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277279.021		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	80
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	89
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	88
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	91
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	96
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	125
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	-	94

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277279.022		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.0	<0.2	2	98
			Diazinon (Dimpylate)	mg/kg	0.5	1.9	<0.5	2	94
			Dichlorvos	mg/kg	0.5	1.4	<0.5	2	70
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.8	<0.2	2	88
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	7.0	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	95

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277279.022	Naphthalene	mg/kg	0.1	3.6	<0.1	4	90
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	3.5	<0.1	4	86
		Acenaphthene	mg/kg	0.1	3.7	<0.1	4	93
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277279.022		Phenanthrene	mg/kg	0.1	4.0	<0.1	4	99
			Anthracene	mg/kg	0.1	3.6	<0.1	4	90
			Fluoranthene	mg/kg	0.1	4.1	<0.1	4	103
			Pyrene	mg/kg	0.1	4.2	<0.1	4	104
			Benzo(a)anthracene	mg/kg	0.1	0.3	<0.1	-	-
			Chrysene	mg/kg	0.1	0.3	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.4	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	0.2	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	3.9	<0.1	4	97
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	0.2	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.0	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.1	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.1	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	32	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	-	89
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	95

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277279.021		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	106
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	-	92

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245996.001	LB277303.004	Arsenic, As	mg/kg	1	46	4	50	85
		Cadmium, Cd	mg/kg	0.3	42	<0.3	50	84
		Chromium, Cr	mg/kg	0.5	53	13	50	79
		Copper, Cu	mg/kg	0.5	54	11	50	86
		Nickel, Ni	mg/kg	0.5	51	10	50	82
		Lead, Pb	mg/kg	1	57	21	50	72
		Zinc, Zn	mg/kg	2	94	59	50	69 ⑨

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245943.001	LB277059.004	Lead	µg/L	1	18	<1	20	94

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277279.022		TRH C10-C14	mg/kg	20	39	<20	40	91
			TRH C15-C28	mg/kg	45	<45	<45	40	88
			TRH C29-C36	mg/kg	45	<45	<45	40	81
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	40	<25	40	93
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	40	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	85
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277286.021	Monocyclic	Benzene	mg/kg	0.1	5.0	<0.1	5	101
		Aromatic	Toluene	mg/kg	0.1	5.0	<0.1	5	99
			Ethylbenzene	mg/kg	0.1	4.9	<0.1	5	99
			m/p-xylene	mg/kg	0.2	9.4	<0.2	10	94
			o-xylene	mg/kg	0.1	5.1	<0.1	5	101
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	7.2	10	89
			d8-toluene (Surrogate)	mg/kg	-	9.1	7.5	10	91
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	7.5	10	89
		Totals	Total BTEX*	mg/kg	0.6	29	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	14	<0.3	-	-

VOCs in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE245925.001	LB277074.028	Monocyclic	Benzene	µg/L	0.5	<0.5	45.45	124
		Aromatic	Toluene	µg/L	0.5	<0.5	45.45	126
			Ethylbenzene	µg/L	0.5	<0.5	45.45	123
			m/p-xylene	µg/L	1	<1	90.9	125
			o-xylene	µg/L	0.5	<0.5	45.45	124
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/L	-	0.0	-	121
			d8-toluene (Surrogate)	mg/L	-	0.0	-	103
			Bromofluorobenzene (Surrogate)	mg/L	-	0.0	-	112
		Totals	Total BTEX	µg/L	3	<3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246243.001	LB277286.021		TRH C6-C10	mg/kg	25	96	<25	92.5	103
			TRH C6-C9	mg/kg	20	83	<20	80	103
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	7.2	10	89
			d8-toluene (Surrogate)	mg/kg	-	9.1	7.5	10	91
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	7.5	-	89
		VPH F	Benzene (F0)	mg/kg	0.1	5.0	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	66	<25	62.5	106

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE245925.001	LB277074.028		TRH C6-C10	µg/L	50	<50	946.63	93
			TRH C6-C9	µg/L	40	<40	818.71	94
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/L	-	0.0	-	121
			d8-toluene (Surrogate)	mg/L	-	0.0	-	103
			Bromofluorobenzene (Surrogate)	mg/L	-	0.0	-	112
		VPH F	Benzene (F0)	µg/L	0.5	<0.5	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	639.67	84

MATRIX SPIKE DUPLICATES

SE246098 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: https://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Project	**301351072**
Order Number	**301351072**
Samples	2

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SGS Reference	**SE246098 R0**
Date Received	13 Apr 2023
Date Reported	21 Apr 2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES

S. Ravensdra.

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE246098.001	HA01_0.1	Soil	736g Sand,Soil,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246098.003	HA03_0.1	Soil	541g Sand,Soil,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 20/4/2023

PARAMETER	UOM	LOR	HA01_0.1 SOIL - 13/4/2023 SE246098.001	HA03_0.1 SOIL - 13/4/2023 SE246098.003
Total Sample Weight*	g	1	**736**	**541**
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

This test report shall not be reproduced, except in full.

SGS

LIMS No: _____

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 13.4.23 Received By: _____ Cooling Method: ☒ Ice ☐ Icepack ☐ None Samples intact: ☒ Yes ☐ No

Logged-in Date: _____ Time of Receipt: 4:50 Cooler Sealed: ☒ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☒ Chilled 13.5°C

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Angus Cadogan, Michael Koerner

Company: Stantec

Address: The Forum, Level 9 203 Pacific Highway, St Leonards

Email: Angus.cadogan@cardno.com.au; Michael.koerner@cardno.com.au

Phone: 478222302 Fax:

Quote #: _____

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: STANDARD TA Urgent TA requires lab approval

Notes:

Client information	**PO No.:**	**Project No.:** 301351072

Company Name: Stantec

Contact Name: Angus Cadogan, Michael Koerner

Address: The Forum, Level 9 203 Pacific Highway, St Leonards

Phone Number: 0476 978 773 **After Hours Phone Number:**

Fax Number: **Email:** Michael.koerner@cardno.com.au; Angus.cadogan@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Date Sampled	Time	Matrix: Soil Water Other	# of Bottles	Analysis Requested: CL17	ACM ID and quanbtitation in soil (500 ml)	pH/pHFOX	CL13	VOC 8620	HOLD						
1	HA01_0.1	13/04/2023		SOIL	2	X	X										
	HA01_0.7	13/04/2023		SOIL	2						X						
	HA02_0.1	13/04/2023		SOIL	2						X						
2	HA02_0.7	13/04/2023		SOIL	2	X		X									
3	HA03_0.1	13/04/2023		SOIL	2	X	X										
	HA03_0.9	13/04/2023		SOIL	2						X						
4	BH01	13/04/2023		WATER	6				X	X							
5	BH03	13/04/2023		WATER	6				X	X							

Sampled By: AC, MK **Date:** 14/04/2023

Relinquished By: Michael Koerner **Date:** 14/04/2023 **Time:** 15:33

E-MAILED 14.4.23 3:34PM

SGS EHS Sydney COC

SE246098

source Sydney_20230414152455309.pdf page: 1 SGS Ref: SE246098_COC

SAMPLE RECEIPT ADVICE

SE246098

CLIENT DETAILS

Contact	Miichael.Koerner
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET VIC 3000
Telephone	0476 978 773
Facsimile	(Not specified)
Email	michael.koerner@cardno.com.au
Project	**301351072**
Order Number	**301351072**
Samples	5

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Thu 13/4/2023
Report Due	Fri 21/4/2023
SGS Reference	**SE246098**

SUBMISSION DETAILS

This is to confirm that 5 samples were received on Thursday 13/4/2023. Results are expected to be ready by COB Friday 21/4/2023. Please quote SGS reference SE246098 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	3 Soil, 2 Water	Type of documentation received	COC
Date documentation received	14/4/2023@3:34pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	13.5C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

3 soil samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.

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SAMPLE RECEIPT ADVICE

SE246098

CLIENT DETAILS

Client STANTEC AUSTRALIA PTY LTD

Project 301351072

SUMMARY OF ANALYSIS

No.	Sample ID	Field pH for Acid Sulphate Soil	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	HA01_0.1	-	30	14	26	11	10	11	7
002	HA02_0.7	4	30	14	26	11	10	11	7
003	HA03_0.1	-	30	14	26	11	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE246098

CLIENT DETAILS

Client STANTEC AUSTRALIA PTY LTD

Project 301351072

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Gravimetric Determination of Asbestos in Soil	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
001	HA01_0.1	2	9	1	1	7
002	HA02_0.7	-	-	1	1	7
003	HA03_0.1	2	9	1	1	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE246098

CLIENT DETAILS

Client STANTEC AUSTRALIA PTY LTD

Project 301351072

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Speciated Phenols in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
004	BH01	1	22	18	7	8	77	7
005	BH03	1	22	18	7	8	77	7

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .