FOUNDATION EARTH SCIENCES

DETAILED SITE INVESTIGATION (DSI)

Property Address

2-10 Berry Road, 14-16 Marshall Avenue & 5-9 Holdsworth Avenue,
St Leonards NSW

Prepared for

Holdsworth Land Pty Ltd

Date

September 2023

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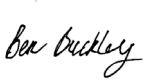
Authorised		Benjamin Buckley- Director B. Env Sc., BSc (Forensics)	14/09/2023

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ABBREVIATIONS

AIP	*Australian Institute of Petroleum Ltd*	**QA/QC**	*Quality Assurance, Quality Control*
ANZECC	*Australian and New Zealand Environment and Conservation Council*	**RAC**	*Remediation Acceptance Criteria*
AST	*Aboveground Storage Tank*	**RAP**	*Remediation Action Plan*
BGL	*Below Ground Level*	**RPD**	*Relative Percentage Difference*
BTEX	*Benzene, Toluene, Ethyl benzene and Xylene*	**SAC**	*Site Assessment Criteria*
COC	*Chain of Custody*	**SVC**	*Site Validation Criteria*
DA	*Development Approval*	**TCLP**	*Toxicity Characteristics Leaching Procedure*
DP	*Deposited Plan*	**TPH**	*Total Petroleum Hydrocarbons*
DQOs	*Data Quality Objectives*	**UCL**	*Upper Confidence Limit*
EPA	*Environment Protection Authority*	**UST**	*Underground Storage Tank*
ESA	*Environmental Site Assessment*	**VHC**	*Volatile Halogenated Compounds*
HIL	*Health-Based Soil Investigation Level*	**VOC**	*Volatile Organic Compounds*
LGA	*Local Government Area*	**DPI**	Department of Primary Industries
NEHF	*National Environmental Health Forum*		
NEPC	*National Environmental Protection Council*		
NHMRC	*National Health and Medical Research Council*		
OCP	*Organochlorine Pesticides*		
OPP	*Organophosphate Pesticides*		
PAH	*Polycyclic Aromatic Hydrocarbon*		
PCB	*Polychlorinated Biphenyl*		
PID	*Photo Ionisation Detector*		
PQL	*Practical Quantitation Limit*		

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EXECUTIVE SUMMARY

Foundation Earth Sciences (FES) was appointed by Holdsworth Land Pty Ltd to undertake a Detailed Site Investigation for the property situated at 2-10 Berry Road, 14-16 Marshall Avenue & 5-9 Holdsworth Avenue, St Leonards NSW ("the site").

The site is currently occupied with residential dwellings including grassed areas, driveways, shed and garages. The site is proposed to be redeveloped into a multi-storey residential building with multiple levels of residential units, three level basement car park, deep soil zone and landscape area.

Soils sampled across the Site were assessed against the Site Acceptance Criteria (SAC) provided by the National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013) Table 1A – Residential B.

The laboratory results for the soil samples were below the adopted detection limits and/or the relevant guideline criteria apart from the following:

- Borehole location BH1 (0.0-0.1m) had a TRH F2 concentration exceeding the ESL criteria from the samples collected during the FES PSI 2021.
- Borehole location BH10 (0.1-0.2m) had a copper concentration exceeding the site derived EILs.
- The following borehole locations BH2 (0.1-0.2m), BH8 (0.0-0.1m), BH12 (0.1-0.2m), BH14 (0.1-0.2m), D2 and SS2 (BH10) had concentrations of zinc exceeding the site derived EILs.
- Borehole locations BH11 (0.0-0.1m) had a TRH F2 concentration exceeding the ESL criteria.
- Concentrations of B(a)p in the FES fill locations BH1 (0.1-0.2m), BH2 (0.1-0.2m), BH3 (0.0-0.1m), BH5 (0.1-0.2m), BH7 (0.1-0.2m), BH8 (0.0-0.1m), BH13 (0.2-0.3m),

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BH14 (0.1-0.2m), D1, and SS1 exceeding the ESL criteria. Along with FES fill location BH1 (0.0-0.1), D1 & SS1 in the previous FES PSI 2021, exceeding the ESL criteria.

- Concentrations of BAP TEQ were detected in FES fill locations BH2, BH5, BH14 exceeding the HIL B criteria.
- Further remediation work is required at the above locations.
- No identified asbestos was detected in the soil samples analysed. No fibro cement fragments were observed in the fill material located within the borehole and/or on the surface of the site at the time of the site inspection.
- The FES DSI locations BH1, BH2, BH6 & BH8 and FES PSI 2021 locations BH1 to BH4 fall within the proposed basement footprint. Therefore, the ESL/EIL criteria do not apply as the soil within this area will be removed during bulk excavation works.

The groundwater monitoring indicated levels of dissolved heavy metals above groundwater investigation levels. The elevated GILs are related to offsite regional contaminant concentrations and/or background levels & therefore of limited concern. The following lines of evidence support the low-risk groundwater conclusions in relation to site suitability:

- Surrounding properties are mostly residential land uses.
- The site is not located in a catchment with contains the water quality objectives of drinking water (i.e., beneficial use) and therefore drinking water guidelines were not applied.
- The groundwater is in the weathered sandstone / shale and is therefore consider a semi confined / confined aquifer. With respect to contamination this further lowers the likely potential for the site to impact the groundwater table.

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Based on the historical review, environmental information, proposed development and laboratory results of the investigation, the site can be made ***suitable*** for the proposed development, subject to the following:

- It is considered that the site would be deemed suitable for the proposed development subject to the implementation of a Remediation Action Plan (RAP) to manage the abovementioned environmental concerns and data gaps.
- A hazardous materials assessment is recommended to be completed prior to the demolition of the building structures on the site.
- Any soil requiring removal from the site, as part of future site works, should be classified in accordance with the "Waste Classification Guidelines, Part 1: Classifying Waste" NSW EPA (2014).

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1.0 INTRODUCTION

Foundation Earth Sciences (FES) was appointed by Holdsworth Land Pty Ltd to undertake a Detailed Site Investigation for the property situated at 2-10 Berry Road, 14-16 Marshall Avenue & 5-9 Holdsworth Avenue, St Leonards NSW ("the site").

Soils sampled across the Site were assessed against the Site Acceptance Criteria (SAC) provided by the National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013) Table 1A – Residential B.

2.0 OBJECTIVE

The NSW Office of Environment and Heritage (OEH) indicate that a Detailed Site Environmental Investigation should provide comprehensive information on:

- Any issues raised in preliminary investigations.
- The type, extent and level of contamination.
- Contaminant dispersal in the air, surface water, soil and dust.
- The potential effects of contaminants on public health and the environment.
- Where applicable, off-site impacts on soil, sediment and biota; and
- The adequacy and completeness of all information available to be used in making decisions on remediation.

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The project objectives of this Detailed Site Investigation (DSI) are to satisfy the stated NSW EPA Detailed Site Investigation requirements in accordance with *NSW EPA, Consultants Reporting on Contaminated Land, 2020.* Specifically, this investigation will consider the potential for suspected historical activities to have caused contamination at the Site and determine land use suitability for the proposed land use.

The proposed investigation program and the Detailed Site Investigation are designed to assess the presence of any unacceptable on site or off-site risk to human health or the environment. The report will draw conclusions regarding the land use suitability of the site for the proposed land use or provide recommendations to enable such conclusions and determine the need for a further assessment.

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3.0 SCOPE OF WORKS

The scope of works for this Detailed Site Investigation (DSI) included:

- Collecting site information, review of historical information and past site practices, (site surveys, site records on waste management practices, NSW Land Titles Office records of ownership, aerial photographs obtained from the NSW Department of Lands, WorkCover NSW records and site interviews).
- A site inspection to identify areas of environmental concern, on-site waste disposal practices and location of sewers, drains, holding tanks, Underground Storage Tanks, Aboveground Storage Tanks and pits, spills and ground discolouration etc.
- A targeted soil boring/sampling investigative study – formulating and conducting a sampling plan and borehole investigation; the soil samples are taken and submitted for analysis on contaminants.
- Groundwater monitoring, well installation and sampling program based on site access.
- Laboratory analysis and results from sample analysis – findings and comparison to regulatory guidelines.
- Quality Assurance/Quality Control (QA/QC) – all QA/QC procedures were undertaken in accordance with the Foundation Earth Sciences Quality Assurance/Quality Control manual.
- Interpretation of results and findings; and
- Recommendations and final conclusions drawn from interpretation of the results.

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4.0 SITE IDENTIFICATION AND SITE HISTORY REVIEW

4.1 Site identification

The site is identified as follows:

Table 1: Site Identification Review

Site Identifier	Site Details	
Site Location	2-10 Berry Road, 14-16 Marshall Avenue & 5-9 Holdsworth Avenue, St Leonards NSW	
Lot/DP	Lot 1 in Sec 2 in DP7259 (16 Marshall Ave) Lot 2 in Sec 2 in DP7259 (14 Marshall Ave) Lot 7 in Sec 2 in DP7259 (5 Holdsworth Ave) Lot 8 in Sec 2 in DP7259 (7 Holdsworth Ave) Lot 9 in Sec 2 in DP7259 (9 Holdsworth Ave) Lot 38 in Sec 2 in DP7259 (2 Berry Rd) Lot 37 in Sec 2 in DP7259 (4 Berry Rd) Lot 36 in Sec 2 in DP7259 (6 Berry Rd) Lot 35 in Sec 2 in DP7259 (8 Berry Rd) Lot 34 in Sec 2 in DP7259 (10 Berry Rd)	
Site Coordinates #	SW corner: Latitude: -33.825888, Longitude: 151.192183	
Parish	Willoughby	
County	Cumberland	
Site Area	Approximately 5,898m²	
Local Government Area (LGA)	Lane Cove	
Zoning##	R4 – High Density Residential	
Surrounding Land Uses	*North*	Marshall Avenue then Commercial/Residential
	South	Residential
	East	Residential
	West	Residential

Notes:

Six Maps

refer to NSW Planning Portal – //www.planningportal.nsw.gov.au/find-a-property

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4.2 Underground Services

Dial Before You Dig' plans were requested and reviewed for the site. Plans were provided by Ausgrid, FibreSense Pty Limited (NSW), Jemena Gas North, NBN Co NSW ACT, Nextgen NCC – NSW, Optus and or Uecomm NSW, Sydney Water, Telstra NSW Central & Verizon Business. The plans did not indicate the presence of any major underground services or utility easements at the site.

The Sydney Water plans indicate a sewer main line running along the northern boundary of Lot 38 from west to east, which then extended along the eastern boundary of Lots 34 to 38, running from north to south. The Telstra NSW Central plans also indicated cables running from the street on to the properties of Lots 1, 2, 7, 9, 34, 36 and 38. It is noted that these underground services are considered a potential preferential pathway.

Refer to **Appendix A** – DBYD Plans.

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4.3 Review of aerial photographs

The following information regarding the aerial photographs has been obtained and the summary of this review are presented in the following table:

Table 2 Review of Aerial Photographs

Year	Site		Surrounding areas
1943	Residential	The site appears to be made up of 10 single-storey residential dwellings, with grassed backyards, sealed driveways/paths. Some properties also have external storage structures.	N: Marshall Avenue, then residential, then Pacific Highway S: Residential E: Holdsworth Avenue then residential and a railway line W: Berry Road then residential
1965	Residential	The site appeared to be mostly unchanged, with exception of an additional covered area in the backyard of 8 Berry Road.	N: Road then residential and new commercial developments S: No major changes E: No major changes W: No major changes
1971	Residential	No major changes.	No major changes other than expanding commercial spaces to the North, including the addition of a carpark
1986	Residential	No major changes	No major changes
1994	Residential	The dwelling in Lot 35 has been redeveloped	No major changes other than expanding commercial spaces to the North and North-West
2005	Residential	No major changes	No major changes

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Current	As per inspection	The site is as inspected (section 7.1)	As per inspection

The aerial photographs indicate the site appeared to be made of ten separate residential properties from 1943 to the present day. By 1965, an additional covered area was constructed within the property 8 Berry Road. Sometime before 1994, the residential dwelling in Lot 35 was redeveloped. The surrounding land appeared to be residential from 1943 to the current date. From 1965 until sometime before the 2000s, properties to the north and north-west of the site were redeveloped into commercial properties. From the 2000s until the present day, the surrounding land has been unchanged.

Refer to **Appendix L** – Historical Aerial Photographs.

4.4 Title search

The land title search was completed, and the following information was obtained.

Table 3 Historical land title data

Lot 38 Sec 2 in DP7259 (2 Berry Road, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017 – Current	Marshall Land PTY LTD	Property Developer
2001	Menka Monaco	
1979	Fortunate Monaco	
1979	Agnes Hayes	
1975	Betty Webb	

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1961	Elizabeth Webb	
1938	Frederick Webb & Elizabeth Webb	
1938	Public Trustee & Euphemia Dan	
1921	Catherine Harris	

Lot 37 Sec 2 in DP7259 (4 Berry Road, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017 – Current	Holdsworth Land Pty Ltd	Property Developer
2003	John McKay	
1968	Eunice McKay	
1963	Max Mouer	
1963	John Brindley Trevor Brindley	
1952	Fanny Brindley	
1927	John Brindley Fanny Brindley	
1927	Herbert Moffitt	
1922	Kate Lindeman	

Lot 36 Sec 2 in DP7259 (6 Berry Road, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2019 – Current	Holdsworth Land Pty Ltd	Property Developer

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2017	Andrew Fournier	
2007	Katherine Po Chu Wong Fournier Andrew Fournier	
1998	Derek Crichton Catherine Crichton	
1966	Ling Chiu	University Lecturer
1960	Katherine Paul	
1939	Lucy Graham	
1920	John Graham Lucy Graham	

Lot 35 Sec 2 in DP7259 (8 Berry Road, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017 – Current	SJD St Leonards Pty Ltd	
1993	Cheong Sung Yu Sung	
1974	Thelma McCullum	
1966	John McCullum Thelma McCullum	
1947	George Fitzsimmons	
1928	Leslie Whitney	
1920	Arthur Miles	Builder

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Lot 34 Sec 2 in DP7259 (10 Berry Road, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017 – Current	SJD St Leonards Pty Ltd	
2007	Jason Jones Katherine Jones	
1995	David Healey Kay Healey	
1980	David Healey	
1969	David Healey Kay Healey	
1966	Francis Lloyd Joan Lloyd	
1960	Arthur Blakey Brenda Blakey	
1958	William McHuliffe Vera McHuliffe	
1953	Lester Cunningham	

Lot 1 Sec 2 in DP7259 (16 Marshall Avenue, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017 – Current	Marshall Land PTY LTD	Property Developer
2014	Ricam Pty Ltd	
1992	Richard Norman Porter John W Riley Pty Ltd	

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1989	John W Riley Pty Ltd Richard Norman	
1985	John W Riley Pty Ltd	
1980	Cartor Pty Ltd	
1980	Norma Todman Alma Carthorn	
1929	Edith Bertram	
1921	Beryl Bertam	Health Inspector

Lot 2 Sec 2 in DP7259 (14 Marshall Avenue, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017 – Current	Marshall Land PTY LTD	Property Developer
2006	Richard Norman Porter	
	Oleh Suchowersky	
1988	Diana Liliana Jakubowicz	
1972	Gesen Pty Ltd Judith Bell Margaret Meisenhelter	
1969	Paul Kerr Carol Kerr	
1959	Elise Lee	
1957	Benjamin Slavin	
1957	Robin Mackenzie Jessie Mackenzie	

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Lot 7 Sec 2 in DP7259 (5 Holdsworth Avenue, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017	Holdsworth Land Pty Ltd	
2016	Justin Sidney Horan	
1981	Justin Sidney Horan Ilse Horan	
1981	Margaret Bloof Ethel Coupland	
1958	Ethel Russell	
1923	William Drake	
1916	Walter Jackson	

Lot 8 Sec 2 in DP7259 (7 Holdsworth Avenue, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017	Holdsworth Land Pty Ltd	
1987	Duncan Reid Heather Reid	
1942	William Turner	

Lot 9 Sec 2 in DP7259 (9 Holdsworth Avenue, St Leonards NSW)		
Year	**Proprietor**	**Company/Personal Occupation**
2017	Holdsworth Land Pty Ltd	
2015	John Sinn	
2012	Terrence Trankiem	
2007	Sarah Southall	
1987	Norma Bagnall	

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1958	Harold Bagnall	
1956	Elane Gouins	
1934	Camellia McDonald	
1928	Edward Lindeman	
1927	Herbert Moffitt	
1921	Kate Lindeman	

In summary, the land titles have indicated the following:

- The properties at 5-9 Holdsworth Avenue have been owned by private individuals from 1916 to 2017. From 2017 to the current date, the land has been owned by a commercial entity.
- The properties at 2-10 Berry Road have been owned by private individuals from 1920s to 2017. From 2017 to the current date, the land has been owned by a commercial entity.
- The property at 16 Marshall Avenue has been owned by private individuals from 1921 to 1980. From 1980 to the current date, the land has been owned by both private and commercial entities.
- The property at 14 Marshall Avenue has been owned by private individuals from 1957 to 1972. From 1972 to 1988, the land has been owned by both private and commercial entities. The land reverted to private ownership from 1988 to 2017. From 2017 to the current date, the land has been owned by a commercial entity.
- The land titles for the subject site have not indicated any potential land use of particular concern.

Refer to **Appendix M** – Land Title Information.

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4.5 Anecdotal Evidence

No anecdotal evidence was available at the time of the investigation.

4.6 NSW EPA Records

The NSW EPA publishes records of contaminated sites under Section 58 of the Contaminated Land Management (CLM) Act 1997. The notices relate to investigation and/or remediation of site contamination considered to pose a significant risk of harm under the definition in the CLM Act.

A search of the database revealed that the subject site is not listed and there were no listed properties within the suburb of St Leonards with current notices.

It should be noted that the NSW EPA record of Notices for Contaminated Land does not provide a record of all contaminated land in NSW.

Refer to **Appendix B** – NSW EPA Records.

4.7 NSW EPA POEO Register

A search of the POEO Register revealed that the site was not listed on the register. However, there are five registered properties within the suburb of St Leonards. Four of

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the properties were located within 1km of the site, however these are not seen as cause for concern.

Refer to **Appendix B** – NSW EPA Records.

4.8 NSW EPA List of Notified Sites

The NSW EPA publishes a list of notified contaminated sites each month. The list of notified sites contain land that has been notified to the EPA as being potentially contaminated.

A search of the list was completed on the 25th of August 2023 and revealed the site is not identified. However, the following table lists the property on the register located less than 1km from the subject site:

Table 4: List of Contaminated site

Suburb	Site Name	Address	Contamination Activity Type	Management Class
St Leonards	Telstra Data Centre	4A Herbert STREET	Other Petroleum	Regulation under CLM Act not required

Refer to **Appendix B** – NSW EPA Records.

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4.9 PFAS Preliminary Screen

NSW EPA requires that PFAS is considered when investigating land contamination. The preliminary screen is based on guidelines from the PFAS National Environmental Management Plan (NEMP 2020). From this screen, a decision can be made as to whether PFAS sampling of soil and groundwater is required.

Table 4: PFAS Preliminary Screen

Preliminary Screen	Risk of Occurrence
Any past or present site activity listed in NEMP 2020 as being activity associated with PFAS contamination?	L
Any past or present off-site activity up-gradient / adjacent to the site listed in NEMP 2020 as being activity associated with PFAS contamination?	L
Did fire training involving the use of suppressants occur from 1970 to 2010?	L
Have fuel fires ever occurred on site from 1970 to 2010?	L
Have PFAS been used in manufacturing or stored on site?	L
Could PFAS have been imported to the site in fill materials from a site activity listed in NEMP 2020?	L
Could PFAS contaminated groundwater or run-off migrated to the site	No
Is the site or adjacent site listed in the NSW EPA PFAS Investigation Program	No
If the risk is medium or high in any of the above, does the inclusion of preliminary sampling / testing of PFAS in soil (including ASLP) and water need to be included?	No

- Note 1
  - Risk: L – low (all necessary documentation has been reviewed and there is no recorded instance or compelling rationale),
  - M – medium/moderate (all necessary documentation has been reviewed and there is potential evidence of a recorded instance with compelling rationale).
  - H – high (all necessary documentation has been reviewed and there is evidence of a recorded instance with compelling rationale), r

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- Risk, N/A – not applicable (or "- ")].
- No /Yes

- Note 2 Activities listed in Appendix B of the NEMP (2020).
- Note 3 Runoff from up-gradient PFAS use may impact surface water, soil, sediment and groundwater.
- Note 4 PFAS is used wide range of industrial processes and consumer products, including in the manufacture of non-stick cookware, specialised garments and textiles, ScotchguardTM and similar products (used to protect fabric, furniture, leather and carpets from oils and stains), metal plating and in some types of fire-fighting foam.
- Note 5 https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program

The potential for PFAS to be present on-site was low and subsequently PFAS sampling / analysis of soil and water was not warranted.

Refer to **Appendix B** – NSW EPA Records.

4.10 SafeWork NSW

Foundation Earth Sciences previously inspected the site on 1st September 2021 and there were no visual indicators of USTs and/or related infrastructure in accessible areas. Foundation Earth Sciences staff has considered the site inspection, aerial photographs & land title information and concluded the land use appeared to be entirely residential. Therefore, based on the weight of evidence above, no SafeWork NSW search was undertaken for this site.

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4.12 Integrity Assessment

The information found in the historical sources has been found to be in general concurrence. It is therefore considered that accuracy of this data is acceptable for this investigation.

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5.0 REVIEW OF ENVIRONMENTAL INFORMATION

Table 5: Site Condition and Surrounding Environment Review

Site Information	Descriptions
Sensitive Receivers	The nearest sensitive human receptors are the current and future users of the site, construction workers during the site redevelopment and the public. The nearest watercourse is Berry's Creek located 341m south of the site.
Soil Landscape *Review of NSW Soil and Land Information website ESPADE.*	The Soil Landscape Map viewed on NSW ESPADE indicates that the site is located within the Glenorie landscape area: Undulating to rolling low hills on Wianamatta Group shales. Local relief 50-80m, slopes 5-20%. Narrow ridges, hillcrests and valleys. Extensively cleared tall open forest (wet sclerophyll forests).
Topography *Review of NSW Soil and Land Information website ESPADE.*	The topography viewed on NSW ESPADE indicated the following for the Glenorie landscapes: Low rolling and steep hills. Local relief 50-120m, slopes 5-20%. Convex narrow (20-300m) ridges and hillcrests grade in moderately inclined sideslopes with narrow concave drainage lines. Moderately inclined slopes of 10-15% are the dominant landform elements.
Geological Profile	The Geological Map of Sydney (Geological Series Sheet 9130, Scale 1:100,000, 1983), published by the Department of Mineral Resources indicates the residual soils within the site to be underlain by Triassic Age Shale of the Wianamatta Group, comprising black to dark grey shale and laminate.
Presence of Acid Sulphate Soils *Review of NSW Department of Land & Water Conservation (DLWC) Acid Sulphate Soil Risk Maps (Edition Two, December 1997, Scale 1:250,000*.	A review of the "Prospect_Parramatta" map indicated that the site is in an area of "No known occurrences" of acid sulphate soil material within the soil profile.

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Site Information	Descriptions					
Localised Hydrogeology Review of DPI (Office of Water) Database. Copies of the groundwater bore records are in: **Appendix D** – DPI (Office of Water) Database Records.	**Number**	**Location from Site**	**Depth (m BGL)**	**SWL (m BGL)**	**Use**	**Water Bearing Zones**
	GW072478	972m NW	180.50	48.00	Domestic Bore	Unknown
	GW108224	900m NE	132.40	35.00	Domestic Bore	Unknown
Nearest Surface Water Body	The nearest watercourse is Berry's Creek located 341m south of the site					
Nearest Active Service Station & Dry Cleaner Shop (Google Maps Search)	Service Station: 1.3km east of the site. Dry Cleaner Shop: 400m north-east of the site					
Local Meteorology (Bureau of Meteorology BOM website) **Appendix E** – BOM Data.	The monthly rainfall of the local surrounding area is represented by the data collected from the BOM rainfall gauge located at the Chatswood Bowling Club, which is located approximately 2.3km from St Leonards. The records indicate that the mean monthly rainfall in August (date of fieldwork) was 77.5mm.					

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6.0 REVIEW OF CONSTRUCTION AND SERVICE INFORMATION

6.1 Proposed Development

The site is currently occupied with residential dwellings including grassed areas, driveways, sheds and garages. The site is proposed to be redeveloped into a multi-storey residential building with multiple levels of residential units, three level basement car park, deep soil zone and landscape area.

Refer to **Appendix F** - Proposed Development Plans.

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7 SITE VISIT

7.1 General

The site was visited on the 30th of August 2023 by Foundation Earth Sciences Environmental Scientists to inspect the site for any potential sources of contamination.

The following items were considered as part of the site visit:

- Description of the building structures.
- Site surroundings.
- Present and past industrial processes and operations at the site.
- Surface water, groundwater, stormwater and sewer.
- Present and past storage of chemicals and wastes associated with site use and their on-site location.
- Waste management practices and management of hazardous materials.
- Presence of Underground Storage Tanks or Above Ground Storage Tanks.
- Odour; and
- Occupational health and safety.

7.2 Site observations

At the time of the site visit the following observations were made as per the following table:

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Table 6: Site Inspection Review

Factors Considered	Description
Buildings & Structures on Site	The site is currently occupied by ten (10) residential properties, each with a residential dwelling, sealed driveways and outdoor spaces, and grassed areas. Some also have external storage dwellings to the rear of the houses.
Percentage Hard-standing surface	70%
Concrete Condition	Good
Chemical Storage	No chemical storage areas were noticed in the accessible areas during the site inspection.
Above and Underground Storage Tanks	No above or underground storage tanks areas were noted at the time of the site inspection in accessible areas.
Trade Waste Pits	No trade waste agreements or pits were identified for the building.
Nearby Electrical Transformers	No electricity substation is identified within the site.
Asbestos	Fibro cement sheeting was not identified within the site surfaces and borehole locations.
Soil Staining and Odours	No odours were identified within the property. No significant soil staining was noted during the inspection
Stormwater and Sewer	Stormwater and sewage were connected to the local utilities.

Refer to **Figure 2** - Site Features Plan and **Appendix C** – Site Photographs.

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8 PRELIMINARY CONCEPTUAL SITE MODEL (CSM)

Based on the above information, site history and site walkover, the areas of potential concern and associated contaminants for the site CSM were identified. These are summarised in the following table.

Table 7: Areas and Contaminants of Concern

Known and potential contamination source	Associated Contaminants
Historical & Current Site Uses (Residential)	Heavy Metals, TRH, BTEX, PAH, OCP, PCB & Asbestos
Surrounding Land Uses (Residential, Commercial)	Heavy Metals, TRH, BTEX, PAH, OCP, PCB, OPP & Asbestos
Imported Fill	Heavy Metals, TRH, BTEX, PAH, OCP, PCB & Asbestos
Car parking Areas	TRH, BTEX, PAH
Potential Pesticide Use	OCP, OPP
Building degradation/ Demolition	Heavy Metals and Asbestos

Table 8: Potentially Contaminated Media

Known and potential contamination source	Associated Contaminants
Fill Material	There is the potential for contamination to be present in the upper fill material.
Groundwater	There is the potential for the leaching of contaminants into groundwater onsite and also migration of the contaminants.

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Soil Vapour	Given the site history, sampling to date and surrounding land uses soil vapour is considered an unlikely potentially contaminated media.

8.1 Chemicals of Concern

Soils

The following chemicals of concern were identified in the sampling conducted in this investigation.

- Borehole location BH1 (0.0-0.1m) had a TRH F2 concentration exceeding the ESL criteria from the samples collected during the FES PSI 2021.
- Borehole location BH10 (0.1-0.2m) had a copper concentration exceeding the site derived EILs.
- The following borehole locations BH2 (0.1-0.2m), BH8 (0.0-0.1m), BH12 (0.1-0.2m), BH14 (0.1-0.2m), D2 and SS2 (BH10) had concentrations of zinc exceeding the site derived EILs.
- Borehole locations BH11 (0.0-0.1m) had a TRH F2 concentration exceeding the ESL criteria.
- Concentrations of B(a)p in the FES fill locations BH1 (0.1-0.2m), BH2 (0.1-0.2m), BH3 (0.0-0.1m), BH5 (0.1-0.2m), BH7 (0.1-0.2m), BH8 (0.0-0.1m), BH13 (0.2-0.3m), BH14 (0.1-0.2m), D1, and SS1 exceeding the ESL criteria. Along with FES fill location BH1 (0.0-0.1), D1 & SS1 in the previous FES PSI 2021, exceeding the ESL criteria.
- Concentrations of BAP TEQ were detected in FES fill locations BH2, BH5, BH14 exceeding the HIL B criteria.
- Further remediation work is required at the above locations.
- No identified asbestos was detected in the soil samples analysed. No fibro cement fragments were observed in the fill material located within the borehole and/or on the surface of the site at the time of the site inspection.

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- The FES DSI locations BH1, BH2, BH6 & BH8 and FES PSI 2021 locations BH1 to BH4 fall within the proposed basement footprint. Therefore, the ESL criteria do not apply as the soil within this area will be removed during bulk excavation works.

Groundwater

The following chemicals of concern were identified in the sampling events completed as part of this DSI:

- Copper and Zinc were observed to be above the levels of testing. It is assumed that this is related to the regional background levels.

8.2 Sources

Soil

The most likely source of the contaminants of concern is the quality of the soil materials impacted from historical land use across the site.

Groundwater

The elevated GILs are related to offsite regional contaminant concentrations and/or background levels. The likely sources include offsite migration.

8.3 Potential Exposure Pathways

Potential exposure pathways include:

- Dermal.
- Ingestion; and
- Inhalation.

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Due to the presence of exposed potentially impacted soil/fill on ground surfaces, dermal and inhalation exposure is considered a potential exposure pathway.

The potential for ingestion of soil is considered as a potential exposure pathway. Although groundwater is not used at the site, there is the potential, for ingestion of contaminants via groundwater removed from monitoring wells.

The proposed development does include the construction of a basement. Because of this dermal and inhalation exposure pathway by potentially contaminated groundwater is considered a risk.

Based on the soil and groundwater sampling to date there is a low potential for vapour to be present in the underlying profile within the site.

8.4 Receptors

Human:

The site groundwater is not currently used for or planned to be used for drinking water as town water is provided be Sydney Water.

Ecological

The ecological receptors would be surface water and benthic organisms in Berry's Creek.

Potential receptors of environmental impact present within the site which will be required to be addressed with respect to the suitability of the site for the proposed use include:

- Excavation/construction/maintenance workers conducting activities at the site, who may potentially be exposed to COPCs through direct contact with impacted soils,

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Vapour Intrusion and/or groundwater present within excavations and/or inhalation of dusts/fibres associated with impacted soils.

- Future occupants/users of the site may potentially be exposed to COPCs through direct contact with impacted soils and/or ingestion of impacted soils and/or inhalation of dusts/fibres associated with impacted soils and/or exposure to vapour; and/or
- Offsite sensitive receptors of groundwater; and/or
- Flora species to be established on vegetated areas of the site.
- Berry's Creek

8.5 Potential for Migration

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics).
- The extent of the contaminants (isolated or widespread).
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology, and hydrogeology.

The potential contaminants identified as part of the site history review & site inspection are present in solid (e.g., impacted fill, asbestos), liquid (e.g., dissolved in water) & gas form (soil vapour).

The proposed development once constructed will create minimal unsealed ground surfaces and therefore, there is a low risk for migration of contaminants via wind-blown dust.

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Likewise, rainfall infiltration at the site is not expected due to the proposed sealed surfaces across most of the site based on the proposed development.

Based on the historical uses and sampling to date, the site has a low potential for possible migration of contaminants in liquid (on-off site migration).

8.6 Preferential Pathways

For this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPCs as either liquids or gases.

Man-made preferential pathways are present throughout the site, generally associated with fill materials and services present beneath existing ground surface. Fill materials and service lines are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

8.7 Frequency of Exposure

As the potential for ingestion of soil is considered a potential exposure pathway during site development works as construction workers would be exposed to soil. The frequency of exposure will be occurring from removal of the existing hard standing surfaces until construction of the new surfaces across the proposed development area.

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8.8 Offsite Contamination & Data Gap Identification

Impacted soil contamination could migrate off site during site development works with surface water run-off.

8.9 Data Gap Identification

The following data gaps remain:

- Waste classification during excavation works to facilitate offsite disposal (TCLP required for heavy metals and PAH)

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9 REVIEW OF DATA QUALITY OBJECTIVES

The DQOs were also prepared using Appendix IV of the Site Auditor Guidelines. These require 7 steps. The steps being:

a. State the problem.
b. Identify the decisions.
c. Identify inputs to decision.
d. Define the study boundaries.
e. Develop a decision rule.
f. Specify limits on decision errors.
g. Optimise the design for obtaining data.

9.1 State the Problem

The site requires to be confirmed suitable for the proposed development. The site is proposed to be redeveloped and has had some areas of potential concern, those being historical & current land uses (residential, commercial), surrounding land uses (residential / commercial), possible areas of imported fill of unknown origin, potential pesticide use, degradation of the building materials and leakages from vehicles on site.

Technically defensible evidence needs to be provided so that the identified site does not present an unacceptable risk to human health or the environment and is suitable for the intended land use.

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9.2 Identify the Decisions

The decisions to be made on the contamination and the new environmental data required includes considering relevant site contamination criteria for each medium (fill, soil and sediment). A proposed use of the 95% UCL on the mean concentrations for all soil chemicals of potential concern must be less than the site criteria identified for the relevant land use suitability.

The decisions made in completing this assessment are as follows:

- Does the site or is the site likely to present a risk of harm to humans or the environment?
- Is the site currently suitable for the proposed land use being residential with minimal accessible soil?
- Is there a potential for soil and groundwater contamination?
- Is there a potential for offsite migration issues?
- Do the sampling results meet the site criteria proposed?
- If not, does the site require remediation works?

9.3 Identify Inputs to Decision

This step requires the identification of the environmental variables/characteristics that need measuring, identification of which media (fill, soil etc.) need to be collected, identification of the site criteria for each medium of concern and appropriate analytical testing. Inputs include:

- Existing site information
- Site history

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- Regional geology, topography and hydrogeology
- Potential contaminants
- Proposed Land Use
- Site assessment criteria
- Results as measured against criteria.

9.4 Define the Study Boundaries

Specific spatial and temporal aspects must be provided to identify the boundaries of the investigation and to identify any restrictions that may hinder the assessment process. The site is located at 2-10 Berry Road, 14-16 Marshall Avenue & 5-9 Holdsworth Avenue, St Leonards NSW. The site is approximately 5,898m² in area.

Refer to **Figure 1** - Site Location and **Figure 2** – Site Features Plan.

9.5 Develop a Decision Rule

The information obtained through this assessment will be used to characterise the soils and the groundwater on the site in terms of contamination issues and risks to human health and the environment. The decision rule in characterising the site will be as follows:

- Laboratory test results will be measured against the criteria provided within this report.
- The site will be deemed suitable for the proposed use if the following criteria are fulfilled:
    - Soil and groundwater concentrations are within background levels.
    - QA/QC shows data can be relied upon
    - Results generally meet regulatory criteria.

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- Results are from NATA accredited laboratories.
- Detection limits are below assessment criteria.
- Results can be shown to be of minimal concern.

9.6 Specify Limits on Decision Errors

The limits on decision errors for this assessment are as follows:

- The assessment criteria adopted from the guidelines within this report have risk probabilities already incorporated.
- The acceptable limits for inter/intra laboratory duplicate sample comparisons are laid out within our protocols.
- The acceptable limits for laboratory QA/QC parameters are based upon the laboratory reported acceptable limits and those stated within the NEPM 2013 Guidelines.

9.7 Optimise the Design for Obtaining Data

A resource-effective sampling and analysis design was undertaken for data collection that satisfies the DQO's. The sampling and analytical plan is designed to avoid Type 1 and Type 2 errors and includes defining minimum sample numbers required to detect contamination as determined with procedures provided in the NSW EPA 2022 Sampling Design Guidelines and AS 4482.1 - 2005 and appropriate quality control procedures.

Furthermore, only laboratories accredited by NATA for the analysis undertaken were used. The laboratory data was assessed from quality data calculated during this assessment. Field QA/QC protocols adopted and incorporate traceable documentation of procedures used in the sampling and analytical program and in data verification procedures.

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10 INTRUSIVE SOIL INVESTIGATION

The intrusive soil investigation took place on the 30th of August 2023 and was designed to meet the Data Quality Objectives.

10.1 Soil Assessment

Twenty-two (22) primary soil samples were recovered from fifteen (15) borehole locations spread across the site and were labelled BH1 to BH15. These locations were selected to detect any contamination that may have originated from past and present activities, and due to potential excavation and future development in these areas.

Table 9: Sampling Information – FES DSI 2023

Analyte / Analyte Group / Sample	Depth (m)	SAMPLING DATE	DUPLICATE & SPLIT	HEAVY METALS (8)	TRH	BTEX	PAH	OC	PCB	OPP	TRH C6-C10 & BTEXN	PH / CEC / %CLAY	Asbestos
FES DSI 2023													
BH1	0.1-0.2	30.08.2023	D1/SS1	X	X	X	X	X	X	X		X	X
BH1	0.4-0.5	30.08.2023		X	X	X	X	X	X			X	
BH2	0.1-0.2	30.08.2023		X	X	X	X	X	X				X
BH2	0.4-0.5	30.08.2023		X	X	X	X	X	X				
BH3	0.0-0.1	30.08.2023		X	X	X	X	X	X	X			X
BH3	0.3-0.4	30.08.2023		X	X	X	X	X	X				
BH4	0.1-0.2	30.08.2023		X	X	X	X	X	X				X
BH4	0.5-0.6	30.08.2023		X	X	X	X	X	X				
BH5	0.1-0.2	30.08.2023		X	X	X	X	X	X				X
BH5	0.3-0.4	30.08.2023		X	X	X	X	X	X				
BH6	0.0-0.1	30.08.2023		X	X	X	X	X	X	X			X
BH6	0.3-0.4	30.08.2023		X	X	X	X	X	X				
BH7	0.1-0.2	30.08.2023		X	X	X	X	X	X				X
BH8	0.0-0.1	30.08.2023		X	X	X	X	X	X				X
BH9	0.0-0.1	30.08.2023		X	X	X	X	X	X	X			X
BH9	0.4-0.5	30.08.2023		X	X	X	X	X	X				
BH10	0.1-0.2	30.08.2023	D2/SS2	X	X	X	X	X	X				
BH11	0.0-0.1	30.08.2023		X	X	X	X	X	X				
BH12	0.1-0.2	30.08.2023		X	X	X	X	X	X				X
BH13	0.2-0.3	30.08.2023		X	X	X	X	X	X				
BH14	0.1-0.2	30.08.2023		X	X	X	X	X	X				X
BH15	0.1-0.2	30.08.2023		X	X	X	X	X	X	X			X
D1	-	30.08.2023		X	X	X	X	X	X				
D2	-	30.08.2023		X	X	X	X	X	X				
SS1	-	30.08.2023		X	X	X	X	X	X				
SS2	-	30.08.2023		X	X	X	X	X	X				
TS/TB	-	-									X		

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The locations of the boreholes and samples are shown in **Figure 2** and details of the boreholes are presented in **Appendix G** – Borehole Logs.

Based on information from all boreholes, the surface and sub-surface profile across the site is generalised as follows:

- Fill: Silty Clay, Sandy Silty, Sandy Clay, Clayey Silt
- Natural: Silty CLAY.

10.2 Sampling Density and Rationale

The NSW EPA "Sampling Design Guidelines" (2022) requires a minimum sampling density of fifteen (15) sampling points for a site approximately area of 5,898m².

Fifteen (15) boreholes labelled (BH1 to BH15) were drilled by adopting a systematic grid-based sampling pattern across the site and to provide general site coverage with consideration given to accessibility and limitations in relation to underground services & access.

10.3 Sampling Methodology

In summary:

- Soil samples were also collected directly from the push tube / split spoon sampler.
- Soil samples were collected using a hand auger, DCP and U50 to collect undisturbed samples.
- Samples were transferred directly into appropriately labelled clean laboratory supplied containers.

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- Samples were transferred into chilled eskies for sample preservation.
- A Chain of Custody was completed and forwarded to the laboratory. Sampling analysis was based on field observations and were in accordance with the schedule outlined in Section 12.
- Soil samples were submitted to their respective laboratories as specified in Section 12.4.

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11 GROUNDWATER INVESTIGATION

11.1 Groundwater Assessment

Foundation Earth Sciences utilised two (2) existing groundwater monitoring constructed during the FES Geotechnical Investigation dated October 2021. Samples were recovered from two (2) groundwater well labelled as GW2 and GW3. The schedule of analysis is provided below:

Table 10: Sampling Information – Groundwater

SAMPLE ID	SAMPLING DATE	HEAVY METALS	TRH	BTEX	PAH	VOC	TRH C6-C10 & BTEXN
FES DSI 2023							
GW2	30.08.2023	X	X	X	X	X	
GW3	30.08.2023	X	X	X	X	X	
D1	30.08.2023	X	X	X	X	X	
SS1	30.08.2023	X	X	X	X	X	
TS1	-					X	X
TB1	-					X	X

The location of the groundwater wells is shown in **Figure 2** – Site Features Plan and details of the boreholes are presented in **Appendix G** – Borehole Logs.

Refer to **Appendix I** – Field Record Forms & **Appendix J** – Calibration Certificate.

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11.2 Groundwater Methodology

The FES Geotechnical wells were constructed from the 30TH of August 2021 by adopting the following methodology:

- 50mm diameter, Class 18PVC threaded and flush joined casing and 0.45 machine-slotted screens were used.
- Coarse, washed sand and gravel was placed in the annulus surrounding the piping to a height of the screen.
- Bentonite pellets were placed in the annulus to form an impermeable plug near the top of the well to prevent surface runoff from entering directly into the well.
- Bentonite pellets were placed in the annulus to form an impermeable plug near the top encountered bedrock.
- A PVC cap was placed on the casing.
- 100mm diameter stainless steel flushed covers were used for all well finishes and concreted onto the ground surface.

Table 11: Summary of Well Construction Details

Notes:

1. RLs was taken from the FES GI Borehole logs.

The following works were carried out upon completion of the well installations:

- The wells were developed by removing at least three well volumes until groundwater parameters reached equilibrium and no further turbidity improvements were observed.

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Drilling and installation of the monitoring wells was carried out on the 04th May 2023 using a combination of solid stem auguring, hollow flight and/or NMLC, under supervision of Foundation Earth Sciences.

11.3 Groundwater Sample Collection

Groundwater sampling was undertaken on the 30th of August 2023. Prior to sampling, the resting water level was recorded within the well while checking for the presence of phase separated hydrocarbon.

Sampling was completed using a low flow peristaltic pump – a low flow/minimum drawdown sampling technique used to minimise any disturbance to the aquifer.

Field measured parameters were collected using a certified and calibrated In-situ YSI water quality meter. Samples were collected when field measured parameters (pH, electrical conductivity, redox potential, dissolved oxygen and temperature) had stabilised. The samples were placed into appropriate laboratory supplied bottles and preserved on ice. The peri pump and other sampling equipment were decontaminated before and after use to avoid possible cross contamination. All samples collected were preserved on ice and couriered directly to the laboratory under COC documentation.

11.4 Groundwater Observations

Table 12: Groundwater Elevations & Observations

Well ID	Well Depth	Surface Level RL	Groundwater Depth Measured (m BGL)	Groundwater Level (RL)	PSH Depth
BH1/GW1	7.75	77.9	DRY	-	-

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BH2/GW2	8.65	75.2	3.3	71.9	None
BH3/GW3	7.6	73.2	2.8	70.4	None

Notes: RLs were taken from the closest point on the plan provided in Appendix F.

The field measured parameters (pH), electrical conductivity (EC), redox potential, dissolved oxygen (DO) and temperature recorded during purging, were allowed to stabilise prior sampling. Final stabilised groundwater field parameters are summarised in below.

Table 13: Groundwater Field Results

Well ID	Date	pH	Electrical Conductivity (EC us/cm)	Redox Potential (ORP mV)	Dissolved Oxygen (mg/L)	Temperature (*C)
BH2/GW2	30/08/2023	3.15	243.5	139	22.7	18.3
BH3/GW3	30/08/2023	3.24	194.1	98.5	10.4	17.7

The results of the field parameters measured are summarised as follows:

- pH reading indicated the groundwater is generally acid.
- The EC reading indicated generally fresh water; and
- The redox potential indicated increasing conditions.

11.5 Catchment Location

It is noted that the groundwater at the site is likely to flow into the Sydney Harbour and Parramatta River catchment area. This catchment is partly affected by urban development. The water quality objectives for the catchment includes, but not limited, are as follows:

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- Maintaining healthy aquatic ecosystems and their riparian zones over the long term.
    - Some indicators include total phosphorus, total nitrogen, chlorophyll-a, turbidity, salinity, dissolved oxygen, ph., temperature, chemical toxicants, biological assessment.
- Visual amenity and aesthetics.
    - Improved by protecting aquatic ecosystems and improving stormwater management.
    - Some indicators include visual clarity and colour, surface films / debris, nuisance organisms.
- Secondary contact recreation (boating / fishing).
    - Objectives is based on maintaining / improving water quality for activities such as boating and wading, where there is a low probability of water being swallowed.
    - Some indicators include faecal coliforms, enterococci, algae, chemical contaminants, surface film, visual clarity / odour & nuisance organisms.
- Primary contact recreation (swimming which is a longer-term objective).
    - Objectives is based on maintaining / improving water quality for activities where there is a high probability of water being swallowed.
    - Some indicators include turbidity, faecal coliforms, enterococci, protozoans, algae, pH, temperature, chemical contaminants, surface film, visual clarity / odour & nuisance organisms.

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12 QUALITY ASSURANCE / QUALITY CONTROL

12.1 General QA/QC

The frequency required for each field quality assurance / quality control (QA/QC) sample is presented in the table below.

Table 14: QA/QCs Frequencies

	Intra Lab	Inter Lab	Rinsate	Spikes	Blanks
Sampling Frequency	1 in 20	1 in 20	1/day	1/day	1/day

During the contamination assessment the integrity of data collected is considered vital. With the assessment of the site, several measures were taken to ensure the quality of the data. These are as follows:

12.2 Sample Containers

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lid inserts. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team and media collected.

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12.3 Decontamination

All equipment used in the sampling program was decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination.
- Cleaning in a solution of Decon 90.
- Rinsing in clean demineralised water then wiping with clean lint free cloths.

Foundation Earth Sciences also adopted a sampling gradient of lowest to highest potential contamination to minimise the impact of cross contamination. This gradient was determined from the historical review and the on-site inspection that was carried out prior to sampling.

Although Foundation Earth Sciences maintains consistent sampling procedures, a rinsate sample is obtained to ensure false positive samples are not generated and that decontamination procedures are effective in preventing cross contamination. The rinsate water is collected after being in contact generally with the trowel used for sampling. Analytical results that target the contaminants of concern are compared to a blank sample, which is taken directly from the rinsate water container supplied by the laboratory.

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A rinsate sample was not collected as the samples were taken either directly from the push tube / split spoon sampler or U50 tube and therefore the chance for cross-contamination was minimal.

12.4 Sample Tracking, Identification and Holding Times

All samples were forwarded to Envirolab and SGS under recognised chain of custodies with clear identification outlining the date, location, sampler and sample ID. All samples were recorded by the laboratory as meeting their respective holding times. The sample tracking system is considered adequate for the purposes of sample collection.

12.5 Sample Transport

All samples were packed into an esky with ice from the time of collection. A trip blank and trip spike are collected where appropriate. These were transported under chain of custody from the site to Envirolab Pty Ltd and SGS, both NATA registered laboratories. During the project, the laboratory reported that all the samples arrived intact and were analysed within holding times for the respective analytes.

Samples were always kept below 4□C, soil samples submitted for asbestos analysis are not required to be kept below 4°C.

12.6 Trip Spike

Trip Spike samples were obtained from the laboratory prior to conducting field sampling where volatile substances are suspected. Foundation Earth Sciences QA/QC procedures

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for the collection of environmental samples involves the collection of trip blanks, trip spikes and duplicate samples both intra and inter laboratory.

12.7 Trip Blank

A trip blank accompanied the sampling for the sampling process and is not separated from the sample collection and transportation process. The purpose of the trip blank is to identify whether cross-contamination is occurring during the sample collection and transport process.

12.8 Field Duplicate Samples

The tables below list the duplicate soil samples collected with their corresponding primary samples.

Table 15: Soil Field Duplicate Samples

Primary Sample	Sample Depth (m BGL)	Intra Duplicate	Inter Duplicate	Date Sampled
BH1	0.1-0.2	D1	SS1	30.08.2023
BH10	0.1-0.2	D2	SS2	30.08.2023

Table 16: Groundwater Field Duplicate Samples

Primary Sample	Screen Zone (m bgl)	Intra Duplicate	Inter Duplicate	Date Sampled
GW2	3.3-4.8	D1	SS1	30.08.2023

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Field duplicate samples for soil were prepared in the field through the following process:

- A larger than normal quantity of soil is recovered from the sample location selected for duplication.
- Two Portions of the sub-sample are immediately transferred, one for an intra-laboratory duplicate and another as a sample.
- Samples are placed into a labelled, laboratory supplied 250ml glass jar and sealed with an airtight, Teflon screw top lid. The fully filled jars are labelled as the sample and duplicate and immediately placed in a chilled esky.

Soil Intra-Laboratory duplicate samples were sent to Envirolab Pty Ltd while Inter-Laboratory duplicate samples were sent to SGS.

A summary of the test results with the Relative Percentage Difference (RPD) is presented in the following tables.

The comparisons between the duplicates and original samples indicate acceptable RPDs when they comply with criteria which are commonly set at:

- less than 30% for inorganics and 50% for organics
- greater than five (5) times the laboratory limit of recording (LOR)
- greater than 50% of the relevant health investigation level (HIL) concentration.

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The tables, below, give details of intra laboratory and inter laboratory duplicates.

Table 17a: Intra-lab Soil Sample D1 RPDs

ANALYTE	BH1 0.1-0.2 mg/kg	ENVIROLAB D1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	6	5	-
Cadmium	<0.4	<0.4	-
Chromium	12	10	18
Copper	40	36	11
Lead	140	150	7
Mercury	0.2	0.2	-
Nickel	7	6	15
Zinc	120	110	9
TRH			
F1	<25	<25	-
F2	<50	<50	-
BTEX			
Benzene	<0.2	<0.2	-
Toulene	<0.5	<0.5	-
Ethylbenzene	<1	<1	-
Xylenes - Total	<1	<1	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	1.7	1.8	6
Total PAH	16	22	32
ORGANOCHLORINE PESTICIDES			
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.1	<0.1	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			
Total PCB	<0.1	<0.1	-

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Table 17b: Intra-lab Soil Sample D2 RPDs

ANALYTE	BH10 0.1-0.2 mg/kg	ENVIROLAB D2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	10	9	11
Cadmium	<0.4	2	-
Chromium	14	16	13
Copper	33	86	89
Lead	62	180	98
Mercury	0.1	0.2	67
Nickel	6	8	29
Zinc	110	400	114
TRH			
F1	<25	<25	-
F2	<50	<50	-
BTEX			
Benzene	<0.2	<0.2	-
Toulene	<0.5	<0.5	-
Ethylbenzene	<1	<1	-
Xylenes - Total	<1	<1	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	0.1	0.25	86
Total PAH	1.5	2.8	60
ORGANOCHLORINE PESTICIDES			
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.1	<0.1	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			
Total PCB	<0.1	<0.1	-

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Table 18: Intra-lab Groundwater Sample D1 RPDs

ANALYTE	ENVIROLAB GW2 ug/l	ENVIROLAB D1 ug/l	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	<1	<1	-
Cadmium	<0.1	<0.1	-
Chromium	<1	<1	-
Copper	11	10	10
Lead	<1	<1	-
Mercury	<0.05	<0.05	-
Nickel	5	6	18
Zinc	33	33	0
TRH			
C6-C10 (F1)	<10	<10	-
C10-C16 (F2)	<50	<50	-
BTEX			
Benzene	<1	<1	-
Toulene	<1	<1	-
Ethylbenzene	<1	<1	-
Xylenes - Total	<3	<3	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	<0.1	-
Naphthalene	<0.2	<0.2	-
VOC			
Vinyl Chloride	<10	<10	-
Chloroform	<1	<1	-

The comparisons between the intra-laboratory duplicates and corresponding original samples for soil and groundwater indicated acceptable RPD with the exception of the concentration of Copper, Lead Mercury, Zinc and PAHs in soil sample D2 which exceeded the DQOs for this project. However, these exceedances are not considered significant because they are most likely due to the heterogeneity of the sample or low concentrations within the sample.

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Table 19a: Inter-lab Soil Sample SS1 RPDs

ANALYTE	BH1 0.1-0.2 mg/kg	SGS SS1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	6	6	0
Cadmium	<0.4	<0.3	-
Chromium	12	11	9
Copper	40	33	19
Lead	140	160	13
Mercury	0.2	0.17	16
Nickel	7	4.6	41
Zinc	120	92	26
TRH			
F1	<25	<25	-
F2	<50	27	-
BTEX			-
Benzene	<0.2	<0.1	-
Toulene	<0.5	<0.1	-
Ethylbenzene	<1	<0.1	-
Xylenes - Total	<1	<0.3	-
POLYCYCLIC HYDROCARBONS (PAH)			-
Benzo(a)pyrene	1.7	1.9	11
Total PAH	16	20	22
ORGANOCHLORINE PESTICIDES			-
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.1	<0.1	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			-
Total PCB	<0.1	<1	-

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Table 19b: Inter-lab Soil Sample SS2 RPDs

ANALYTE	BH10 0.1-0.2 mg/kg	SGS SS2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	10	6	50
Cadmium	<0.4	1.8	-
Chromium	14	13	7
Copper	33	770	184
Lead	62	200	105
Mercury	0.1	0.16	46
Nickel	6	5.9	2
Zinc	110	420	117
TRH			
F1	<25	<25	-
F2	<50	<25	-
BTEX			
Benzene	<0.2	<0.1	-
Toulene	<0.5	<0.1	-
Ethylbenzene	<1	<0.1	-
Xylenes - Total	<1	<0.3	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	0.1	0.2	67
Total PAH	1.5	2	29
ORGANOCHLORINE PESTICIDES			
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.1	<0.1	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			
Total PCB	<0.1	<1	-

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Table 20: Inter-lab Groundwater Sample SS1 RPDs

ANALYTE	ENVIROLAB GW2 ug/l	SGS GWSS1 ug/l	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	<1	<1	-
Cadmium	<0.1	<0.1	-
Chromium	<1	<1	-
Copper	11	12	9
Lead	<1	<1	-
Mercury	<0.05	<0.0001	-
Nickel	5	6	18
Zinc	33	32	3
TRH			
C6-C10 (F1)	<10	<50	-
C10-C16 (F2)	<50	<60	-
BTEX			
Benzene	<1	<0.5	-
Toulene	<1	<0.5	-
Ethylbenzene	<1	<0.5	-
Xylenes - Total	<3	<1.5	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	0.02	-
Naphthalene	<0.2	0.03	-
VOC			
Vinyl Chloride	<10	<0.3	-
Chloroform	<1	<0.5	-

The comparisons between the inter-laboratory duplicates and corresponding original samples for soil and groundwater indicated generally acceptable RPD with the exception of the concentration of Copper, Lead, Zinc and benzo(a)pyrene in soil sample SS1 which exceeded the DQOs for this project. However, these exceedances are not considered significant because they are most likely due to the heterogeneity of the sample or low concentrations within the sample.

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Field duplicates provide an indication of the whole investigation process, including the sampling process, sample preparation and analysis. The accuracy of the data is adequate due to the effect on confidence intervals with low concentrations in the samples and their duplicates.

12.9 Trip Spike and Trip Blank Results

Trip Spike samples were obtained from the laboratory prior to conducting field sampling where volatile substances are suspected. Trip spike and trip blank samples were collected to assess the effect of sample handling on volatile concentrations in the samples collected and the results are listed in the tables below:

Table 21: Trip Spike

ANALYTE	TS1 Trip Spike % Soil (mg/kg) 30.08.2023
BTEX	
Benzene	101%
Toluene	101%
Ethyl Benzene	100%
O-Xylenes	101%
M & P Xylenes	100%

ANALYTE	TS1 Trip Spike % water (ug/L) 30.08.2023
BTEX	
Benzene	109%
Toluene	103%
Ethyl Benzene	96%
O-Xylenes	92%
M & P Xylenes	91%

Results discussed in Section 12.11

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Table 22: Trip Blank

ANALYTE	Trip Blank Soil (TB) mg/kg 30.08.2023
TRH	
C6-C10	<25
BTEX	
Naphthalene	<1
Benzene	<0.2
Toluene	<0.5
Ethyl Benzene	<1
Total Xylenes	<1

ANALYTE	Trip Blank water (TB1) ug/L 30.08.2023
TRH	
C6-C10	<10
BTEX	
Naphthalene	<1
Benzene	<1
Toluene	<1
Ethyl Benzene	<1
Total Xylenes	<3

Results discussed in Section 12.11

12.10 Laboratory QA/QC

The integrity of analytical data provides the second step in the QA/QC process for total data compliance. The data validation techniques adopted by Foundation Earth Sciences are based upon techniques published by the US EPA and in line with methods and guidelines adopted by the NSW EPA and outlined in the NEPM, 2013.

Descriptions are provided of the specific mechanisms used in the assessment of accuracy, precision and useability of analytical data within the project.

Refer to **Appendix H**- NATA Laboratory Test Results.

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12.11 QA/QC Results

The QA/QC results for soil collected at the site are summarised in the table below:

Table 23: QA/QC Results Summary

Data Quality Indicator	Results	DQI Met
Completeness		
Soil & Groundwater		
Data from critical samples is considered valid	Data is considered valid	Yes
Satisfactory frequency / result for QC samples	The QC results are considered adequate for the purpose of the investigation.	Yes
Field documentation completed	Field records are complete	Yes
Boreholes logs & COCs completed and holding times complied with	Logs, COCs and holding times have been completed and complied with	Yes
Comparability		
Soil & Groundwater		
Standard operating procedures used	Yes	Yes
Consistent field conditions, sampling staff and laboratory analysis	Sampling was conducted by one Foundation Earth Sciences scientist operating under the SOPs. The laboratories remained consistent throughout the investigation.	Yes
Same analytical methods used	All analytical methods used between laboratories were based on the USEPA/APHA methods.	Yes
Limit of reporting appropriate and consistent	The LORs were the same within each laboratory but differed between the primary and secondary laboratories. The	Yes

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Data Quality Indicator	Results	DQI Met
	LORs were considered appropriate based on the results.	
Representativeness		
Soil & Groundwater		
Sampling appropriate for media and analytes	All sampling was conducted in accordance with Foundation Earth Sciences SOPs.	Yes
Samples adequately preserved.	The majority of samples collected were received by laboratories at the correct temperature. Where relevant, samples were stored in acid-preserved containers supplied by laboratories.	Yes
Precision		
Soil & Groundwater		
SOPs appropriate and complied with in relation to field duplicates	The recovery of field duplicates was conducted in accordance with Foundation Earth Sciences SOPs to allow for the assessment of field precision.	Yes
RPDs of the field duplicates within control limits	The comparisons between the intra and/or inter-laboratory duplicates and corresponding original samples for soil and groundwater indicated generally acceptable RPD with the exception of PAH and heavy metals in soil. However, these exceedances are not considered significant because they are most likely due to the heterogeneity of the sample or low concentrations within the sample.	Partial
RPDs of the laboratory duplicates within control limits	The RPDs of the laboratory duplicates were within the control limits with the exception of.	Partial

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Data Quality Indicator	Results	DQI Met
	• In Envirolab laboratory certificate 331865, the laboratory RPD acceptance criteria have been exceeded for 331865-21 for Zinc. Therefore, a triplicate result has been issued as laboratory sample number 331865-27. • In SGS laboratory certificate SE253188, the laboratory RPD for lead in SE253200.001 / LB289790.014 failed the acceptance criteria due to sample heterogeneity.	
Accuracy		
Soil & Groundwater		
SOPs appropriate and complied with in relation to field blanks	Yes	Yes
Rinsate Blanks, trip blanks & laboratory blanks free of contaminants	Laboratory blanks & trip blanks were free of contaminants.	Yes
Surrogate spikes within control limits	Yes	Yes
Laboratory control spikes within control limits	Laboratory Control Spike recoveries were within control limits.	Yes
Matrix Spike recoveries within control limits	Matrix spike recoveries were within control limits with the exception of • In SGS laboratory certificate SE253188, the recovery failed the acceptance criteria for Nickel and Zinc in sample SE253185.001 / LB289790.004 due to sample heterogeneity.	Partial
Trip spike recoveries within control limits	Yes	Yes

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12.12 QA/QC Evaluation / Conclusion

It is therefore considered that the data is sufficiently reliable and that the results can be used for the purpose of this project.

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13 SITE ASSESSMENT CRITERIA

13.1 SOILS

13.1.1 Health Investigation Levels (HILs)

To assess the contamination status of soils at a site, the NSW EPA refers to the document entitled National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) (Amendment 2013).

The site will be assessed against the NEPM exposure scenario 'Residential B' Health Investigation Levels of the above-mentioned guidelines and specifically refers to the following:

HIL 'B' – Residential with minimal opportunities for soil access, includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats.

The soil regulatory guidelines are presented in the table below.

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Table 24: Health Investigation Levels (HIL) Criteria for Soil Contaminants

FOUNDATION EARTH SCIENCES	Residential B	Reference
Heavy Metals		
Arsenic	500	NEPM 2013 - Table 1(A)1 HILs
Beryllium	90	NEPM 2013 - Table 1(A)1 HILs
Boron	40000	NEPM 2013 - Table 1(A)1 HILs
Cadmium	150	NEPM 2013 - Table 1(A)1 HILs
Chromium (VI)	500	NEPM 2013 - Table 1(A)1 HILs
Cobalt	600	NEPM 2013 - Table 1(A)1 HILs
Copper	30000	NEPM 2013 - Table 1(A)1 HILs
Lead	1200	NEPM 2013 - Table 1(A)1 HILs
Manganese	14000	NEPM 2013 - Table 1(A)1 HILs
Mercury (Inorganic)	120	NEPM 2013 - Table 1(A)1 HILs
Methyl Mercury	30	NEPM 2013 - Table 1(A)1 HILs
Nickel	1200	NEPM 2013 - Table 1(A)1 HILs
Selenium	1400	NEPM 2013 - Table 1(A)1 HILs
Zinc	60000	NEPM 2013 - Table 1(A)1 HILs
Cyanide (Free)	300	NEPM 2013 - Table 1(A)1 HILs
Polycyclic Aromatic Hydrocarbons (PAHs)		
Carcinogenic PAHs (as Bap TEQ)	4	NEPM 2013 - Table 1(A)1 HILs
Total PAHs	400	NEPM 2013 - Table 1(A)1 HILs
Organochlorine Pesticides		
DDT + DDE + DDD	600	NEPM 2013 - Table 1(A)1 HILs
Aldrin + Dieldrin	10	NEPM 2013 - Table 1(A)1 HILs
Chlordane	90	NEPM 2013 - Table 1(A)1 HILs
Endosulfan	400	NEPM 2013 - Table 1(A)1 HILs
Endrin	20	NEPM 2013 - Table 1(A)1 HILs
Heptachlor	10	NEPM 2013 - Table 1(A)1 HILs
HCB	15	NEPM 2013 - Table 1(A)1 HILs
Methoxychlor	500	NEPM 2013 - Table 1(A)1 HILs
Mirex	20	NEPM 2013 - Table 1(A)1 HILs
Toxaphene	30	NEPM 2013 - Table 1(A)1 HILs
Polychlorinated Biphenyls (PCBs)		
PCBs	1	NEPM 2013 - Table 1(A)1 HILs
Other Organics		
PDBE (Br1-Br9)	2	NEPM 2013 - Table 1(A)1 HILs

Note - All values are in mg/kg.

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13.1.2 Health Screening Levels (HSLs)

The HSLs are applicable to generic land uses such as residential, commercial/industrial or recreational/public open space and different soil types between the ground surface and soils >4 metres below ground level. The HILs have been applied to assess human health risks via the inhalation and direct contact pathways of exposure.

It should be noted that HSL D can be used in lieu of HSL B for buildings that comprise car parks or commercial properties on the ground floor.

For assessing TRH and BTEX contamination at sites used for sensitive land use, such as residential, the NEPM refers to the Health Screening Levels (HSLs) “HSL B”.

For selection of the health screening criteria an assessment of the in-situ soil profile should be undertaken. The soil profile consisted of predominantly **Clay and Silt**.

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Table 25: Health Screening Levels (HSL) Criteria

FOUNDATION EARTH SCIENCES	HSL A & HSL B	HSL A & HSL B	HSL A & HSL B	HSL A & HSL B	Soil Saturation Concentration (Csat)	Reference
	0m to <1m	1m to <2m	2m to <4m	4m+		
SAND						
Toluene	160	220	310	540	560	NEPM 2013 - Table 1(A) 3 HSLs
Ethylbenzene	55	NL	NL	NL	64	NEPM 2013 - Table 1(A) 3 HSLs
Xylenes	40	60	95	170	300	NEPM 2013 - Table 1(A) 3 HSLs
Naphthalene	3	NL	NL	NL	9	NEPM 2013 - Table 1(A) 3 HSLs
Benzene	0.5	0.5	0.5	0.5	360	NEPM 2013 - Table 1(A) 3 HSLs
F1	45	70	110	200	950	NEPM 2013 - Table 1(A) 3 HSLs
F2	110	240	440	NL	560	NEPM 2013 - Table 1(A) 3 HSLs
SILT						
Toluene	480	NL	NL	NL	640	NEPM 2013 - Table 1(A) 3 HSLs
Ethylbenzene	NL	NL	NL	NL	69	NEPM 2013 - Table 1(A) 3 HSLs
Xylenes	110	310	NL	NL	330	NEPM 2013 - Table 1(A) 3 HSLs
Naphthalene	5	NL	NL	NL	10	NEPM 2013 - Table 1(A) 3 HSLs
Benzene	0.7	1	2	3	440	NEPM 2013 - Table 1(A) 3 HSLs
F1	50	90	150	290	910	NEPM 2013 - Table 1(A) 3 HSLs
F2	280	NL	NL	NL	570	NEPM 2013 - Table 1(A) 3 HSLs
CLAY						
Toluene	480	NL	NL	NL	630	NEPM 2013 - Table 1(A) 3 HSLs
Ethylbenzene	NL	NL	NL	NL	68	NEPM 2013 - Table 1(A) 3 HSLs
Xylenes	110	310	NL	NL	330	NEPM 2013 - Table 1(A) 3 HSLs
Naphthalene	5	NL	NL	NL	10	NEPM 2013 - Table 1(A) 3 HSLs
Benzene	0.7	1	2	3	430	NEPM 2013 - Table 1(A) 3 HSLs
F1	50	90	150	290	850	NEPM 2013 - Table 1(A) 3 HSLs
F2	280	NL	NL	NL	560	NEPM 2013 - Table 1(A) 3 HSLs

Note - All values are in mg/kg.

13.1.3 (EILs) and (ESLs)

Ecological Investigation Levels (EILs) -

The NEPM 2013 states that "Ecological investigation levels" (EILs) for the protection of terrestrial ecosystems have been derived for common contaminants in soil based on a species sensitivity distribution (SSD) model developed for Australian conditions. EILs have been derived for As, Cu, CrIII, DDT, naphthalene, Ni, Pb and Zn

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Insufficient data was available to derive ACLs for arsenic (As), DDT, lead (Pb) and naphthalene. As a result, the derived EILs are generic to all soils and are presented as total soil contaminant concentrations in Tables 1B (4) and 1B (5) within the NEPM 2013.

For the purposes of EIL derivation, a contaminant incorporated in soil for at least two years is considered to be aged for the purpose of EIL derivation. The majority of contaminated sites are likely to be affected by aged contamination. Fresh contamination is usually associated with current industrial activity and chemical spills.

The following process describes the method for calculation of site specific EILs.

A. EILs for Ni, Cr III, Cu, Zn and Pb aged contamination (>2 years)

Steps 1–4 below describe the process for deriving site-specific EILs for the above elements using Tables 1B (1) – 1B (4), which can be found at the end of the NEPM 2013.

1. Measure or analyse the soil properties relevant to the potential contaminant of concern (pH, CEC, organic carbon, clay content). Sufficient samples need to be taken for these determinations to obtain representative values for each soil type in which the contaminant occurs.

2. Establish the sample ACL for the appropriate land use and with consideration of the soil-specific pH, clay content or CEC. The ACL for Cu may be determined by pH or CEC and the lower of the determined values should be selected for EIL calculation. Note that the ACL for Pb is taken directly from Table 1(B) 4.

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3. Calculate the contaminant ABC in soil for the particular contaminant and location from a suitable reference site measurement or other appropriate method.

4. Calculate the EIL by summing the ACL and ABC:

$$EIL = ABC + ACL$$

B. EILs for As, DDT and naphthalene

EILs for aged contamination for DDT and naphthalene are not available and the adopted EIL is based on fresh contamination taken directly from Table 1B (5). The EILs for As, DDT and naphthalene are generic i.e., they are not dependent on soil type and are taken directly from Table 1B (5). Only EILs for fresh contamination are available for As, DDT and naphthalene due to the absence of suitable data for aged contaminants.

Ecological Screening Levels (ESLs) -

Ecological screening levels (ESLs) are presented based on a review of Canadian guidance for petroleum hydrocarbons in soil and application of the Australian methodology (Schedule B5b) to derive Tier 1 ESLs for BTEX, benzo(a)pyrene and F1 and F2 (Warne 2010a, 2010b).

The Canadian Council of the Ministers of the Environment (CCME) has adopted risk-based TPH standards for human health and ecological aspects for various land uses in the *Canada-wide standard for petroleum hydrocarbons (PHC) in soil* (CCME 2008) (CWS PHC). The standards established soil values including ecologically based criteria for sites affected by TPH contamination for coarse- and fine-grained soil types.

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Table 26: Ecological Investigation Levels (EIL) and Ecological Screening Levels (ESL) Criteria

FOUNDATION EARTH SCIENCES	Contaminant Age/Soil Texture	National parks and areas of high conservation value	Urban residential and open public spaces	Commercial and industrial	Reference
Ecological Investigation Levels (EILs)					
Heavy Metals					
Arsenic	**Fresh**	20	50	80	NEPM 2013 - Table 1(B) 1-5 EILs
	Aged	40	100	160	NEPM 2013 - Table 1(B) 1-5 EILs
Chromium (III)	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Copper	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Lead	**Fresh**	110	270	440	NEPM 2013 - Table 1(B) 1-5 EILs
	Aged	470	1100	1800	NEPM 2013 - Table 1(B) 1-5 EILs
Nickel	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Zinc	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Polycyclic Aromatic Hydrocarbons (PAHs)					
Naphthalene	**Fresh**	10	170	370	NEPM 2013 - Table 1(B) 1-5 EILs
	Aged	10	170	370	NEPM 2013 - Table 1(B) 1-5 EILs
Organochlorine Pesticides					
Ecological Screening Levels (ESLs) and Management Limits					
F1 (C_6-C_{10})	**Coarse**				NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	125*	180*	215*	NEPM 2013 - Table 1(B) 6-7 EILs
F1 (C_6-C_{10})	**Coarse**		700	700	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	800	800	NEPM 2013 - Table 1(B) 6-7 EILs
F2 (>C_{10}-C_{16})	**Coarse**				NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	25*	120*	170*	NEPM 2013 - Table 1(B) 6-7 EILs
F2 (>C_{10}-C_{16})	**Coarse**		1000	1000	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	1000	1000	NEPM 2013 - Table 1(B) 6-7 EILs
F3 (>C_{16}-C_{34})	**Coarse**	-	300	1700	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	-	1300	2500	NEPM 2013 - Table 1(B) 6-7 EILs
F3 (>C_{16}-C_{34})	**Coarse**		2500	3500	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	3500	5000	NEPM 2013 - Table 1(B) 6-7 EILs
F4 (>C_{34}-C_{40})	**Coarse**	-	2800	3300	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	-	5600	6600	NEPM 2013 - Table 1(B) 6-7 EILs
F4 (>C_{34}-C_{40})	**Coarse**		10000	10000	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	10000	10000	NEPM 2013 - Table 1(B) 6-7 EILs
Benzene	**Coarse**	10	50	75	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	10	65	95	NEPM 2013 - Table 1(B) 6-7 EILs
Toluene	**Coarse**	10	85	135	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	65	105	135	NEPM 2013 - Table 1(B) 6-7 EILs
Ethylbenzene	**Coarse**	1.5	70	165	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	40	125	185	NEPM 2013 - Table 1(B) 6-7 EILs
Xylenes	**Coarse**	10	105	180	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	1.6	45	95	NEPM 2013 - Table 1(B) 6-7 EILs
Benzo(a)pyrene	**Coarse**	0.7	0.7	0.7	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	0.7	0.7	0.7	NEPM 2013 - Table 1(B) 6-7 EILs

Notes

1 Urban residential/public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land uses cenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

2 Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule BE

3 Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination sh

4 Insufficient data was available to calculate ACLs for As, DDT and naphthalene. The EILs should be taken directly from Table 1B(5).

5 ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability.

6 '-' indicates that insufficient data was available to derive a value.

7 To obtain F1, subtract the sum of BTEX concentrations from C6-C10 fraction and subtract naphthalene from >C10-C16 to obtain F2.

8 Management limits are applied after consideration of relevant ESLs and HSLs

9 Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

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13.1.4 Asbestos

Health screening for asbestos in soil, which are based on scenario-specific likely exposure levels, are adopted from the WA DoH guidelines and are referred in Table 7 in Schedule B1. The following Residential 'B' health screening levels for asbestos can be seen below:

Table 27: Health Screening Levels for Asbestos

	Health Screening Levels (w/w)			
Form of Asbestos	**Residential A**	**Residential B**	**Recreational C**	**Commercial/Industrial D**
Bonded ACM	0.01%	**0.04%**	0.02%	0.05%
FA and AF (Friable Asbestos)	**0.001%**			
All forms of asbestos	**No visible asbestos for surface soil**			

13.1.5 Aesthetic Considerations

Schedule B1 in NEPC (2013) requires the consideration of aesthetic issues arising from soils and groundwater within the site. The following assessment criteria were adopted when considering aesthetics:

- no persistently malodourous soils or extracted groundwater.
- no persistent hydrocarbon sheen on surface water.
- no staining or discolouration in soils, taking into consideration the natural state of the soil; and
- no large or frequently occurring anthropogenic materials present (to the extent practicable).

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13.2 Groundwater

The NSW DECC has endorsed the use of the Groundwater Investigation Levels (GILs) given in the 1999 NEPM '*Schedule B (1) Guideline on the Investigation Levels for Soil and Groundwater*' (Amendment 2013) and the water quality trigger levels given in the ANZG (2018). These Guidelines provide criteria for:

- Aquatic ecosystems – both marine and fresh waters

The NEPM advises that 'when assessing groundwater contamination, the GILs are to be applied at the point of extraction and as response levels at the point of use, or where there is a likelihood of an adverse environmental effect at the point of discharge'.

For assessing groundwater quality, it is first necessary to assess the potential uses of groundwater downgradient of the site being assessed.

Potential uses of groundwater downgradient of the site include:

- Discharge to water bodies sustaining aquatic ecosystems particularly Fresh Water.
- Extraction of groundwater by local users.

The threshold concentrations presented in the ANZG (2018) are considered applicable for the protection of aquatic ecosystems of the receiving waters. As these guidelines apply to receiving waters, it is generally conservative to apply these to groundwater discharging to receiving waters. It is important to note that these are not threshold values at which an environmental problem is likely to occur if exceeded, rather, if the trigger values are exceeded, then further action is required which may include either further site-specific

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investigations to assess whether or not there is an actual problem or management / remedial action should be undertaken.

It is considered that ***Marine water trigger*** values are applicable for investigating chemical concentrations in groundwater at the site. The nearest watercourse is Berry's Creek located 341m south of the site. It is understood that the NSW EPA policy is that the trigger values for the protection of 95% of aquatic ecosystems should be used as groundwater assessment criteria when considering moderately or highly disturbed receiving environments. The receiving waters for groundwater at the site are moderately disturbed ecosystems and the ANZG (2018) 95% protection values are therefore considered appropriate groundwater assessment criteria for the site.

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14 RESULTS

SOIL

The laboratory certificates are presented in **Appendix H** – NATA Accredited Laboratory Certificates.

A summary of the results together with the assessment criteria adopted are provided in **Appendix K** – Summary Tables.

14.1 HEAVY METALS

14.1.1 Heath Investigation Levels

As indicated in Table K1 all the heavy metals were below the respective LOR and/or the Health Investigation Level (HIL) for a residential development, that being the HIL 'B'.

14.1.2 Ecological Investigation Levels

The EILs for Copper, Zinc, Lead, Nickel and Chromium III were derived by adding the Ambient Background Concentration (ABC) to the Added Contaminant Limits (ACL), as per the following formula:

EIL = ABC + ACL

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The ABC for the site has been determined by recovering a sample from an appropriate reference point, that being:

- BH1 (0.1-0.2m)
- BH1 (0.4-0.5m)

The soil samples collected from BH1 was analysed for pH, CEC & %CLAY to provide the background parameters for the soil on the site.

As shown in Table K1, most of the locations were below the site derived EILs for an urban residential and public open space development apart from the following:

- Copper in SS2 (BH10) has a value of 700mg/kg which exceeded the calculated EIL criteria of 170mg/kg.
- Zinc in BH2 (0.1-0.2m), BH8 (0.0-0.1m), BH12 (0.1-0.2m), BH14 (0.1-0.2m), D2 and SS2 which have a values of 1,700mg/kg, 310mg/kg, 360mg/kg, 450mg/kg, 400mg/kg, 420mg/kg, which exceeded the calculated EIL criteria of 300mg/kg. BH14 (0.1-0.2m) triplicate has as value of 540mg/kg.

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14.2 TRH, BTEX, NAPHTHALENE &/OR BENZO (A) PYRENE

14.2.1 Heath Screening Levels & Management Limits

As indicated in Table K1, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), benzene, toluene, ethyl benzene, xylenes and naphthalene concentrations were below the HSL 'B' for Silt & Clay soil profiles with a source depth of "0m to <1m".

As shown in Table K1, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}), F4 (C_{34}-C_{40}), concentrations were below the Management Limits for fine-grained soil in a residential development.

14.2.2 Ecological Screening Levels

As indicated in Table K1, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}), F4 (C_{34}-C_{40}), benzene, toluene, ethyl benzene, xylenes and benzo(a)pyrene concentrations were below the ESLs for both fine grained soil in a residential development with the exception of the following:

- A concentration 150mg/kg of TRH F2 in BH11 (0.0-0.1m) exceeding the ESL criteria.
- A concentration of 130mg/kg of TRH F2 in BH1 (0.0-0.1m) in the FES PSI 2021 exceeding the ESL criteria.
- Concentrations of B(a)p in the FES fill locations BH1 (0.1-0.2m) – 1.7mg/kg, BH2 (0.1-0.2m) - 6.0mg/kg, BH3 (0.0-0.1m) - 1.1mg/kg, BH5 (0.1-0.2m) -5.8mg/kg, BH7 (0.1-0.2m) -2.3mg/kg, BH8 (0.0-0.1m) - 0.72mg/kg, BH13 (0.2-0.3m) -1.6mg/kg, BH14 (0.1-0.2m) - 6.8mg/kg, D1 – 1.8mg/kg and SS1 – 1.9mg/kg exceeding the ESL criteria.

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- Along with FES fill location BH1 (0.0-0.1) -0.84mg/kg, D1 – 0.84mg/kg & SS1 - 1.3mg/kg in the previous FES PSI 2021, exceeding the ESL criteria.

14.3 PAH, OCP, OPP & PCB

14.3.1 Heath Investigation Levels

As indicated in Table K1, the concentrations of the benzo(a)pyrene (as TEQ), PAH, OCP, OPP & PCB were below the Health Investigation Level (HIL) for a residential development. That being the HIL 'B' and/or the limit of reporting (LOR) apart from the following:

- A concentration of 8.5mg/kg of BAP TEQ at FES BH2 (0.1-0.2m) exceeded the HIL B criteria.
- A concentration of 8.2mg/kg of BAP TEQ at FES BH5 (0.1-0.2m) exceeded the HIL B criteria.
- A concentration of 9mg/kg of BAP TEQ at FES BH14 (0.1-0.2m) exceeded the HIL B criteria.

14.3.2 EILs & ESLs

As indicated in Table K1, the concentrations of arsenic, naphthalene and DDT were below the EILs & ESLs for a Residential development.

14.4 Asbestos

As shown in Table K1, no asbestos was detected in the soil samples tested.

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GROUNDWATER

The laboratory certificates are presented in **Appendix H** – NATA Accredited Laboratory Certificates.

A summary of the results together with the assessment criteria adopted are provided in **Appendix K** – Summary Tables.

14.5 HEAVY METALS

As indicated in Table K2, dissolved Copper and Zinc were detected at concentrations above the respective groundwater investigation level for the 95% protection of marine aquatic ecosystems in GW2, and the associated field duplicates.

The remaining metals concentrations were either below the laboratory limits of reporting (LOR) or their respective assessment criteria.

14.6 TRH & BTEXN

As shown In Table K2, the BTEXN concentrations were either less than the laboratory limit of reporting (LOR) and/or below the assessment criteria.

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As indicated in Table K2, the TRH F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), benzene, toluene, ethyl benzene, xylenes and naphthalene concentrations were below the HSL 'A & B' for a Clay profile with a source depth of "2m to <4m", "4m to <8m" & "8m+".

14.7 PAH

As indicated in Table K2, the PAH concentrations were either less than the laboratory limit of reporting (LOR) and/or below the assessment criteria.

14.8 VOCs in Groundwater

As indicated in Table K3, the VOC concentrations were either less than the laboratory limit of reporting (LOR) and/or below the adopted assessment criteria.

Refer to **Appendix K** – NATA Accredited Laboratory Certificates.

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15 PRELIMINARY SOIL CLASSIFICATION

A preliminary soil classification on the sampling completed during the DSI has been completed by FES. This preliminary soil classification refers to fifteen in-situ borehole locations from the FES DSI designated as BH1 to BH15 plus QA/QC and four in-situ borehole locations from the FES PSI plus QA/QC.

With reference to a site walkover, the attached site plans, following the laboratory analysis and with reference to NSW EPA guidelines, the in-situ soil fill materials found within the site have been classified as follows.

- *Soil fill material located within the FES PSI 2021 borehole locations BH2, BH3 & BH4 are classified as* ***General Solid Waste (non-putrescible).***
- *Soil fill material located within the FES PSI 2021 borehole locations BH1 (including D1 & SS1) are classified as* ***Restricted Solid Waste.***
- *Soil fill material located within the FES DSI borehole locations BH9 & BH15 are classified as* ***General Solid Waste (non-putrescible).***
- *Soil fill material located within the FES DSI borehole locations BH1 (D1/SS1), BH3, BH4, BH6, BH7, BH8, BH10 (D2/SS2), BH11, BH12 & BH13 are classified as* ***Restricted Solid Waste (non-putrescible).***
- *Soil fill material located within the FES DSI borehole locations BH2, BH5 & BH14 are classified as* ***Hazardous Solid Waste (non-putrescible).***
- A TCLP leachate analysis is required to further characterise the initial waste classification at the time of removal.

Refer to **Appendix K** – Summary Tables.

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16 DISCUSSION

16.1 SOILS

The laboratory results for all the soil samples were below the adopted detection limits and/or the relevant guideline criteria apart from the following:

- Borehole location BH1 (0.0-0.1m) had a TRH F2 concentration exceeding the ESL criteria from the samples collected during the FES PSI 2021.
- Borehole location BH10 (0.1-0.2m) had a copper concentration exceeding the site derived EILs.
- The following borehole locations BH2 (0.1-0.2m), BH8 (0.0-0.1m), BH12 (0.1-0.2m), BH14 (0.1-0.2m), D2 and SS2 (BH10) had concentrations of zinc exceeding the site derived EILs.
- Borehole locations BH11 (0.0-0.1m) had a TRH F2 concentration exceeding the ESL criteria.
- Concentrations of B(a)p in the FES fill locations BH1 (0.1-0.2m), BH2 (0.1-0.2m), BH3 (0.0-0.1m), BH5 (0.1-0.2m), BH7 (0.1-0.2m), BH8 (0.0-0.1m), BH13 (0.2-0.3m), BH14 (0.1-0.2m), D1, and SS1 exceeding the ESL criteria. Along with FES fill location BH1 (0.0-0.1), D1 & SS1 in the previous FES PSI 2021, exceeding the ESL criteria.
- Concentrations of BAP TEQ were detected in FES fill locations BH2, BH5, BH14 exceeding the HIL B criteria.
- Further remediation work is required at the above locations.
- No identified asbestos was detected in the soil samples analysed. No fibro cement fragments were observed in the fill material located within the borehole and/or on the surface of the site at the time of the site inspection.

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- The FES DSI locations BH1, BH2, BH6 & BH8 and FES PSI 2021 locations BH1 to BH4 fall within the proposed basement footprint. Therefore, the ESL/EIL criteria do not apply as the soil within this area will be removed during bulk excavation works.

16.2 GROUNDWATER QUALITY

The groundwater monitoring indicated levels of dissolved heavy metals above groundwater investigation levels. The elevated GILs are related to offsite regional contaminant concentrations and/or background levels & therefore of limited concern.

The following lines of evidence support the low-risk groundwater conclusions in relation to site suitability:

- Surrounding properties are mostly residential land uses.
- The site is not located in a catchment with contains the water quality objectives of drinking water (i.e., beneficial use) and therefore drinking water guidelines were not applied; and
- The groundwater is in the weathered sandstone / shale and is therefore consider a semi confined / confined aquifer. With respect to contamination this further lowers the likely potential for the site to impact the groundwater table.

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16.3 DUTY TO REPORT

Under Section 60 of the Contaminated Land Management Act 1997, the owner of the land is required to notify contamination in circumstances as indicated in the NSW EPA (2015) *Guidelines on Duty to Report Contamination under the Contaminated Land Management Act 1997*.

Sites that are significantly impacted by soil, groundwater and ground gases are likely to require notification to the NSW EPA under section 60 of the CLM Act. A decision process for use by site owners or responsible persons considering reporting contamination under section 60 is provided in Appendix 1 (Figure 1) of the guidelines.

No notification to NSW EPA is recommended based on the sampling and investigation to date.

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17 CONCLUSION AND RECOMMENDATION

Based on the historical review, environmental information, proposed development and laboratory results of the investigation, the site can be made ***suitable*** for the proposed development, subject to the following:

- It is considered that the site would be deemed suitable for the proposed development subject to the implementation of a Remediation Action Plan (RAP) to manage the abovementioned environmental concerns and data gaps.
- A hazardous materials assessment is recommended to be completed prior to the demolition of the building structures on the site.
- Any soil requiring removal from the site, as part of future site works, should be classified in accordance with the "Waste Classification Guidelines, Part 1: Classifying Waste" NSW EPA (2014).

Thank you for the opportunity of undertaking this work. We would be pleased to provide further information on any aspects of this report.

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18 LIMITATIONS

To the best of our knowledge information contained in this report is accurate at the date of issue, however, subsurface conditions, including groundwater levels and contaminant concentrations, can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There is always some disparity in subsurface conditions across a site that cannot be fully defined by investigation. Hence it is unlikely that measurements and values obtained from sampling and testing during environmental works carried out at a site will characterise the extremes of conditions that exist within the site.

There is no investigation that is thorough enough to preclude the presence of material that presently or in the future, may be considered hazardous at the site. Since regulatory criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under different regulatory standards that require remediation.

Opinions expressed herein are judgements and are based on our understanding and interpretation of current regulatory standards and should not be construed as legal opinions.

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REFERENCES

- ANZG (2018) "Australian and New Zealand Guidelines for Fresh and Marine Water Quality", Australian and New Zealand Governments and Australian State and Territory Governments, Canberra ACT.
- Department of Urban Affairs and Planning – EPA (1998) "*Managing Land Contamination – Planning Guidelines – SEPP 55 – Remediation of Land*".
- National Environmental Protection Council (NEPC) (1999) – *National Environmental Protection (Assessment of Site Contamination) Measure. Amendment 2013*
- National Health and Medical Research Council (NHMRC) & National Resource Management Ministerial Council (NRMMC) "National Water Quality Management Strategy, Australian Drinking Water Guidelines" (2011)
- NSW EPA (2014) "*Technical Note: Investigation of Service Station Sites*".
- NSW EPA (2020), "Consultants Reporting on Contaminated Land". NSW Environment Protection Authority, Parramatta
- NSW DEC "Guidelines for the NSW Site Auditor Scheme" (2017, 3rd edition). NSW Environment Protection Authority, Sydney.
- NSW EPA (2014) – "Waste Classification Guidelines, Part 1: Classifying Waste".
- NSW EPA (2015) "Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997".
- NSW EPA "Sampling Design Part 1" (August 2020). NSW Environment Protection Authority, Parramatta NSW.

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FIGURE 1: SITE LOCALITY

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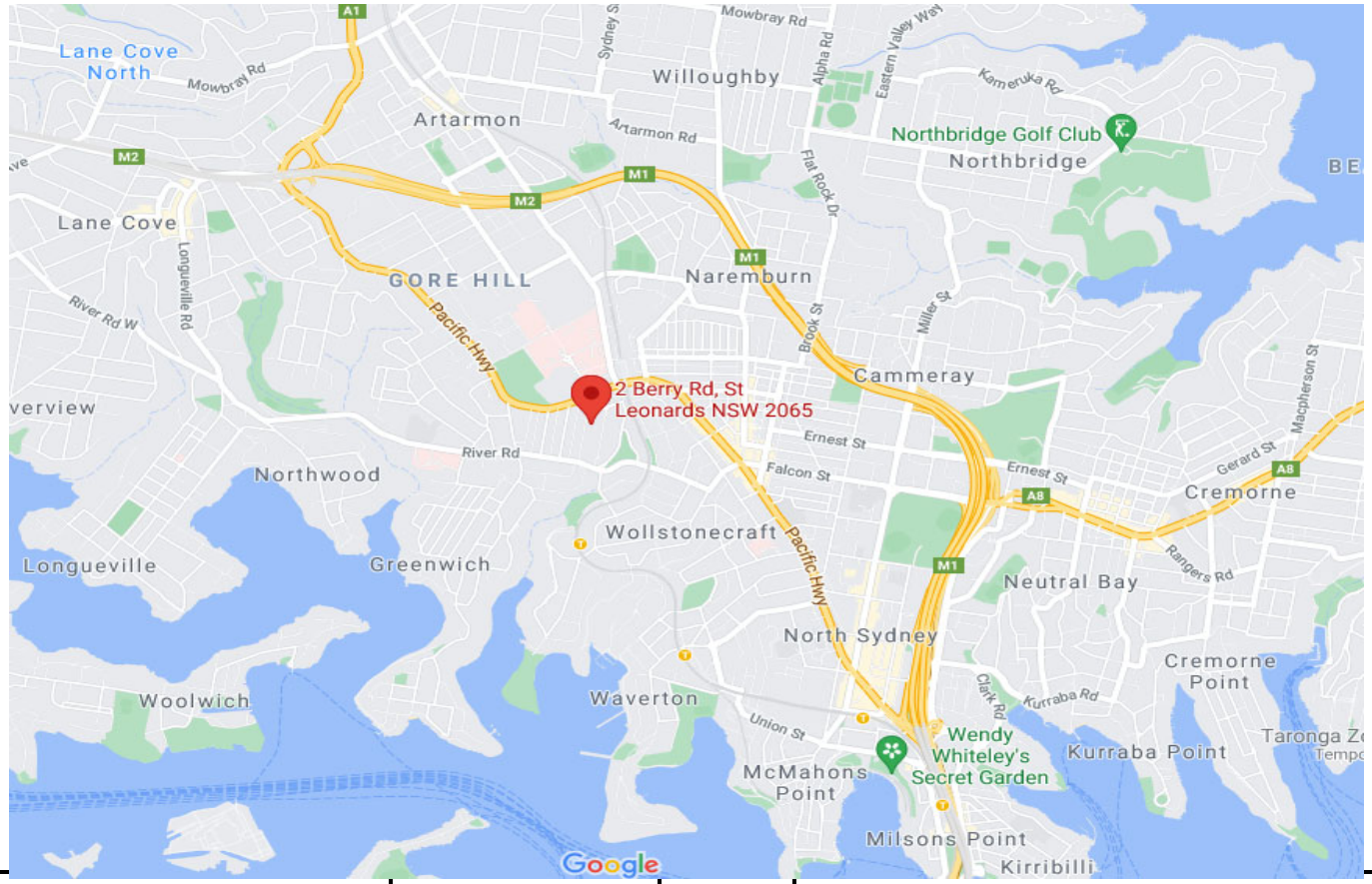

Key Site Location	FOUNDATION EARTH SCIENCES	**DRAWN** MT	**SITE LOCALITY**
		FIGURE 1	Holdsworth Land Pty Ltd
		Job # E2670-2	2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW

FIGURE 2: SITE FEATURES PLAN

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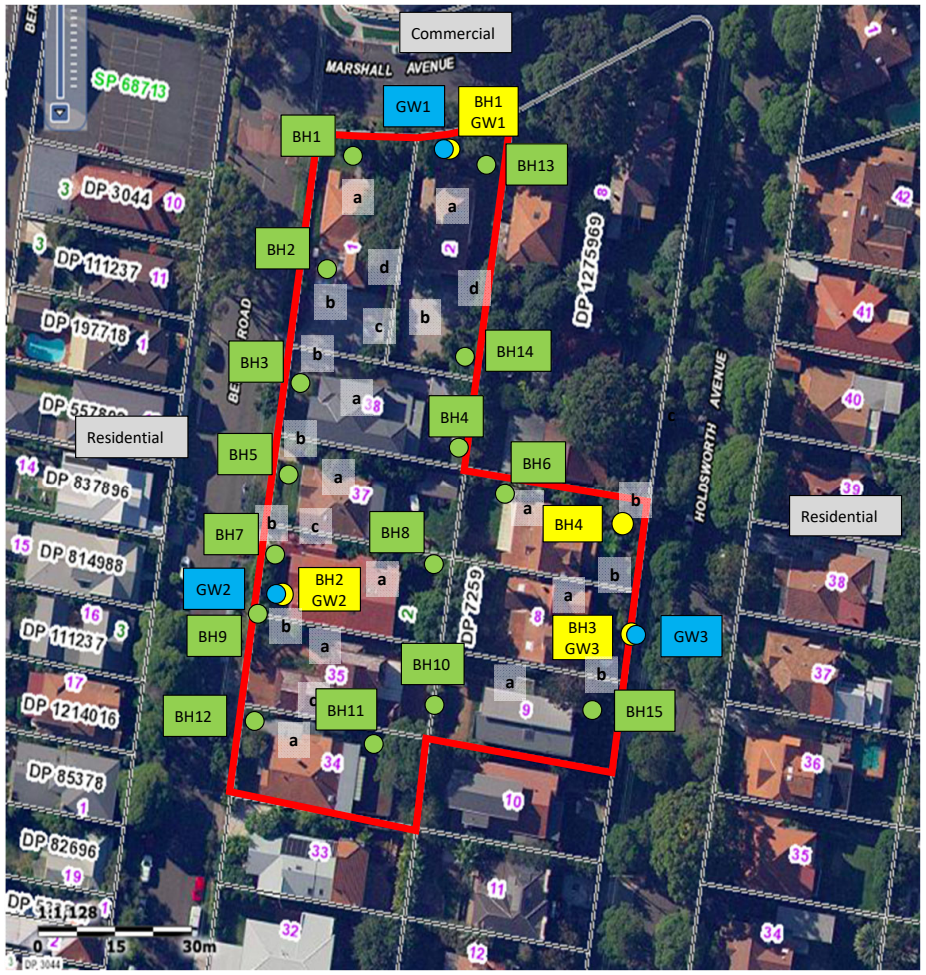
Feature No	Details
a	Residential property
b	Driveway
c	Shed
d	Gravel Car Park



Key			
Site Location		DRAWN MT	**Site Features Plan**
FES PSI Borehole Locations 2021		Figure 2	Holdsworth Land Pty Ltd
FES DSI Soil Borehole Locations 2023	FOUNDATION EARTH SCIENCES	Job # E2670-2	2-10 Berry Road, 14-16 Marshall Avenue & 5-9 Holdsworth Avenue, St Leonards NSW
FES DSI Groundwater Locations 2023			

FIGURE 3: BOREHOLE LOCATIONS AND EXCEEDANCES OVER PROPOSED PLANS

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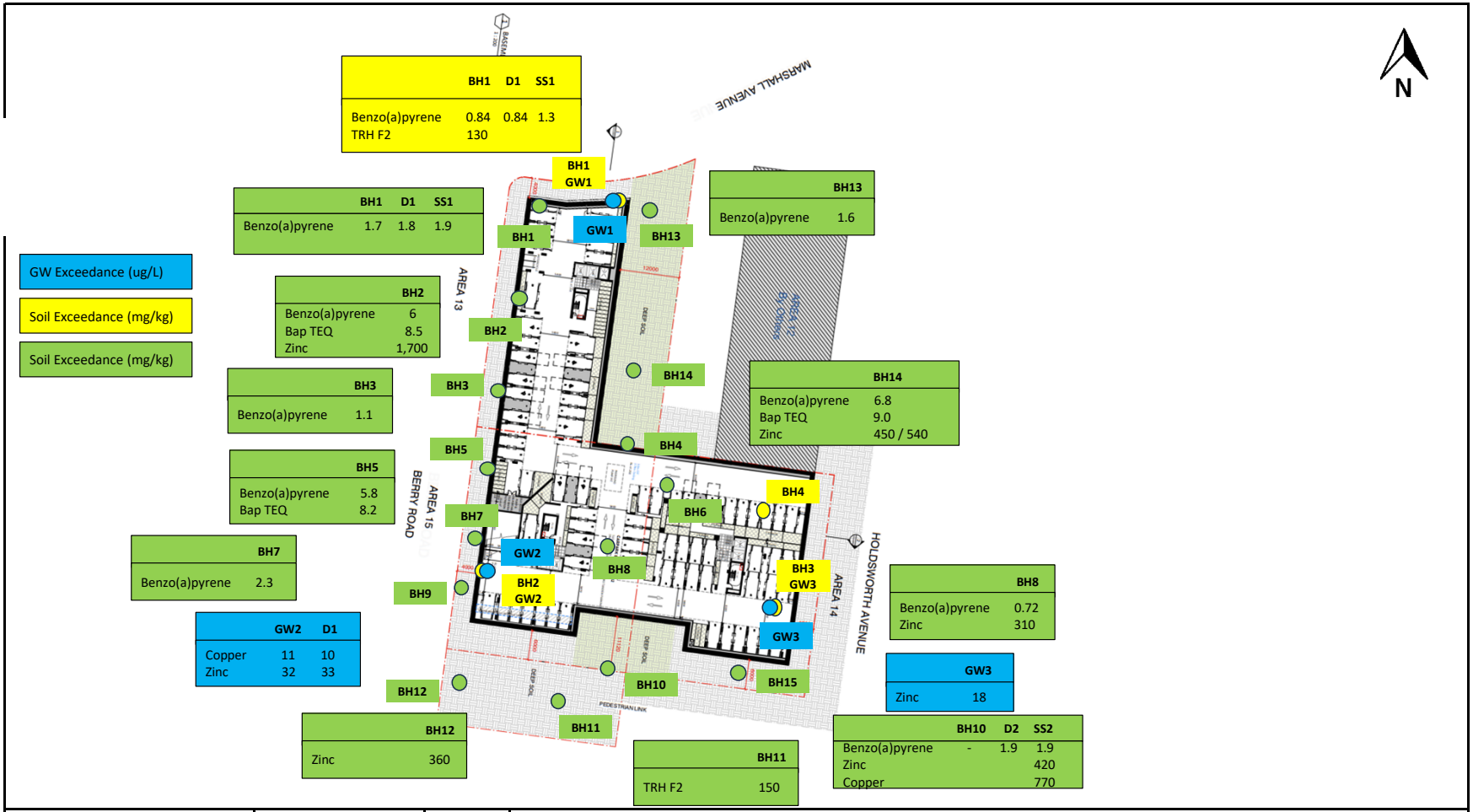

Key

- Site Location
- FES PSI Soil Location 2021
- FES GW location 2023
- FES Soil Location 2023

FOUNDATION EARTH SCIENCES

DRAWN	MT
Figure	3
Job #	E2670-2

Borehole Locations & Exceedances over the Proposed Plans

Detailed Site Investigation

2-10 Berry Road, 14-16 Marshall Avenue & 5-9 Holdsworth Avenue, St Leonards NSW

APPENDIX A: DBYD PLANS

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Job No 34917194

Phone: 1100
www.byda.com.au

Caller Details

Contact: Megan Trethewy
Company: Foundation Earth Sciences
Address: Unit 119 14 Loyalty Road
North Rocks NSW 2151

Caller Id: 3102600
Phone: 0409 620 828
Email: megan@foundationes.com.au

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

User Reference: 4 Berry Road
Working on Behalf of: Private
Enquiry Date: 25/08/2023
Start Date: 26/08/2023
End Date: 27/08/2023
Address:
4 Berry Road
St Leonards NSW 2065

Job Purpose: Excavation
Onsite Activities: Vertical Boring
Location of Workplace: Private
Location in Road:

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:
Not supplied

Your Responsibilities and Duty of Care

- The lodgement of an enquiry does not authorise the project to commence. You must obtain all necessary information from any and all likely impacted asset owners prior to excavation.
- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at **www.byda.com.au**
- **For more information on safe excavation practices, visit www.byda.com.au**

Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days.
Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.
** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.
# Asset owners highlighted with a hash # require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
228848287	Ausgrid	(02) 4951 0899	NOTIFIED
228848284	FiberSense Pty Limited (NSW)	1300 947 466	NOTIFIED
228848288	Jemena Gas North	1300 880 906	NOTIFIED
228848285	NBN Co NswAct	1800 687 626	NOTIFIED
228848286	Nextgen NCC - NSW	1800 262 663	NOTIFIED
228848283	Optus and or Uecomm Nsw	1800 505 777	NOTIFIED
228848290	Sydney Water	13 20 92	NOTIFIED
228848291	Telstra NSW Central	1800 653 935	NOTIFIED

Seq. No.	Authority Name	Phone	Status
228848289	Verizon Business (Nsw)	(02) 8210 3243	NOTIFIED

END OF UTILITIES LIST

Lodge Your Free Enquiry Online – 24 Hours a Day, Seven Days a Week

APPENDIX B: NSW EPA RECORDS

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Search results

Your search for: Suburb: ST LEONARDS

Search Again | Refine Search

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

25 August 2023

Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
ST IVES	7-Eleven (former Mobil) St Ives Service Station	157-159 Mona Vale Road, corner Putarri AVENUE	Service Station	Regulation under CLM Act not required	-33.73265301	151.1563899
ST IVES	Caltex Service Station	452 Mona Vale ROAD	Service Station	Regulation under CLM Act not required	-33.70752272	151.187545
ST IVES	Caltex Service Station	164 Mona Vale ROAD	Service Station	Regulation under CLM Act not required	-33.7307595	151.1570462
ST IVES	Caltex Service Station St Ives	363 Mona Vale ROAD	Service Station	Regulation under CLM Act not required	-33.7168971	151.1735263
ST IVES	Shell Service Station	179-181 Mona Vale ROAD	Service Station	Contamination formerly regulated under the CLM Act	-33.73124859	151.1575827
ST LEONARDS	Telstra Data Centre	4A Herbert STREET	Other Petroleum	Regulation under CLM Act not required	-33.81873741	151.1914222
ST MARYS	7-Eleven (former Mobil) Service Station	2 Christie STREET	Service Station	Regulation under CLM Act not required	-33.74790843	150.7767667
ST MARYS	7-Eleven (former Mobil) Service Station	2 Wilson STREET	Service Station	Regulation under CLM Act not required	-33.77790415	150.771689
ST MARYS	Caltex St Marys Service Station	Wordoo St Cnr Forrester ROAD	Service Station	Regulation under CLM Act not required	-33.75334263	150.7755489
ST MARYS	Chemcolour Industries	19-25 Anne STREET	Chemical Industry	Regulation under CLM Act not required	-33.75027071	150.7725397
ST MARYS	Former Dry Cleaning Location	1-7 Queen STREET	Other Industry	Under assessment	-33.76223376	150.774412
ST MARYS	Former Woolworths Service Station	120-128 Forrester ROAD	Service Station	Regulation under CLM Act not required	-33.75525115	150.7752897
ST MARYS	Integral Energy Mt Druitt Transmission Substation	69 Kurrajong North ROAD	Other Industry	Regulation under CLM Act not required	-33.76376093	150.7921691
ST MARYS	Solveco	38 LINKS ROAD	Other Industry	Contamination currently regulated under CLM Act	-33.73875413	150.7716457
ST MARYS	St Mary's Shopping Village	10 Charles Hackett DRIVE	Other Industry	Regulation under CLM Act not required	-33.76647672	150.7710143

Search results

Your search for: **General Search** with the following criteria

Suburb - ST LEONARDS
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Search Again

Number	Name	Location	Type	Status	Issued date
6996	MOCKRIDGE BULMER PTY LTD	2/12 FREDERICK STREET, ST LEONARDS, NSW 2065	POEO licence	Surrendered	26 Jun 2000
1025667	MOCKRIDGE BULMER PTY LTD	2/12 FREDERICK STREET, ST LEONARDS, NSW 2065	s.80 Surrender of a Licence	Issued	12 Mar 2003
6737	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	POEO licence	No longer in force	27 Jul 2000
1018592	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22 Oct 2002
1027381	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	18 Jun 2003
1044544	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	PACIFIC HIGHWAY, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	16 Feb 2005
11170	RAMSAY HEALTH CARE AUSTRALIA PTY LIMITED	3 Westbourne Street, ST LEONARDS, NSW 2065	POEO licence	No longer in force	24 Aug 2000
1034912	RAMSAY HEALTH CARE AUSTRALIA PTY LIMITED	3 Westbourne Street, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17 Mar 2004
12413	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	POEO licence	Surrendered	09 Jan 2006
1057752	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22 Mar 2006
1061467	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	08 Jun 2006
1063712	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	18 Aug 2006
1064638	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	01 Sep 2006
1065547	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	26 Oct 2006
1067983	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	11 Jan 2007
1068923	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19 Jan 2007
1069135	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	09 Feb 2007
1070045	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	23 Feb 2007
1071102	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	28 Mar 2007
1071946	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19 Apr 2007

Search results

Your search for: **General Search** with the following criteria

Suburb - ST LEONARDS
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Search Again

Number	Name	Location	Type	Status	Issued date
1072566	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	04 May 2007
1073905	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	07 Jun 2007
1074608	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22 Jun 2007
1074931	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	26 Jun 2007
1075522	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	04 Jul 2007
1075965	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	16 Jul 2007
1076177	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	20 Jul 2007
1076399	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30 Jul 2007
1077496	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27 Aug 2007
1077654	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	31 Aug 2007
1077903	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	14 Sep 2007
1078330	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	21 Sep 2007
1078805	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	09 Oct 2007
1079326	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	26 Oct 2007
1079820	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	07 Nov 2007
1080029	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	09 Nov 2007
1080251	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	22 Nov 2007
1080718	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30 Nov 2007
1080890	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	06 Dec 2007
1081253	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	21 Dec 2007

Search results

Your search for: **General Search** with the following criteria

Suburb - ST LEONARDS
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Search Again

Number	Name	Location	Type	Status	Issued date
1082052	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	01 Feb 2008
1082694	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	11 Feb 2008
1082834	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	20 Feb 2008
1083247	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	07 Mar 2008
1083594	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17 Mar 2008
1084038	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27 Mar 2008
1084428	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	01 Apr 2008
1084917	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17 Apr 2008
1087230	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	15 May 2008
1088312	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	03 Jun 2008
1088987	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	20 Jun 2008
1089391	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27 Jun 2008
1090509	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	23 Jul 2008
1090739	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30 Jul 2008
1090779	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	31 Jul 2008
1090927	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	08 Aug 2008
1091180	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	14 Aug 2008
1091558	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	25 Aug 2008
1092071	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	12 Sep 2008
1092354	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	24 Sep 2008

Search results

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Number	Name	Location	Type	Status	Issued date
1093257	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	12 Dec 2008
1096533	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	06 Jan 2009
1097717	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	10 Feb 2009
1099139	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27 Mar 2009
1099637	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	03 Apr 2009
1102309	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19 Jun 2009
1103281	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	30 Jun 2009
1103852	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	09 Jul 2009
1103992	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	13 Jul 2009
1104068	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	16 Jul 2009
1105824	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	25 Aug 2009
1105949	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	03 Sep 2009
1106705	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	24 Sep 2009
1108086	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	27 Oct 2009
1109163	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	09 Dec 2009
1112398	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19 Mar 2010
1114586	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	31 May 2010
1116927	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	15 Jul 2010
1119536	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	17 Sep 2010
1122403	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	03 Dec 2010

Search results

Your search for: **General Search** with the following criteria

Suburb - ST LEONARDS
returned 97 results

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Search Again

Number	Name	Location	Type	Status	Issued date
1123528	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	10 Jan 2011
1127396	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	28 Apr 2011
1501076	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	13 Sep 2011
1503205	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	08 Dec 2011
1506168	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	18 May 2012
1509363	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	25 Oct 2012
1510877	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	07 Jan 2013
1511290	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	21 Jan 2013
1514126	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	15 May 2013
1518061	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	07 Nov 2013
1521869	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	19 Aug 2014
1524725	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	01 Sep 2014
1525877	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	28 Oct 2014
1531778	TRANSPORT FOR NSW	Locked Bag 6501, ST LEONARDS, NSW 2065	s.80 Surrender of a Licence	Issued	02 Jul 2015
13358	VENTIA UTILITY SERVICES PTY LIMITED	Royal North Shore Hospital, Reserve Road, ST LEONARDS, NSW 2065	POEO licence	Surrendered	20 Apr 2011
1528865	VENTIA UTILITY SERVICES PTY LIMITED	Royal North Shore Hospital, Reserve Road, ST LEONARDS, NSW 2065	s.58 Licence Variation	Issued	13 May 2015
1547893	VENTIA UTILITY SERVICES PTY LIMITED	Royal North Shore Hospital, Reserve Road, ST LEONARDS, NSW 2065	s.80 Surrender of a Licence	Issued	20 Jan 2017

The NSW Government PFAS Investigation Program

View a map of the sites in NSW that may be contaminated with PFAS, learn how to reduce your exposure to these dangerous chemicals, and read about our investigation of the issue.

The EPA is leading an investigation program to assess the legacy of PFAS use across NSW. With the assistance of the NSW PFAS Technical Advisory Group, which includes NSW Health, Department of Primary Industries and the Office of Environment and Heritage, we provide impacted residents with tailored, precautionary dietary advice to help them reduce any exposure to PFAS.

Current investigations are focused on sites where it is likely that large quantities of PFAS have been used. The EPA is currently investigating PFAS at these sites:

Map view | List view

List view

Clear filters ☐ Only show sites within current map view Showing 0 of 50 sites

	Organisation	Address	Status
	filter by organisation	ST LEONARDS	☑ PFAS investigation site

Sampling and analysis

The EPA is collecting samples of soils and/or waters for analysis for PFAS. The EPA is also looking for exposure pathways that may increase people's contact with the chemicals, such as bore and surface water usage.

If significant levels are detected and human or ecological exposure is likely, a more detailed assessment will be undertaken.

The EPA will work with the occupiers and owners of these sites, or the responsible parties, to clean-up the site, where necessary.

APPENDIX C: SITE PHOTOGRAPHS

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SITE PHOTOGRAPHS

Client:	Holdsworth Land Pty Ltd
Project:	DSI
Site Location:	2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW
Job No.:	E2670-2

FOUNDATION EARTH SCIENCES

Photo 1

View of front yard of No. 16 Marshall Ave
Looking East
Inspected 30.08.2023

Photo 2

View of front yard and side access of No. 16
Looking South
Inspected 30.08.2023

Photo 3

View of backyard of No. 7
Looking South-West
Inspected 30.08.2023

Photo 4

View of front yard looking towards Berry Road from No. 8
Looking East
Inspected 30.08.2023

Photo 5

View of carport in No. 6 Berry Road
Looking West
Inspected 30.08.2023

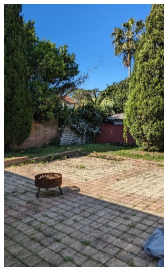
Photo 6

View of side access to No. 14 Marshall Ave
Looking South
Inspected 30.08.2023

Photo 7

View of paved backyard of no. 7 Holdsworth Ave
Looking East
Inspected 30.08.2023

Photo 8



View of paved backyard of no. 2 Berry Road
Looking West
Inspected 30.08.2023

APPENDIX D: DPI (OFFICE OF WATER) DATABASE RECORDS

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WaterNSW
Work Summary

GW072478

Licence:
Licence Status:

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

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

Commenced Date:
Completion Date: 10/01/1995
Final Depth: 180.50 m
Drilled Depth: 180.50 m

Contractor Name: INTERTEC DRILLING SERVICES
Driller: Richard Auld
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 48.000
Salinity Description:
Yield (L/s): 0.700

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	WILLOUGHB	101//1075748
Licensed:			

Region: 10 - Sydney South Coast
River Basin: - Unknown
Area/District:
CMA Map: 9130-3N
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6256317.000
Easting: 332277.000
Latitude: 33°49'12.3"S
Longitude: 151°11'15.8"E

GS Map: -
MGA Zone: 56
Coordinate Source: Unidentified

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	5.40	210			Rotary
1		Hole	Hole	5.40	180.50	158			Rotary
1	1	Casing	Steel	-0.50	5.40	168	158		Driven into Hole

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
29.70	30.10	0.40	Unknown			0.20	30.50		230.00
138.00	139.80	1.80	Unknown			0.30	142.50		270.00
143.80	144.50	0.70	Unknown	48.00		0.20	180.50		270.00

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	2.50	2.50	CONCRETE OVERBURDEN	Overburden	
2.50	5.10	2.60	MOIST CLAY	Clay	
5.10	28.70	23.60	L/G MED. GRAIN SANDSTONE	Sandstone	
28.70	30.10	1.40	LIGHT GREY MED. GRAIN S/STONE QUARTZ MATRIX	Sandstone	
30.10	35.90	5.80	L/GREY GRAIN SANDSTONE	Sandstone	
35.90	37.20	1.30	L/GREY MED GRAIN S/STONE QUARTZ MATRIX	Sandstone	
37.20	45.30	8.10	L/GREY MED GRAIN S/STONE	Sandstone	
45.30	54.30	9.00	DARK GREY SHALE	Shale	
54.30	72.40	18.10	L/GREY CEMENTED S/STONE	Sandstone	
72.40	75.40	3.00	DARK GREY SHALE	Shale	
75.40	109.70	34.30	L/GREY MED GRAIN S/STONE	Sandstone	
109.70	110.60	0.90	QUARTZ LAYER	Quartz	
110.60	121.80	11.20	L/GREY MED GRAIN S/STONE	Sandstone	
121.80	123.30	1.50	DARK GREY SHALE	Shale	
123.30	135.40	12.10	L/GREY MED GRAIN S/STONE	Sandstone	
135.40	138.00	2.60	L/GREY MED GRAIN S/STONE QUARTZ MATRIX	Sandstone	
138.00	139.80	1.80	WATER BEARING QUARTZ	Quartz	
139.80	143.80	4.00	L/GREY MED GRAIN S/STONE QUARTZ MATRIX	Sandstone	
143.80	144.40	0.60	WATER BEARING QUARTZ	Quartz	
144.40	154.10	9.70	L/GREY CEMENTED SANDSTONE	Sandstone	
154.10	163.70	9.60	L/GREY MED GRAIN S/STONE QUARTZ MATRIX	Sandstone	
163.70	166.90	3.20	QUARTZ LAYER	Quartz	
166.90	168.70	1.80	GREY MED GRAIN S/STONE	Sandstone	
168.70	180.50	11.80	L/GREY MED GRAIN SANDSTONE	Sandstone	

Remarks

11/11/2009: Nat Carling, 11-Nov-2009: Updated coordinates as per IPW info, old cadastre was '8//233037'.
19/03/2013: Nat Carling, 19-Mar-2013; Added rock type codes to driller's log & added missing information (based on existing data).

***** End of GW072478 *****

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

WaterNSW
Work Summary

GW108224

Licence: 10WA109080 **Licence Status:** CURRENT

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

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

Commenced Date:
Completion Date: 05/09/2006
Final Depth: 132.40 m
Drilled Depth: 132.40 m

Contractor Name: INTERTEC DRILLING SERVICES
Driller: Colin Leslie Barden
Assistant Driller:

Property: PITTORINO 1 Ross Lane NAREMBURN 2065 NSW
GWMA: -
GW Zone: -
Standing Water Level (m): 35.000
Salinity Description:
Yield (L/s): 0.300

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	CUMBERLAND	WILLOUGHB	1 306386
Licensed:	CUMBERLAND	WILLOUGHBY	Whole Lot 1//306386

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

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6256404.000
Easting: 333214.000
Latitude: 33°49'10.0"S
Longitude: 151°11'52.3"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	2.50	203			Down Hole Hammer
1		Hole	Hole	2.50	132.40	165			Down Hole Hammer
1		Annulus	Concrete	0.00	2.50	203			
1	1	Casing	Pvc Class 9	-0.40	71.60	140			Suspended in Clamps, Screwed and Glued
1	1	Casing	Steel	-0.40	2.60	165	155		Driven into Hole, Suspended in Clamps

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
29.00	35.00	6.00	Unknown			0.10		00:25:00	1750.00
98.00	100.00	2.00	Unknown			0.20		00:05:00	970.00

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.60	0.60	clay, sandy	Clay	
0.60	2.80	2.20	sandstone, weathered	Sandstone	
2.80	3.10	0.30	clay	Clay	
3.10	25.50	22.40	sandstone, weathered	Sandstone	
25.50	27.00	1.50	sandstone, grey quartz	Sandstone	
27.00	29.00	2.00	shale	Shale	
29.00	35.00	6.00	sandstone, quartz grey	Sandstone	
35.00	41.00	6.00	shale	Shale	
41.00	52.00	11.00	sandstone, grey	Sandstone	
52.00	54.00	2.00	sandstone, quartz grey	Sandstone	
54.00	61.00	7.00	sandstone, grey	Sandstone	
61.00	65.00	4.00	shale	Shale	
65.00	81.00	16.00	sandstone, grey	Sandstone	
81.00	84.00	3.00	sandstone, grey quartz siltstone	Sandstone	
84.00	98.00	14.00	sandstone, grey	Sandstone	
98.00	100.00	2.00	sandstone, grey quartz	Sandstone	
100.00	106.50	6.50	sandstone, grey	Sandstone	
106.50	109.00	2.50	sandstone, dark brown	Sandstone	
109.00	110.50	1.50	sandstone, grey quartz	Sandstone	
110.50	112.00	1.50	siltstone	Siltstone	
112.00	132.40	20.40	sandstone, grey	Sandstone	

Remarks

04/05/2010: updated from original form A

***** End of GW108224 *****

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

APPENDIX E: BUREAU OF METEOROLOGY

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Monthly Rainfall (millimetres)

CHATSWOOD BOWLING CLUB

Station Number: 066011 · State: NSW · Opened: 1951 · Status: Open · Latitude: 33.80°S · Longitude: 151.18°E · Elevation: Unknown m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1951							9.9	111.6	65.2	42.7	6.1	10.9	
1952	46.3	61.3	140.8	302.2	56.9	191.9	251.1	254.2	32.0	140.5	63.3	34.1	1574.6
1953	72.9	182.8	107.5	11.7	455.2	17.2	55.1	41.7	25.4	69.1	52.8	2.6	1094.0
1954	116.2	310.0	34.8	23.5	48.6	9.9	127.0	30.0	54.4	164.8	165.6	83.1	1167.9
1955	182.2	289.0	273.7	88.7	297.6	77.4	23.7	12.1	21.7	58.9	217.5	233.7	1776.2
1956	180.2	497.6	360.9	16.2	126.9	200.1	47.2	85.3	38.3	55.6	10.7	39.7	1658.7
1957	58.9	90.8	48.9	20.0	4.1	27.0	116.6	132.4	7.6	12.9	20.6	50.5	590.3
1958	149.9	234.4	329.7	71.5	15.0	201.2	27.0	74.7	38.5	59.0	8.7	128.3	1337.9
1959	158.8	198.9	166.7	35.8	40.4	103.2	193.5	70.5	112.5	277.8	97.4	48.6	1504.1
1960	67.6	81.8	67.6	24.8	105.0	67.3	95.6	51.6	63.4	256.0	61.2	232.7	1174.6
1961	56.0	72.4	55.5	64.5	20.9	51.8	29.9	231.8	37.6	57.9	543.7	107.9	1329.9
2000												*45.0*	
2001	*128.0*	*131.0*	*84.0*	*146.0*	*302.0*	*34.0*	*108.0*	*48.0*	*11.0*	*31.0*	*94.0*	*36.0*	*1153.0*
2002	*67.0*	*300.0*	*65.0*	*26.0*	*78.0*	*22.0*	*16.0*	*31.0*	*21.0*	*5.0*	*35.0*	*95.0*	*761.0*
2003	*7.0*	*89.0*	*113.0*	*219.0*	*347.0*	*54.0*	*58.0*	*37.0*	*11.0*	*94.0*	*131.0*	*69.0*	*1229.0*
2004	*43.0*	*128.0*	*77.0*	*21.0*	*10.0*	*9.0*	*34.0*	*110.0*	*56.0*	*295.0*	*66.0*	*88.0*	*937.0*
2005	*82.0*	*118.0*	*161.0*	*33.0*	*59.0*	*101.0*	*102.0*	*4.0*	*53.0*	*60.0*	*137.0*	*26.0*	*936.0*
2006	*116.0*	*59.0*	*49.0*	*7.0*	*41.0*	*164.0*	*114.0*	*62.0*	*165.0*	*12.0*	*53.0*	*87.0*	*929.0*
2007	*90.0*	*141.0*	*60.0*	*203.0*	*11.0*	*425.0*	*59.0*	*143.0*	*38.0*	*35.0*	*176.0*	*128.0*	*1509.0*
2008	*73.0*	*303.0*	*37.0*	*158.0*	*8.0*	*134.0*	*63.0*	*48.0*	*97.0*	*59.0*	*62.0*	*60.0*	*1102.0*
2009	*29.0*	*172.0*	*62.0*	*145.0*	*112.0*	*90.0*	*48.0*	*6.0*	*8.0*	*180.0*	*8.0*	*69.0*	*929.0*
2010	*43.0*	*231.0*	*62.0*	*33.0*	*127.0*	*144.0*	*87.0*	*28.0*	*94.0*	*80.0*	*153.0*	*80.0*	*1162.0*
2011	*45.0*	*12.0*	*162.0*	*191.0*	*94.0*	*102.0*	*303.0*	*62.0*	*79.0*	*33.0*	*165.0*	*140.0*	*1388.0*
2012	*191.0*	*169.0*	*222.0*	*174.0*	*25.0*	*238.0*	*42.0*	*12.0*	*25.0*	*31.0*	*52.0*	*49.0*	*1230.0*
2013	*186.0*	*174.0*	*82.0*	*157.0*	*100.0*	*293.0*	*21.0*	*11.0*	*44.0*	*20.0*	*246.0*	*35.0*	*1369.0*
2014	*16.0*	*62.0*	*136.0*	*88.0*	*17.0*	*92.0*	*14.0*	*235.0*	*49.0*	*81.0*	*16.0*	*139.0*	*945.0*
2015	*210.0*	*51.0*	*41.0*	*392.0*	*148.0*	*85.0*	*39.0*	*47.0*	*78.0*	*41.0*	*161.0*	*67.0*	*1360.0*
2016	*349.0*	*29.0*	*166.0*	*70.0*	*4.0*	*367.0*	*131.0*	*159.0*	*66.0*	*35.0*	*25.0*	*73.0*	*1474.0*
2017	*25.0*	*151.0*	*284.0*	*62.0*	*21.0*	*187.0*	*6.0*		*0.0*	*89.0*	*49.0*	*48.0*	
2018	*35.0*	*109.0*	*106.0*	*19.0*	*22.0*	*135.0*	*7.0*	*5.0*	*44.0*	*223.0*	*167.0*	*74.0*	*946.0*
2019	*51.0*	*98.0*	*258.0*	*27.0*	*13.0*	*165.0*	*54.0*	*111.0*	*117.0*	*58.0*	*28.0*	*1.0*	*981.0*
2020	*72.0*	*458.0*	*159.0*	*25.0*	*103.0*	*53.0*		*70.0*	*35.0*	*82.0*	*56.0*	*128.0*	
2021	*114.0*	*98.0*	*390.0*	*23.0*	*54.0*	*28.0*	*22.0*				*135.0*	*82.0*	
2022	*180.0*	*359.0*	*600.0*	*250.0*	*119.0*	*13.0*					*59.0*	*52.0*	
2023	*164.0*	*180.0*	*45.0*	*97.0*	*0.0*	*1.0*	*4.0*						

Quality control: 12.3 Done & acceptable, *12.3* Not completed or unknown

Australian Government
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Monthly Rainfall (millimetres)

CHATSWOOD BOWLING CLUB

Station Number: 066011 · State: NSW · Opened: 1951 · Status: Open · Latitude: 33.80°S · Longitude: 151.18°E · Elevation: Unknown m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	103.2	170.9	151.7	97.7	90.5	117.7	72.1	77.5	51.2	88.4	100.7	77.7	1198.2
Lowest	7.0	12.0	34.8	7.0	0.0	1.0	4.0	4.0	0.0	5.0	6.1	1.0	590.3
5th percentile	21.4	42.2	39.4	14.4	4.1	9.5	6.6	5.4	7.8	12.4	8.4	8.0	819.8
10th percentile	30.2	59.5	45.8	19.2	8.4	13.8	10.3	10.5	11.0	20.0	11.8	28.4	929.0
Median	73.0	141.0	107.5	64.5	54.0	92.0	51.0	56.8	44.0	59.0	62.0	69.0	1171.2
90th percentile	185.2	308.6	320.6	215.8	267.7	230.6	130.6	166.3	97.0	223.0	174.2	135.8	1528.7
95th percentile	198.6	398.6	372.5	270.9	320.0	322.6	219.4	233.6	114.8	266.9	228.9	172.4	1629.3
Highest	349.0	497.6	600.0	392.0	455.2	425.0	303.0	254.2	165.0	295.0	543.7	233.7	1776.2

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml.

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APPENDIX F: PROPOSED DEVELPOMENT PLANS

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DEVELOPMENT APPLICATION - AREA 13,14 & 15 ST LEONARDS SOUTH

14-16 MARSHALL AVE, 5-9 HOLDSWORTH AVE & 2-10 BERRY RD, ST LEONARDS

DRAWING LIST

SITE AND SETOUT

DA-A110010	COVER SHEET & DRAWING LIST	B
DA-A110020	DEVELOPMENT INFORMATION	D
DA-A110030	BASIX NOTES	A
DA-A120010	SITE ANALYSIS	B
DA-A120020	DEMOLITION PLAN	B
DA-A130010	SITE PLAN	B

GENERAL ARRANGEMENT PLANS

DA-B1B0910	BASEMENT 02 PLAN	G
DA-B1B1010	BASEMENT 01 PLAN	G
DA-B1GRD10	GROUND FLOOR PLAN	H
DA-B1L0110	LEVEL 01 PLAN	H
DA-B1L0210	LEVEL 02 PLAN	H
DA-B1L0310	LEVEL 03 PLAN	G
DA-B1L0410	LEVEL 04 PLAN	F
DA-B1L0510	LEVEL 05 PLAN	F
DA-B1L0610	LEVEL 06 PLAN	F
DA-B1L0710	LEVEL 07 PLAN	F
DA-B1L0810	LEVEL 08 PLAN	F
DA-B1L0910	LEVEL 09 PLAN	F
DA-B1L1010	LEVEL 10 PLAN	F
DA-B1L1110	LEVEL 11 PLAN	F
DA-B1L1210	LEVEL 12 PLAN	F
DA-B1L1310	LEVEL 13 PLAN	G
DA-B1L1410	ROOF PLAN	B

ELEVATIONS

DA-C010010	EAST ELEVATION	B
DA-C020010	SOUTH ELEVATION	B
DA-C030010	WEST ELEVATION	B
DA-C040010	NORTH ELEVATION	B
DA-C050010	GREEN SPINE WEST ELEVATION	B
DA-C060010	GREEN SPINE EAST ELEVATION	B

PHOTOMONTAGE AND MATERIALS

DA-C510010	PERSPECTIVE 1	A
DA-C510011	PERSPECTIVE 2	A
DA-C910010	MATERIALS AND FINISHES BOARD	A

SECTIONS

DA-D110010	SECTION BLDG 14-15	C
DA-D120010	SECTION BLDG 13-15	B

SEPP 65 COMPLIANCE

DA-Q110010	GFA PLAN 01	B
DA-Q120010	GFA PLAN 02	B
DA-Q310010	SOLAR ACCESS COMPLIANCE DIAGRAMS	B
DA-Q320010	SHADOW DIAGRAMS	A
DA-Q330010	SOLAR ANALYSIS-SUN EYE VIEWS	A
DA-Q410010	CROSS VENTILATION COMPLIANCE DIAGRAMS	B
DA-Q510010	ADAPTABLE/LIVABLE APARTMENT TYPE PLAN 1	A
DA-Q520010	ADAPTABLE/LIVABLE APARTMENT TYPE PLAN 2	A
DA-Q610010	DEEP SOIL DIAGRAM	B
DA-Q710010	COMMUNAL OPEN SPACE DIAGRAM	B
DA-Q810010	HEIGHT PLANE DIAGRAM	B

DEVELOPMENT APARTMENT SCHEDULE

DA-Y210010	APARTMENT SCHEDULE	B

NOTIFICATION PLAN

DA-Y310010	NOTIFICATION PLAN	A

Key Plan:

Drawing Disclaimer:
Do not scale from drawings.
Verify all dimensions on site before commencing work.
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Note
PTW takes no responsibility for external building elements. Anything connected with any design, materials selection, construction or installation of any cladding, facade or external building element must be checked by and remains the responsibility of others, including suitably qualified experts as may be required.

Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	10/02/23

***Registered Architect**
LGU Lilian Gu NSW Arch 8013

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Nominated Architects
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Diane Jones NSW ARB 4778
Nela Marojević NSW ARB 11274

0 1 2 5 8m
@ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
COVER SHEET & DRAWING LIST

Drawing Number DA-A110010 **Revision** B

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02-May-23 10:51:27 AM

A1

DEVELOPMENT INFORMATION

SITE AREA: Total: 5874 m².

Area 13: 1973 m².
Area 14: 1672 m².
Area 15: 2229 m².

LEP ZONING: R4 High Density Residential.

HEIGHT CONTROL: 37m.

BEA - Building Envelope Area:
The total building area measured to the outside face of exterior walls including open balconies and including any building articulation.

GBA - Gross Building Area:
The total building area measured to the outside face of exterior walls excluding open balconies and including the following areas calculated seperately:
-basement area & car park
-plant rooms
-any areas having different cost rates

NSA - Net Saleable Area:
Strata Area (NSA) is area of dwelling measured from internal face of perimeter walls, including internal walls and balcony (measured separately) but excluding structural cubic space (ie. ducts, risers, structural columns, double height space) within the dwelling.
*unless otherwise noted NSA excludes balconies.

GFA DEFINTION

http://www.legislation.nsw.gov.au/#/view/EPI/2013/411/dict1
17 February 2017
gross floor area means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor, and includes:
(a) the area of a mezzanine, and
(b) habitable rooms in a basement or an attic, and
(c) any shop, auditorium, cinema, and the like, in a basement or attic,

but excludes:
(d) any area for common vertical circulation, such as lifts and stairs, and
(e) any basement:
(i) storage, and
(ii) vehicular access, loading areas, garbage and services, and
(f) plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and
(g) car parking to meet any requirements of the consent authority (including access to that car parking), and
(h) any space used for the loading or unloading of goods (including access to it), and
(i) terraces and balconies with outer walls less than 1.4 metres high, and
(j) voids above a floor at the level of a storey or storey above.

AREA 14_FSR

Proposed GFA	Proposed FSR	Allowable GFA	Alloable FSR
5601.2 m²	3.35	5601.2 m²	3.35

AREA 13 & 15_FSR

Proposed GFA	Proposed FSR	Allowable GFA	Alloable FSR
11975.7 m²	2.85	11975.7 m²	2.85

SOLAR ACCESS_AREA 14

Solar AccessCompliance	Count	Percentage
0HRS	1	2%
<2HRS	21	38%
>2HRS	33	60%
Grand total: 55		

SOLAR ACCESS_AREA 13&15

Solar AccessCompliance	Count	Percentage
0HRS	2	2%
<2HRS	29	22%
>2HRS	101	77%
Grand total: 132		

SOLAR ACCESS_AREA_ALL

Solar AccessCompliance	Count	Percentage
0HRS	3	2%
<2HRS	50	27%
>2HRS	134	72%
Grand total: 187		

COMMUNAL OPEN SPACE DIAGRAM

AreaType	Area	% (Site area 5874 m²)
COS	2215.7 m²	38%

CROSS VENTILATION AREA 14

CROSS VENTILATION Compliance	Count	Percentage
NO	13	31%
YES	29	69%
Grand total	42	

CROSS VENTILATION AREA 13&15

CROSS VENTILATION Compliance	Count	Percentage
NO	51	43%
YES	67	57%
Grand total	118	

CROSS VENTILATION AREA_ALL

CROSS VENTILATION Compliance	Counter_PTW	Percentage
NO	64	40%
YES	96	60%
Grand total	160	

DEEP SOIL DIAGRAM_ALL

AreaType	Area	% (Site area 5874 m²)
GREEN SPINE DEEP SOIL	894.8 m²	15%
SOUTHERN DEEP SOIL	488.8 m²	8%
	1383.6 m²	24%

DEEP SOIL DIAGRAM_GREEN SPINE

AreaType	Area	% (Green spine area 1784 m²)
GREEN SPINE DEEP SOIL	894.8 m²	50%

APARTMENT UNIT MIX

BEDROOM NUM.	Count	Percentage
1	43	23%
2	82	44%
3	50	27%
4	12	6%
Grand total: 187	187	100%

DDA UNITS_ALL

UNIT TYPE	Number	Percentage
STANDARD	37	20%
ADAPTABLE/LIVABLE	38	20%
VISITABLE	112	60%
Grand total: 187	187	100%

ADAPTABLE UNITS(ALSO CONSIDERED AS LIVABLE UNITS) REQUIRED: 38(20%)
ADAPTABLE UNITS(ALSO CONSIDERED AS LIVABLE UNITS) PROVIDED: 38(20%)

VISITABLE UNITS REQUIRED(INCLUDING ADAPTABLE UNITS): 150(80%)
VISITABLE UNITS PROVIDED(INCLUDING ADAPTABLE UNITS): 150(80%)

CAR PARKING

TYPE	RATE	TARGET	PROVIDE
RESIDENTIAL	0.5 PER 1B UNIT, 0.9 PER 2B UNIT, 1.4 PER 3B UNIT, 2 PER 4+B UNIT	190	207
VISITOR	1 PER 5 UNITS	38	38
CARWASH	1 PER 50 UNITS	4	2
CARSHARE	-	-	2
MOTORCYCLE	1 PER 15 CAR SPACES FOR ALL TYPES OF DEVELOPMENT	17	17
BICYCL-RESIDENTIAL	1 PER 4 DWELLINGS	47	47
BICYCLE-VISITOR	1 RACK + 1 RACK PER 10 DWELLINGS	20	20

CAR PARKING BY TYPE

PARKING TYPE	TOTAL
RESIDENTIAL-STANDARD	139
RESIDENTIAL-TANDEM	30
RESIDENTIAL-DISABLE	38
VISITOR-STANDARD	37
VISITOR-DISABLE	1
CARWASH BAY	2
CARSHARE BAY	2
Grand total: 249	249

BICYCLE/MOTORCYCLE BY TYPE

PARKING TYPE	TOTAL
BICYCLE-RESIDENTIAL	47
BICYCLE-VISITOR	20
MOTORCYCLE	17

APARTMENT UNIT MIX by Building

BEDROOM NUM.	Count	Percentage
AREA 13		
1	13	7%
2	28	15%
3	15	8%
4	4	2%
60	60	32%
AREA 14		
1	5	3%
2	29	16%
3	16	9%
4	5	3%
55	55	29%
AREA 15		
1	25	13%
2	25	13%
3	19	10%
4	3	2%
72	72	39%
Grand total: 187	187	100%

DDA UNITS by Building

UNIT TYPE	Number	Percentage
AREA 13		
ADAPTABLE/LIVABLE	15	8%
STANDARD	14	7%
VISITABLE	31	17%
60	60	32%
AREA 14		
ADAPTABLE/LIVABLE	3	2%
STANDARD	7	4%
VISITABLE	45	24%
55	55	29%
AREA 15		
ADAPTABLE/LIVABLE	20	11%
STANDARD	16	9%
VISITABLE	36	19%
72	72	39%
Grand total: 187	187	100%

AFFORDABLE UNIT

Number	LotType_PTW	Area
140406	2B+1B	70.3 m²
140306	2B+1B	70.3 m²
140506	2B+1B	70.3 m²
Grand total: 3		

PARKING BY LEVEL

LEVEL	RESIDENTIAL-STANDARD	RESIDENTIAL-TANDEM	RESIDENTIAL-DISABLE	VISITOR-STANDARD	VISITOR-DISABLE	CARWASH BAY	CARSHARE BAY	BICYCLE-RESIDENTIAL	BICYCLE-VISITOR	MOTORCYCLE	TOTAL
B02	44	16	15	0	0	0	0	0	0	2	77
B01	30	14	19	0	0	0	0	0	0	2	65
L00	12	0	2	28	1	2	2	7	20	2	76
L01	36	0	2	9	0	0	0	22	0	6	75
L02	17	0	0	0	0	0	0	18	0	5	40
Total: 333	139	30	38	37	1	2	2	47	20	17	333

Key Plan:

Drawing Disclaimer:
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Rev	Amendment	By	Chk*	Date
D	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
C	ISSUE FOR INFORMATION	JY	LG	15/03/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

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Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
DEVELOPMENT INFORMATION

Drawing Number DA-A110020 **Revision** D

A1

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BASIX NOTES
[SOUCE: BASIX ASSESSMENT REPORT BY ECO ENGINEERING GROUP REV 1.0 - 2 MAY 2023]

1. Executive Summary

EEG has been commissioned to assess the interaction of the residential area of the proposed development at 14-16 Marshall Ave, St Leonards NSW, with the local environment in terms of BASIX compliance.

A BASIX Certificate is a regulatory requirement and demonstrates compliance with the NSW Government's sustainability targets. BASIX assessment and certification has been completed for this project (Certificate No. 1241743M).

Dwellings within the development have been assessed in terms of their passive energy design using the BASIX Thermal Comfort protocol. They have also been assessed in terms of their ability to conserve water and also to minimise energy consumption via appliances and hot water etc.

With the recommendations provided in the BASIX certificate, the development meets and exceeds the minimum requirements for all the following areas.

- Water Efficiency
- Energy Efficiency
- Thermal Comfort

This development achieves the following targets:

- Water Efficiency: 41% reduction (minimum requirements under BASIX: 40%)
- Energy Efficiency: 31% reduction (minimum requirements under BASIX: 25%)
- Thermal Comfort: Outperforms the thermal performance requirements under BASIX.

4. BASIX Water Section

The water efficiency performance of the development has been assessed using the online BASIX Tool. The assessment has considered the common area and central system features including the landscape design, plant species, water catchment areas, rain water tank size and efficiency of preferred fixtures and fittings in the dwellings.

The proposed development will meet the mandatory BASIX water target of 40% as long as the water commitments detailed in Table 2 are installed. For details of the requirements necessary to achieve this target, please refer to the BASIX Certificate No. 1241743M.

Table 2 Water Commitments

Common Areas and Central Systems	
Common areas	• No common showerhead facility. • No common toilet facility. • 5-star (water-rated) taps. • No common clothes washer facility.
Central systems	• Fire sprinkler system (No. 1). • Fire sprinkler system (No. 2). • Rainwater tank (No.1) with capacity of minimum 15,000L (minimum), collecting run-off from minimum 1980 m² of roof area, used for irrigation of common area landscape with minimum area of 126.3m² and 2 carwash bay.
Private Dwellings	
Fixtures for apartments	• 3-star (Water Rating) showerheads with a flow rate > 4.5 but <= 6 L/min. • 4-star (Water Rating) toilets. • 5-star (Water Rating) kitchen taps. • 5-star (Water Rating) bathroom taps. • 4-star (Water Rating) dishwashers. • No hot water recirculation. • No washing machine taps.

5. BASIX Thermal Comfort Section

The preliminary thermal performance of the development has been evaluated using BERS Pro software; this computer simulation of residential developments is used to assess the potential of a residential development to have low heating and cooling energy requirements once operational.

5.1. Modelling Assumptions

BERS Pro software calculates the transient hourly heat gains and losses for each space inside a building taking into account the building's thermal storage, typical residential occupancy and operational profiles plus hourly weather data for the site.

Building geometry and orientation were modelled according to supplied drawings.

The "base-case" building fabric and estimated glazing and thermal performance requirements are described in Table 3 below. Please note the estimated requirements below are based on the nominated construction materials by the architect.

Table 3 Building Fabric Requirements

Element	Insulation/glazing
External walls	• Tilt up concrete, lined with added R2.0 insulation • Autoclaved Aerated Concrete Cavity Panel Direct Fix with added R2.0 insulation
Internal walls	Unit 140502 only: • Cavity wall, direct fix plasterboard, single gap with no added insulation • Concrete Panel/Blocks filled, plasterboard with no added insulation • Autoclaved Aerated Concrete, plaster on studs with added R2.0 insulation All other units: • Cavity wall, direct fix plasterboard, single gap with no added insulation • Concrete Panel/Blocks filled, plasterboard with no added insulation • Autoclaved Aerated Concrete, plaster on studs with no added insulation
Floor	Units 140201-140205, 140301, 140202: • Suspended concrete slab with added R0.5 insulation All other units: • Suspended concrete slab with added R2.0 insulation • Timber Above Plasterboard with no added insulation
Ceiling	Units 130603, 131201-131204, 141101-141103, 150805, 151201-151204: • Concrete, Plasterboard with added R3.0 insulation.
Roof	• Concrete with no added insulation
Glazing Reference	Type A: • U-Value 6.7 & SHGC 0.70 ±10% Type B: • U-Value 3.4 & SHGC 0.32 ±10% Type C: • U-Value 5.1 & SHGC 0.32 ±10%

Units	Glazing Type
130301	Type A: All Glazing Components
130302	Type A: All Glazing Components
130305	Type A: All Glazing Components
130306	Type A: All Glazing Components

130307	Type A: All Glazing Components
130401	Type A: All Glazing Components
130402	Type A: All Glazing Components
130501	Type A: All Glazing Components
130502	Type A: All Glazing Components
130503	Type A: All Glazing Components
130508	Type A: All Glazing Components
130601	Type A: All Glazing Components
130602	Type A: All Glazing Components
130603	Type A: All Glazing Components
130608	Type A: All Glazing Components
130701	Type A: All Glazing Components
130702	Type A: All Glazing Components
130703	Type A: All Glazing Components
130708	Type A: All Glazing Components
130901	Type A: All Glazing Components
130902	Type A: All Glazing Components
130903	Type A: All Glazing Components
130901	Type A: All Glazing Components
130902	Type A: All Glazing Components
131001	Type A: All Glazing Components
131002	Type A: All Glazing Components
131101	Type A: All Glazing Components
131102	Type A: All Glazing Components
131201	Type A: All Glazing Components
140005	Type A: All Glazing Components
140201	Type A: All Glazing Components
140205	Type A: All Glazing Components
140301	Type A: All Glazing Components
140305	Type A: All Glazing Components
140306	Type A: All Glazing Components
140401	Type A: All Glazing Components
140405	Type A: All Glazing Components
140406	Type A: All Glazing Components

140501	Type A: All Glazing Components
140505	Type A: All Glazing Components
140506	Type A: All Glazing Components
140601	Type A: All Glazing Components
140605	Type A: All Glazing Components
140606	Type A: All Glazing Components
140701	Type A: All Glazing Components
140705	Type A: All Glazing Components
140706	Type A: All Glazing Components
140801	Type A: All Glazing Components
140805	Type A: All Glazing Components
140806	Type A: All Glazing Components
140901	Type A: All Glazing Components
140905	Type A: All Glazing Components
140906	Type A: All Glazing Components
141001	Type A: All Glazing Components
141005	Type A: All Glazing Components
141006	Type A: All Glazing Components
141101	Type A: All Glazing Components
150201	Type A: All Glazing Components
150202	Type A: All Glazing Components
150204	Type A: All Glazing Components
150205	Type A: All Glazing Components
150301	Type A: All Glazing Components
150306	Type A: All Glazing Components
150307	Type A: All Glazing Components
150401	Type A: All Glazing Components
150406	Type A: All Glazing Components
150407	Type A: All Glazing Components
150501	Type A: All Glazing Components
150506	Type A: All Glazing Components
150607	Type A: All Glazing Components
150608	Type A: All Glazing Components
150601	Type A: All Glazing Components

150606	Type A: All Glazing Components
150607	Type A: All Glazing Components
150608	Type A: All Glazing Components
150701	Type A: All Glazing Components
150706	Type A: All Glazing Components
150707	Type A: All Glazing Components
150708	Type A: All Glazing Components
150801	Type A: All Glazing Components
150806	Type A: All Glazing Components
150807	Type A: All Glazing Components
150901	Type A: All Glazing Components
150905	Type A: All Glazing Components
150906	Type A: All Glazing Components
150907	Type A: All Glazing Components
151001	Type A: All Glazing Components
151005	Type A: All Glazing Components
151006	Type A: All Glazing Components
151101	Type A: All Glazing Components
151105	Type A: All Glazing Components
151106	Type A: All Glazing Components
151201	Type A: All Glazing Components
151204	Type B: All Glazing Components
130804	Type B: All Glazing Components
140502	Type B: All Glazing Components
150803	Type B: All Glazing Components
150804	Type B: All Glazing Components
150805	Type B: All Glazing Components
130303	Type A: Kitchen/Living on west Type B: Kitchen/Living and Bedroom 2 on west
130304	Type A: Bedrooms 1 & 2 and Kitchen/Living on south Type B: Kitchen/Living on west
130403	Type A: Kitchen/Living on south and Bedroom 1 on west Type B: Bedroom 2 and Kitchen/Living on west
130404	Type A: Bedroom 1 & 2 on west and Kitchen/living on south Type B: Kitchen/living on west

130504	Type A: Kitchen/living on south and Bedroom 1 on west Type B: Kitchen/living and Bedroom 2 on west
130505	Type A: Kitchen/living on south and Bedroom 1 & 2 on west Type B: Kitchen/living on west
130506	Type A: Kitchen/living on south and Bedroom 1 & 2 on west Type B: Kitchen/living on west
130507	Type A: Kitchen/living on west and north. Bedroom 1 & 2 on north. Type B: Bedroom 1 on west
130604	Type A: Kitchen/living on south and bedroom 1 on west Type B: Kitchen/living and bedroom 2 on west
130605	Type A: Kitchen/living on south and bedroom 1 & 2 on west Type B: Kitchen/living on west
130606	Type A: Kitchen/living on south and bedroom 1 & 2 on west Type B: Kitchen/living on west
130607	Type A: Kitchen/living on west and north. Bedroom 1 & 2 on north Type B: Kitchen/living on west
130704	Type A: Kitchen/living on south and bedroom 1 on west Type B: Kitchen/living and bedroom 2 on west
130705	Type A: Kitchen/living on south and bedroom 1 & 2 on west Type B: Kitchen/living on west
130706	Type A: Kitchen/living on south and bedroom 1 & 2 on west Type B: Kitchen/living on west
130707	Type A: Kitchen/living on west and north. Bedroom 1 & 2 on north Type B: Bedroom 1 & 2 on west
130805	Type A: Kitchen/living on north Type B: Kitchen/living on west. Bedroom 1, 2 & 3 on west
130806	Type A: All glazing on north Type B: All glazing on east
130903	Type A: Bedroom 2 on west and kitchen/living on south Type B: All other glazing
130904	Type A: Master bedroom on west and north Type B: All other glazing
130905	Type A: All glazing on north Type B: All glazing on east

131003	Type A: Bedroom 2 on west and Kitchen/living on south Type B: All glazing on west except for bedroom 2
131004	Type A: Master bedroom on west and north Type B: All other glazing
131005	Type A: All glazing on north Type B: All glazing on east
131103	Type A: Bedroom 2 on west and kitchen/living on south Type B: All other glazing
131104	Type A: Master bedroom on west and north Type B: All other glazing
131106	Type A: All glazing on north Type B: All glazing on east
131202	Type A: Bedroom 2 on west and kitchen/living on south Type B: All other glazing
131203	Type A: Master bedroom on west and north Type B: All other glazing
131204	Type A: All glazing on north Type B: All glazing on east
140001	Type A: Bedroom 2 on east and Main bed on north Type B: All other glazing on east
140003	Type A: Kitchen/living, bedroom 3 and bedroom 2 on east Type B: Bedroom 2 on south and bedroom 1 on east
140004	Type A: All glazing on south Type B: All glazing on east
140202	Type A: Bedroom 1 on east and kitchen/living on north Type B: All other glazing
140204	Type A: Bedroom 2 & 3 on east and bedroom 3 on south Type B: Bedroom 1 and kitchen/living on east
140302	Type A: Kitchen/living on north and bedroom 1 on east Type B: Kitchen/living and Bedroom 2 on east
140304	Type A: Bedroom 2 on east. Bedroom 3 on east and south Type B: Bedroom 1 and kitchen/living on east
140402	Type A: Bedroom 1 on east and kitchen/living on north Type B: All other glazing
140404	Type A: Bedroom 2 on east. Bedroom 3 on east and south Type B: Bedroom 1 and kitchen/living on east
140504	Type A: All glazing on south Type B: All glazing on east
140602	Type A: Kitchen/living & bedroom 2 on north and bedroom 2 on east Type B: Kitchen/living and bedroom 1 on east

140604	Type A: Kitchen/living on south and west. Bedroom 3 on south Type B: Kitchen/living, bedroom 1 & 2 on east
140702	Type A: Kitchen/living and bedroom 2 on north. Bedroom 2 on east Type B: Kitchen/living and bedroom 1 on east
140704	Type A: Kitchen/living and bedroom 3 on south. Kitchen/living on east Type B: Kitchen/living and bedroom 1 & 2 on east
140802	Type A: Kitchen/living and bedroom 2 on north. Bedroom 2 on east Type B: Kitchen/living and bedroom 1 on east
140804	Type A: Kitchen/living and bedroom 3 on south. Kitchen/living on east Type B: Kitchen/living and bedroom 1 & 2 on east
140902	Type A: Kitchen/living and bedroom 2 on north. And bedroom 2 on east Type B: Kitchen/living and bedroom 1 on east
140904	Type A: Kitchen/living and bedroom 3 on south. Kitchen/living on east Type B: Kitchen/living and bedroom 1 & 2 on east
141002	Type A: Kitchen/living and bedroom 2 on north. Bedroom 2 on east Type B: Kitchen/living and bedroom 1 on east
141004	Type A: Kitchen/living and bedroom 3 on south. Kitchen/living on east Type B: Kitchen/living and bedroom 1 & 2 on east
150203	Type A: All glazing on south Type B: All glazing on west
150302	Type A: Kitchen/living and bedroom 1 & 2 on south. Bedroom 2 on west Type B: Kitchen/living and bedroom 3 on west
150303	Type A: Kitchen/living on south. Bedroom 1 & 2 on west Type B: Kitchen/living on west
150304	Type A: Kitchen/living on north and bedroom 1 on west Type B: Kitchen/living on west
150305	Type A: Kitchen/living on north and bedroom 1 on west Type B: Kitchen/living and bedroom 2 on west
150402	Type A: Kitchen/living, bedroom 1 and bedroom 2 on south. Bedroom 2 on west Type B: Kitchen/living and bedroom 3 on west
150403	Type A: Kitchen/living on south. Bedroom 1 & 2 on west Type B: Kitchen/living on west
150404	Type A: Kitchen/living on north. Bedroom 1 on west Type B: Kitchen/living on west

150405	Type A: Kitchen/living on north. Bedroom 1 on west Type B: Kitchen/living and bedroom 2 on west
150502	Type A: Kitchen/living, bedroom 1 and bedroom 2 on south. Bedroom 2 on west Type B: Kitchen/living and bedroom 3 on west
150503	Type A: Kitchen/living on south. Bedroom 1 & 2 on west Type B: Kitchen/living on west
150504	Type A: Kitchen/living on north. Bedroom 1 on west Type B: Kitchen/living on west
150505	Type A: Kitchen/living on north. Bedroom 1 on west Type B: Kitchen/living and bedroom 2 on west
150602	Type A: Kitchen/living, bedroom 1 and bedroom 2 on south. Bedroom 2 on west Type B: Kitchen/living and bedroom 3 on west
150603	Type A: Kitchen/living on south. Bedroom 1 & 2 on west Type B: Kitchen/living on west
150604	Type A: Kitchen/living on north. Bedroom 1 on west Type B: Kitchen/living on west
150605	Type A: Kitchen/living on north. Bedroom 1 on west Type B: Kitchen/living and bedroom 2 on west
150702	Type A: Kitchen/living, bedroom 1 and bedroom 2 on south. Bedroom 2 on west Type B: Kitchen/living and bedroom 3 on west
150703	Type A: Kitchen/living on south. Bedroom 1 & 2 on west Type B: Kitchen/living on west
150704	Type A: Kitchen/living on north. And bedroom 1 on west Type B: Kitchen/living on west
150705	Type A: Kitchen/living on north. And bedroom 1 on west Type B: Kitchen/living and bedroom 2 on west
150802	Type A: Kitchen/living, bedroom 1 and ensuite on south. Bedroom 1 on west Type B: Kitchen/living and bedroom 2 & 3 on west
150902	Type A: Kitchen/living, bedroom 1 and ensuite on south. Bedroom 1 on west Type B: Kitchen/living and bedroom 2 & 3 on west
150903	Type A: Kitchen/living on west and south Type B: Kitchen/living and bedroom 1 on west
150904	Type A: Kitchen/living on north and bedroom 2 on west Type B: Kitchen/living and bedroom 1 on west
151002	Type A: Kitchen/living, bedroom 1 and ensuite on south. Bedroom 1 on west Type B: Kitchen/living and bedroom 2 & 3 on west
151003	Type A: Kitchen/living on west and south Type B: Kitchen/living and bedroom 1 on west

151004	Type A: Kitchen/living on north and bedroom 2 on south Type B: Kitchen/living and bedroom 1 on west
151102	Type A: Kitchen/living, bedroom 1 and ensuite on south. Bedroom 1 on west Type B: Kitchen/living and bedroom 2 & 3 on west
151103	Type A: Kitchen/living on west and south Type B: Kitchen/living and bedroom 1 on west
151104	Type A: Kitchen/living on north and bedroom 2 on west Type B: Kitchen/living and bedroom 1 on west
151202	Type A: Kitchen/living on south and west. Bedroom 3 on west Type B: Kitchen/living, bedroom 1 & 2 on west
151203	Type A: All other glazing on west Type B: Kitchen/living, bedroom 1 & 2 on west
140203	Type A: Kitchen/living on north and bedroom 1 on east Type B: Kitchen/living and bedroom 2 on east Type C: Bedroom 2 on east
140303	Type A: Kitchen/living on north and bedroom 1 on east Type B: Kitchen/living and bedroom 2 on east Type C: Bedroom 2 on east
140403	Type A: Kitchen/living on north and bedroom 1 on east Type B: Kitchen/living and bedroom 2 on east Type C: Bedroom 2 on east
141102	Type A: Kitchen/living and bedroom 2 on north. Bedroom 2 on east Type B: Kitchen/living on east Type C: Kitchen/living, bedroom 1 & 2 on east
141103	Type A: Kitchen/living on south and east. Bedroom 2, 3 & 4 on south. Bedroom 3 on west Type B: Kitchen/living on east Type C: Kitchen/living on east

Note:

- The preliminary thermal insulation and glazing performance requirements outlined in this report nominate the estimated minimum BASIX requirements only. The specified performance values therefore do not consider requirements for any other disciplines such as Acoustics, Fire or Safety compliance. Where required, the development shall comply with any additional requirements related to the local council or other design disciplines in addition to the compliance requirements detailed in this report.
- Compliance with the minimum BASIX requirements does not warrant thermal comfort. All services consultants and contractors shall design and construct the development to comply with the minimum requirements of the NCC Vol 1 & 2 and NSW Section J requirements (revision of the NCC applicable to the development).
- The final NCC 2022 Section J has not yet been released at the time of this assessment. Based on the information provided by the Australian Building Construction Board (ABCB), a 12-month transition period ending 1st October 2023 is available in relation to the energy efficiency provisions of Section J. During this period, either the new NCC 2022 provisions or those from NCC 2019 may be used. On this basis, the transitional BCA 2019 Section J provisions have been applied in this assessment. The project team are required to confirm this with the PCA / planning authority prior to the design finalisation and construction since the minimum requirements under NCC 2022 Part J may be different and a re-assessment may be necessary.

6. BASIX Energy Section

The Energy performance of the development has been assessed using the online BASIX Tool. The assessment has considered Common Area and Central System features including the lifts, ventilation and lighting for common areas (corridors, lobbies, car park etc.), centralised domestic hot water and the efficiency of preferred lighting and appliances in the dwellings.

The proposed development will meet the mandatory BASIX Energy target of 25% as long as the energy commitments detailed in Table 4 are installed.

Table 4 Energy Commitments

Component		Commitment
Common Areas of residential areas	Lifts	• Quantity: 6, Gearless traction with VVVF motor.
	Swimming pool / Sauna	• N/A
	Ventilation	• Carpark: ventilation (supply & exhaust). Controlled with carbon monoxide monitor and VSD fan. • Switch room: ventilation (supply only). Thermostatically controlled. • Garbage room: ventilation exhaust only. • Plant or service rooms: ventilation (supply only). Thermostatically controlled. • Ground floor lobby type: ventilation (supply only), time clock or BMS controlled • Hallways areas: ventilation (supply only). time clock or BMS controlled
	Lighting	• Carpark: LED lighting with motion sensors. • Lifts: LED lighting, connected to the lift call button. • Switch room: LED lighting with manual on / manual off. • Garbage room: LED lighting with motion sensors. • Plant or service rooms: LED lighting with manual on / manual off. • Ground floor lobby type: LED lighting with time clock and motion sensors. • Hallways areas: LED lighting with time clock and motion sensors.
	Hot Water	• All buildings: Gas-fired storage (manifolded) with R0.6 insulation to the pipes.
	Alternative Energy Supply	• 52.2 Solar PV system
Private Dwellings	Ventilation	• Kitchen Exhaust: Individual fan, ducted to façade or roof, manual on/off switch. • Bathroom & Laundry Exhaust: Individual fan, ducted to façade or roof, interlocked to light.
	Heating & Cooling to living and bedroom areas	• Heating: 1-phase air-conditioning 4 Star (old label). • Cooling: 1-phase air-conditioning 4 Star (old label).
	Lighting	• Fluorescent or LED lights with dedicated fittings.
	Appliances	• Gas cooktops and electric ovens. • 3-star (energy rating) dishwashers. • 3-star (energy rating) clothes dryers.

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Key Plan:

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Rev	Amendment	By	Chk*	Date
A	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23

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Project PA030465

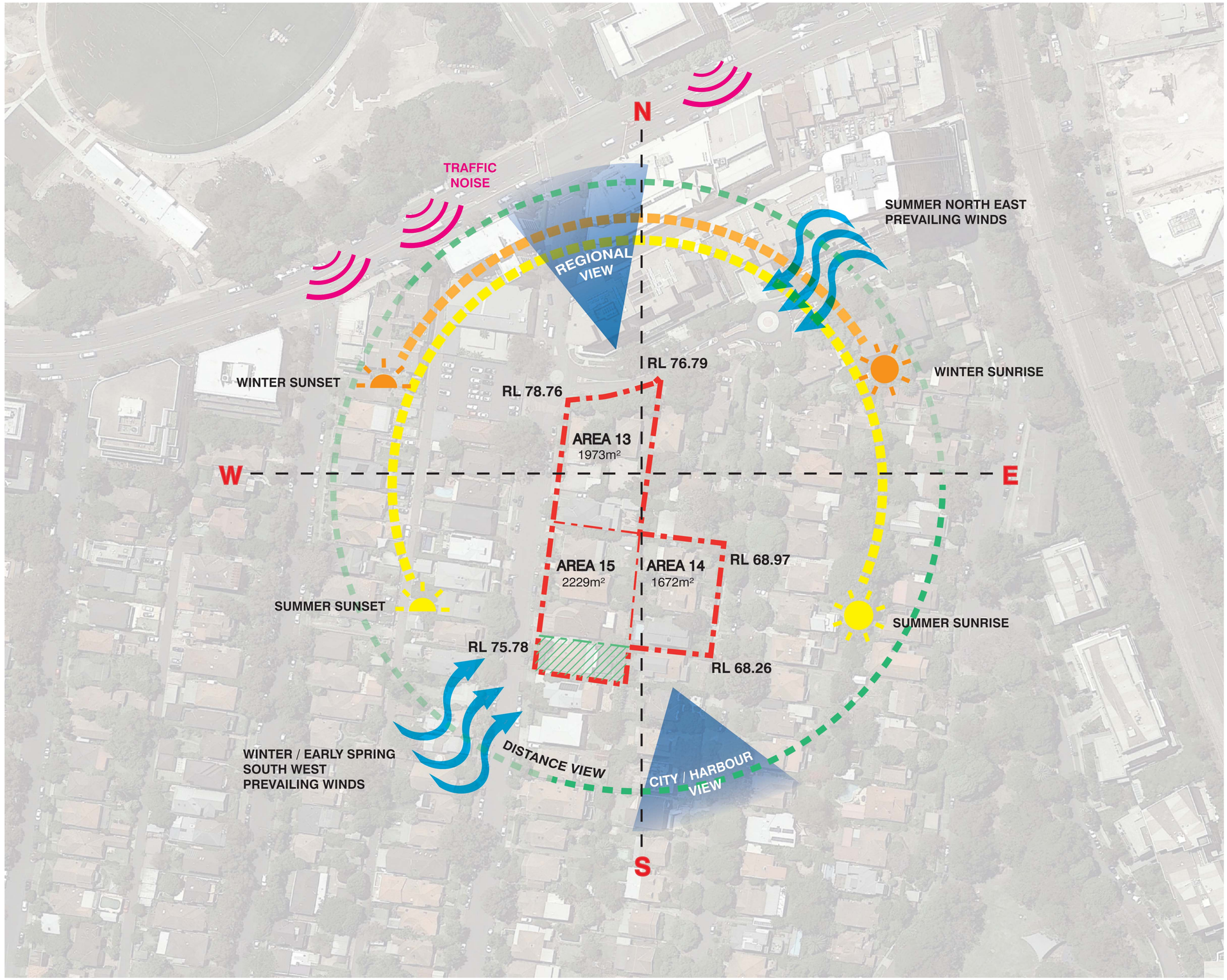
14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
BASIX NOTES

Drawing Number DA-A110030
Revision A

A1



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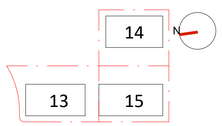

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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	10/02/23

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Nela Marojević NSW ARB 11274

PTW

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Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
SITE ANALYSIS

Drawing Number DA-A120010 **Revision** B

A1

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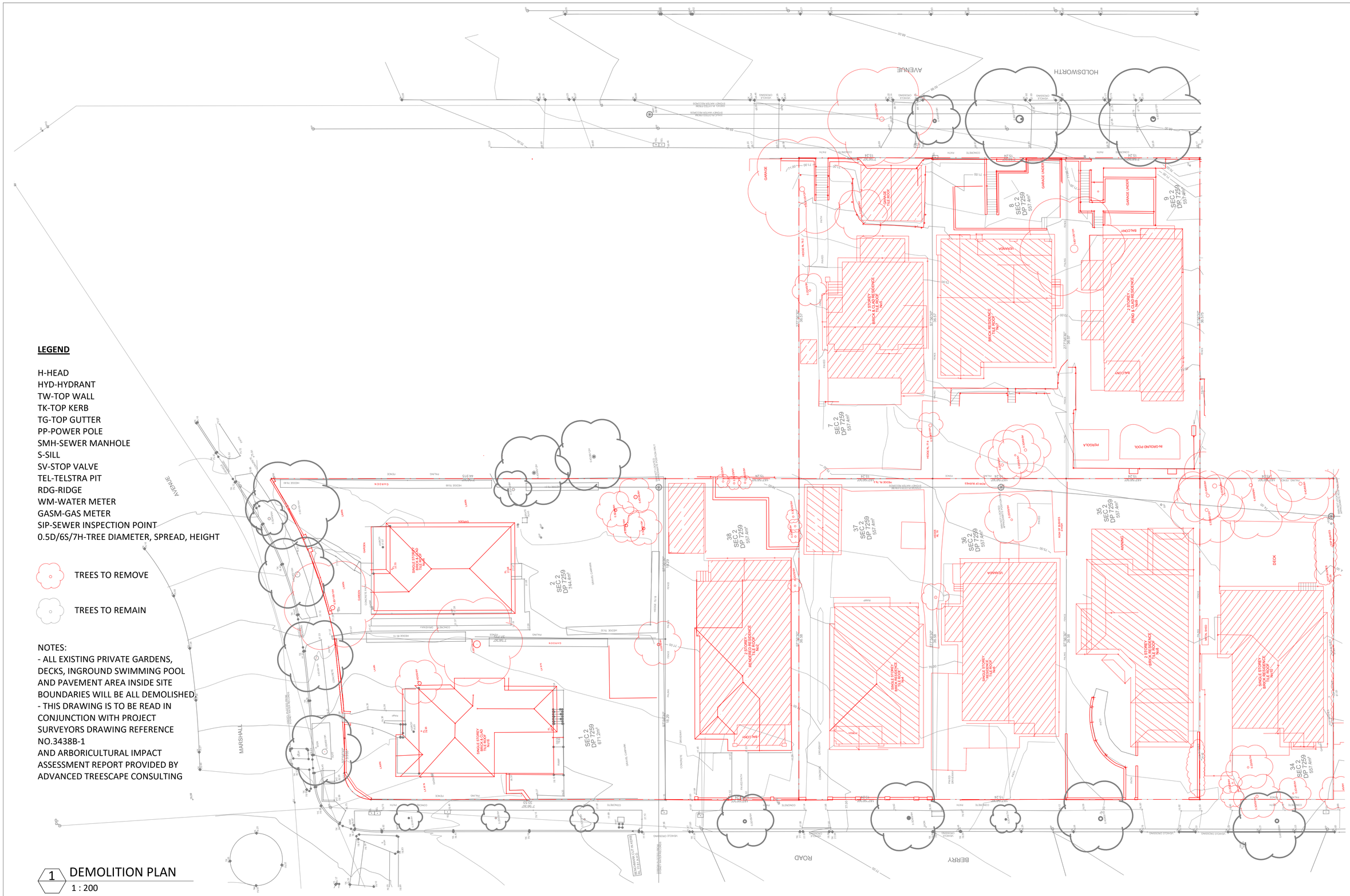
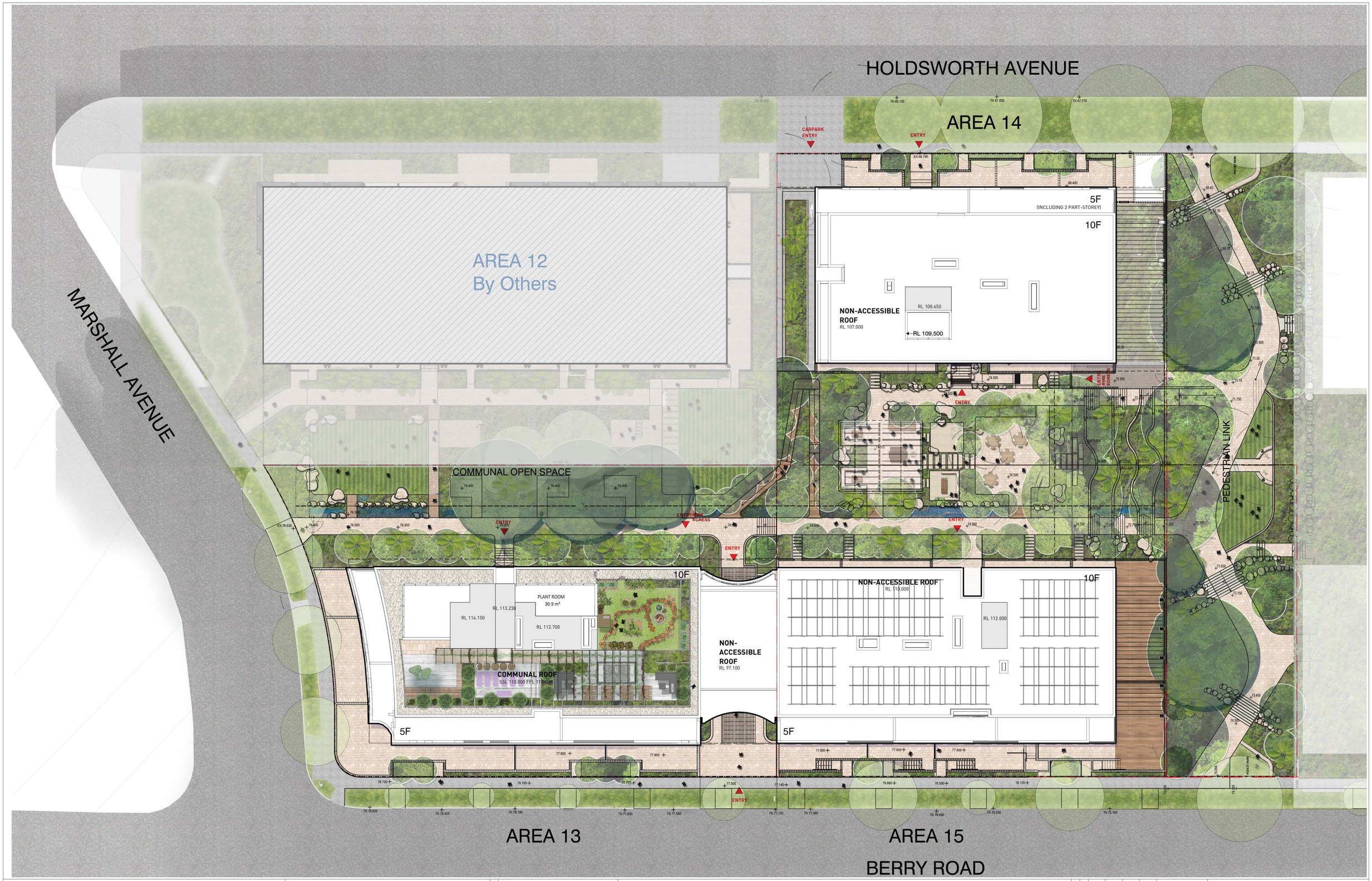

AVENUE
HOLDSWORTH
AVENUE
MARSHALL
ROAD
BERRY
8 SEC 2 DP 7259 557.4m²
9 SEC 2 DP 7259 557.4m²
7 SEC 2 DP 7259 557.4m²
2 SEC 2 DP 7259 744.4m²
1 SEC 2 DP 7259 671.2m²
38 SEC 2 DP 7259 557.4m²
37 SEC 2 DP 7259 557.4m²
36 SEC 2 DP 7259 557.4m²
35 SEC 2 DP 7259 557.4m²
34 SEC 2 DP 7259 557.4m²
7 STOREY BRICK RESIDENCE FLAT ROOF
2 STOREY BRICK & CLAD RESIDENCE TILE ROOF
7 STOREY BRICK RESIDENCE FLAT ROOF
7 STOREY BRICK & CLAD RESIDENCE FLAT ROOF
SINGLE STOREY BRICK RESIDENCE TILE ROOF
SINGLE STOREY BRICK RESIDENCE TILE ROOF
2 STOREY RENDERED RESIDENCE FLAT ROOF
SINGLE STOREY BRICK RESIDENCE TILE ROOF
SINGLE STOREY BRICK RESIDENCE TILE ROOF
GARAGE
GARAGE UNDER
BALCONY
PERGOLA
IN-GROUND POOL
DECK
PATH
CONCRETE
PAVING
LAWN
GARDEN
FENCE
PALING FENCE
HEDGE
TREE
SIGNAL PLATFORM BEHIND
BRICK WALL
STONE WALL
RETAINING WALL
VEHICLE CROSSING
CONCRETE PATH
SIGNAL PLATFORM BEHIND
STONE WALL



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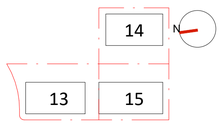

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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	10/02/23

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Nela Marojević NSW ARB 11274

0 1 2 5 8m
@ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
SITE PLAN

Drawing Number DA-A130010 **Revision** B

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1 BASEMENT 02 PLAN

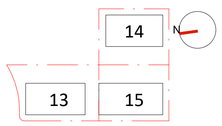
1 : 200

AREA 13

AREA 15

BERRY ROAD

Key Plan:



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F	ISSUE FOR COORDINATION	JY	LG	15/03/23
E	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
D	ISSUE FOR TRAFFIC COORDINATION	JY	LG	09/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
BASEMENT 02 PLAN

Drawing Number DA-B1B0910

Revision G

A1

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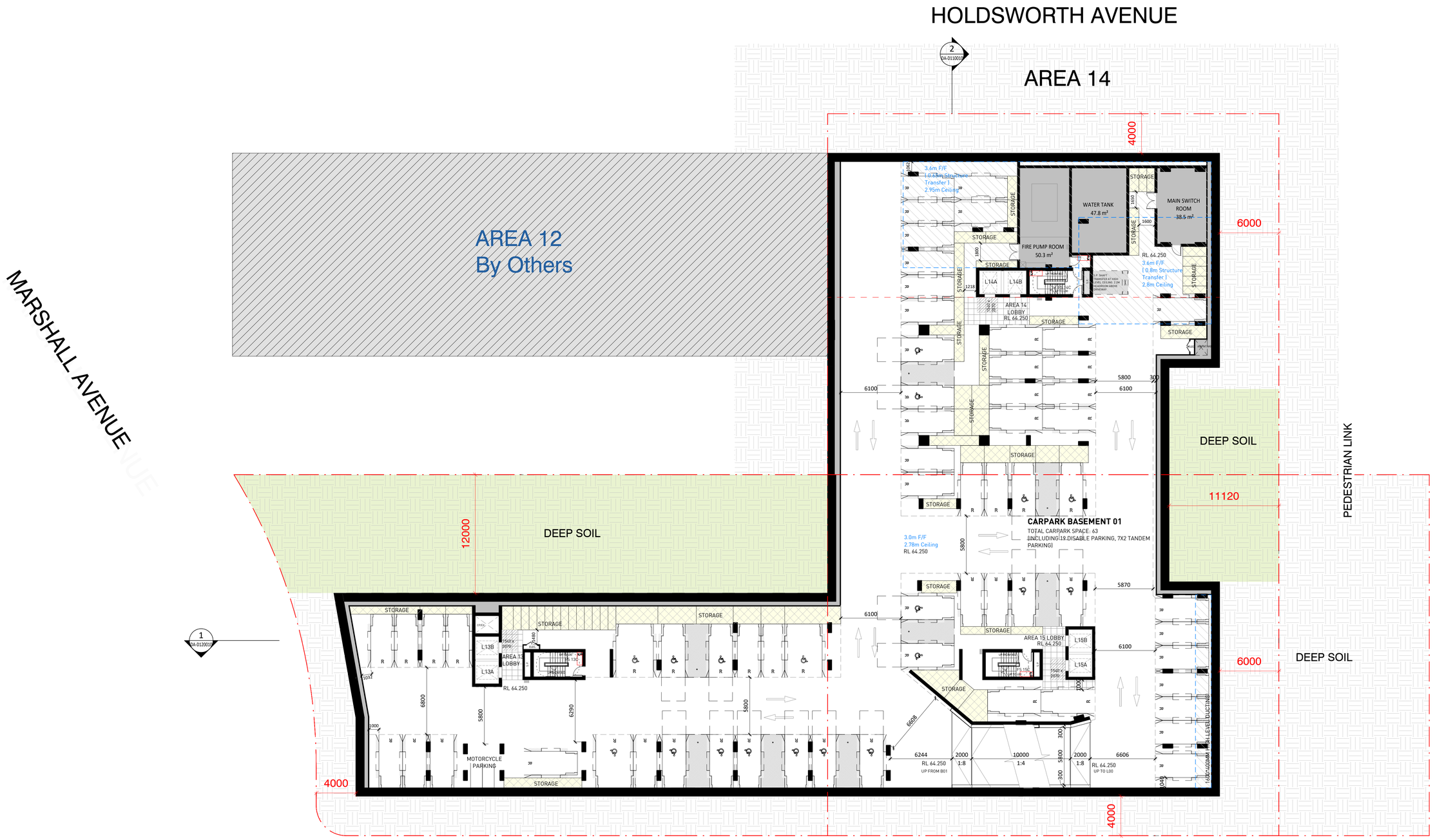

1 BASEMENT 01 PLAN

1 : 200

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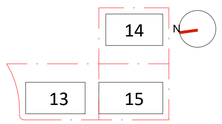
Key Plan:



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A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

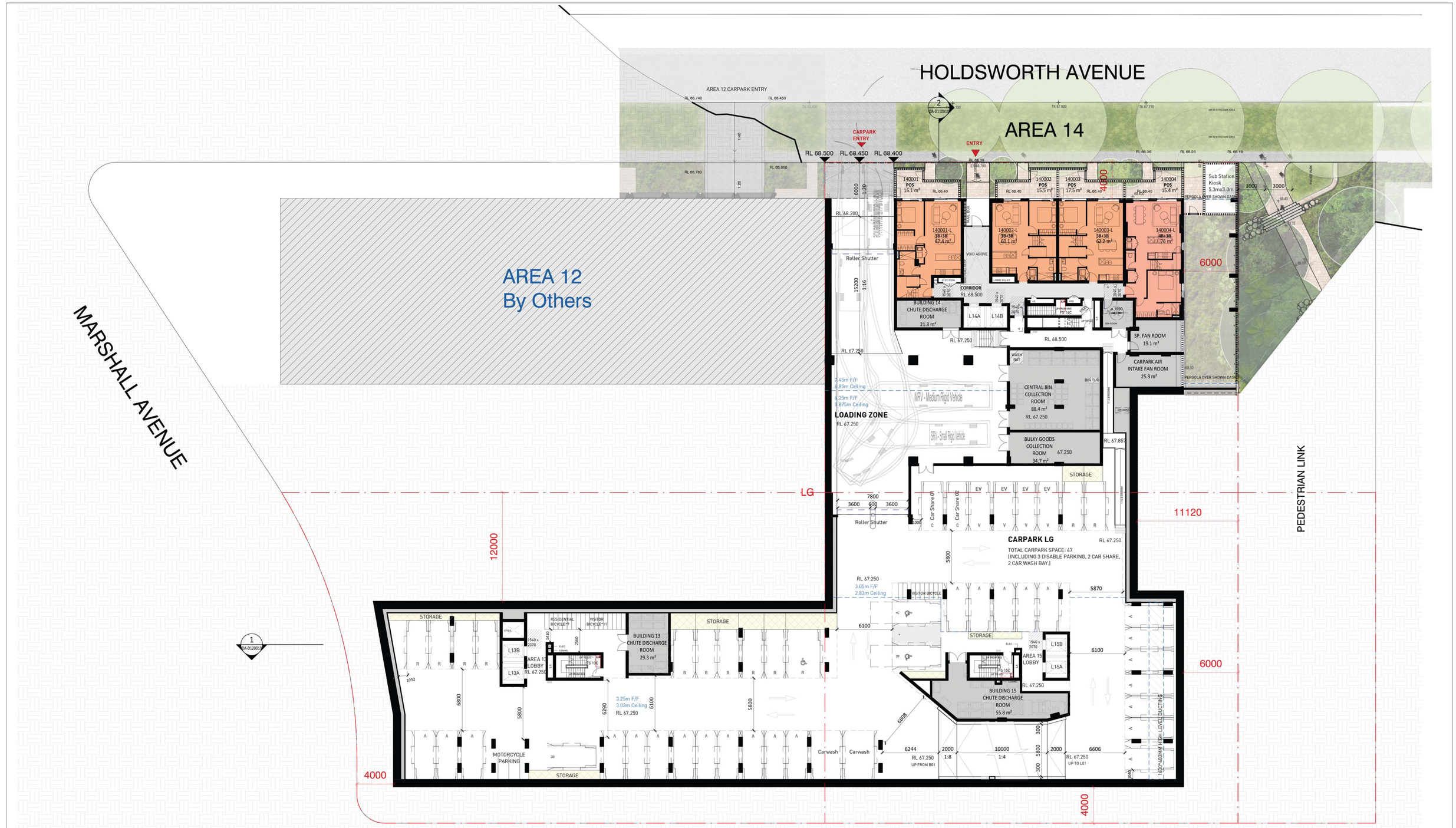
Status

Title
DA DRAWINGS
BASEMENT 01 PLAN

Drawing Number DA-B1B1010

Revision G

A1



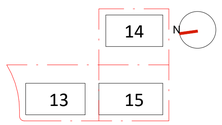
1 GROUND FLOOR PLAN
1 : 200

AREA 13

AREA 15

BERRY ROAD

Key Plan:



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@ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
GROUND FLOOR PLAN

Drawing Number DA-B1GRD10
Revision H

A1

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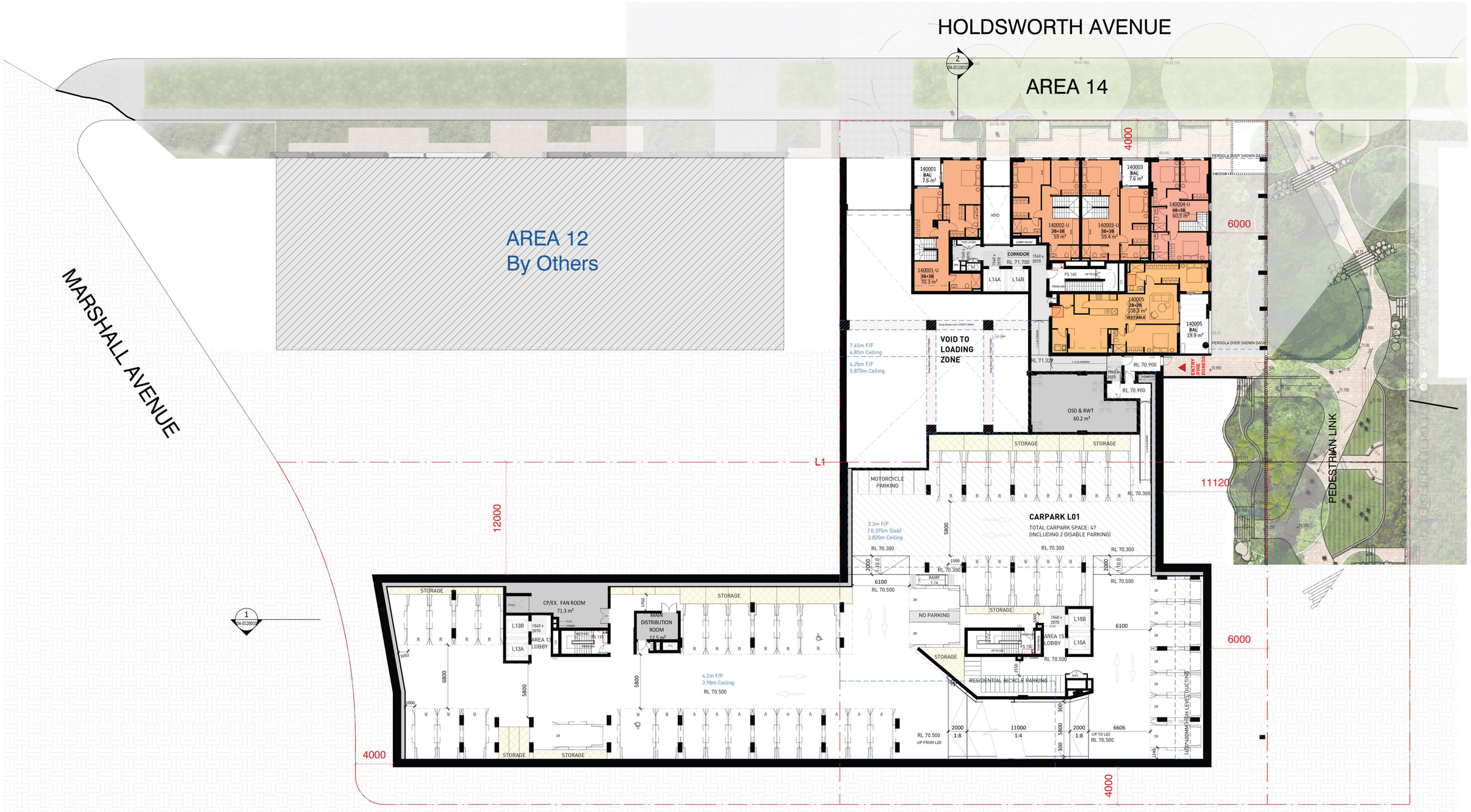


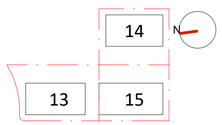
1 LEVEL 01 PLAN
1 : 200

AREA 13

AREA 15

BERRY ROAD

Key Plan:



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A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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0 1 2 5 8m
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Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 01 PLAN

Drawing Number DA-B1L0110

Revision H

A1

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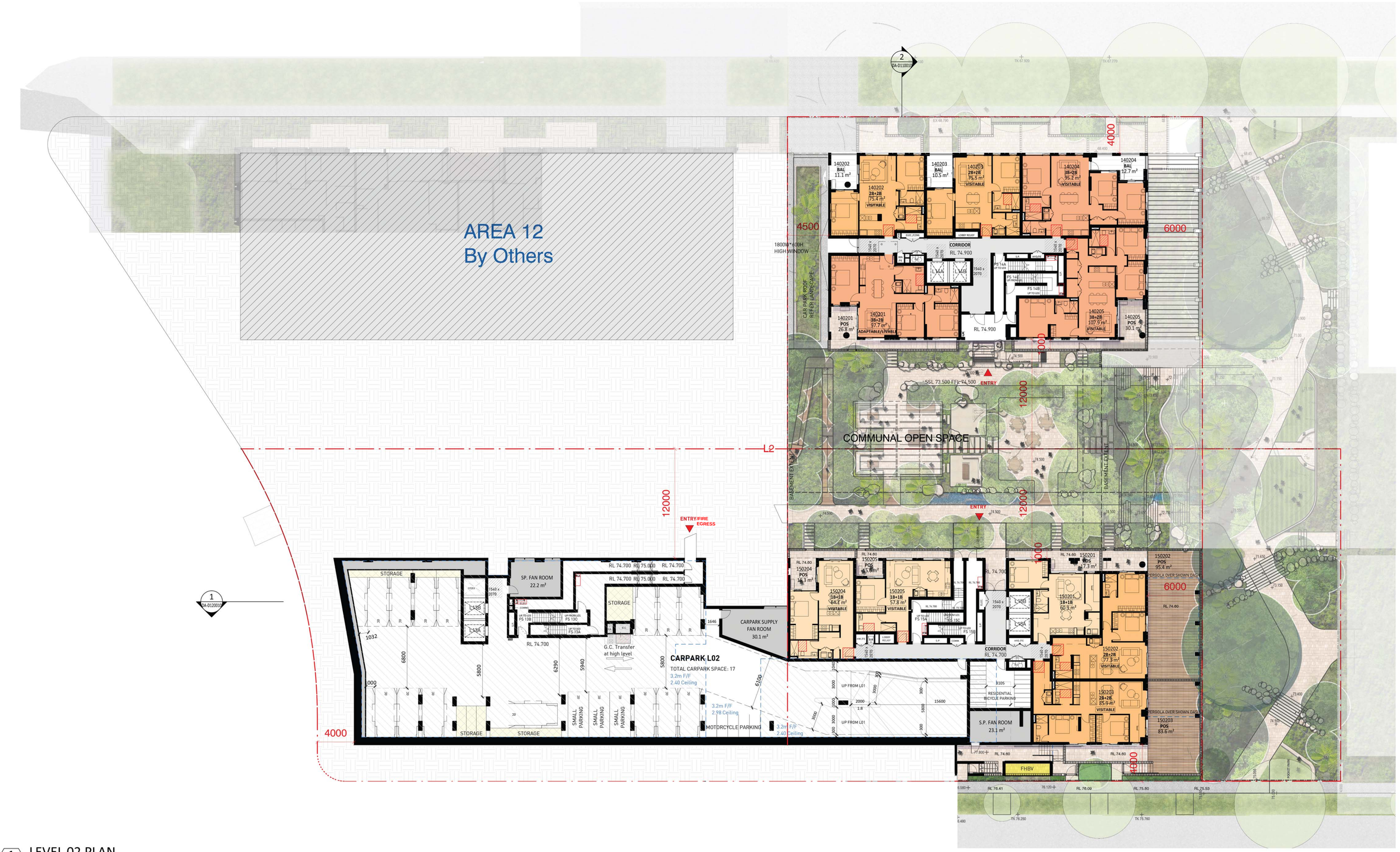
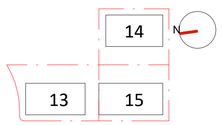


1 LEVEL 02 PLAN

1 : 200

Key Plan:



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C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojevic NSW ARB 11274

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Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 02 PLAN

Drawing Number
DA-B1L0210

Revision
H

A1

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HOLDSWORTH AVENUE

2
DA-0110020

AREA 14

AREA 12
By Others

MARSHALL AVENUE

COMMUNAL OPEN SPACE

PEDESTRIAN LINK

VOID TO
RL 74.50

1
DA-0120010

1800W*600H
HIGH WINDOW

OPEN LOBBY
RL 77.900

CORRIDOR RL 77.900

MAIL BOX

ENTRY

ENTRY/EGRESS

EGRESS

PERGOLA OVER SHOWN DASHED

VOID TO
RL 74.60

FHBV UNDER TERRACE

1 ARCH_L03
1 : 200

AREA 13

AREA 15

BERRY ROAD

Key Plan:

14 | 15 | 13

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D	ISSUE FOR LANDSCAPE COORDINATION	JY	LG	10/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

0 | 1 | 2 | 5 | 10 | 15m
@ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 03 PLAN

Drawing Number DA-B1L0310

Revision G

A1

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AREA 12
By Others

2
DA-0110010

AREA 14

4000
4500
6000
12000
1800W*600H HIGH WINDOW
RL 81.300
CORRIDOR
L14A
L14B
FS 14A
FS 14B
LOBBY RELIEF
ELEC. ROOM
DRYER
1540 x 2070
1800 x 2070
900 x 2070

140402 BAL 11.1 m²
140402 2B+2B 75.3m² VISITABLE
140403 BAL 10.5 m²
140403 2B+2B 75.5m² VISITABLE
140404 1B+1B 55.2 m² VISITABLE
140404 BAL 12.7 m²
140401 2B+2B 76.2 m² ADAPTABLE/LIVABLE
140401 BAL 10.3 m²
140406 2B+1B 70.3 m² VISITABLE&AFFORDABLE
140406 BAL 10.4 m²
140405 3B+2B 96 m² VISITABLE
140405 BAL 12.3 m²

L4

1
DA-0120010

4000
12000
9000
6000
1800W*600H HIGH WINDOW
VOID
SLAB OVER SHOWN DASH
CORRIDOR RL 81.100
L13A
L13B
FS 13A
FS 13B
LOBBY RELIEF
VOID
1540 x 2070
1800 x 2070
900 x 2070

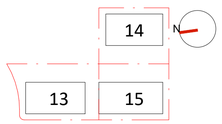
130307 U 4B+3B 65.1 m²
130306 U 3B+3B 75 m²
130305 U 4B+3B 67 m²
130401 1B+1B 50 m²
130401 BAL 8.1 m²
130402 2B+2B 77.8 m² ADAPTABLE/LIVABLE
130402 BAL 10.7 m²
130404 2B+2B 76.2 m² VISITABLE
130404 BAL 12.8 m²
130403 2B+2B 81.3 m² ADAPTABLE/LIVABLE
130403 BAL 10.1 m²
150406 BAL 10 m²
150406 2B+2B 76 m² ADAPTABLE/LIVABLE
150407 BAL 8 m²
150407 1B+1B 52.6 m²
150401 BAL 12.6 m²
150401 3B+2B 95.3 m² VISITABLE
150402 3B+2B 101.7 m² VISITABLE
150402 BAL 13.2 m²
150405 2B+2B 75.2 m² ADAPTABLE/LIVABLE
150405 BAL 10 m²
150404 BAL 8.6 m²
150404 1B+1B 56.9 m² ADAPTABLE/LIVABLE
150403 2B+2B 75.3 m²
150405 BAL 10.3 m²

AREA 13

AREA 15

1 ARCH_L04
1 : 200

Key Plan:



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C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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PTW

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1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 04 PLAN

Drawing Number
DA-B1L0410

Revision
F

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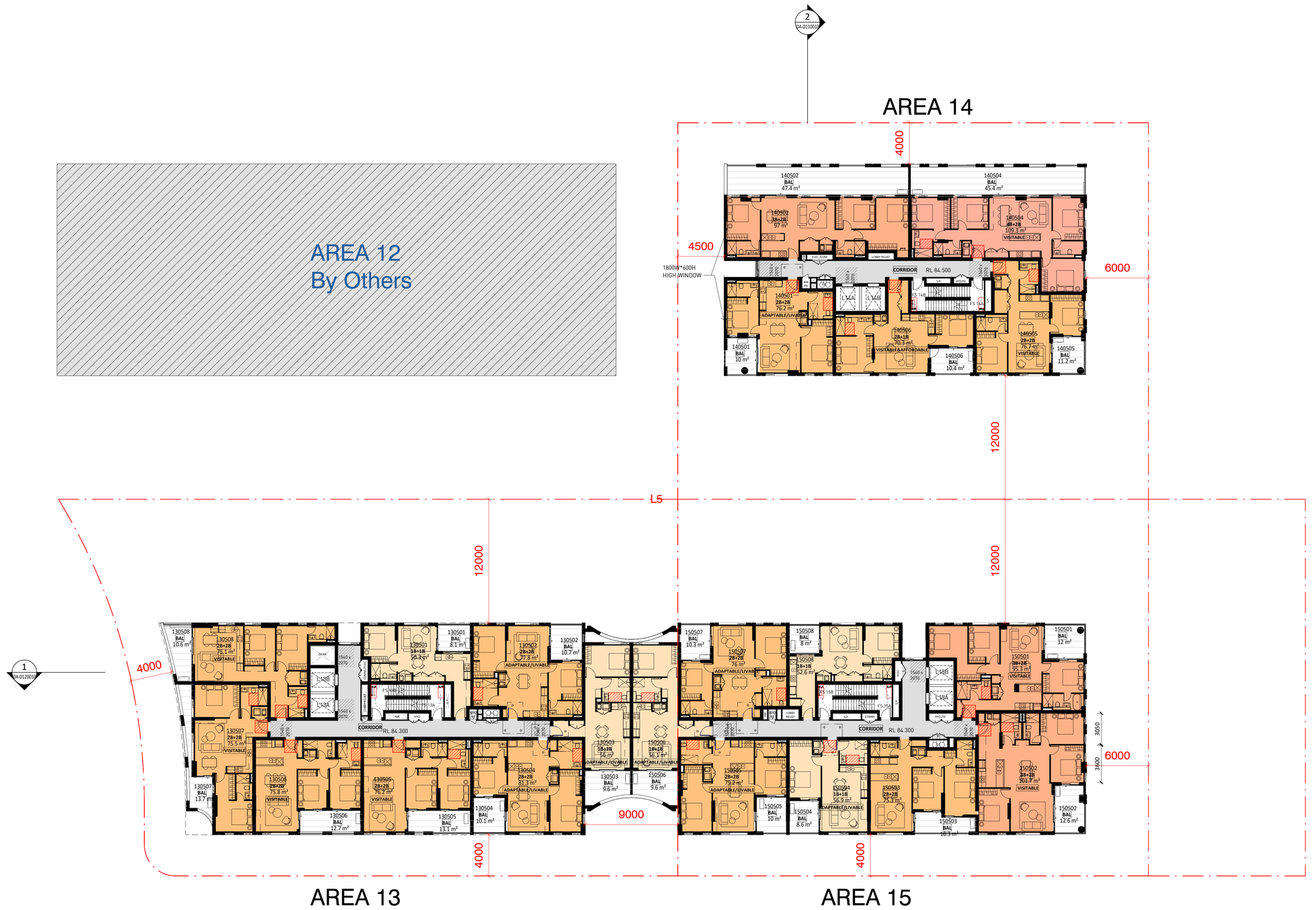

2
DA-0110010

1
DA-0120010

1 ARCH_L05
1 : 200

Key Plan:	Drawing Disclaimer:	Rev	Amendment	By	Chk*	Date
14 / 13 / 15 / N	Do not scale from drawings. Verify all dimensions on site before commencing work. Copying or reproduction of this drawing is strictly prohibited without the consent of PTW Architects	F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
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		C	ISSUE FOR COORDINATION	JY	LG	16/02/23
		B	ISSUE FOR COORDINATION	JY	LG	10/02/23
		A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 05 PLAN

Drawing Number
DA-B1L0510

Revision
F

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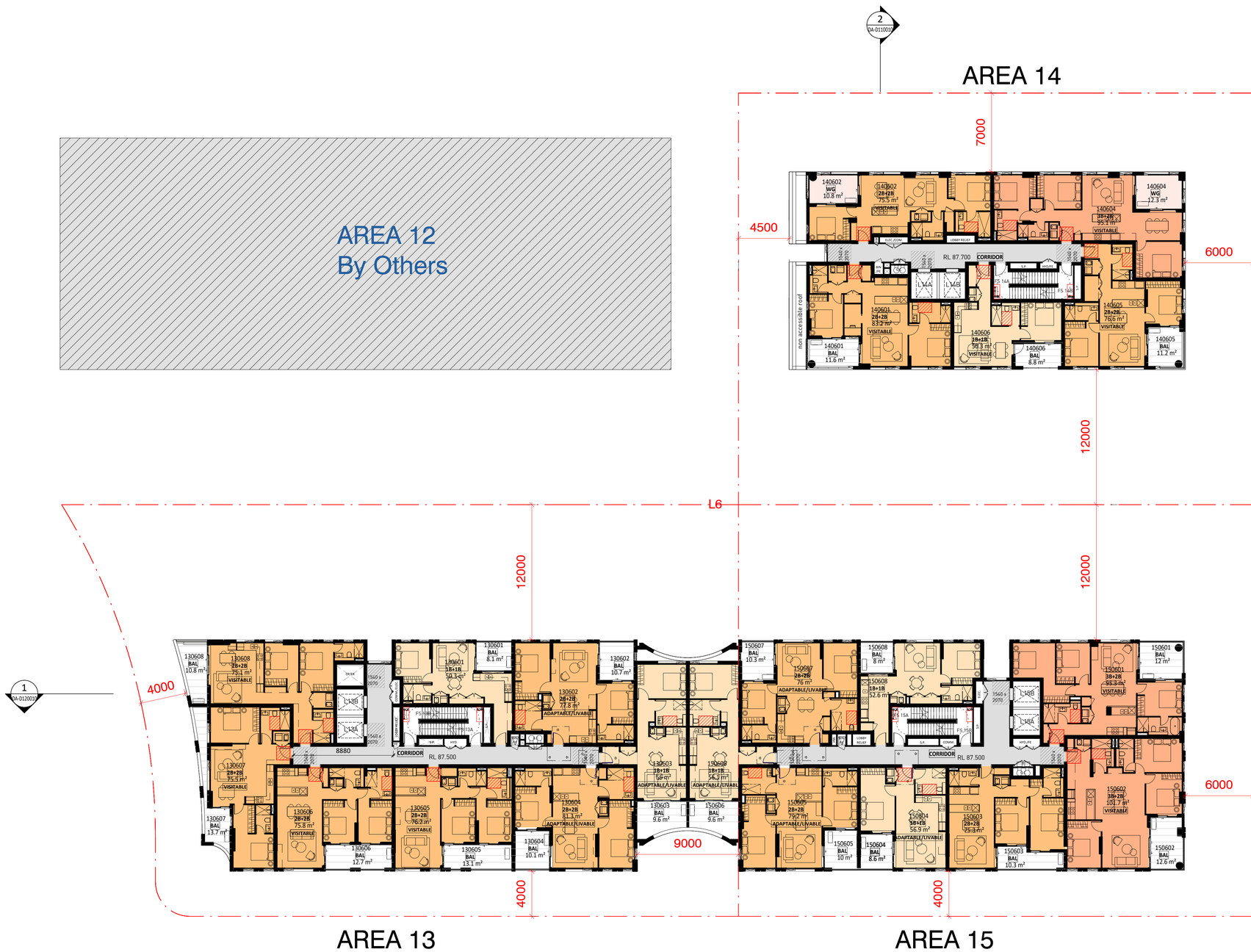

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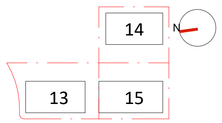

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Rev	Amendment	By	Chk*	Date
F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
E	ISSUE FOR COORDINATION	JY	LG	15/03/23
D	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Diane Jones NSW ARB 4778
Nela Marojević NSW ARB 11274

PTW

0 1 2 5 10 15m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 06 PLAN

Drawing Number
DA-B1L0610

Revision
F

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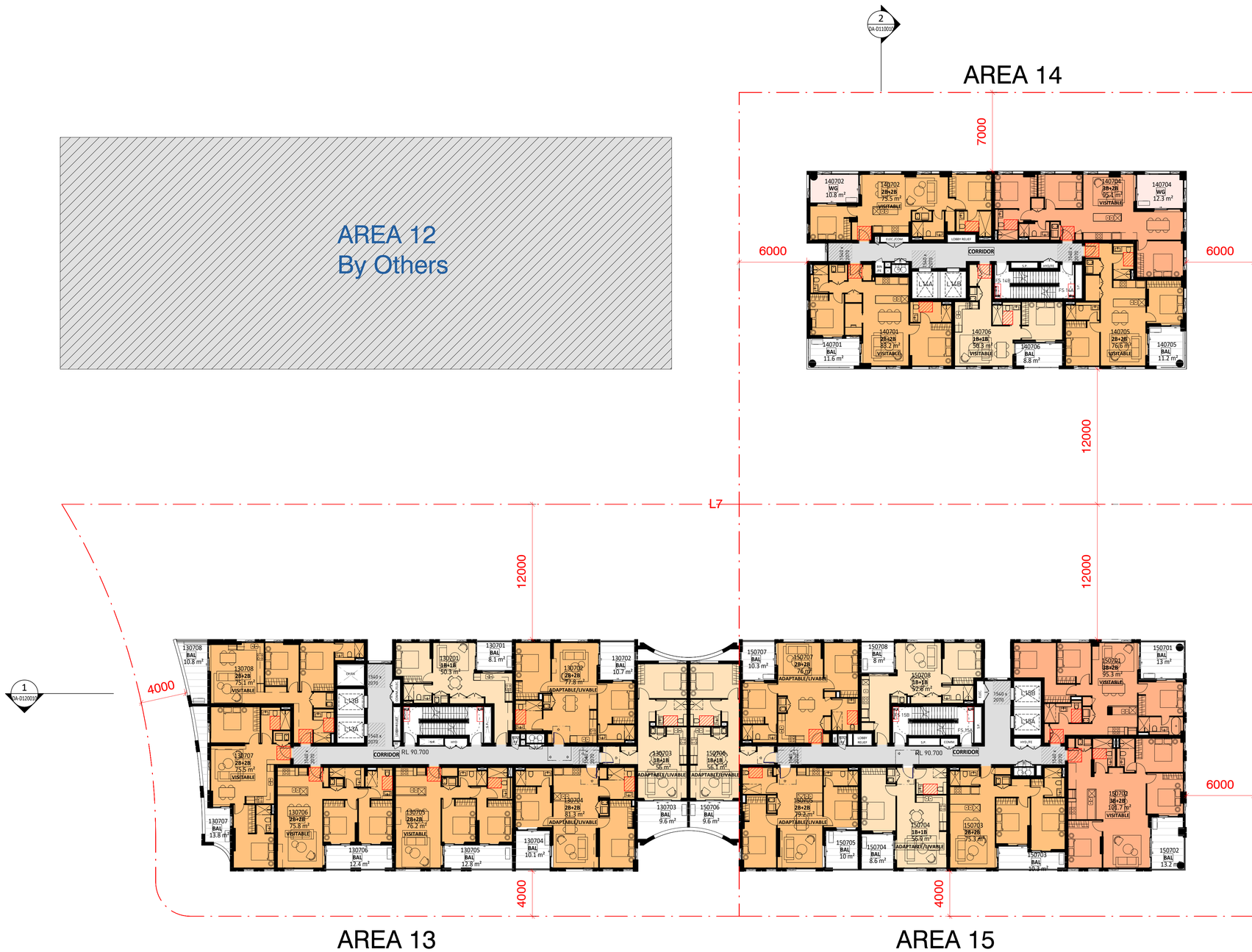

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DA-D120010

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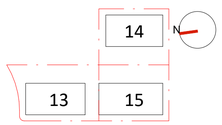

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Rev	Amendment	By	Chk*	Date
F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
E	ISSUE FOR COORDINATION	JY	LG	15/03/23
D	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 07 PLAN

Drawing Number
DA-B1L0710

Revision
F

A1

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AREA 12
By Others

2
DA-0110010

AREA 14

7000

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L8

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AREA 13

AREA 15

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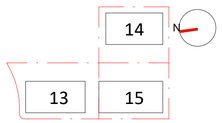

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Rev	Amendment	By	Chk*	Date
F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
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D	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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PTW

0 1 2 5 10 15m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 08 PLAN

Drawing Number
DA-B1L0810

Revision
F

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2 DA-0110010

1 DA-0120010

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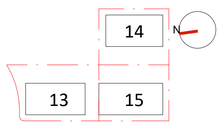
Key Plan:



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F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
E	ISSUE FOR COORDINATION	JY	LG	15/03/23
D	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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0 1 2 5 10 15m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 09 PLAN

Drawing Number DA-B1L0910

Revision F

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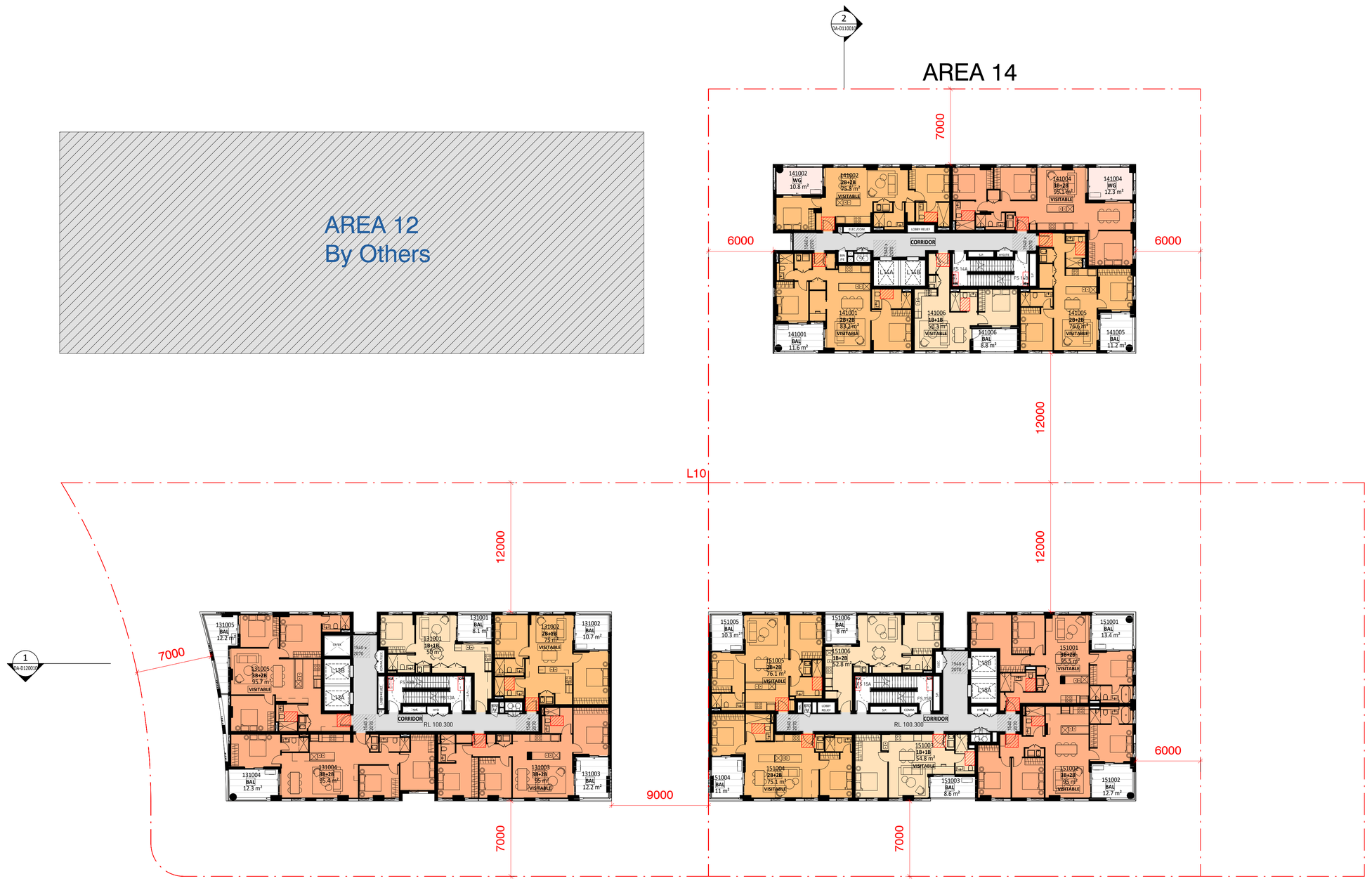

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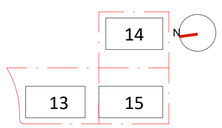
Key Plan:



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Rev	Amendment	By	Chk*	Date
F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
E	ISSUE FOR COORDINATION	JY	LG	15/03/23
D	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

0 1 2 5 10 15m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 10 PLAN

Drawing Number DA-B1L1010

Revision F

A1

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AREA 12
By Others

AREA 14

AREA 13

AREA 15

L11

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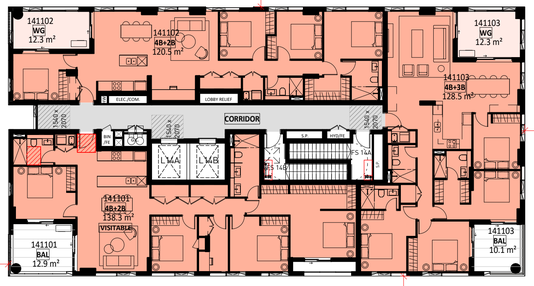

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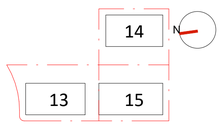

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Rev	Amendment	By	Chk*	Date
F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
E	ISSUE FOR COORDINATION	JY	LG	15/03/23
D	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Diane Jones NSW ARB 4778
Nella Marojević NSW ARB 11274

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0 1 2 5 10 15m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 11 PLAN

Drawing Number DA-B1L1110

Revision F

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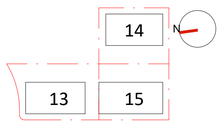
Key Plan:



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Rev	Amendment	By	Chk*	Date
F	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
E	ISSUE FOR COORDINATION	JY	LG	15/03/23
D	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

0 1 2 5 10 15m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 12 PLAN

Drawing Number DA-B1L1210
Revision F

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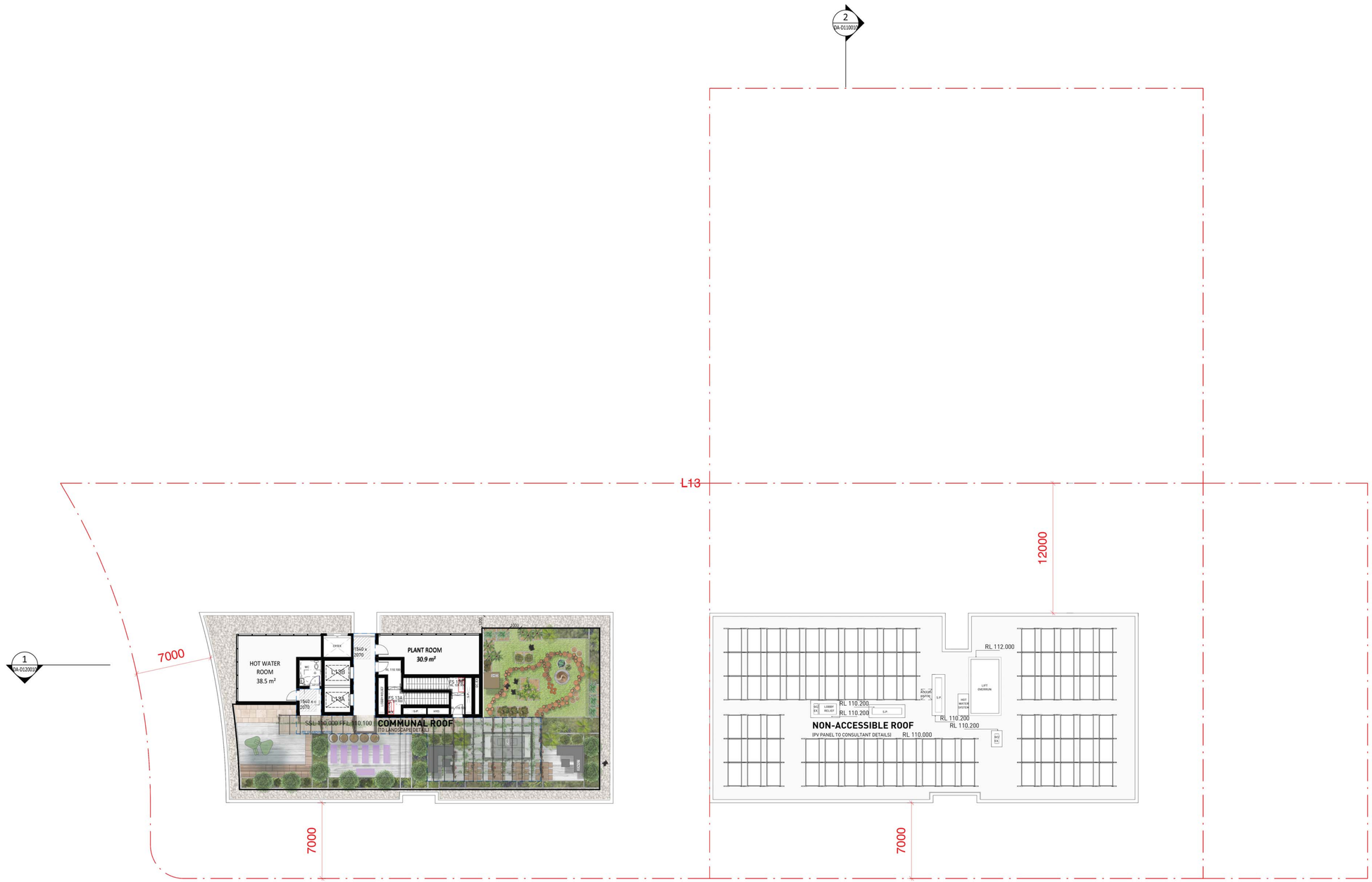

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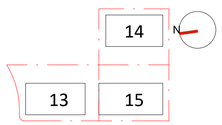
Key Plan:



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Rev	Amendment	By	Chk*	Date
G	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
F	ISSUE FOR COORDINATION	JY	LG	15/03/23
E	ISSUE FOR STRUCTURE COORDINATION	JY	LG	14/03/23
D	ISSUE FOR LANDSCAPE COORDINATION	JY	LG	10/03/23
C	ISSUE FOR COORDINATION	JY	LG	16/02/23
B	ISSUE FOR COORDINATION	JY	LG	10/02/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Diane Jones NSW ARB 4778
Nela Marojević NSW ARB 11274

PTW

0 1 2 5 10 15m
@ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
LEVEL 13 PLAN

Drawing Number DA-B1L1310

Revision G

A1

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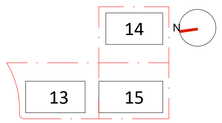
1 SITE PLAN

1 : 200

Key Plan:



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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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0 1 2 5 8m
@ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
ROOF PLAN

Drawing Number DA-B1L1410

Revision B

A1

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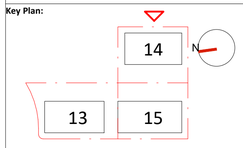
26-Apr-23 6:05:55 PM

1 EAST ELEVATION
1 : 200 @A1

CODES - MATERIALS & FINISHES

CODES	DESCRIPTION
AL-01	ALUMINIUM POWDERCOATED DULUX CHAMPAGNE
AL-02	ALUMINIUM POWDERCOATED DULUX MONUMENT
AL-03	ALUMINIUM POWDERCOATED DULUX MEDIUM GREY
AL-04	ALUMINIUM POWDERCOATED DULUX LIGHT GREY
BR-01	LIGHT BROWN BRICK
BR-02	VERTICAL LIGHT BROWN BRICK
BR-03	DARK BROWN BRICK
BR-04	VERTICAL DARK BROWN BRICK
BR-05	PERFORATED BRICK LIGHT BROWN
CC-01	CONCRETE PAINTED LIGHT GREY
GL-01	CLEAR GLASS
HB-01	MEDIUM GREY HEBEL PANEL
PC-01	CONCRETE LIGHT GREY
PT-01	DULUX PAINTED DARK GREY
PT-02	DULUX PAINTED LIGHT GREY
PT-03	DULUX PAINTED MEDIUM GREY
ST-01	SANDSTONE

Key Plan:



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B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
EAST ELEVATION

Drawing Number DA-C010010

Revision B

A1

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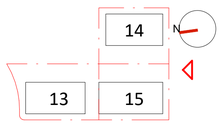
01 May 23 5:40:19 PM

1 SOUTH ELEVATION
1 : 200 @A1

CODES - MATERIALS & FINISHES

CODES	DESCRIPTION
AL-01	ALUMINIUM POWDERCOATED DULUX CHAMPAGNE
AL-02	ALUMINIUM POWDERCOATED DULUX MONUMENT
AL-03	ALUMINIUM POWDERCOATED DULUX MEDIUM GREY
AL-04	ALUMINIUM POWDERCOATED DULUX LIGHT GREY
BR-01	LIGHT BROWN BRICK
BR-02	VERTICAL LIGHT BROWN BRICK
BR-03	DARK BROWN BRICK
BR-04	VERTICAL DARK BROWN BRICK
BR-05	PERFORATED BRICK LIGHT BROWN
CC-01	CONCRETE PAINTED LIGHT GREY
GL-01	CLEAR GLASS
HB-01	MEDIUM GREY HEBEL PANEL
PC-01	CONCRETE LIGHT GREY
PT-01	DULUX PAINTED DARK GREY
PT-02	DULUX PAINTED LIGHT GREY
PT-03	DULUX PAINTED MEDIUM GREY
ST-01	SANDSTONE

Key Plan:



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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

PTW

0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
SOUTH ELEVATION

Drawing Number DA-C020010 **Revision** B

A1

C:\Revit_Local\PA030465_BerryHoldsworthMarshall_AA_AB_DA_xi.Yang@ptw.com.au.rvt

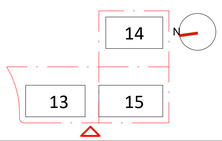
01-May-23 5:42:55 PM

1 WEST ELEVATION
1 : 200 @A1

CODES - MATERIALS & FINISHES

CODES	DESCRIPTION
AL-01	ALUMINIUM POWDERCOATED DULUX CHAMPAGNE
AL-02	ALUMINIUM POWDERCOATED DULUX MONUMENT
AL-03	ALUMINIUM POWDERCOATED DULUX MEDIUM GREY
AL-04	ALUMINIUM POWDERCOATED DULUX LIGHT GREY
BR-01	LIGHT BROWN BRICK
BR-02	VERTICAL LIGHT BROWN BRICK
BR-03	DARK BROWN BRICK
BR-04	VERTICAL DARK BROWN BRICK
BR-05	PERFORATED BRICK LIGHT BROWN
CC-01	CONCRETE PAINTED LIGHT GREY
GL-01	CLEAR GLASS
HB-01	MEDIUM GREY HEBEL PANEL
PC-01	CONCRETE LIGHT GREY
PT-01	DULUX PAINTED DARK GREY
PT-02	DULUX PAINTED LIGHT GREY
PT-03	DULUX PAINTED MEDIUM GREY
ST-01	SANDSTONE

Key Plan:



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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
WEST ELEVATION

Drawing Number DA-C030010 **Revision** B

A1

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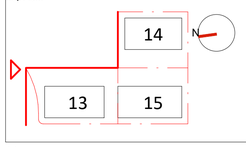
5/3/2023 6:10:48 PM

1 NORTH ELEVATION
1 : 200

CODES - MATERIALS & FINISHES

CODES	DESCRIPTION
AL-01	ALUMINIUM POWDERCOATED DULUX CHAMPAGNE
AL-02	ALUMINIUM POWDERCOATED DULUX MONUMENT
AL-03	ALUMINIUM POWDERCOATED DULUX MEDIUM GREY
AL-04	ALUMINIUM POWDERCOATED DULUX LIGHT GREY
BR-01	LIGHT BROWN BRICK
BR-02	VERTICAL LIGHT BROWN BRICK
BR-03	DARK BROWN BRICK
BR-04	VERTICAL DARK BROWN BRICK
BR-05	PERFORATED BRICK LIGHT BROWN
CC-01	CONCRETE PAINTED LIGHT GREY
GL-01	CLEAR GLASS
HB-01	MEDIUM GREY HEBEL PANEL
PC-01	CONCRETE LIGHT GREY
PT-01	DULUX PAINTED DARK GREY
PT-02	DULUX PAINTED LIGHT GREY
PT-03	DULUX PAINTED MEDIUM GREY
ST-01	SANDSTONE

Key Plan:



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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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PTW

0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
NORTH ELEVATION

Drawing Number DA-C040010

Revision B

A1

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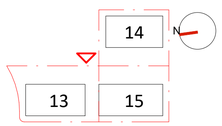
01-May-23 5:47:27 PM

2 ARCH_GREEN SPINE WEST
1 : 200 @A1

CODES - MATERIALS & FINISHES

CODES	DESCRIPTION
AL-01	ALUMINIUM POWDERCOATED DULUX CHAMPAGNE
AL-02	ALUMINIUM POWDERCOATED DULUX MONUMENT
AL-03	ALUMINIUM POWDERCOATED DULUX MEDIUM GREY
AL-04	ALUMINIUM POWDERCOATED DULUX LIGHT GREY
BR-01	LIGHT BROWN BRICK
BR-02	VERTICAL LIGHT BROWN BRICK
BR-03	DARK BROWN BRICK
BR-04	VERTICAL DARK BROWN BRICK
BR-05	PERFORATED BRICK LIGHT BROWN
CC-01	CONCRETE PAINTED LIGHT GREY
GL-01	CLEAR GLASS
HB-01	MEDIUM GREY HEBEL PANEL
PC-01	CONCRETE LIGHT GREY
PT-01	DULUX PAINTED DARK GREY
PT-02	DULUX PAINTED LIGHT GREY
PT-03	DULUX PAINTED MEDIUM GREY
ST-01	SANDSTONE

Key Plan:



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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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PTW

0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
GREEN SPINE WEST ELEVATION

Drawing Number DA-C050010 **Revision** B

A1

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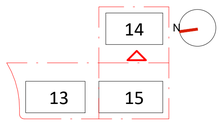
01-May-23 5:48:15 PM

1 ARCH_GREEN SPINE EAST
1 : 200 @A1

CODES - MATERIALS & FINISHES

CODES	DESCRIPTION
AL-01	ALUMINIUM POWDERCOATED DULUX CHAMPAGNE
AL-02	ALUMINIUM POWDERCOATED DULUX MONUMENT
AL-03	ALUMINIUM POWDERCOATED DULUX MEDIUM GREY
AL-04	ALUMINIUM POWDERCOATED DULUX LIGHT GREY
BR-01	LIGHT BROWN BRICK
BR-02	VERTICAL LIGHT BROWN BRICK
BR-03	DARK BROWN BRICK
BR-04	VERTICAL DARK BROWN BRICK
BR-05	PERFORATED BRICK LIGHT BROWN
CC-01	CONCRETE PAINTED LIGHT GREY
GL-01	CLEAR GLASS
HB-01	MEDIUM GREY HEBEL PANEL
PC-01	CONCRETE LIGHT GREY
PT-01	DULUX PAINTED DARK GREY
PT-02	DULUX PAINTED LIGHT GREY
PT-03	DULUX PAINTED MEDIUM GREY
ST-01	SANDSTONE

Key Plan:



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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojevic NSW ARB 11274

0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
GREEN SPINE EAST ELEVATION

Drawing Number DA-C060010
Revision B

A1

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02-May-23 3:36:48 PM

Key Plan:

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Rev	Amendment	By	Chk*	Date
A	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23

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0 1 2 5 8m
1 : 100 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
PERSPECTIVE 1

Drawing Number DA-C510010 **Revision** A

A1

ARTIST IMPRESSION

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Rev	Amendment	By	Chk*	Date
A	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23

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0 1 2 5 8m
@ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
PERSPECTIVE 2

Drawing Number DA-C510011 **Revision** A

A1

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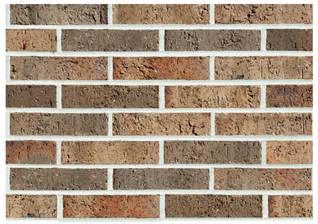
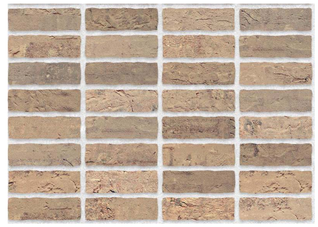


BR-01
LIGHT BROWN BRICK

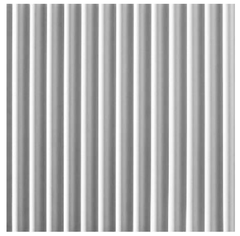


BR-02
VERTICAL LIGHT BROWN BRICK

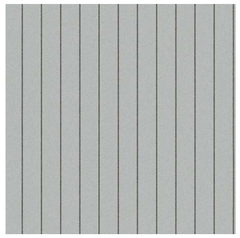
BR-01
DARK BROWN BRICK

BR-01
VERTICAL DARK BROWN BRICK

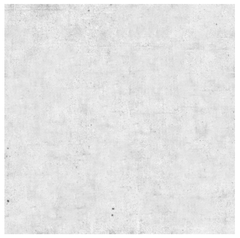
ST-01
SANDSTONE



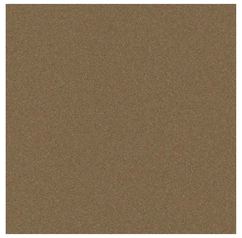
CR-01
CONCRETE PAINTED LIGHT GREY WITH TEXTURES



HB-01
MEDIUM GREY HEBEL PANEL



CC-01
CONCRETE PAINTED LIGHT GREY



AL-01
ALUMINIUM POWDERCOATED DULUX CHAMPAGNE

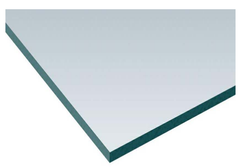
AL-02
ALUMINIUM POWDERCOATED DULUX MONUMENT

AL-03
ALUMINIUM POWDERCOATED DULUX MEDIUM GREY

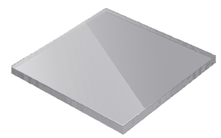
AL-04
ALUMINIUM POWDERCOATED DULUX LIGHT GREY

PT-01
DULUX PAINTED DARK GREY

PT-02
DULUX PAINTED MEDIUM GREY



GL-01
CLEAR GLASS



GL-02
COLOUR BACK GLASS

BR-05
PERFORATED BRICK INSPIRATION (LIGHT BROWN BRICK)

FENCES
REFERENCE FENCES FINISHES

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Key Plan:

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Rev	Amendment	By	Chk*	Date
A	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23

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Nela Marojević NSW ARB 11274

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

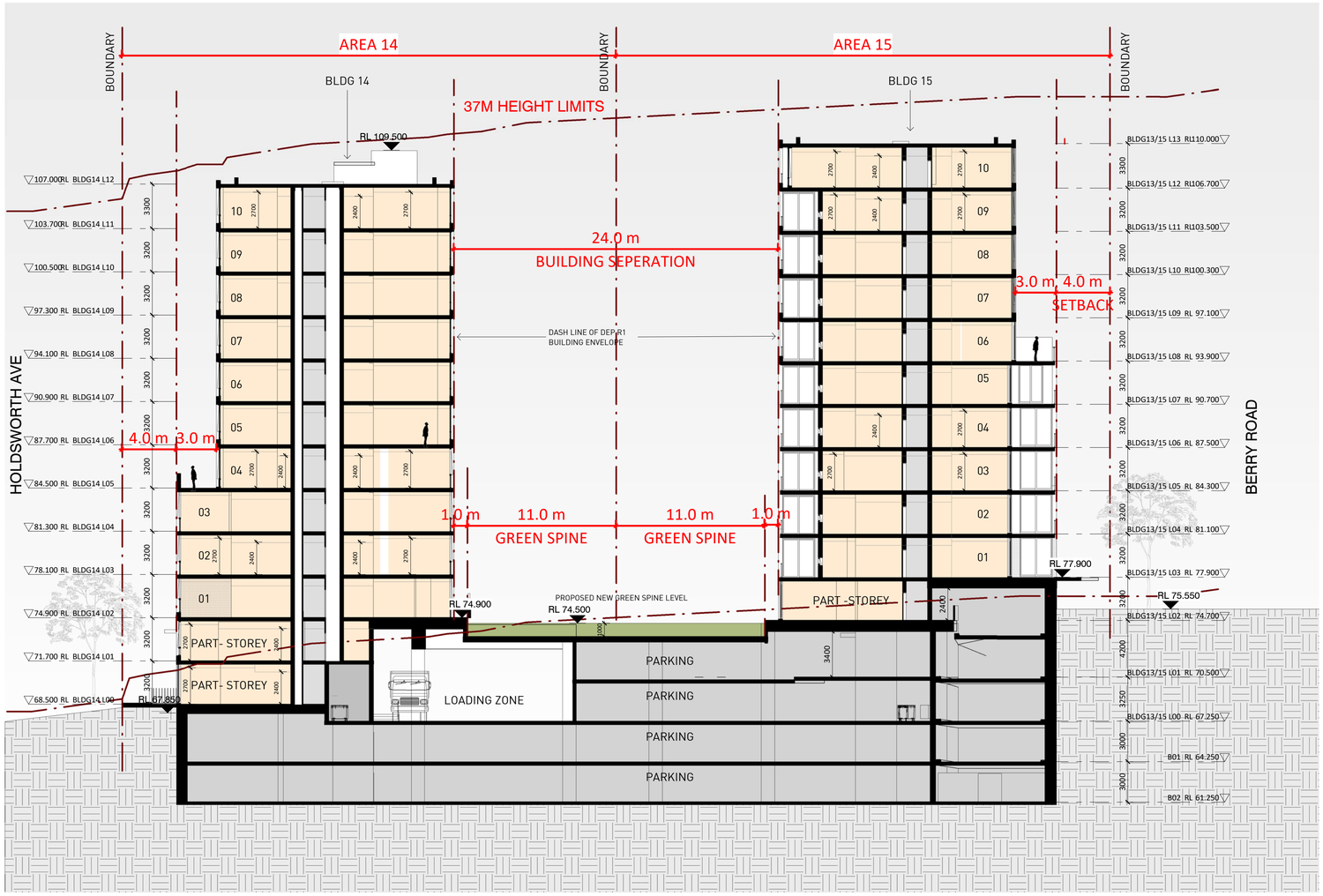
Status

Title
DA DRAWINGS
MATERIALS AND FINISHES BOARD

Drawing Number DA-C910010 **Revision** A

28-Apr-23 5:03:46 PM

A1



2 SECTION 14/15

1 : 200 @A1

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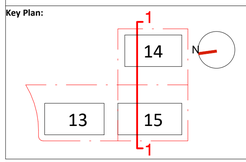

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Rev	Amendment	By	Chk*	Date
C	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
B	ISSUE FOR LANDSCAPE COORDINATION	JY	LG	10/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

***Registered Architect**
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Diane Jones NSW ARB 4778
Nela Marojević NSW ARB 11274

0 1 2 5 8m
1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
SECTION BLDG 14-15

Drawing Number DA-D110010 **Revision** C

A1

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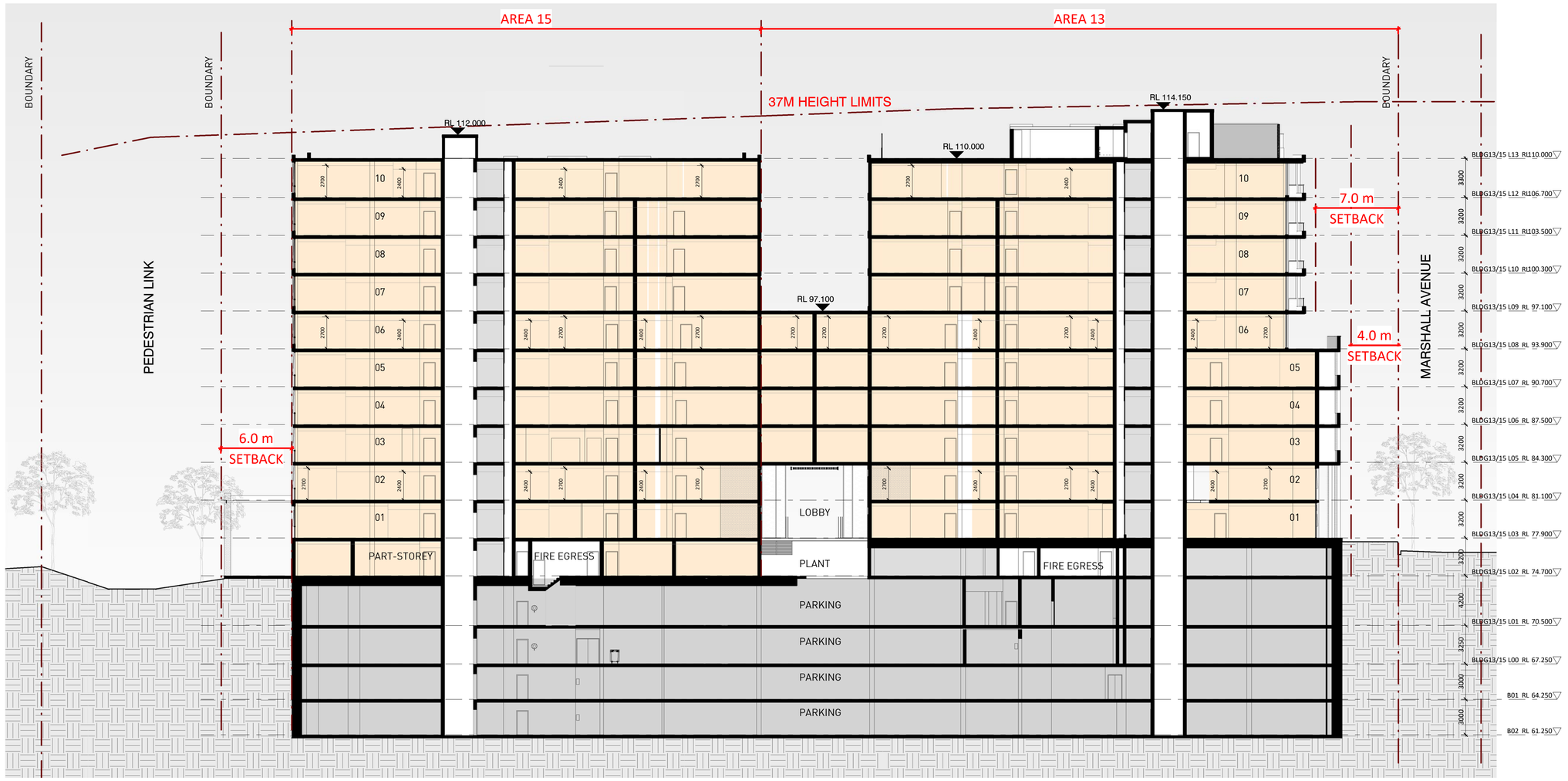
01-May-23 5:52:13 PM



1 SECTION 13/15

1 : 200

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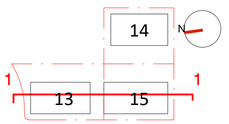
Key Plan:



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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR COORDINATION	JY	LG	03/02/23

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Nela Marojević NSW ARB 11274

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1 : 200 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
SECTION BLDG 13-15

Drawing Number DA-D120010

Revision B

01 May 23 5:52:26 PM

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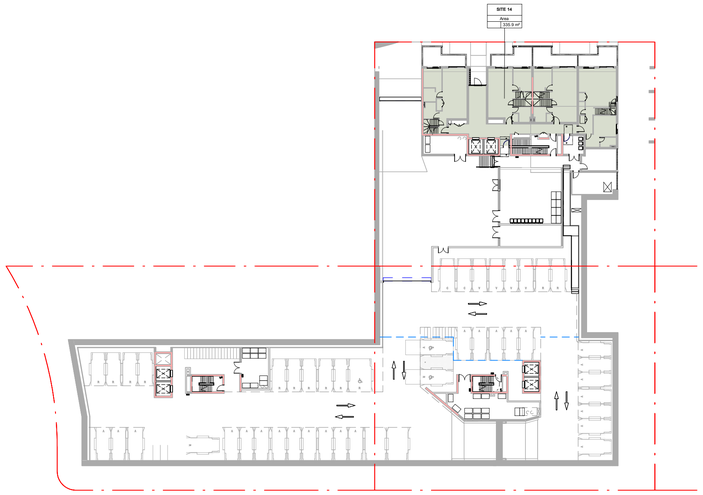

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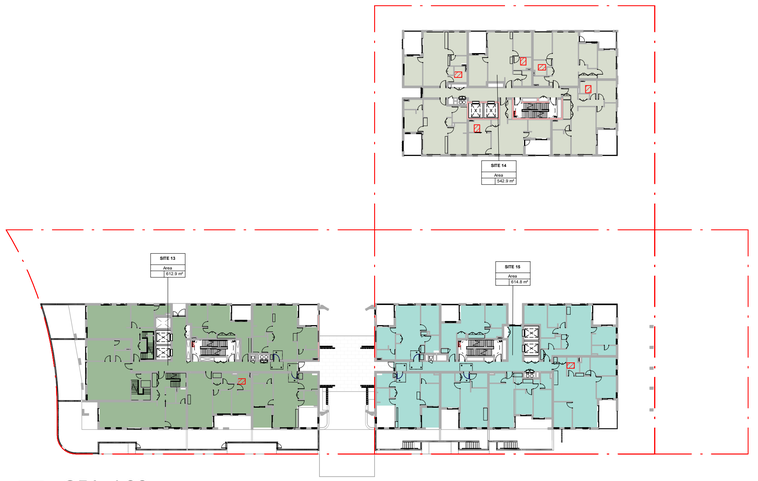

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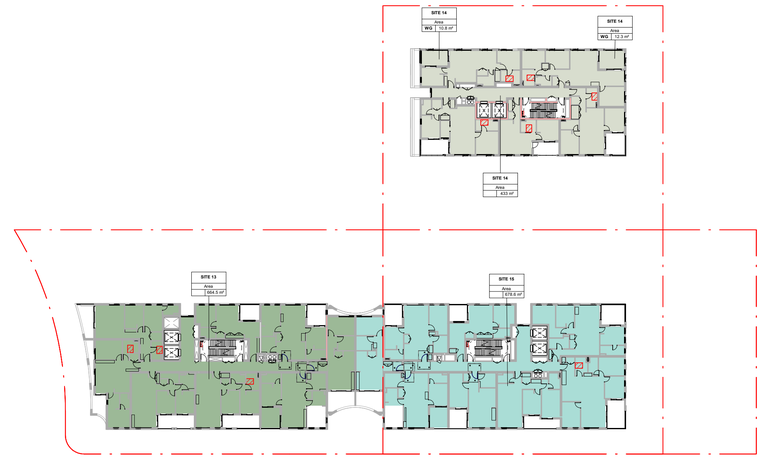

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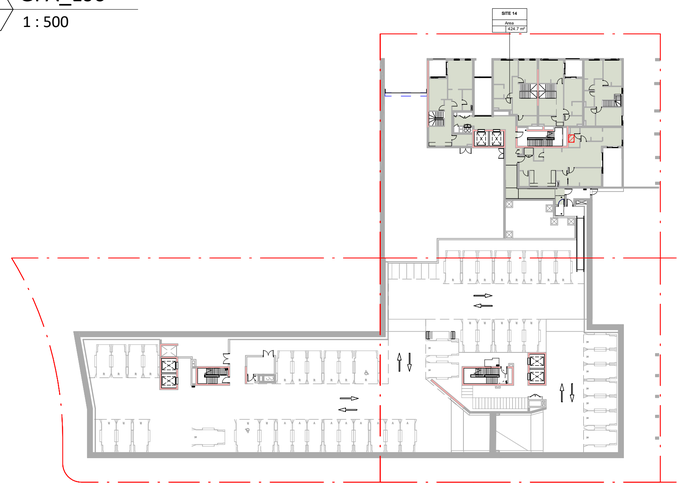

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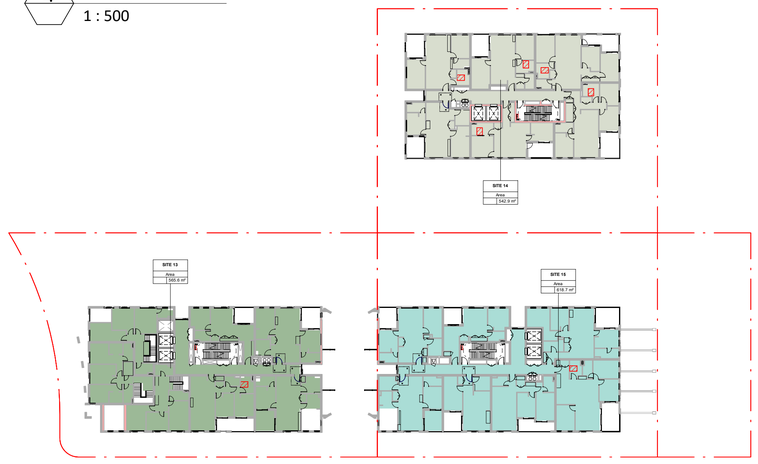

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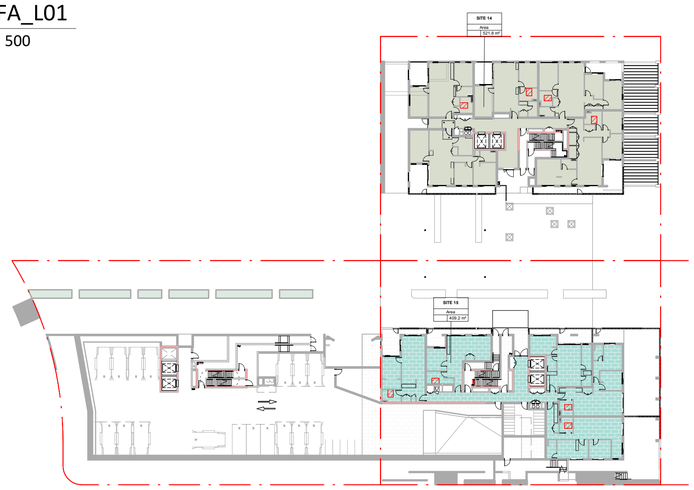

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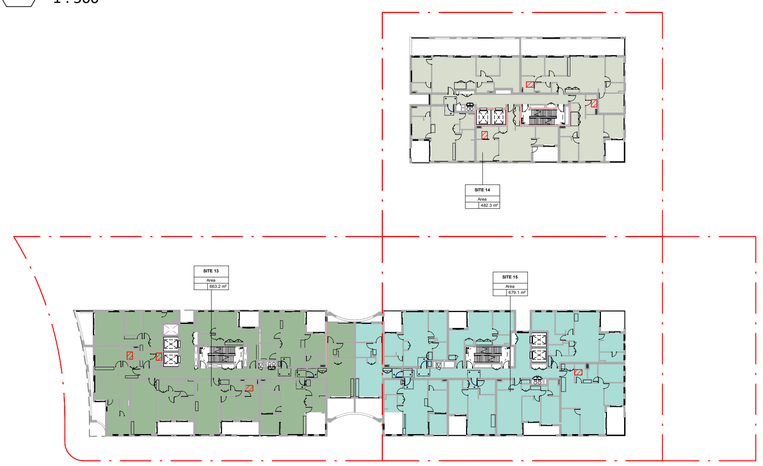

6 GFA_L05
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Key Plan:

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B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR INFORMATION	JY	LG	15/03/23

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Nela Marojević NSW ARB 11274

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1 : 500 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
GFA PLAN 01

Drawing Number DA-Q110010 **Revision** B

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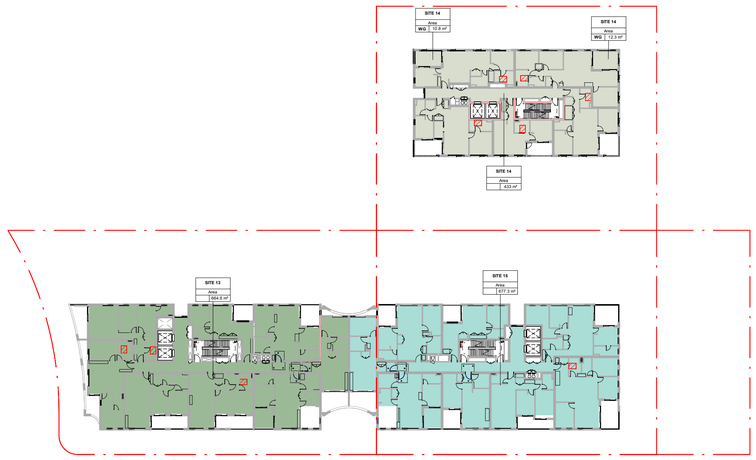

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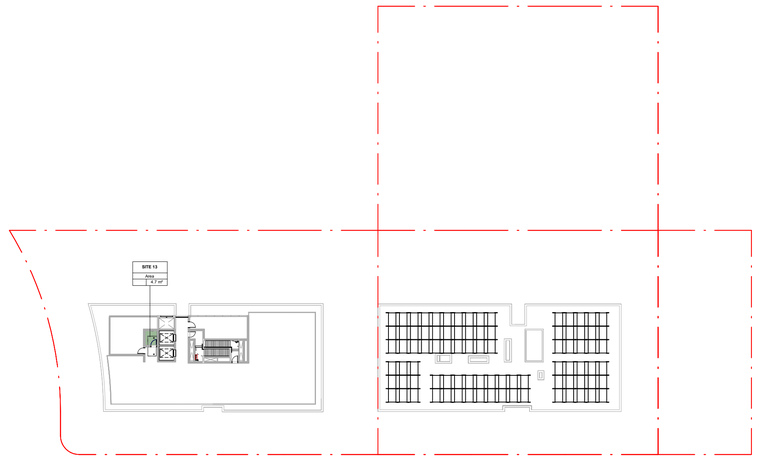

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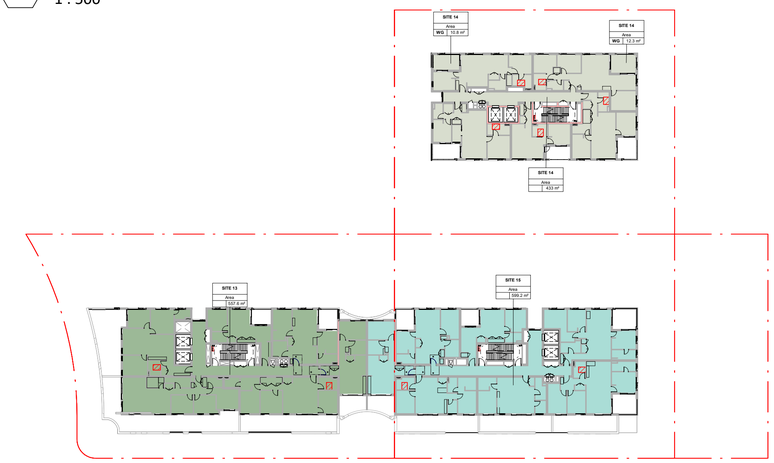

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5 GFA_L11
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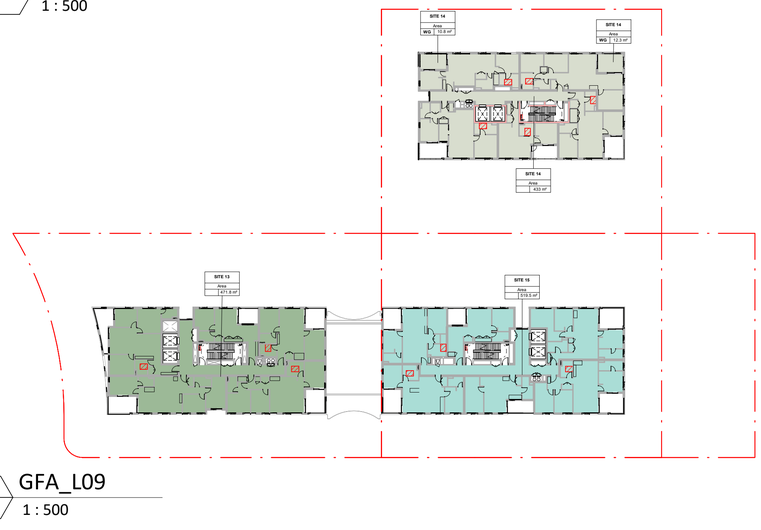

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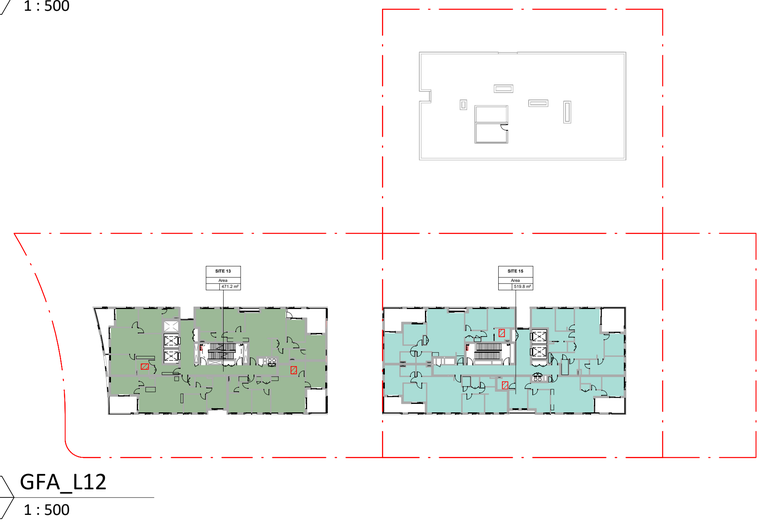

6 GFA_L12
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AREA 14_TOTAL GFA	
Level	**Area**
SITE 14	
BLDG13/15 L11	445.7 m²
BLDG13/15 L11	12.3 m²
BLDG13/15 L11	12.3 m²
BLDG13/15 L10	433 m²
BLDG13/15 L10	12.3 m²
BLDG13/15 L10	10.8 m²
BLDG13/15 L09	433 m²
BLDG13/15 L09	12.3 m²
BLDG13/15 L09	10.8 m²
BLDG13/15 L08	433 m²
BLDG13/15 L08	12.3 m²
BLDG13/15 L08	10.8 m²
BLDG13/15 L07	433 m²
BLDG13/15 L07	12.3 m²
BLDG13/15 L07	10.8 m²
BLDG13/15 L06	433 m²
BLDG13/15 L06	12.3 m²
BLDG13/15 L06	10.8 m²
BLDG13/15 L05	482.3 m²
BLDG13/15 L04	542.9 m²
BLDG13/15 L03	542.9 m²
BLDG13/15 L02	521.8 m²
BLDG13/15 L01	424.7 m²
BLDG13/15 L00	335.9 m²
Grand total	5601.2 m²

AREA 14_WINTERGARDEN GFA	
Level	**Area**
SITE 14	
BLDG13/15 L11	12.3 m²
BLDG13/15 L11	12.3 m²
BLDG13/15 L10	12.3 m²
BLDG13/15 L10	10.8 m²
BLDG13/15 L09	12.3 m²
BLDG13/15 L09	10.8 m²
BLDG13/15 L08	12.3 m²
BLDG13/15 L08	10.8 m²
BLDG13/15 L07	12.3 m²
BLDG13/15 L07	10.8 m²
BLDG13/15 L06	12.3 m²
BLDG13/15 L06	10.8 m²
Grand total	139.8 m²

AREA 14 AREA		
Total GFA	**Control**	**Proposed**
5601.2 m²	5601.2 m²	3.35

AREA 13_TOTAL GFA	
Level	**Area**
SITE 13	
BLDG13/15 L13	4.7 m²
BLDG14 L12	471.2 m²
BLDG13/15 L11	471.9 m²
BLDG13/15 L10	471.8 m²
BLDG13/15 L09	471.8 m²
BLDG13/15 L08	557.6 m²
BLDG13/15 L07	664.6 m²
BLDG13/15 L06	664.5 m²
BLDG13/15 L05	663.2 m²
BLDG13/15 L04	565.6 m²
BLDG13/15 L03	612.9 m²
Grand total	5619.7 m²

AREA 15_TOTAL GFA	
Level	**Area**
SITE 15	
BLDG14 L12	519.8 m²
BLDG13/15 L11	520.2 m²
BLDG13/15 L10	519.5 m²
BLDG13/15 L09	519.5 m²
BLDG13/15 L08	599.2 m²
BLDG13/15 L07	677.3 m²
BLDG13/15 L06	678.6 m²
BLDG13/15 L05	679.1 m²
BLDG13/15 L04	618.7 m²
BLDG13/15 L03	614.8 m²
BLDG13/15 L02	409.2 m²
Grand total	6356 m²

AREA 13 & 15_AREA		
Total GFA	**Control**	**Proposed**
11975.7 m²	11975.7 m²	2.85

Key Plan:

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Nela Marojevic NSW ARB 11274

PTW

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Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
GFA PLAN 02

Drawing Number DA-Q120010 **Revision** B

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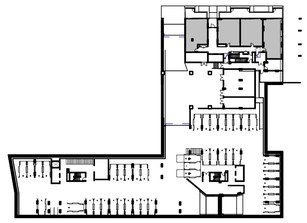

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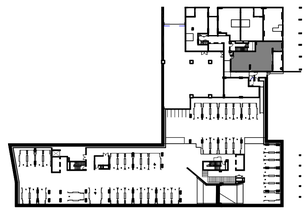

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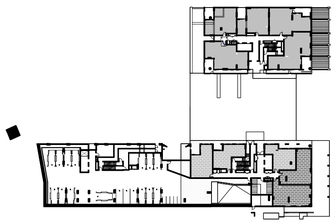

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4 SOLAR L03
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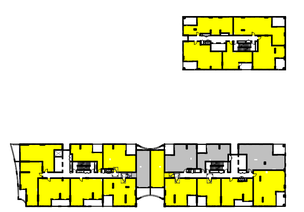
5 SOLAR L04
1 : 1000

6 SOLAR L05
1 : 1000

7 SOLAR L06
1 : 1000



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9 SOLAR L08
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10 SOLAR L09
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11 SOLAR L10
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12 SOLAR L11
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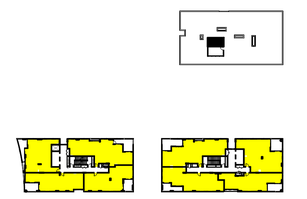

13 SOLAR L12
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SOLAR ACCESS_AREA 13&15		
Solar AccessCompliance	**Count**	**Percentage**
0HRS	2	2%
<2HRS	29	22%
>2HRS	101	77%
Grand total: 132		

SOLAR ACCESS_AREA 14		
Solar AccessCompliance	**Count**	**Percentage**
0HRS	1	2%
<2HRS	21	38%
>2HRS	33	60%
Grand total: 55		

SOLAR ACCESS TOTAL		
Solar AccessCompliance	**Count**	**Percentage**
0HRS	3	2%
<2HRS	50	27%
>2HRS	134	72%
Grand total: 187		

Key Plan:

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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR INFORMATION	JY	LG	15/03/23

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1 : 1000 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
SOLAR ACCESS COMPLIANCE DIAGRAMS

Drawing Number DA-Q310010 **Revision** B

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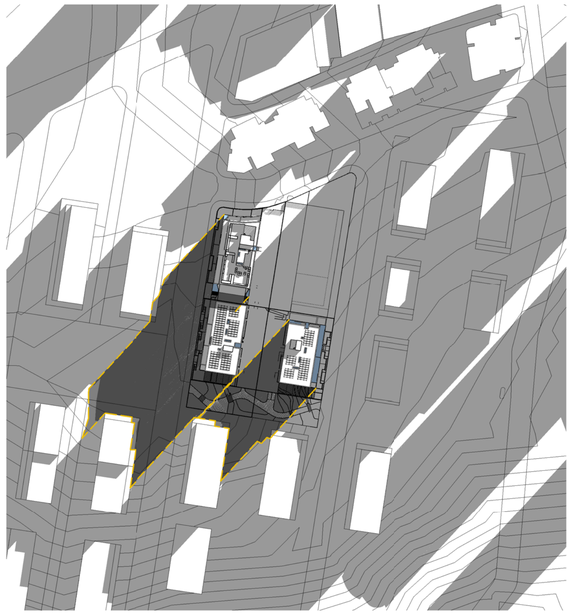
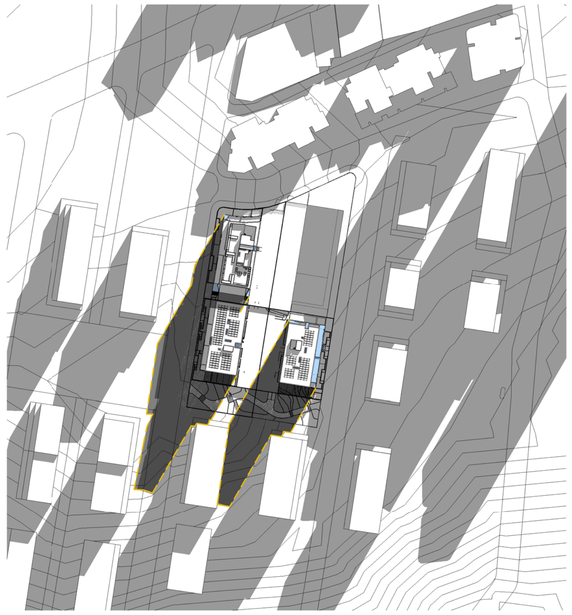


21 JUNE - 0900



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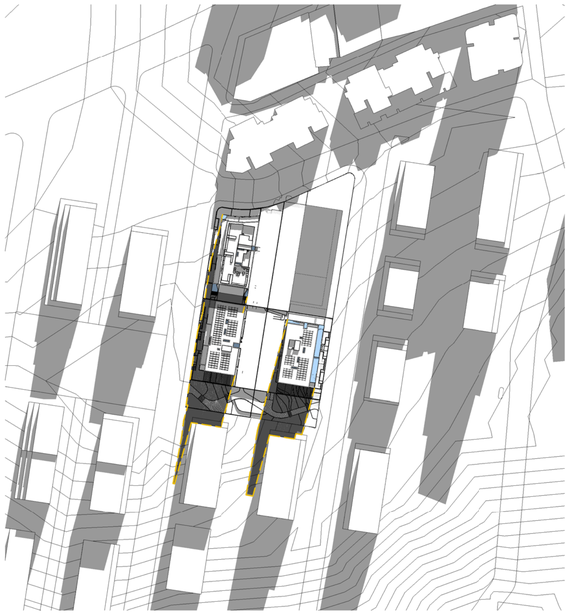

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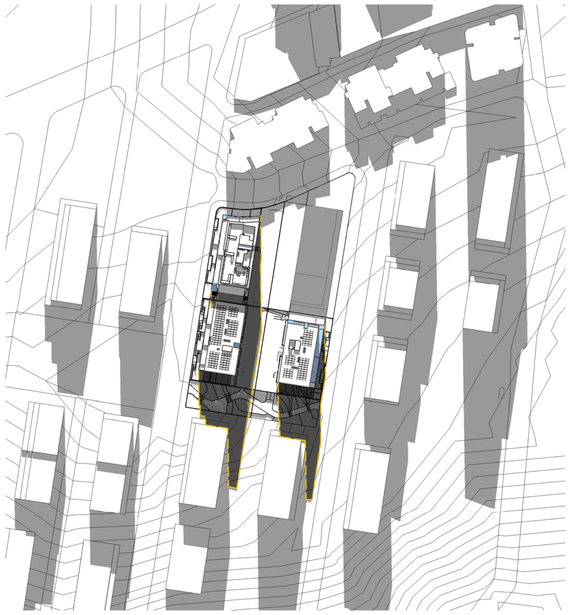

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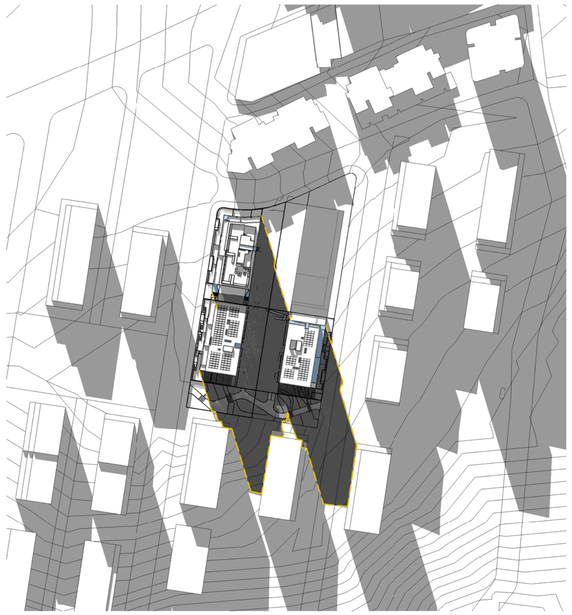

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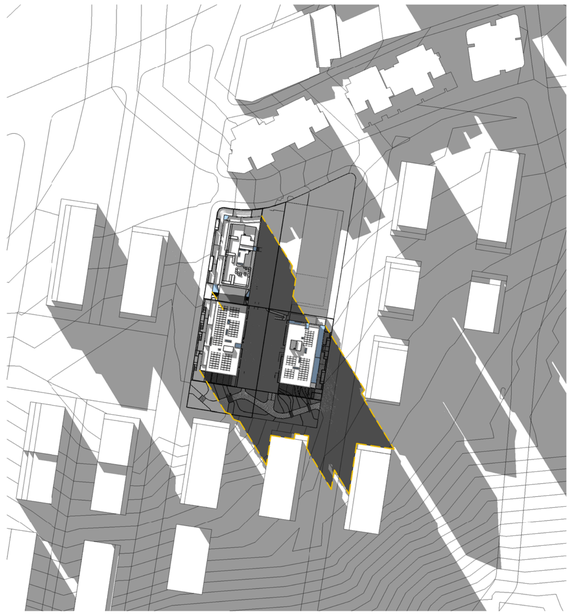

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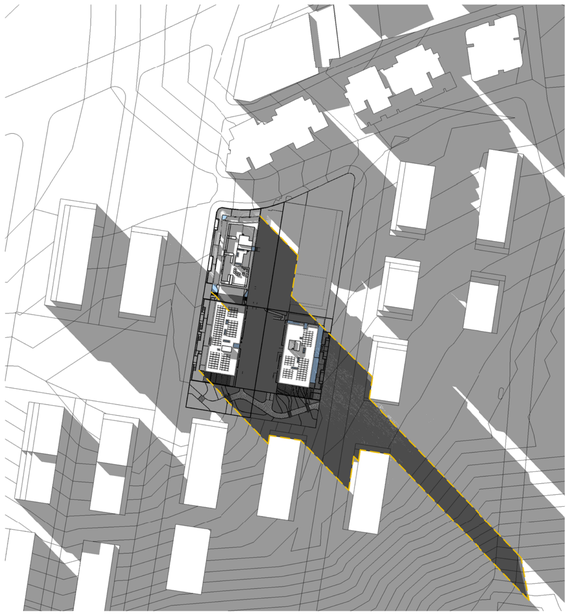

21 JUNE - 1500

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PTW

0 1 2 5 8m
1 : 1700 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
PLAN SHADOW DIAGRAM

Drawing Number DA-Q320010 **Revision** A

A1

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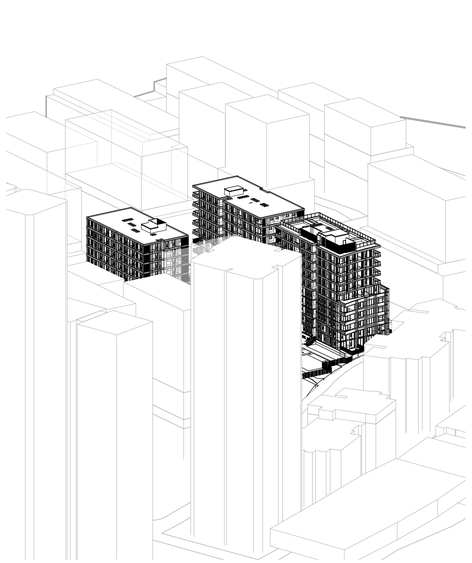

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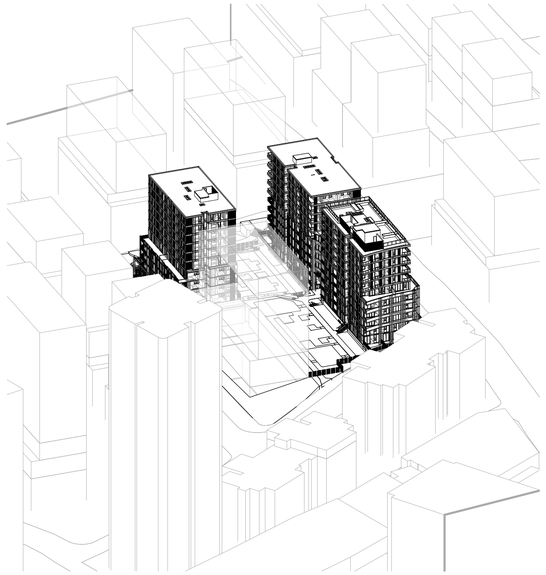
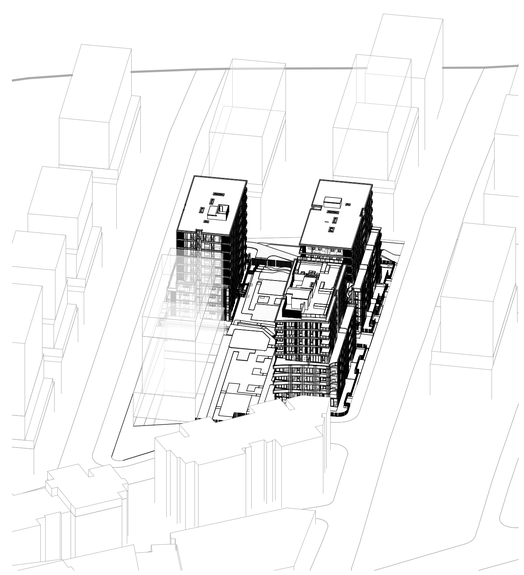


SUN EYE VIEW_21Jun1000

SUN EYE VIEW_21Jun1100



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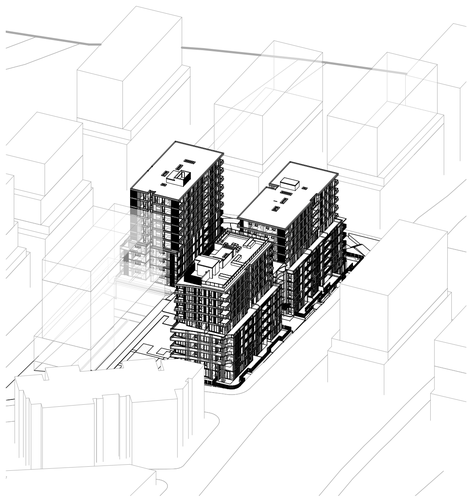

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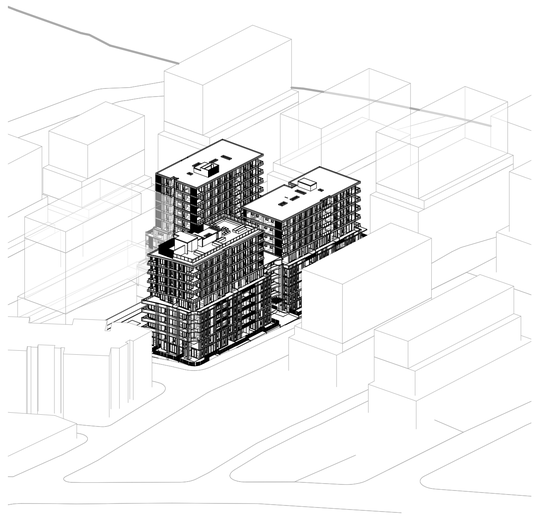

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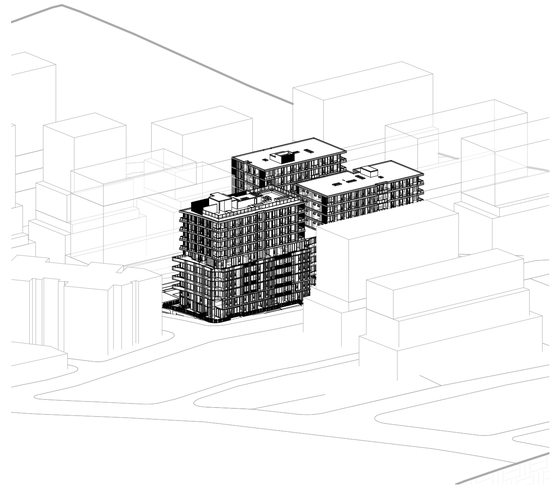

SUN EYE VIEW_21Jun1500

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trading as PTW Architects

Nominated Architects
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Diane Jones NSW ARB 4778
Nela Marojević NSW ARB 11274

0 1 2 5 8m

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
SOLAR ANALYSIS-SUN EYE VIEWS

Drawing Number DA-Q330010 **Revision** A

A1

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12-Apr-23 10:20:51 AM

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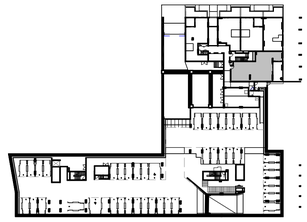

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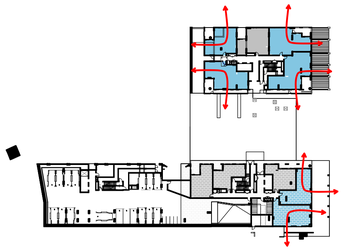

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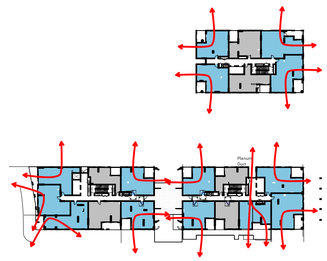

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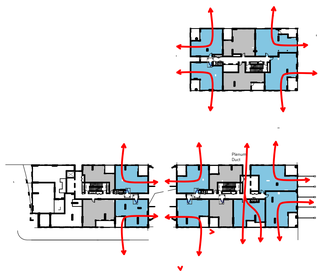

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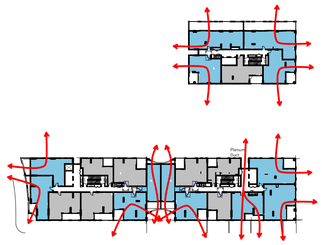

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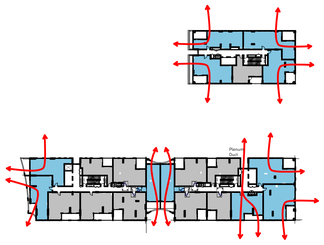

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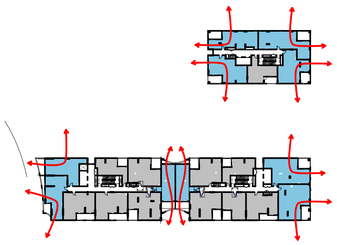

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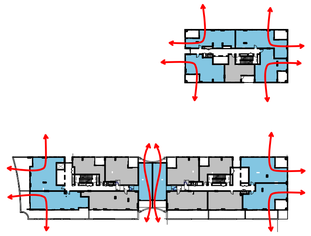

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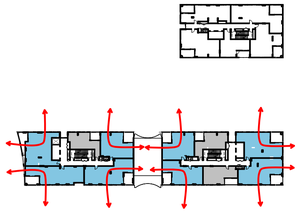

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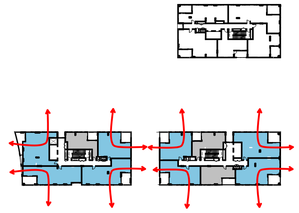

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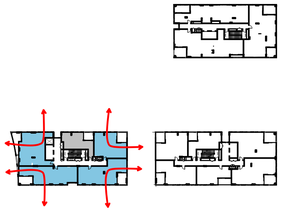

12 VENT L11
1 : 1000

CROSS VENTILATION AREA 14		
CROSS VENTILATION Compliance	**Count**	**Percentage**
NO	13	31%
YES	29	69%
Grand total	42	

CROSS VENTILATION AREA 13&15		
CROSS VENTILATION Compliance	**Count**	**Percentage**
NO	51	43%
YES	67	57%
Grand total	118	

CROSS VENTILATION AREA_ALL		
CROSS VENTILATION Compliance	**Counter_PTW**	**Percentage**
NO	64	40%
YES	96	60%
Grand total	160	

Key Plan:

Drawing Disclaimer:
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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR INFORMATION	JY	LG	15/03/23

***Registered Architect**
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Diane Jones NSW ARB 4778
Nella Marojević NSW ARB 11274

PTW

0 1 2 5 8m
1 : 1000 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
CROSS VENTILATION COMPLIANCE DIAGRAMS

Drawing Number DA-Q410010 **Revision** B

A1

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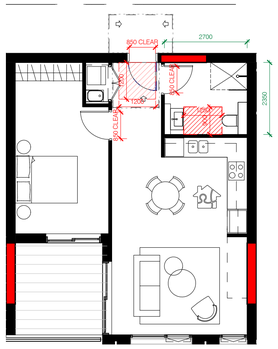
26-Apr-23 6:11:55 PM

DDA UNITS_ALL		
UNIT TYPE	**Number**	**Percentage**
STANDARD	37	20%
ADAPTABLE/LIVABLE	38	20%
VISITABLE	112	60%
Grand total: 187	187	100%

ADAPTABLE UNITS(ALSO CONSIDERED AS LIVABLE UNITS) REQUIRED: 38(20%)
ADAPTABLE UNITS(ALSO CONSIDERED AS LIVABLE UNITS) PROVIDED: 38(20%)

VISITABLE UNITS REQUIRED(INCLUDING ADAPTABLE UNITS): 150(80%)
VISITABLE UNITS PROVIDED(INCLUDING ADAPTABLE UNITS): 150(80%)

DDA UNITS_ADAPTABLE/LIVABLE		
LotType_PTW	**UnitType**	**UNIT**
1B+1B	1B-01	150304
1B+1B	1B-01	150404
1B+1B	1B-01	150504
1B+1B	1B-01	150604
1B+1B	1B-01	150704
1B-01: 5		
1B+1B	1B-02	130503
1B+1B	1B-02	130603
1B+1B	1B-02	130703
1B+1B	1B-02	130803
1B+1B	1B-02	150506
1B+1B	1B-02	150606
1B+1B	1B-02	150706
1B+1B	1B-02	150805
1B-02: 8		
1B+1B: 13		
2B+2B	2B-01	130303
2B+2B	2B-01	130402
2B+2B	2B-01	130504
2B+2B	2B-01	130604
2B+2B	2B-01	130704
2B+2B	2B-01	150305
2B+2B	2B-01	150405
2B+2B	2B-01	150505
2B+2B	2B-01	150605
2B+2B	2B-01	150705
2B-01: 10		
2B+2B	2B-02	130302
2B+2B	2B-02	130403
2B+2B	2B-02	130502
2B+2B	2B-02	130602
2B+2B	2B-02	130702
2B+2B	2B-02	130802
2B+2B	2B-02	150306
2B+2B	2B-02	150406
2B+2B	2B-02	150507
2B+2B	2B-02	150607
2B+2B	2B-02	150707
2B+2B	2B-02	150806
2B-02: 12		
2B+2B	2B-03	140401
2B+2B	2B-03	140501
2B-03: 2		
2B+2B: 24		
3B+2B	3B-01	140201
3B-01: 1		
3B+2B: 1		
TOTAL: 38		



2 PRE-ADAPTABLE 1B LAYOUT (1B-01)
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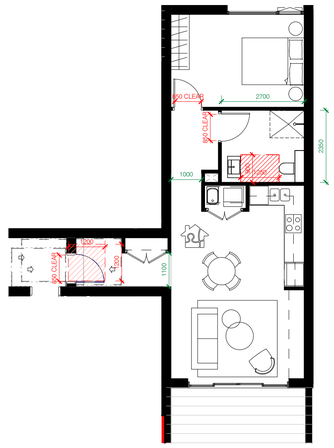
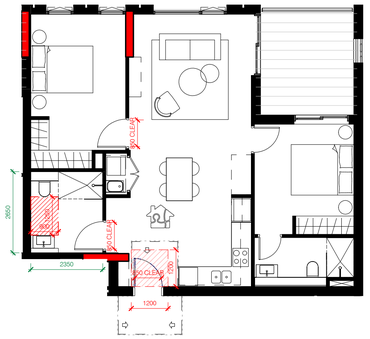


4 PRE-ADAPTABLE 1B LAYOUT (1B-02)
1 : 100

6 PRE-ADAPTABLE 2B LAYOUT (2B-01)
1 : 100



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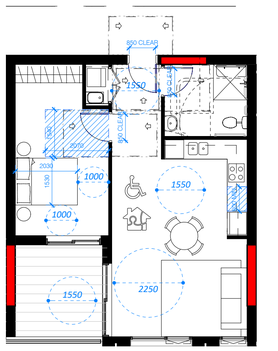

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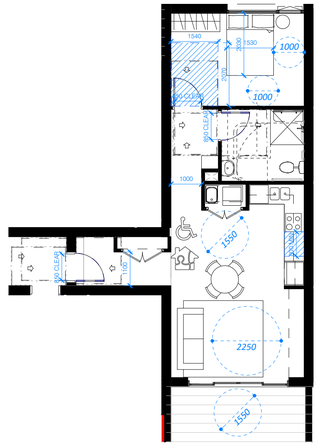

3 POST-ADAPTABLE 1B LAYOUT (1B-02)
1 : 100

5 POST-ADAPTABLE 2B LAYOUT (2B-01)
1 : 100

7 POST-ADAPTABLE 2B LAYOUT (2B-02)
1 : 100

VISITABLE CIRCULATION CLEARANCE

ADAPTABLE CIRCULATION CLEARANCE

Key Plan:

Drawing Disclaimer:
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Rev	Amendment	By	Chk*	Date
A	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23

***Registered Architect**
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0 1 2 5 8m
As @ A1
indicated

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
ADAPTABLE/LIVABLE
APARTMENT TYPE PLAN 1

Drawing Number DA-Q510010 **Revision** A

A1

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26-Apr-23 6:12:03 PM

DDA UNITS_ALL		
UNIT TYPE	**Number**	**Percentage**
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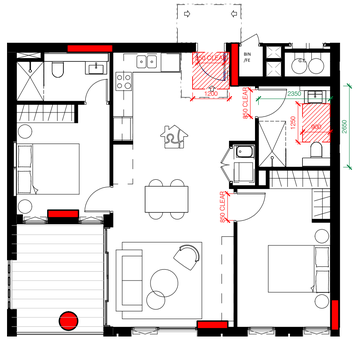
LotType_PTW	**UnitType**	**UNIT**
1B+1B	1B-01	150304
1B+1B	1B-01	150404
1B+1B	1B-01	150504
1B+1B	1B-01	150604
1B+1B	1B-01	150704
1B-01: 5		
1B+1B	1B-02	130503
1B+1B	1B-02	130603
1B+1B	1B-02	130703
1B+1B	1B-02	130803
1B+1B	1B-02	150506
1B+1B	1B-02	150606
1B+1B	1B-02	150706
1B+1B	1B-02	150805
1B-02: 8		
1B+1B: 13		
2B+2B	2B-01	130303
2B+2B	2B-01	130402
2B+2B	2B-01	130504
2B+2B	2B-01	130604
2B+2B	2B-01	130704
2B+2B	2B-01	150305
2B+2B	2B-01	150405
2B+2B	2B-01	150505
2B+2B	2B-01	150605
2B+2B	2B-01	150705
2B-01: 10		
2B+2B	2B-02	130302
2B+2B	2B-02	130403
2B+2B	2B-02	130502
2B+2B	2B-02	130602
2B+2B	2B-02	130702
2B+2B	2B-02	130802
2B+2B	2B-02	150306
2B+2B	2B-02	150406
2B+2B	2B-02	150507
2B+2B	2B-02	150607
2B+2B	2B-02	150707
2B+2B	2B-02	150806
2B-02: 12		
2B+2B	2B-03	140401
2B+2B	2B-03	140501
2B-03: 2		
2B+2B: 24		
3B+2B	3B-01	140201
3B-01: 1		
3B+2B: 1		
TOTAL: 38		



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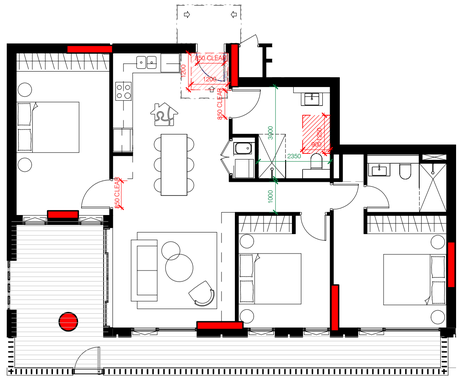

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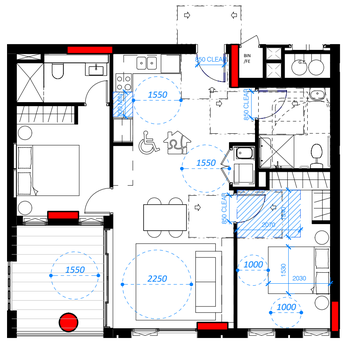

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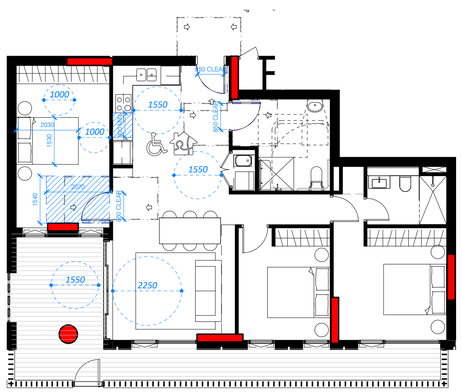

3 POST-ADAPTABLE 3B LAYOUT (3B-01)
1 : 100

VISITABLE CIRCULATION CLEARANCE

ADAPTABLE CIRCULATION CLEARANCE

Key Plan:

Drawing Disclaimer:
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Rev	Amendment	By	Chk*	Date
A	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23

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0 1 2 5 8m
As @ A1 indicated

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
ADAPTABLE/LIVABLE
APARTMENT TYPE PLAN 2

Drawing Number DA-Q520010 **Revision** A

A1

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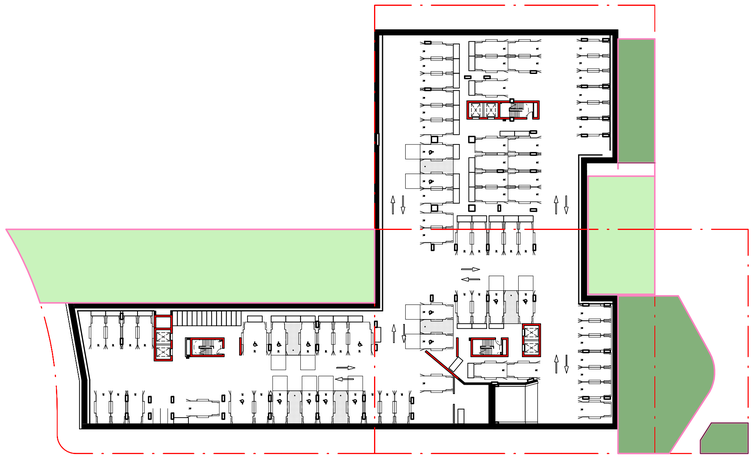

1 SITE DEEP SOIL
1 : 500

DEEP SOIL DIAGRAM_GREEN SPINE		
AreaType	**Area**	**% (Green spine area 1784 m²)**
GREEN SPINE DEEP SOIL	894.8 m²	50%

DEEP SOIL DIAGRAM_ALL		
AreaType	**Area**	**% (Site area 5874 m²)**
GREEN SPINE DEEP SOIL	894.8 m²	15%
SOUTHERN DEEP SOIL	488.8 m²	8%
	1383.6 m²	24%

Key Plan:

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B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
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0 1 2 5 8m
1 : 500 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

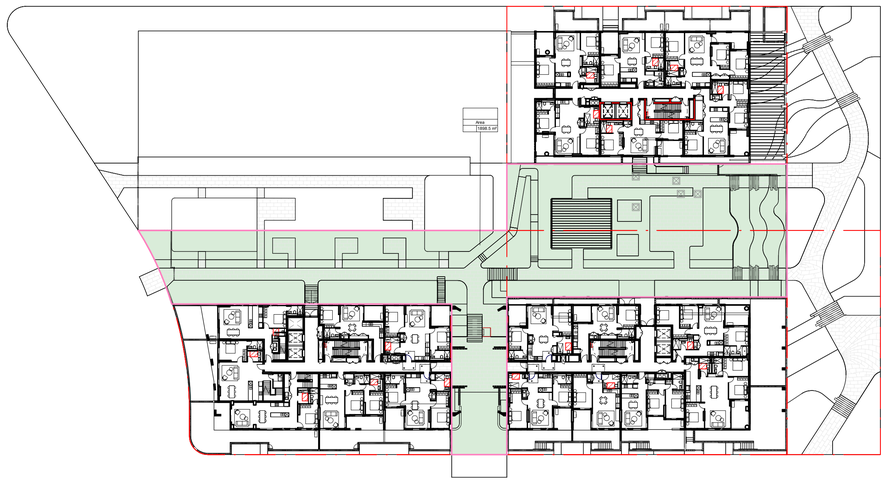
Status

Title
DA DRAWINGS
DEEP SOIL DIAGRAM

Drawing Number DA-Q610010
Revision B

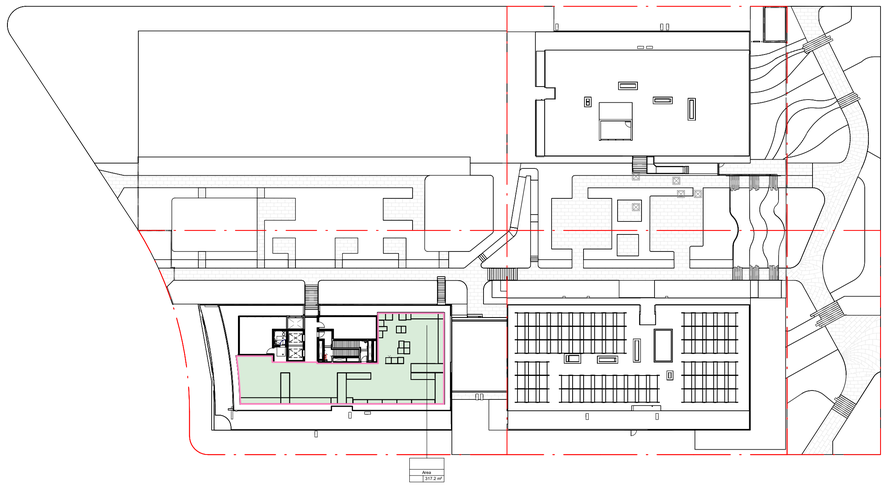
26-Apr-23 6:12:13 PM

A1



1 SITE COMMUNAL OPEN SPACE LEVEL 3

1 : 500



2 SITE COMMUNAL OPEN SAPCE ROOF

1 : 500

COMMUNAL OPEN SPACE DIAGRAM		
AreaType	**Area**	**% (Site area 5874 m²)**
COS	2215.7 m²	38%

Key Plan:

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0 1 2 5 8m
1 : 500 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
COMMUNAL OPEN SPACE DIAGRAM

Drawing Number DA-Q710010 **Revision** B

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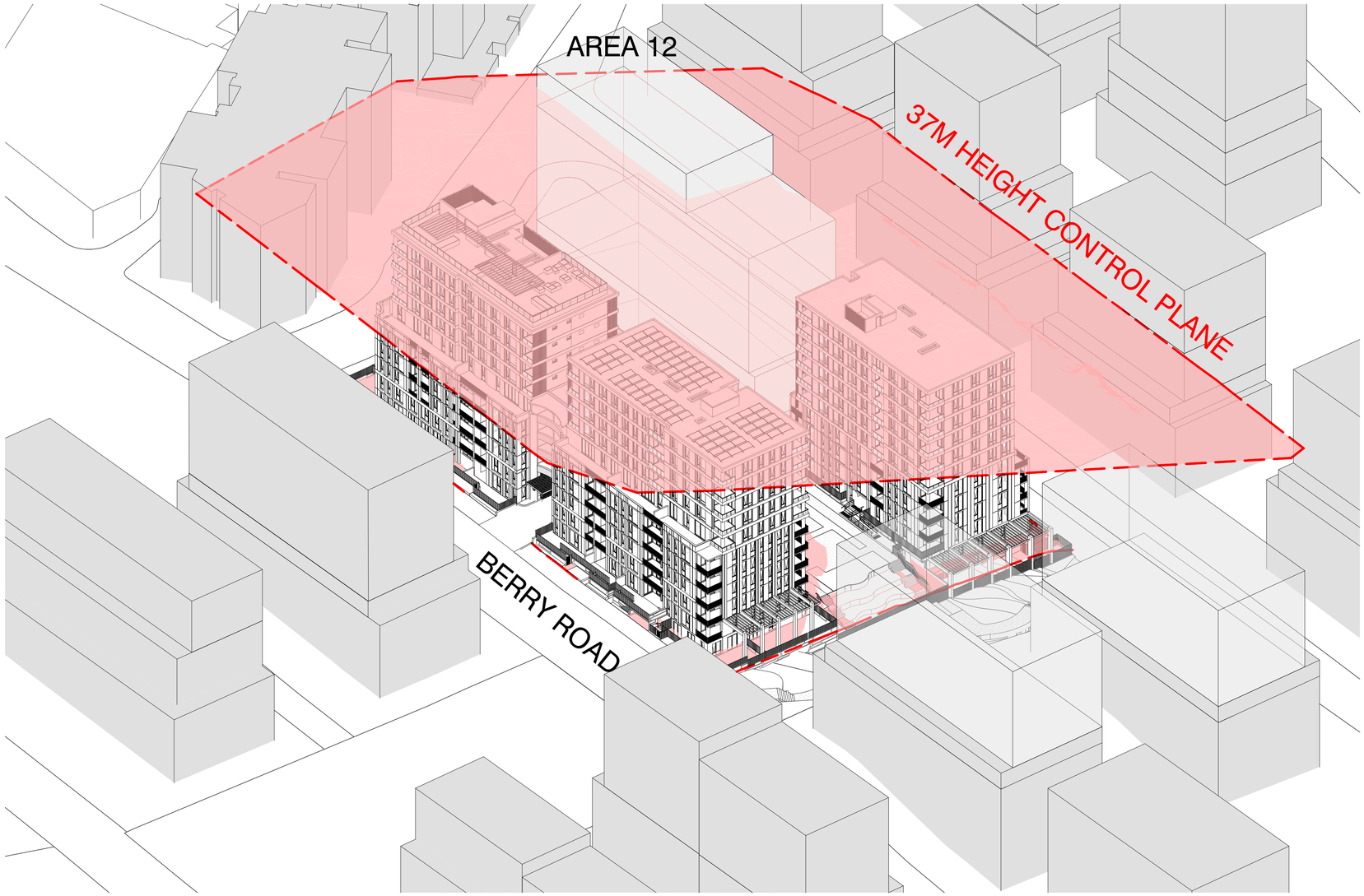
A1



1 BUILDING ENVELOPE DIAGRAM

Key Plan:

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Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR INFORMATION	JY	LG	15/03/23

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PTW

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Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
HEIGHT PLANE DIAGRAM

Drawing Number DA-Q810010 **Revision** B

A1

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AREA 13

NO.	Type	InternalArea	ExternalArea	Int. Storage	CrossVentilation	SolarAccess	Adaptable	Visitable
130301	1B+1B	50 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
130302	2B+2B	77.8 m²	10.7 m²	4.02 m³	YES	<2HRS	Yes	No
130303	2B+2B	81.3 m²	41.6 m²	4.44 m³	YES	>2HRS	Yes	No
130304	2B+2B	76.5 m²	42.6 m²	4.10 m³	NO	>2HRS	No	Yes
130305	4B+3B	151 m²	93 m²	14.40 m³	YES	>2HRS	No	Yes
130306	4B+3B	157.9 m²	48.9 m²	12.79 m³	YES	>2HRS	No	Yes
130307	4B+3B	140 m²	36.3 m²	5.11 m³	YES	>2HRS	No	Yes
130401	1B+1B	50 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
130402	2B+2B	77.8 m²	10.7 m²	4.02 m³	YES	<2HRS	Yes	No
130403	2B+2B	81.3 m²	10.1 m²	4.44 m³	YES	>2HRS	Yes	No
130404	2B+2B	76.2 m²	12.8 m²	4.10 m³	NO	>2HRS	No	Yes
130501	1B+1B	50.3 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
130502	2B+2B	77.8 m²	10.7 m²	4.02 m³	NO	>2HRS	Yes	No
130503	1B+1B	56 m²	9.6 m²	5.95 m³	YES	<2HRS	Yes	No
130504	2B+2B	81.3 m²	10.1 m²	4.44 m³	YES	>2HRS	Yes	No
130505	2B+2B	76.2 m²	13.1 m²	4.10 m³	NO	>2HRS	No	Yes
130506	2B+2B	75.8 m²	12.7 m²	4.02 m³	NO	>2HRS	No	Yes
130507	2B+2B	75.5 m²	13.7 m²	5.37 m³	YES	>2HRS	No	Yes
130508	2B+2B	75.1 m²	10.6 m²	6.60 m³	YES	>2HRS	No	Yes
130601	1B+1B	50.3 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
130602	2B+2B	77.8 m²	10.7 m²	4.02 m³	NO	>2HRS	Yes	No
130603	1B+1B	56 m²	9.6 m²	4.82 m³	YES	<2HRS	Yes	No
130604	2B+2B	81.3 m²	10.1 m²	4.44 m³	NO	>2HRS	Yes	No
130605	2B+2B	76.2 m²	13.1 m²	4.10 m³	NO	>2HRS	No	Yes
130606	2B+2B	75.8 m²	12.7 m²	4.02 m³	NO	>2HRS	No	Yes
130607	2B+2B	75.5 m²	13.7 m²	5.37 m³	YES	>2HRS	No	Yes
130608	2B+2B	75.1 m²	10.8 m²	6.60 m³	YES	>2HRS	No	Yes
130701	1B+1B	50.3 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
130702	2B+2B	77.8 m²	10.7 m²	4.02 m³	NO	>2HRS	Yes	No
130703	1B+1B	56 m²	9.6 m²	5.95 m³	YES	<2HRS	Yes	No
130704	2B+2B	81.3 m²	10.1 m²	4.44 m³	NO	>2HRS	Yes	No
130705	2B+2B	76.2 m²	12.8 m²	4.10 m³	NO	>2HRS	No	Yes
130706	2B+2B	75.8 m²	12.4 m²	4.02 m³	NO	>2HRS	No	Yes
130707	2B+2B	75.5 m²	13.8 m²	5.37 m³	YES	>2HRS	No	Yes
130708	2B+2B	75.1 m²	10.8 m²	6.60 m³	YES	>2HRS	No	Yes
130801	1B+1B	50 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
130802	2B+2B	78.1 m²	10.4 m²	4.02 m³	NO	>2HRS	Yes	No
130803	1B+1B	56 m²	9.6 m²	5.95 m³	YES	<2HRS	Yes	No
130804	3B+2B	95.9 m²	43.6 m²	8.21 m³	NO	>2HRS	No	Yes
130805	3B+2B	102.1 m²	75.8 m²	13.17 m³	YES	>2HRS	No	Yes
130806	3B+2B	95.7 m²	46.1 m²	5.87 m³	YES	>2HRS	No	Yes
130901	1B+1B	50 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
130902	2B+1B	75 m²	10.7 m²	5.46 m³	YES	>2HRS	No	Yes
130903	3B+2B	95 m²	12.2 m²	6.80 m³	YES	>2HRS	No	Yes
130904	3B+2B	95.4 m²	12.3 m²	5.46 m³	YES	>2HRS	No	No
130905	3B+2B	95.7 m²	12.2 m²	5.87 m³	YES	>2HRS	No	Yes
131001	1B+1B	50 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
131002	2B+1B	75 m²	10.7 m²	5.46 m³	YES	>2HRS	No	Yes
131003	3B+2B	95 m²	12.2 m²	6.80 m³	YES	>2HRS	No	Yes
131004	3B+2B	95.4 m²	12.3 m²	5.46 m³	YES	>2HRS	No	No
131005	3B+2B	95.7 m²	12.2 m²	5.87 m³	YES	>2HRS	No	Yes
131101	1B+1B	50 m²	8.1 m²	6.05 m³	NO	>2HRS	No	No
131102	2B+1B	75 m²	10.7 m²	5.46 m³	YES	>2HRS	No	Yes
131103	3B+2B	95 m²	12.2 m²	6.80 m³	YES	>2HRS	No	Yes
131104	3B+2B	95.4 m²	12.3 m²	5.46 m³	YES	>2HRS	No	No
131105	3B+2B	95.7 m²	12.2 m²	5.87 m³	YES	>2HRS	No	Yes
131201	4B+3B	123.4 m²	17.9 m²	5.04 m³		>2HRS	No	No
131202	3B+2B	97.4 m²	12.3 m²	6.16 m³		>2HRS	No	Yes
131203	3B+2B	95.1 m²	12.4 m²	5.46 m³		>2HRS	No	No
131204	3B+2B	95.7 m²	12 m²	5.87 m³		>2HRS	No	Yes
		4846.3 m²	1002.8 m²	344.79 m³	AREA 13: 60			

AREA 14

NO.	Type	InternalArea	ExternalArea	Int. Storage	CrossVentilation	SolarAccess	Adaptable	Visitable
140001	3B+3B	137.8 m²	23.6 m²	9.12 m³	NO	<2HRS	No	No
140002	3B+3B	119.1 m²	15.5 m²	5.13 m³	NO	<2HRS	No	No
140003	3B+3B	121.7 m²	25 m²	6.79 m³	NO	<2HRS	No	No
140004	4B+3B	136.3 m²	15.4 m²	6.40 m³	YES	<2HRS	No	No
140005	2B+2B	108.3 m²	19.9 m²	16.54 m³	NO	0HRS	No	Yes
140201	3B+2B	97.7 m²	26.8 m²	5.04 m³	YES	<2HRS	Yes	No
140202	2B+2B	75.4 m²	11.1 m²	4.39 m³	YES	<2HRS	No	Yes
140203	2B+2B	75.5 m²	10.5 m²	6.14 m³	NO	<2HRS	No	Yes
140204	3B+2B	95.2 m²	12.7 m²	5.11 m³	YES	<2HRS	No	Yes
140205	3B+2B	107.9 m²	30.1 m²	14.10 m³	YES	<2HRS	No	No
140301	2B+2B	76.2 m²	10.3 m²	4.67 m³	YES	<2HRS	No	Yes
140302	2B+2B	75.3 m²	11.1 m²	4.39 m³	YES	<2HRS	No	Yes
140303	2B+2B	75.5 m²	10.5 m²	6.14 m³	NO	<2HRS	No	Yes
140304	3B+2B	95.2 m²	12.7 m²	5.11 m³	YES	<2HRS	No	Yes
140305	3B+2B	96 m²	12.3 m²	11.10 m³	YES	<2HRS	No	Yes
140306	2B+1B	70.3 m²	10.4 m²	4.99 m³	NO	<2HRS	No	Yes
140401	2B+2B	76.2 m²	10.3 m²	4.67 m³	YES	<2HRS	Yes	No
140402	2B+2B	75.3 m²	11.1 m²	4.39 m³	YES	<2HRS	No	Yes
140403	2B+2B	75.5 m²	10.5 m²	6.14 m³	NO	<2HRS	No	Yes
140404	3B+2B	95.2 m²	12.7 m²	5.11 m³	YES	<2HRS	No	Yes
140405	3B+2B	96 m²	12.3 m²	11.10 m³	YES	<2HRS	No	Yes
140406	2B+1B	70.3 m²	10.4 m²	4.99 m³	NO	<2HRS	No	Yes
140501	2B+2B	76.2 m²	10 m²	4.67 m³	YES	>2HRS	Yes	No
140502	3B+2B	97 m²	47.4 m²	5.08 m³	YES	>2HRS	No	No
140504	4B+2B	109.3 m²	45.4 m²	6.10 m³	YES	>2HRS	No	Yes
140505	2B+2B	76.7 m²	11.2 m²	6.75 m³	YES	>2HRS	No	Yes
140506	2B+1B	70.3 m²	10.4 m²	4.99 m³	NO	>2HRS	No	Yes
140601	2B+2B	83.2 m²	11.6 m²	5.22 m³	YES	>2HRS	No	Yes
140602	2B+2B	75.5 m²	10.8 m²	5.59 m³	YES	>2HRS	No	Yes
140604	3B+2B	95.1 m²	12.3 m²	5.31 m³	YES	>2HRS	No	Yes
140605	2B+2B	76.6 m²	11.2 m²	6.75 m³	YES	>2HRS	No	Yes
140606	1B+1B	50.3 m²	8.8 m²	3.19 m³	NO	>2HRS	No	Yes
140701	2B+2B	83.2 m²	11.6 m²	5.22 m³	YES	>2HRS	No	Yes
140702	2B+2B	75.5 m²	10.8 m²	5.59 m³	YES	>2HRS	No	Yes
140704	3B+2B	95.1 m²	12.3 m²	5.31 m³	YES	>2HRS	No	Yes
140705	2B+2B	76.6 m²	11.2 m²	6.75 m³	YES	>2HRS	No	Yes
140706	1B+1B	50.3 m²	8.8 m²	3.19 m³	NO	>2HRS	No	Yes
140801	2B+2B	83.2 m²	11.6 m²	5.22 m³	YES	>2HRS	No	Yes
140802	2B+2B	75.5 m²	10.8 m²	5.59 m³	YES	>2HRS	No	Yes
140804	3B+2B	95.1 m²	12.3 m²	5.31 m³	YES	>2HRS	No	Yes
140805	2B+2B	76.6 m²	11.2 m²	6.75 m³	YES	>2HRS	No	Yes
140806	1B+1B	50.3 m²	8.8 m²	3.19 m³	NO	>2HRS	No	Yes
140901	2B+2B	83.2 m²	11.6 m²	5.22 m³		>2HRS	No	Yes
140902	2B+2B	75.5 m²	10.8 m²	5.59 m³		>2HRS	No	Yes
140904	3B+2B	95.1 m²	12.3 m²	5.31 m³		>2HRS	No	Yes
140905	2B+2B	76.6 m²	11.2 m²	6.75 m³		>2HRS	No	Yes
140906	1B+1B	50.3 m²	8.8 m²	3.19 m³		>2HRS	No	Yes
141001	2B+2B	83.2 m²	11.6 m²	5.22 m³		>2HRS	No	Yes
141002	2B+2B	75.5 m²	10.8 m²	5.59 m³		>2HRS	No	Yes
141004	3B+2B	95.1 m²	12.3 m²	5.31 m³		>2HRS	No	Yes
141005	2B+2B	76.6 m²	11.2 m²	6.75 m³		>2HRS	No	Yes
141006	1B+1B	50.3 m²	8.8 m²	3.19 m³		>2HRS	No	Yes
141101	4B+2B	138.3 m²	12.9 m²	12.29 m³		>2HRS	No	Yes
141102	4B+2B	120.5 m²	12.3 m²	6.76 m³		>2HRS	No	No
141103	4B+3B	128.5 m²	22.4 m² (including 12.3m² Winter Garden)	7.30 m³		>2HRS	No	No
		4772 m²	771 m²	335.83 m³	AREA 14: 55			

AREA 15

NO.	Type	InternalArea	ExternalArea	Int. Storage	CrossVentilation	SolarAccess	Adaptable	Visitable
150201	1B+1B	60.9 m²	17.3 m²	7.54 m³	NO	<2HRS	No	No
150202	2B+2B	77.3 m²	95.4 m²	6.13 m³	YES	0HRS	No	Yes
150203	2B+2B	85.9 m²	83.6 m²	6.26 m³	YES	0HRS	No	Yes
150204	1B+1B	64.1 m²	16.3 m²	3.31 m³	NO	<2HRS	No	Yes
150205	1B+1B	57.8 m²	15.6 m²	3.24 m³	NO	<2HRS	No	Yes
150301	3B+2B	95.3 m²	12 m²	5.30 m³	YES	<2HRS	No	Yes
150302	3B+2B	101.7 m²	12.6 m²	6.54 m³	YES	<2HRS	No	Yes
150303	2B+2B	75.3 m²	42.2 m²	4.32 m³	YES	<2HRS	No	No
150304	1B+1B	56.9 m²	29.6 m²	3.12 m³	NO	>2HRS	Yes	No
150305	2B+2B	79.2 m²	38.8 m²	4.04 m³	YES	>2HRS	Yes	No
150306	2B+2B	76 m²	10 m²	4.05 m³	YES	<2HRS	Yes	No
150307	1B+1B	52.6 m²	8 m²	5.74 m³	NO	<2HRS	No	No
150401	3B+2B	95.3 m²	12.6 m²	5.30 m³	YES	<2HRS	No	Yes
150402	3B+2B	101.7 m²	13.2 m²	6.54 m³	YES	<2HRS	No	Yes
150403	2B+2B	75.3 m²	10.3 m²	4.32 m³	YES	<2HRS	No	No
150404	1B+1B	56.9 m²	8.6 m²	3.12 m³	NO	<2HRS	Yes	No
150405	2B+2B	79.2 m²	10 m²	4.04 m³	YES	>2HRS	Yes	No
150406	2B+2B	76 m²	10 m²	4.05 m³	YES	<2HRS	Yes	No
150407	1B+1B	52.6 m²	8 m²	5.74 m³	NO	<2HRS	No	No
150501	3B+2B	95.3 m²	12 m²	5.30 m³	YES	<2HRS	No	Yes
150502	3B+2B	101.7 m²	12.6 m²	6.54 m³	YES	>2HRS	No	Yes
150503	2B+2B	75.3 m²	10.3 m²	4.32 m³	YES	>2HRS	No	No
150504	1B+1B	56.9 m²	8.6 m²	3.12 m³	NO	>2HRS	Yes	No
150505	2B+2B	79.2 m²	10 m²	4.04 m³	YES	>2HRS	Yes	No
150506	1B+1B	56.1 m²	9.6 m²	5.95 m³	YES	>2HRS	Yes	No
150507	2B+2B	76 m²	10.3 m²	4.05 m³	NO	<2HRS	Yes	No
150508	1B+1B	52.6 m²	8 m²	5.74 m³	NO	<2HRS	No	No
150601	3B+2B	95.3 m²	12 m²	5.30 m³	YES	<2HRS	No	Yes
150602	3B+2B	101.7 m²	12.6 m²	6.54 m³	YES	>2HRS	No	Yes
150603	2B+2B	75.3 m²	10.3 m²	4.32 m³	YES	>2HRS	No	No
150604	1B+1B	56.9 m²	8.6 m²	3.12 m³	NO	>2HRS	Yes	No
150605	2B+2B	79.2 m²	10 m²	4.04 m³	NO	>2HRS	Yes	No
150606	1B+1B	56.1 m²	9.6 m²	5.95 m³	YES	>2HRS	Yes	No
150607	2B+2B	76 m²	10.3 m²	4.05 m³	NO	<2HRS	Yes	No
150608	1B+1B	52.6 m²	8 m²	5.74 m³	NO	<2HRS	No	No
150701	3B+2B	95.3 m²	13 m²	5.30 m³	YES	<2HRS	No	Yes
150702	3B+2B	101.7 m²	13.2 m²	6.54 m³	YES	>2HRS	No	Yes
150703	2B+2B	75.3 m²	10.3 m²	4.32 m³	NO	>2HRS	No	No
150704	1B+1B	56.9 m²	8.6 m²	3.12 m³	NO	>2HRS	Yes	No
150705	2B+2B	79.2 m²	10 m²	4.04 m³	NO	>2HRS	Yes	No
150706	1B+1B	56.1 m²	9.6 m²	5.95 m³	YES	>2HRS	Yes	No
150707	2B+2B	76 m²	10.3 m²	4.05 m³	NO	<2HRS	Yes	No
150708	1B+1B	52.6 m²	8 m²	5.74 m³	NO	<2HRS	No	No
150801	3B+2B	95.3 m²	12.4 m²	5.30 m³	YES	>2HRS	No	Yes
150802	3B+2B	95 m²	40.9 m²	5.51 m³	YES	>2HRS	No	Yes
150803	1B+1B	64.5 m²	31.6 m²	3.46 m³	NO	>2HRS	No	Yes
150804	2B+2B	75.4 m²	36 m²	5.10 m³	NO	>2HRS	No	Yes
150805	1B+1B	56.1 m²	9.6 m²	5.95 m³	YES	>2HRS	Yes	No
150806	2B+2B	76 m²	10.4 m²	4.05 m³	NO	>2HRS	Yes	No
150807	1B+1B	52.6 m²	8.3 m²	5.74 m³	NO	>2HRS	No	No
150901	3B+2B	96.4 m²	13.2 m²	5.30 m³	YES	>2HRS	No	Yes
150902	3B+2B	95.8 m²	12.7 m²	5.51 m³	YES	>2HRS	No	Yes
150903	1B+1B	54.8 m²	8.6 m²	5.17 m³	NO	>2HRS	No	Yes
150904	2B+2B	75.1 m²	11 m²	4.04 m³	YES	>2HRS	No	Yes
150905	2B+2B	76.1 m²	10.3 m²	4.89 m³	YES	>2HRS	No	Yes
150906	1B+2B	52.8 m²	8 m²	5.74 m³	NO	>2HRS	No	No
151001	3B+2B	95.5 m²	13.4 m²	5.30 m³	YES	>2HRS	No	Yes
151002	3B+2B	95 m²	12.7 m²	5.51 m³	YES	>2HRS	No	Yes
151003	1B+1B	54.8 m²	8.6 m²	5.17 m³	NO	>2HRS	No	Yes
151004	2B+2B	75.1 m²	11 m²	4.04 m³	YES	>2HRS	No	Yes
151005	2B+2B	76.1 m²	10.3 m²	4.89 m³	YES	>2HRS	No	Yes
151006	1B+2B	52.8 m²	8 m²	5.74 m³	NO	>2HRS	No	No
151101	3B+2B	95.5 m²	13.4 m²	5.30 m³		>2HRS	No	Yes
151102	3B+2B	95 m²	12.7 m²	5.51 m³		>2HRS	No	Yes
151103	1B+1B	54.8 m²	8.6 m²	5.17 m³		>2HRS	No	Yes
151104	2B+2B	75.1 m²	11 m²	4.04 m³		>2HRS	No	Yes
151105	2B+2B	76.1 m²	10.3 m²	4.89 m³		>2HRS	No	Yes
151106	1B+2B	52.8 m²	8 m²	5.74 m³		>2HRS	No	Yes
151201	4B+3B	117.9 m²	13.9 m²	8.17 m³		>2HRS	No	Yes
151202	3B+2B	95 m²	12.1 m²	5.13 m³		>2HRS	No	Yes
151203	4B+3B	110.2 m²	13.2 m²	5.18 m³		>2HRS	No	No
151204	4B+3B	128 m²	18.8 m²	8.90 m³		>2HRS	No	Yes
		5515.4 m²	1099.2 m²	364.29 m³	AREA 15: 72			

WINTERGARDEN

CROSS VENTILATION

SOLAR

ADAPTABLE UNIT

LIVABLE UNIT

Key Plan:

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Note
PTW takes no responsibility for external building elements. Anything connected with any design, materials selection, construction or installation of any cladding, facade or external building element must be checked by and remains the responsibility of others, including suitably qualified experts as may be required.

Rev	Amendment	By	Chk*	Date
B	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23
A	ISSUE FOR INFORMATION	JY	LG	15/03/23

*Registered Architect
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Nominated Architects
Simon Parsons NSW ARB 6098
Diane Jones NSW ARB 4778
Nela Marojević NSW ARB 11274

PTW

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Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
APARTMENT SCHEDULE

Drawing Number DA-Y210010
Revision B

A1

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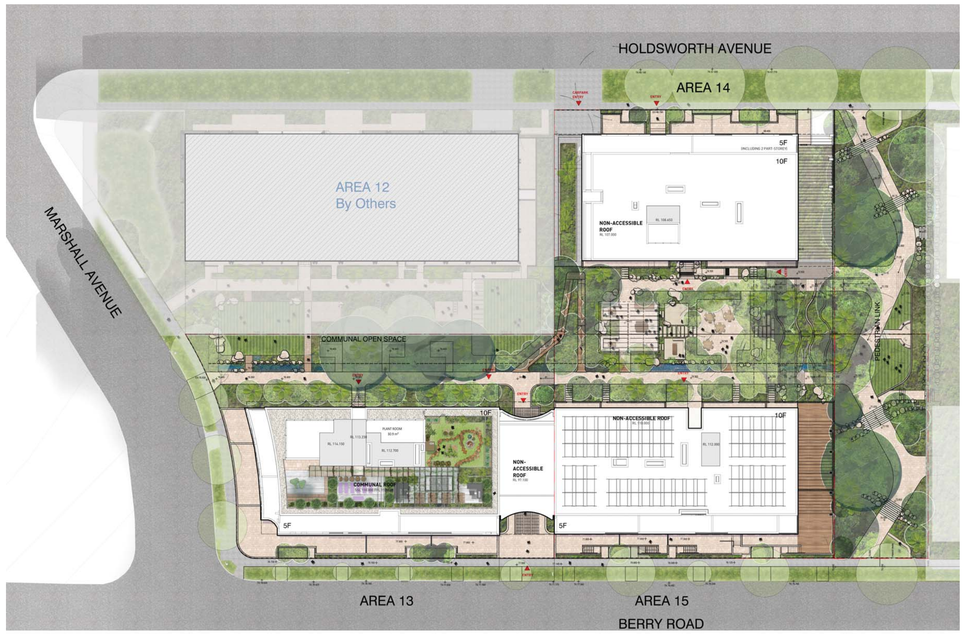

1 **SITE PLAN-NOTIFICATION PLAN**
1 : 500

3 NORTH ELEVATION
1 : 500

4 SOUTH ELEVATION
1 : 500

2 WEST ELEVATION
1 : 500

5 EAST ELEVATION
1 : 500

Key Plan:

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Note
PTW takes no responsibility for external building elements. Anything connected with any design, materials selection, construction or installation of any cladding, facade or external building element must be checked by and remains the responsibility of others, including suitably qualified experts as may be required.

Rev	Amendment	By	Chk*	Date
A	ISSUE FOR DA SUBMISSION	JY	LG	24/03/23

***Registered Architect**
LGU Lilian Gu NSW Arch 8013

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PTW

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1 : 500 @ A1

Project PA030465

14-16 Marshall Avenue, 5-9 Holdsworth Avenue & 2-10 Berry Road, ST Leonards

Status

Title
DA DRAWINGS
NOTIFICATION PLAN

Drawing Number DA-Y310010

Revision A

A1

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APPENDIX G: BOREHOLE LOGS

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BOREHOLE : BH1

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 30/08/2021 **Completed :** 30/08/2021 **Logged By :** MM **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 77.9 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT	Not encountered within the augering		77.8	0.10		CH	FILL, gravelly silt, low plasticity, fine to medium gravel, grey-brown-red	M	F		Fill	1
							Silty CLAY, medium to high plasticity, grey	M	St-VSt	SPT 2, 4, 13 N=17	Residual Soils	2
										SPT 9, 26, Bouncing N > 50		3
			73.9	4.00			SANDSTONE, fine to medium grained, interbedded with some clay and shale, extremely weathered, extremely low strength, yellow-grey	M			Bedrock	4
			72.3	5.65			Borehole BH1 continued as cored hole from 5.65m				TC bit refusal	5
												6
												7
												8
												9
												10

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH1

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 30/08/2021 **Completed :** 30/08/2021 **Logged By :** MM **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 77.9 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength (EL VL L M H VH EH)	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm) (20 60 180 540 1620)	Defect Description	Depth (m)
				1									1
				2									2
				3									3
				4									4
				5		Continued from non-cored borehole							5
NMLC			72.3	5.65		SANDSTONE, fine to medium grained, with some shale bands, grey-brown-dark grey	MW		D A 0.43 0.82 D A 0.15 0.8 D A 0.53 0.51	68 74		5.72m, B, P, S, 0-5° 5.76m, B, P, S, 0-5° 5.85m, B, P, S, 0-5° 5.90m, B, P, S, 0-5°, Fe 5.92m, B, P, S, 0-5° 6.00m, HB 6.10m, B, P, S, 10-15° 6.30m, B, P, S, 5-10° 6.32m, B, P, S, 0-5° 6.39m, B, P, S, 0-5° 6.53m, B, P, S, 0-5° 6.70m, EW, 10mm 6.80m, B, P, S, 0-5° 6.88m, B, P, S, 0-5° 6.92m, J, P, S, 0-5°, Fe 7.00m, HB 7.15m, B, P, S, 0-5°, Fe 7.16m, B, P, S, 0-5°, Fe 7.30m, J, Ir, R, 0-5° 7.35m, J, Ir, R, 70-75°, Fe 7.46m, EW+CS, 50mm 7.52m, B, P, R, 0-5°, Fe 7.62m, B, P, R, 10-15°, Fe 7.69m, B, P, R, 10-15°, Fe 7.80m, B, P, R, 0-5°, Fe 8.00m, HB 8.10m, B, P, S, 0-5° 8.21m, J, P, R, 0-5° 8.31m, B, P, S, 0-5° 8.38m, B, P, S, 0-5° 8.45m, MB 8.51m, B, P, S, 5-10° 8.77m, B, P, S, 0-5° 8.82m, EW, 20mm 9.00m, HB 9.27m, B, P, R, 0-5° 9.28m, B, P, R, 0-5° 9.39m, J, P, S, 10-15° 9.63m, B, P, S, 0-5° 9.65m, B, P, S, 10-15° 9.93m, B, P, S, 0-5°	6 7 8 9 10

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Comments:

Weathering
EW - Extremely
HW - Highly
MW - Moderately
SW - Slightly
Fr - Fresh

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

D - Diametral
A Axial

J - Joint
B - Bedding Plan
CS - Clay Seams
FZ - Fractured Zone
IS - Infill Seam
SS - Sheared Seam
CZ - Crushed Zone

MB - Mechanical Break
HB - Handling Break
Pl - Planar
Ir - Irregular
Cu - Curved
St - Stepped

S - Smooth
R - Rough
P - Polished
Qz - Quartz
Fe - Iron Stain

FOUNDATION EARTH SCIENCES

BOREHOLE : BH1

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 30/08/2021 **Completed :** 30/08/2021 **Logged By :** MM **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 77.9 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength (EL VL L M H VH EH)	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm) (20 60 180 540 1620)	Defect Description	Depth (m)
NMLC				11		SANDSTONE, fine to medium grained, with some shale bands, grey-brown-dark grey *(continued)*	MW		D A 0.15 1.5	74		10.00m, HB 10.15m, B, P, S, 10-15° 10.17m, J, Ir, R, 85-90°, Fe 10.20m, J, Ir, R, 85-90°, Fe 10.22m, J, Ir, R, 85-90°, Fe 10.25m, J, Ir, R, 85-90°, Fe 10.28m, EW+CS, 50mm 10.40m, B, P, R, 0-5° 10.62m, B, P, R, 0-5° 10.70m, B, P, R, 0-5° 10.83m, B, P, R, 0-5° 11.00m, HB 11.08m, B, P, S, 0-5° 11.13m, B, P, S, 0-5° 11.22m, B, P, S, 0-5° 11.24m, B, P, S, 0-5° 11.35m, B, P, S, 0-5° 11.41m, B, P, S, 0-5°	11
				12			SW		D A 1.09 0.95			11.48m, MB 11.50m, B, P, S, 0-5° 11.72m, B, P, S, 0-5° 12.00m, B, P, S, 0-5° 12.03m, B, P, S, 0-5° 12.31m, B, P, R, 0-5°	12
				13						85		12.72m, B, P, S, 0-5° 13.00m, HB	13
				14					D A 1.1 0.87			13.25m, B, P, S, 0-5° 13.27m, B, P, S, 0-5° 13.37m, B, P, S, 0-5° 13.46m, B, P, S, 0-5° 13.54m, J, Ir, R, 0-5° 13.56m, B, P, R, 0-5° 13.60m, B, P, R, 0-5° 13.64m, B, P, R, 0-5° 13.72m, B, P, R, 0-5° 13.76m, B, P, R, 0-5° 14.00m, HB 14.30m, B, P, R, 0-5° 14.47m, MB	14
				15					D A 1.84 1.39			14.81m, B, P, S, 0-5° 14.90m, EW, 10mm 14.97m, B, P, S, 0-5° HB 15.05m, B, P, S, 0-5° 15.44m, B, P, S, 0-5°	15
				16						89		15.90m, B, P, S, 0-5° 15.93m, B, P, S, 0-5° 16.00m, HB 16.02m, B, P, S, 0-5°	16
				17					D A 1.17 1.1			16.90m, B, P, S, 0-5° 17.00m, HB	17
									D A 1.2 1.71				
			60.2	*17.75* 18		BH1 terminated at 17.75m						17.75m, MB	18
				19									19
				20									20

Comments:

Weathering: EW - Extremely; HW - Highly; MW - Moderately; SW - Slightly; Fr - Fresh

EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High

D - Diametral; A Axial

J - Joint; B - Bedding Plan; CS - Clay Seams; FZ - Fractured Zone; IS - Infill Seam; SS - Sheared Seam; CZ - Crushed Zone

MB - Mechanical Break; HB - Handling Break; Pl - Planar; Ir - Irregular; Cu - Curved; St - Stepped

S - Smooth; R - Rough; P - Polished; Qz - Quartz; Fe - Iron Stain

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BOREHOLE : BH2

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 31/08/2021 **Completed :** 31/08/2021 **Logged By :** RL/MM **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 75.2 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT			75.2	0.05			Brick Pavement, approximate thickness of 50mm	M	F		Fill	
			75.0	0.20		CH	FILL, gravelly silt, low plasticity, fine gravel, dark brown-dark grey	M	St-VSt		Residual Soils	
							Silty CLAY, medium to high plasticity, grey with red mottling					1
			74.0	1.20		CS	Sandy CLAY, medium to high plasticity, fine to medium grained sand, grey-red-brown	M	St-VSt	SPT 3, 6, 9 N=15		2
			72.7	2.50			SANDSTONE, fine to medium grained, interbedded with some clay and shale, extremely weathered, extremely low strength, yellow-grey	M-W			Bedrock	3
	▶										Seepage from 3.8m to 4.0m	4
											TC bit refusal	5
			70.3	4.90			Borehole BH2 continued as cored hole from 4.90m					6
												7
												8
												9
												10

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH2

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 31/08/2021 **Completed :** 31/08/2021 **Logged By :** RL/MM **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 75.2 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm)	Defect Description	Depth (m)
				1									1
				2									2
				3									3
				4									4
				5		Continued from non-cored borehole							5
NMLC			70.3	4.90 5		SANDSTONE, fine to medium grained, with some shale bands, light grey-grey-brown	MW		D A 0.45 0.62	52		4.95m, B, P, S, 0-5° 5.00m, B, P, S, 0-5° 5.11m, B, P, S, 10-15° 5.19m, J, Ir, R, 45-50° 5.27m, J, P, R, 10-15° 5.30m, J, P, R, 60-65°, Fe 5.34m, J, P, R, 60-65°, Fe 5.36m, J, P, R, 10-15° 5.46m, B, P, S, 0-5° 5.65m, B, P, R, 0-5° 5.73m, B, P, R, 0-5° 5.76m, CS, 10mm 5.83m, B, P, R, 0-5° 5.91m, EW, 20mm 6.00m, HB 6.05m, B, P, R, 0-5° 6.20m, MB 6.34m, B, P, S, 0-5° 6.68m, B, P, R, 5-10° 6.73m, B, P, S, 0-5° 6.91m, J, P, R, 5-10° 7.00m, B, P, S, 0-5° 7.10m, B, P, S, 0-5°	6
				7					D A 0.29 1.28	73		7.32m, J, Ir, R, 0-5° 7.36m, B, P, S, 0-5° 7.45m, B, P, S, 0-5° 7.54m, EW, 20mm 7.62m, B, P, S, 0-5° 7.72m, B, P, S, 0-5° 7.83m, B, P, R, 0-5° 7.86m, B, P, S, 0-5° 7.88m, B, P, S, 0-5° 7.97m, B, P, S, 0-5° 8.00m, B, P, S, 0-5° 8.08m, B, P, S, 0-5° 8.21m, B, P, S, 0-5° 8.23m, B, P, S, 0-5° 8.33m, B, P, S, 0-5° 8.41m, B, P, S, 0-5° 8.74m, J, P, R, 5-10° 9.00m, HB	7
				8			SW		D A 0.6 1.14			9.15m, MB 9.21m, B, P, S, 0-5°	8
				9									9
				10					D A 0.73 1.11	91		9.82m, B, P, S, 0-5°	10

Comments:

Weathering
EW - Extremely
HW - Highly
MW - Moderately
SW - Slightly
Fr - Fresh

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

D - Diametral
A Axial

J - Joint
B - Bedding Plan
CS - Clay Seams
FZ - Fractured Zone
IS - Infill Seam
SS - Sheared Seam
CZ - Crushed Zone

MB - Mechanical Break
HB - Handling Break
Pl - Planar
Ir - Irregular
Cu - Curved
St - Stepped

S - Smooth
R - Rough
P - Polished
Qz - Quartz
Fe - Iron Stain

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH2

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 31/08/2021 **Completed :** 31/08/2021 **Logged By :** RL/MM **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 75.2 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength (EL VL L M H VH EH)	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm) (20 60 180 540 1620)	Defect Description	Depth (m)
NMLC				11		SANDSTONE, fine to medium grained, with some shale bands, light grey-grey-brown *(continued)*	SW		D 0.71 A 1.78	91		10.00m, HB 10.12m, HB 10.59m, B, P, S, 0-5° 10.96m, B, P, S, 0-10° 11.00m, HB 11.10m, B, P, S, 0-5° 11.12m, B, P, S, 0-5° 11.15m, B, P, S, 0-5° 11.17m, B, P, S, 0-5° 11.34m, B, P, S, 0-5° 11.36m, EW, 30mm 11.47m, B, P, S, 0-5° 11.67m, B, P, S, 0-5°	11
				12								12.00m, HB 12.09m,MB 12.41m, B, P, S, 0-5° 12.61m, B, P, S, 0-5° 12.66m, EW, 20mm	12
				13					D 0.71 A 0.98	98		12.93m, B, P, S, 0-5° 13.00m, HB 13.12m, B, P, S, 0-5° 13.23m, J, P, S, 20-30°	13
				14					D 1.37 A 1.57			14.00m, HB 14.18m, B, P, S, 0-5°	14
				15								15.00m, HB 15.02m, HB 15.05m, MB	15
				16					D 1.86 A 2.09			15.77m, B, P, S, 0-5° 16.00m, HB 16.07m, HB 16.46m, B, P, S, 0-5°	16
				17					D 1.51 A 1.66	98		17.00m, HB 17.63m, B, Ir, R, 0-10°	17
				18					D 1.47 A 1.66			17.98m, MB	18
			57.2	*17.98*		BH2 terminated at 17.98m							
				19									19
				20									20

EL VL L M H VH EH | 20 60 180 540 1620 4860

Comments:

Weathering
EW - Extremely
HW - Highly
MW - Moderately
SW - Slightly
Fr - Fresh

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

D - Diametral
A Axial

J - Joint
B - Bedding Plan
CS - Clay Seams
FZ - Fractured Zone
IS - Infill Seam
SS - Sheared Seam
CZ - Crushed Zone

MB - Mechanical Break
HB - Handling Break
Pl - Planar
Ir - Irregular
Cu - Curved
St - Stepped

S - Smooth
R - Rough
P - Polished
Qz - Quartz
Fe - Iron Stain

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BOREHOLE : BH3

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 1/09/2021 **Completed :** 2/09/2021 **Logged By :** RL **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 73.2 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
							FILL, silty clay, low to medium plasticity, brown-dark brown	M	F		Fill	
HA	Not encountered within the augering		72.8	0.40		CH	Sandy CLAY, medium to high plasticity, light brown-orange	M	St		Residual Soils	
											Hand Auger refusal	
			71.9	1.31			Borehole BH3 continued as cored hole from 1.31m					

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH3

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 1/09/2021 **Completed :** 2/09/2021 **Logged By :** RL **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 73.2 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength (EL VL L M H VH EH)	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm) (20 60 180 540 1620)	Defect Description	Depth (m)
				1		Continued from non-cored borehole							1
NMLC			71.9	1.31		SHALE, interbedded with clay and sandstone, fine to medium grained, brown-red-grey	EW		D 1.54 A 2.26 D 0.01 A 0	0 0			2 3 4
			68.8	4.37		SHALE, interbedded with sandstone, fine to medium grained, dark grey-brown	HW		D 0.38 A 0.66 D 0.4 A 1.41	50 63		4.43m, B, P, S, 0-5° 4.46m, B, P, S, 0-5° 4.71m, J, Ir, R, 0-5° 4.86m, B, P, S, 0-5° 4.95m, B, P, S, 0-5° 5.00m, B, P, R, 0-5° 5.06m, B, P, S, 0-5° 5.11m, B, P, S, 0-10° 5.26m, B, Ir, S, 0-10° 5.29m, B, P, S, 0-5° 5.35m, B, P, S, 0-5° 5.43m, B, P, S, 0-5° 5.46m, B, P, S, 0-10° 5.51m, B, P, S, 0-5° 5.56m, B, P, S, 0-5° 5.70m, B, P, S, 0-5° 5.76m, B, P, S, 0-5° 5.84m, B, P, S, 0-5° 5.94m, MB 6.00m, B, P, S, 0-10° 6.02m, J, Ir, R, 0-10° 6.06m, J, Cu, R, 10-20° 6.09m, B, P, R, 5-10° 6.10m, B, P, R, 5-10° 6.17m, B, Ir, S, 0-10° 6.31m, B, P, S, 0-5° 6.32m, B, P, S, 0-5° 6.38m, EW, 10mm 6.55m, J, Cu, S, 10-30° 6.67m, B, P, S, 0-5° 6.69m, B, P, S, 0-5° 6.70m, EW, 10mm 6.80m, B, P, S, 0-5° 6.84m, B, Ir, S, 0-10° 6.86m, B, P, S, 0-5° 6.95m, EW, 10mm 7.00m, HB 7.14m, B, P, S, 0-5° 7.20m, HB 7.54m, MB 7.59m, B, P, S, 0-5° 7.75m, B, P, S, 0-10° 7.93m, J, Ir, S, 0-15° 7.98m, HB 8.00m, HB 8.11m, B, P, S, 0-5° 8.21m, B, P, S, 0-5° 8.26m, B, P, S, 0-5° 8.35m, B, P, S, 0-5° 8.42m, B, P, S, 0-5° 8.63m, B, P, S, 5-10° 8.69m, B, P, S, 5-10° 8.90m, B, P, S, 0-5° 8.95m, B, P, S, 0-5° 9.00m, HB	5 6 7
			66.2	7.00		SANDSTONE, fine to medium grained, with some shale bands, light grey-grey	MW-SW		D 0.41 A 0.33 D 0.57 A 0.52	69 75			8 9 10

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Comments:

Weathering: EW - Extremely; HW - Highly; MW - Moderately; SW - Slightly; Fr - Fresh

EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High

D - Diametral; A - Axial

J - Joint; B - Bedding Plan; CS - Clay Seams; FZ - Fractured Zone; IS - Infill Seam; SS - Sheared Seam; CZ - Crushed Zone

MB - Mechanical Break; HB - Handling Break; Pl - Planar; Ir - Irregular; Cu - Curved; St - Stepped

S - Smooth; R - Rough; P - Polished; Qz - Quartz; Fe - Iron Stain

FOUNDATION EARTH SCIENCES

BOREHOLE : BH3

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 1/09/2021 **Completed :** 2/09/2021 **Logged By :** RL **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 73.2 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength (EL VL L M H VH EH)	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm) (20 60 180 540 1620)	Defect Description	Depth (m)
NMLC				11		SANDSTONE, fine to medium grained, with some shale bands, light grey-grey *(continued)*	MW-SW		D 1.4 A 1.75 D 1.71 A 1.89	75 89		9.04m, MB 9.54m, CS, 10mm 9.62m, CS, 10mm 9.66m, B, P, S, 0-10° 9.71m, B, P, S, 0-5° 9.78m, B, P, S, 0-5° 9.90m, B, P, S, 5-10° 10.00m, HB 10.09m, EW, 10mm 10.18m, B, P, S, 0-5° 10.22m, B, P, S, 0-5° 10.37m, B, P, S, 0-5° 10.55m, MB 10.86m, B, P, S, 0-5° 11.00m, HB 11.09m, B, P, S, 0-5° 11.19m, B, P, S, 0-5° 11.22m, B, P, S, 0-5° 11.27m, MB	11
			61.9	*11.27*		BH3 terminated at 11.27m							
				12									12
				13									13
				14									14
				15									15
				16									16
				17									17
				18									18
				19									19
				20									20

Comments:

Weathering
EW - Extremely
HW - Highly
MW - Moderately
SW - Slightly
Fr - Fresh

EL - Extremely Low
VL - Very Low
L - Low
M - Medium
H - High
VH - Very High
EH - Extremely High

D - Diametral
A Axial

J - Joint
B - Bedding Plan
CS - Clay Seams
FZ - Fractured Zone
IS - Infill Seam
SS - Sheared Seam
CZ - Crushed Zone

MB - Mechanical Break
HB - Handling Break
Pl - Planar
Ir - Irregular
Cu - Curved
St - Stepped

S - Smooth
R - Rough
P - Polished
Qz - Quartz
Fe - Iron Stain

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH4

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 7/09/2021 **Completed :** 7/09/2021 **Logged By :** RL **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 72.1 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
						FILL, silty clay, low to medium plasticity, brown-dark brown	M	F		Fill	
HA	Not encountered within the augering	71.7	0.40		CH	Sandy CLAY, medium to high plasticity, light brown-orange	M	St		Residual Soils	1
		70.8	1.34			Borehole BH4 continued as cored hole from 1.34m				Hand Auger refusal	2

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH4

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 7/09/2021 **Completed :** 7/09/2021 **Logged By :** RL **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 72.1 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength (EL VL L M H VH EH)	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm) (20 60 180 540 1620)	Defect Description	Depth (m)
			1		Continued from non-cored borehole							1
NMLC		70.8	1.34		SANDSTONE, fine to medium grained, grey-brown, with some clay bands	EW		D 0.46 A 0.42	0			2
		69.2	2.90		SANDSTONE, interbedded with shale, fine to medium grained, grey-brown-red-light grey	HW		D 0.44 A 0.54	59		2.90m, B, P, S, 0-5° 2.97m, HB 3.00m, HB 3.14m, B, P, S, 0-5° 3.25m, B, Ir, S, 0-10° 3.33m, B, P, S, 0-5° 3.48m, EW, 10mm	3
			4					D 0.43 A 0.31	39		3.66m, J, P, R, 40-50° 3.71m, B, P, R, 0-5° 3.74m, B, P, R, 0-5° 3.82m, EW, 40mm 3.92m, B, P, R, 10-20° 3.96m, B, P, R, 0-5° 4.00m, MB 4.14m, B, P, S, 15-20° 4.37m, B, P, S, 15-20° 4.50m, B, P, S, 5-10° 4.60m, CS, 60mm 4.69m, CS, 20mm 4.80m, Core Loss, 90mm 4.91m, B, P, S, 0-5° 4.95m, B, P, S, 0-5° 4.99m, B, P, S, 0-5°	4
			5								5.00m, HB 5.04m, B, P, S, 0-5° 5.09m, B, P, S, 0-5° 5.13m, B, P, S, 0-5° 5.17m, B, P, S, 0-5° 5.21m, B, P, S, 0-5° 5.26m, B, P, S, 0-5° 5.30m, B, Ir, S, 0-10° 5.37m, B, P, S, 0-5°	5
			6					D 0.43 A 1.22	61		5.40m, J, Ir, S, 15-25° 5.43m, B, P, S, 0-5° 5.47m, B, Ir, S, 0-5° 5.49m, B, P, S, 0-5° 5.55m, MB 5.58m, B, Ir, S, 0-5° 5.64m, B, P, S, 0-5° 5.71m, B, P, S, 5-10°	6
		65.9	6.20		SANDSTONE, fine to medium grained, with some shale bands, light grey-grey	MW-SW						
			7								5.73m, B, P, S, 0-5° 5.92m, B, P, S, 0-5° 6.00m, B, P, S, 0-5° 6.03m, B, P, S, 0-5° 6.07m, B, Ir, S, 0-10° 6.08m, B, P, S, 0-5° 6.11m, B, P, S, 0-5° 6.13m, B, P, S, 0-5° 6.17m, B, P, S, 0-5° 6.33m, B, P, S, 0-5° 6.41m, B, P, S, 0-5°	7
			8					D 0.67 A 1.11	73		6.46m, B, P, S, 0-5° 6.56m, B, P, S, 0-5° 6.67m, B, P, S, 0-5° 6.77m, B, P, S, 0-5° 6.87m, B, P, S, 0-5° 7.00m, MB 7.08m, B, P, S, 0-5° 7.13m, B, P, S, 0-5° 7.27m, B, P, S, 0-5°	8
			9					D 0.39 A 0.47	30		7.32m, B, P, S, 0-5° 7.39m, B, P, S, 0-5° 7.44m, B, P, S, 0-5° 7.54m, B, P, S, 0-5° 7.59m, B, P, S, 0-5° 7.70m, B, P, S, 0-5° 7.76m, B, P, S, 0-5° 8.00m, HB 8.03m, HB 8.28m, B, P, S, 0-5° 8.54m, MB	9
			10					D 1.58 A 0.97	53			10

Comments:

Weathering: EW - Extremely; HW - Highly; MW - Moderately; SW - Slightly; Fr - Fresh

EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High

D - Diametral; A - Axial

J - Joint; B - Bedding Plan; CS - Clay Seams; FZ - Fractured Zone; IS - Infill Seam; SS - Sheared Seam; CZ - Crushed Zone

MB - Mechanical Break; HB - Handling Break; Pl - Planar; Ir - Irregular; Cu - Curved; St - Stepped

S - Smooth; R - Rough; P - Polished; Qz - Quartz; Fe - Iron Stain

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH4

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** G511

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Geotechnical Investigation

Date Started : 7/09/2021 **Completed :** 7/09/2021 **Logged By :** RL **Checked By :** MM

Borehole Location : Refer to Site Plan **Surface RL :** 72.1 **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Material Description	Weathering	Estimated Strength (EL VL L M H VH EH)	$Is_{(50)}$ (MPa)	RQD %	Defect Spacing (mm) (20 60 180 540 1620)	Defect Description	Depth (m)
NMLC					SANDSTONE, fine to medium grained, with some shale bands, light grey-grey *(continued)*	MW-SW		D 1.23 A 1.96	53		8.56m, B, Ir, S, 0-10° 8.68m, B, P, S, 0-5° 8.75m, B, P, S, 0-5° 8.77m, CS, 20mm 8.83m, B, P, S, 0-5° 8.88m, B, P, S, 0-5° 8.98m, EW, 20mm 9.02m, J, Ir, S, 80-90° 9.03m, B, Ir, S, 0-10° 9.09m, B, P, S, 0-5° 9.10m, CS, 60mm 9.19m, B, P, S, 0-5° 9.24m, B, P, S, 0-5° 9.27m, MB 9.32m, B, P, S, 0-5° 9.37m, B, P, S, 0-5° 9.40m, B, P, S, 0-5° 9.44m, B, P, S, 0-5° 9.62m, B, P, S, 0-5° 9.67m, B, P, S, 0-5° 9.70m, B, P, S, 0-5° 10.00m, HB 10.10m, B, P, S, 0-5° 10.15m, B, P, S, 0-5° 10.17m, B, P, S, 0-5° 10.20m, B, P, S, 0-5° 10.27m, B, P, S, 0-5° 10.32m, B, P, S, 0-5° 10.35m, B, P, S, 0-5° 10.37m, B, P, S, 0-5° 10.48m, B, P, R, 20-30° 10.57m, MB	
		61.5	*10.57*		BH4 terminated at 10.57m							

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Comments:

Weathering: EW - Extremely; HW - Highly; MW - Moderately; SW - Slightly; Fr - Fresh

EL - Extremely Low; VL - Very Low; L - Low; M - Medium; H - High; VH - Very High; EH - Extremely High

D - Diametral; A Axial

J - Joint; B - Bedding Plan; CS - Clay Seams; FZ - Fractured Zone; IS - Infill Seam; SS - Sheared Seam; CZ - Crushed Zone

MB - Mechanical Break; HB - Handling Break; Pl - Planar; Ir - Irregular; Cu - Curved; St - Stepped

S - Smooth; R - Rough; P - Polished; Qz - Quartz; Fe - Iron Stain

FOUNDATION EARTH SCIENCES

BOREHOLE : BH1

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						FILL: Silty Clay, low to medium plasticity, brown/dark brown, traces of sand	M	F		-	
									0.1-0.2, D1/SS1	No HC odour, No Staining and No fibro fragments observed.	
			0.30		CH	Silty CLAY, medium to high plasticity, grey/dark brown	M	F-St		Residual soil	
			0.5						0.4-0.5	No HC odour, No Staining and No fibro fragments observed.	0.5
			0.50			Borehole BH1 terminated at 0.50m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH2

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						FILL: Silty Clay, low to medium plasticity, brown/dark brown, traces of sand	M	F		-	
									0.1-0.2	No HC odour, No Staining and No fibro fragments observed.	
			0.40		CH	Silty CLAY, medium to high plasticity, grey/yellow	M	F-St	0.4-0.5	Residual Soil No HC odour, No Staining and No fibro fragments observed.	
			0.5								0.5
			0.60			Borehole BH2 terminated at 0.60m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH3

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						FIll: Silty Clay, medium plasticity, brown, with vegetable matter	M	F	0.0-0.1	- No HC odour, No Staining and No fibro fragments observed.	
			0.20		CH	Silty CLAY, high plasticity, grey	M	F-St	0.3-0.4	Residual Soil No HC odour, No Staining and No fibro fragments observed.	
			0.40			Borehole BH3 terminated at 0.40m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH4

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, medium plasticity, brown, with vegetable matter	M	F		-	
									0.1-0.2	No HC odour, No Staining and No fibro fragments observed.	
			0.40		CH	Silty CLAY, high plasticity, grey/brown	M	F-St		Residual soil	
			0.5						0.5-0.6	No HC odour, No Staining and No fibro fragments observed.	0.5
			0.60			Borehole BH4 terminated at 0.60m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH5

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, low to medium plasticity, brown/dark brown, with vegetable matter	M	F		-	
									0.1-0.2	No HC odour, No Staining and No fibro fragments observed.	
			0.20		CH	Silty CLAY, high plasticity, grey	M	F-St		Residual Soil	
									0.3-0.4	No HC odour, No Staining and No fibro fragments observed.	
			0.40			Borehole BH5 terminated at 0.40m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH6

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA			0.10			Fill: Silty Clay, medium plasticity, brown, with vegetable matter	M	F	0.0-0.1	- No HC odour, No Staining and No fibro fragments observed.	
					CH	Silty CLAY, high plasticity, grey	M	F-St		Residual Soil	
			0.40			Borehole BH6 terminated at 0.40m			0.3-0.4	No HC odour, No Staining and No fibro fragments observed.	
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH7

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, medium to high plasticity, brown, with vegetable matter	M	F		-	
									0.1-0.2	No HC odour, No Staining and No fibro fragments observed.	
			0.20		CH	Silty CLAY, high plasticity, grey/yellow	M	F-St		Residual Soil	
			0.40			Borehole BH7 terminated at 0.40m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH8

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, medium plasticity, brown, with vegetable matter	M	F	0.0-0.1	- No HC odour, No Staining and No fibro fragments observed.	
			0.20		CH	Silty CLAY, high plasticity, grey	M	F-St		Residual Soil	
			0.5								0.5
			0.60			Borehole BH8 terminated at 0.60m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH9

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, low to medium plasticity, brown/dark brown, with gravels	M	F	0.0-0.1	- No HC odour, No Staining and No fibro fragments observed.	
			0.30		CH	Silty CLAY, high plasticity, grey/orange/brown	M	F-St		Residual Soil	
			0.5						0.4-0.5	No HC odour, No Staining and No fibro fragments observed.	0.5
			0.50			Borehole BH9 terminated at 0.50m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH10

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA			0.5			Fill: Silty Clay, medium to high plasticity, brown, with gravels	M	F	0.1-0.2, D2/SS2	- No HC odour, No Staining and No fibro fragments observed.	0.5
			0.50 1.0 1.5 2.0			Borehole BH10 terminated at 0.50m				-	1.0 1.5 2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH11

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						FIll: sandy Silt, low plasticity, light brown, with vegetable matter	D	VS-S	0.0-0.1	- No HC odour, No Staining and No fibro fragments observed.	
			0.20			Borehole BH11 terminated at 0.20m				-	
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH12

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Sandy Clay, low to medium plasticity, brown/orange, with gravels	D	F	0.1-0.2	- No HC odour, No Staining and No fibro fragments observed.	
			0.20			Borehole BH12 terminated at 0.20m				-	
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH13

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Clayey Silt, low plasticity, brown with Vegetable matter	M	S		-	
									0.2-0.3	No HC odour, No Staining and No fibro fragments observed.	
			0.40			Borehole BH13 terminated at 0.40m				Refusal	
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH14

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
						Fill: Silty Clay, medium plasticity, brown, with traces of sands	M	S		-	
									0.1-0.2	No HC odour, No Staining and No fibro fragments observed.	
HA			*0.20*		CH	Silty CLAY, medium to high plasticity, brown/grey	M	F-St		Residual Soil	
			0.5								0.5
			0.50			Borehole BH14 terminated at 0.50m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH15

CLIENT NAME: Holdsworth Land Pty Ltd **JOB NUMBER:** E2670-2

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave, St Leonards NSW **PROJECT:** Detailed Site Investigation

Date Started : 30/08/2023 **Completed :** 30/08/2023 **Logged By :** RW **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 50mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, medium plasticity, brown/darkbrown, with vegetable matter	M	F		-	
									0.1-0.2	No HC odour, No Staining and No fibro fragments observed.	
			0.40			Borehole BH15 terminated at 0.40m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH1

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** E2670

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave St Leonards NSW **PROJECT:** Preliminary Site Investigation

Date Started : 1/09/2021 **Completed :** 1/09/2021 **Logged By :** RL **Checked By :** BB

Borehole Location : Refer to site plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA					Fill	F: Gravelly Silt, low to medium plasticity, grey-brown-red	M	S-F	0-0.1	No hydrocarbon odours, no staining, no fibro cement fragments observed. D1/SS1	
			0.30		CL-CH	N: Silty CLAY, medium to high plasticity, grey	M	F-St			
			0.5								0.5
			0.50			Borehole BH1 terminated at 0.50m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH2

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** E2670

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave St Leonards NSW **PROJECT:** Preliminary Site Investigation

Date Started : 1/09/2021 **Completed :** 1/09/2021 **Logged By :** RL **Checked By :** BB

Borehole Location : Refer to site plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA			0.10		Fill	F: Silty Clay, low to medium plasticity, dark brown	M	S-F	0-0.1	No hydrocarbon odours, no staining, no fibro cement fragments observed.	
					CL-CH	N: Silty CLAY, medium to high plasticity, grey-red	M	F-St			
			0.30			Borehole BH2 terminated at 0.30m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH3

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** E2670

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave St Leonards NSW **PROJECT:** Preliminary Site Investigation

Date Started : 1/09/2021 **Completed :** 1/09/2021 **Logged By :** RL **Checked By :** BB

Borehole Location : Refer to site plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA					Fill	F: Sandy Silt, low to medium plasticity, dark brown-brown	M	S-F	0.1-0.2	No hydrocarbon odours, no staining, no fibro cement fragments observed.	
			0.40			Refusal on rock fragment Borehole BH3 terminated at 0.40m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH4

FOUNDATION EARTH SCIENCES

CLIENT NAME: Holdsworth Land Pty Ltd ATF Holdsworth Land Unit Trust **JOB NUMBER:** E2670

SITE ADDRESS: 2-10 Berry Rd, 14-16 Marshall Ave & 5-9 Holdsworth Ave St Leonards NSW **PROJECT:** Preliminary Site Investigation

Date Started : 1/09/2021 **Completed :** 1/09/2021 **Logged By :** RL **Checked By :** BB

Borehole Location : Refer to site plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA					Fill	F: Silty Clay, low to medium plasticity, dark brown-brown	M	S-F	0.1-0.2	No hydrocarbon odours, no staining, no fibro cement fragments observed.	
			0.40			Borehole BH4 terminated at 0.40m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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APPENDIX H: NATA ACCREDITED LABORATORY CERTIFICATES

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Envirolab Services Pty Ltd
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CERTIFICATE OF ANALYSIS 277093

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E2670, St Leonards**
Number of Samples	7 Soil
Date samples received	02/09/2021
Date completed instructions received	02/09/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	09/09/2021
Date of Issue	09/09/2021

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Lucy Zhu, Asbestos Supervisor
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		277093-1	277093-2	277093-3	277093-4	277093-5
Your Reference	UNITS	BH1	BH2	BH3	BH4	D1
Depth		0-0.1	0-0.1	0.1-0.2	0.1-0.2	-
Date Sampled		01/09/2021	01/09/2021	01/09/2021	01/09/2021	01/09/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
Date analysed	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	82	95	93	83	86

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		277093-6	277093-7
Your Reference	UNITS	TS1	TB1
Depth		-	-
Date Sampled		01/09/2021	01/09/2021
Type of sample		Soil	Soil
Date extracted	-	03/09/2021	03/09/2021
Date analysed	-	03/09/2021	03/09/2021
TRH C_6 - C_9	mg/kg	[NA]	<25
TRH C_6 - C_{10}	mg/kg	[NA]	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	[NA]	<25
Benzene	mg/kg	100%	<0.2
Toluene	mg/kg	101%	<0.5
Ethylbenzene	mg/kg	102%	<1
m+p-xylene	mg/kg	102%	<2
o-Xylene	mg/kg	103%	<1
naphthalene	mg/kg	[NT]	<1
Total +ve Xylenes	mg/kg	[NT]	<3
Surrogate aaa-Trifluorotoluene	%	85	97

svTRH (C10-C40) in Soil						
Our Reference		277093-1	277093-2	277093-3	277093-4	277093-5
Your Reference	UNITS	BH1	BH2	BH3	BH4	D1
Depth		0-0.1	0-0.1	0.1-0.2	0.1-0.2	-
Date Sampled		01/09/2021	01/09/2021	01/09/2021	01/09/2021	01/09/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
Date analysed	-	04/09/2021	04/09/2021	04/09/2021	04/09/2021	04/09/2021
TRH C_{10} - C_{14}	mg/kg	83	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	580	<100	<100	<100	340
TRH C_{29} - C_{36}	mg/kg	620	<100	<100	<100	500
Total +ve TRH (C10-C36)	mg/kg	1,300	<50	<50	<50	840
TRH >C_{10} -C_{16}	mg/kg	130	<50	<50	<50	73
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	130	<50	<50	<50	73
TRH >C_{16} -C_{34}	mg/kg	970	<100	<100	<100	650
TRH >C_{34} -C_{40}	mg/kg	340	<100	<100	<100	260
Total +ve TRH (>C10-C40)	mg/kg	1,400	<50	<50	<50	980
Surrogate o-Terphenyl	%	123	81	91	83	100

PAHs in Soil						
Our Reference		277093-1	277093-2	277093-3	277093-4	277093-5
Your Reference	UNITS	BH1	BH2	BH3	BH4	D1
Depth		0-0.1	0-0.1	0.1-0.2	0.1-0.2	-
Date Sampled		01/09/2021	01/09/2021	01/09/2021	01/09/2021	01/09/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
Date analysed	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
Naphthalene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	1	0.1	0.2	0.4	0.8
Anthracene	mg/kg	0.2	<0.1	<0.1	0.1	0.2
Fluoranthene	mg/kg	1.8	0.3	0.1	1	1.7
Pyrene	mg/kg	1.8	0.2	0.2	0.9	1.7
Benzo(a)anthracene	mg/kg	1.1	0.1	<0.1	0.4	1
Chrysene	mg/kg	0.9	0.1	0.1	0.4	0.8
Benzo(b,j+k)fluoranthene	mg/kg	0.7	<0.2	<0.2	0.3	0.7
Benzo(a)pyrene	mg/kg	0.84	0.1	<0.05	0.4	0.84
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	<0.1	<0.1	0.2	0.4
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	0.6	0.1	<0.1	0.2	0.6
Total +ve PAH's	mg/kg	9.8	1.1	0.60	4.3	8.8
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.2	<0.5	<0.5	<0.5	1.2
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.2	<0.5	<0.5	<0.5	1.2
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.2	<0.5	<0.5	0.5	1.2
Surrogate p-Terphenyl-d14	%	86	98	90	93	87

Organochlorine Pesticides in soil				
Our Reference		277093-1	277093-3	277093-5
Your Reference	UNITS	BH1	BH3	D1
Depth		0-0.1	0.1-0.2	-
Date Sampled		01/09/2021	01/09/2021	01/09/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	03/09/2021	03/09/2021	03/09/2021
Date analysed	-	03/09/2021	03/09/2021	03/09/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	110	113

PCBs in Soil				
Our Reference		277093-1	277093-3	277093-5
Your Reference	UNITS	BH1	BH3	D1
Depth		0-0.1	0.1-0.2	-
Date Sampled		01/09/2021	01/09/2021	01/09/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	03/09/2021	03/09/2021	03/09/2021
Date analysed	-	03/09/2021	03/09/2021	03/09/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	110	113

Acid Extractable metals in soil						
Our Reference		277093-1	277093-2	277093-3	277093-4	277093-5
Your Reference	UNITS	BH1	BH2	BH3	BH4	D1
Depth		0-0.1	0-0.1	0.1-0.2	0.1-0.2	-
Date Sampled		01/09/2021	01/09/2021	01/09/2021	01/09/2021	01/09/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
Date analysed	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
Arsenic	mg/kg	<4	<4	<4	<4	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	10	5	6	12
Copper	mg/kg	34	16	16	22	41
Lead	mg/kg	100	28	25	65	130
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	0.2
Nickel	mg/kg	6	7	3	2	7
Zinc	mg/kg	200	63	51	51	230
Boron	mg/kg	3	<3	<3	<3	5
Beryllium	mg/kg	<1	<1	<1	<1	<1
Cobalt	mg/kg	2	6	1	1	2
Manganese	mg/kg	120	210	120	30	140

Moisture						
Our Reference		277093-1	277093-2	277093-3	277093-4	277093-5
Your Reference	UNITS	BH1	BH2	BH3	BH4	D1
Depth		0-0.1	0-0.1	0.1-0.2	0.1-0.2	-
Date Sampled		01/09/2021	01/09/2021	01/09/2021	01/09/2021	01/09/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	03/09/2021	03/09/2021	03/09/2021	03/09/2021	03/09/2021
Date analysed	-	06/09/2021	06/09/2021	06/09/2021	06/09/2021	06/09/2021
Moisture	%	16	21	7.0	14	14

Asbestos ID - soils			
Our Reference		277093-1	277093-3
Your Reference	UNITS	BH1	BH3
Depth		0-0.1	0.1-0.2
Date Sampled		01/09/2021	01/09/2021
Type of sample		Soil	Soil
Date analysed	-	08/09/2021	08/09/2021
Sample mass tested	g	Approx. 20g	Approx. 20g
Sample Description	-	Brown fine-grained soil	Brown fine-grained soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Date analysed	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	87	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	101	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	98	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	77	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	79	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	83	[NT]
naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	85	[NT]	[NT]	[NT]	[NT]	90	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Date analysed	-			04/09/2021	[NT]	[NT]	[NT]	[NT]	04/09/2021	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	122	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	122	[NT]
Surrogate o-Terphenyl	%		Org-020	98	[NT]	[NT]	[NT]	[NT]	119	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Date analysed	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	128	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	132	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	97	[NT]	[NT]	[NT]	[NT]	72	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Date analysed	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	113	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	121	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	128	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	108	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Date analysed	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	108	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Date analysed	-			03/09/2021	[NT]	[NT]	[NT]	[NT]	03/09/2021	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	98	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	92	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Boron	mg/kg	3	Metals-020	<3	[NT]	[NT]	[NT]	[NT]	96	[NT]
Beryllium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Cobalt	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Manganese	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos: Excessive sample volume was provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Samples were sub-sampled from bags provided by the client.

E... Lab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 277093
Date Received: 2/9/21
Time Received: 1315
Received By: AB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; ray@foundationes.com.au ph: +61466 385 221	Project Manager: Michael Silk Sampled By: RL Purchase Order #: N/A Page #: 1 of 1	Project #: E2670 Project Name: St Leonards Quote #: Turnaround: Standard
Delivery Details:	Envirolab Pty Ltd 12 Ashley Street, Chatswood NSW 2067 email: ahie@envirolab.com.au ph: +612 9910 6200		

#	Sample ID	Depth	Date Sampled	Matrix	Analytes												Sample Comments
					ph	CEC	%CLAY	Heavy Metals (12)	TRH	BTEXN	PAH	OCP PCB	Asbestos ID	Asbestos %w/w (NEPM /WA)	TRH C6-C10 & BTEXN	Envirolab Suites	
1	BH1	0-0.1	01.09.2021	Soil				X	X	X	X	X	X			Combo5a	Keep
2	BH2	0-0.1	01.09.2021	Soil				X	X	X	X					Combo3	Keep
3	BH3	0.1-0.2	01.09.2021	Soil				X	X	X	X	X	X			Combo5a	Keep
4	BH4	0.1-0.2	01.09.2021	Soil				X	X	X	X					Combo3	Keep
5	D1	-	01.09.2021	Soil				X	X	X	X	X				Combo5	Keep
6	TS1	-	01.09.2021	Soil											X	-	Keep
7	TB1	-	01.09.2021	Soil											X	-	Keep

Special Directions and Coments

Relinquished by	Ray Liu	Received By	BLJ MD
Signature		Signature	
Date	02.09.2021	Date	2/9/21 1315

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk

Sample Login Details

Your reference	E2670, St Leonards
Envirolab Reference	277093
Date Sample Received	02/09/2021
Date Instructions Received	02/09/2021
Date Results Expected to be Reported	09/09/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	7 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	7
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils
BH1-0-0.1	✓	✓	✓	✓	✓	✓	✓
BH2-0-0.1	✓	✓	✓			✓	
BH3-0.1-0.2	✓	✓	✓	✓	✓	✓	✓
BH4-0.1-0.2	✓	✓	✓			✓	
D1	✓	✓	✓	✓	✓	✓	
TS1	✓						
TB1	✓						

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; ray@foundationes.com.au ph: +61466 385 221	**Project Manager:** Michael Silk **Sampled By:** RL **Purchase Order #:** N/A **Page #:** 1	**Project #:** E2670 **Project Name:** St Leonards **Quote #:** **Turnaround:** Standard
Delivery Details:	SGS Laboratories Pty Ltd Unit 16, 33 Maddox Street, Alexandria NSW 2015 email: au.samplereceipt@sgs.com ph: +612 8594 0400		

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC	%CLAY	Heavy Metals (12)	TRH	BTEXN	PAH	OC	PCB	Asbestos ID	Asbestos %w/w (NEPM /WA)	Phenol		Suites	
1	SS1	–	01.09.2021	Soil				X	X	X	X	x	x					CL16	Keep

Special Directions and Coments:

Relinquished by	RL	**Received By**	
Signature		**Signature**	M·H
Date	02.09.2021	**Date**	2/9/21

#821929

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Foundation Earth Sciences
Contact name:	Michael Silk
Project name:	ST LEONARDS
Project ID:	E2670
Turnaround time:	5 Day
Date/Time received	Sep 2, 2021 12:54 PM
Eurofins reference	821929

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Michael Silk - michael@foundationes.com.au.

Global Leader - Results you can trust

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Foundation Earth Sciences
Address: PO BOX 4405
East Gosford
NSW 2250

Project Name: ST LEONARDS
Project ID: E2670

Order No.:
Report #: 821929
Phone:
Fax:

Received: Sep 2, 2021 12:54 PM
Due: Sep 9, 2021
Priority: 5 Day
Contact Name: Michael Silk

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Metals IWRG 621 : Metals M12	Suite B13: OCP/PCB	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA Site # 1254									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	SS1	Sep 01, 2021		Soil	S21-Se07631	X	X	X	X
Test Counts						1	1	1	1

Foundation Earth Sciences
PO BOX 4405
East Gosford
NSW 2250

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Michael Silk**

Report **821929-S**
Project name ST LEONARDS
Project ID E2670
Received Date Sep 02, 2021

Client Sample ID			[G01]**SS1**
Sample Matrix			**Soil**
Eurofins Sample No.			**S21-Se07631**
Date Sampled			**Sep 01, 2021**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	50
TRH C15-C28	50	mg/kg	520
TRH C29-C36	50	mg/kg	330
TRH C10-C36 (Total)	50	mg/kg	900
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	84
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	84
TRH >C16-C34	100	mg/kg	910
TRH >C34-C40	100	mg/kg	440
TRH >C10-C40 (total)*	100	mg/kg	1434
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	109
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 2
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.0
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.3
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	1.2
Benzo(a)pyrene	0.5	mg/kg	1.3
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	1.1
Benzo(g.h.i)perylene	0.5	mg/kg	< 2
Benzo(k)fluoranthene	0.5	mg/kg	1.1
Chrysene	0.5	mg/kg	1.1
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5

Client Sample ID			G01 SS1
Sample Matrix			Soil
Eurofins Sample No.			S21-Se07631
Date Sampled			Sep 01, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.5	mg/kg	1.8
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	0.9
Naphthalene	0.5	mg/kg	0.9
Phenanthrene	0.5	mg/kg	1.1
Pyrene	0.5	mg/kg	1.8
Total PAH*	0.5	mg/kg	12.3
2-Fluorobiphenyl (surr.)	1	%	87
p-Terphenyl-d14 (surr.)	1	%	95
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-HCH	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-HCH	0.05	mg/kg	< 0.05
d-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	119
Tetrachloro-m-xylene (surr.)	1	%	81
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	119
Tetrachloro-m-xylene (surr.)	1	%	81

Client Sample ID			G01SS1
Sample Matrix			**Soil**
Eurofins Sample No.			**S21-Se07631**
Date Sampled			**Sep 01, 2021**
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	2	mg/kg	< 2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	8.1
Copper	5	mg/kg	20
Lead	5	mg/kg	62
Mercury	0.1	mg/kg	< 0.1
Molybdenum	5	mg/kg	< 5
Nickel	5	mg/kg	< 5
Selenium	2	mg/kg	< 2
Silver	2	mg/kg	< 2
Tin	10	mg/kg	< 10
Zinc	5	mg/kg	97
% Moisture	1	%	< 1

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Sep 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Sep 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Sep 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Sep 07, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Sep 07, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Sydney	Sep 07, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Sep 07, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals IWRG 621 : Metals M12	Sydney	Sep 07, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Sep 06, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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Phone : 0800 856 450
IANZ # 1290

Company Name: Foundation Earth Sciences
Address: PO BOX 4405
East Gosford
NSW 2250

Project Name: ST LEONARDS
Project ID: E2670

Order No.:
Report #: 821929
Phone:
Fax:

Received: Sep 2, 2021 12:54 PM
Due: Sep 9, 2021
Priority: 5 Day
Contact Name: Michael Silk

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Metals IWRG 621 : Metals M12	Suite B13: OCP/PCB	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA Site # 1254									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	SS1	Sep 01, 2021		Soil	S21-Se07631	X	X	X	X
Test Counts						1	1	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	90			70-130	Pass	
TRH C10-C14	%	83			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
TRH C6-C10	%	85			70-130	Pass	
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	97			70-130	Pass	
o-Xylene	%	94			70-130	Pass	
Xylenes - Total*	%	96			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	111			70-130	Pass	
Acenaphthylene	%	116			70-130	Pass	
Anthracene	%	118			70-130	Pass	
Benz(a)anthracene	%	119			70-130	Pass	
Benzo(a)pyrene	%	129			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	%	115			70-130	Pass	
Benzo(g.h.i)perylene	%	93			70-130	Pass	
Benzo(k)fluoranthene	%	105			70-130	Pass	
Chrysene	%	118			70-130	Pass	
Dibenz(a.h)anthracene	%	94			70-130	Pass	
Fluoranthene	%	107			70-130	Pass	
Fluorene	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	128			70-130	Pass	
Naphthalene	%	113			70-130	Pass	
Phenanthrene	%	111			70-130	Pass	
Pyrene	%	108			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	97			70-130	Pass	
4.4'-DDD	%	107			70-130	Pass	
4.4'-DDE	%	114			70-130	Pass	
a-HCH	%	99			70-130	Pass	
Aldrin	%	111			70-130	Pass	
b-HCH	%	105			70-130	Pass	
d-HCH	%	97			70-130	Pass	
Dieldrin	%	102			70-130	Pass	
Endosulfan I	%	124			70-130	Pass	
Endosulfan II	%	122			70-130	Pass	
Endosulfan sulphate	%	107			70-130	Pass	
Endrin aldehyde	%	96			70-130	Pass	
Endrin ketone	%	103			70-130	Pass	
g-HCH (Lindane)	%	105			70-130	Pass	
Heptachlor	%	127			70-130	Pass	
Heptachlor epoxide	%	102			70-130	Pass	
Hexachlorobenzene	%	106			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	102			70-130	Pass	
Aroclor-1260	%	120			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	102			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	113			80-120	Pass	
Copper	%	115			80-120	Pass	
Lead	%	107			80-120	Pass	
Mercury	%	116			80-120	Pass	
Molybdenum	%	97			80-120	Pass	
Nickel	%	116			80-120	Pass	
Selenium	%	106			80-120	Pass	
Silver	%	106			80-120	Pass	
Tin	%	105			80-120	Pass	
Zinc	%	110			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S21-Se10719	NCP	%	104			70-130	Pass	
TRH C10-C14	S21-Se08612	NCP	%	97			70-130	Pass	
Naphthalene	S21-Se10719	NCP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C10	S21-Se10719	NCP	%	103			70-130	Pass	
TRH >C10-C16	S21-Se08612	NCP	%	98			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-Se10719	NCP	%	107			70-130	Pass	
Toluene	S21-Se10719	NCP	%	101			70-130	Pass	
Ethylbenzene	S21-Se10719	NCP	%	104			70-130	Pass	
m&p-Xylenes	S21-Se10719	NCP	%	107			70-130	Pass	
o-Xylene	S21-Se10719	NCP	%	106			70-130	Pass	
Xylenes - Total*	S21-Se10719	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-Se10699	NCP	%	107			70-130	Pass	
Acenaphthylene	S21-Se10699	NCP	%	110			70-130	Pass	
Anthracene	S21-Se10699	NCP	%	97			70-130	Pass	
Benz(a)anthracene	S21-Se10699	NCP	%	100			70-130	Pass	
Benzo(a)pyrene	S21-Se10699	NCP	%	106			70-130	Pass	
Benzo(b&j)fluoranthene	S21-Se10699	NCP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	S21-Se10699	NCP	%	107			70-130	Pass	
Benzo(k)fluoranthene	S21-Se10699	NCP	%	120			70-130	Pass	
Chrysene	S21-Se10699	NCP	%	104			70-130	Pass	
Dibenz(a.h)anthracene	S21-Se10699	NCP	%	108			70-130	Pass	
Fluoranthene	S21-Se10699	NCP	%	95			70-130	Pass	
Fluorene	S21-Se10699	NCP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-Se10699	NCP	%	113			70-130	Pass	
Naphthalene	S21-Se10699	NCP	%	105			70-130	Pass	
Phenanthrene	S21-Se10699	NCP	%	100			70-130	Pass	
Pyrene	S21-Se10699	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-Se10699	NCP	%	99			70-130	Pass	
4.4'-DDD	S21-Se10699	NCP	%	87			70-130	Pass	
4.4'-DDE	S21-Se10699	NCP	%	105			70-130	Pass	
4.4'-DDT	S21-Se10699	NCP	%	75			70-130	Pass	
a-HCH	S21-Se10699	NCP	%	98			70-130	Pass	
Aldrin	S21-Se10699	NCP	%	102			70-130	Pass	
b-HCH	S21-Se10699	NCP	%	98			70-130	Pass	
d-HCH	S21-Se10699	NCP	%	109			70-130	Pass	
Dieldrin	S21-Se10699	NCP	%	100			70-130	Pass	
Endosulfan I	S21-Se10699	NCP	%	101			70-130	Pass	
Endosulfan II	S21-Se10699	NCP	%	93			70-130	Pass	
Endosulfan sulphate	S21-Se10699	NCP	%	94			70-130	Pass	
Endrin	S21-Se10699	NCP	%	93			70-130	Pass	
Endrin aldehyde	S21-Se10699	NCP	%	75			70-130	Pass	
Endrin ketone	S21-Se10699	NCP	%	88			70-130	Pass	
g-HCH (Lindane)	S21-Se10699	NCP	%	102			70-130	Pass	
Heptachlor	S21-Se10699	NCP	%	77			70-130	Pass	
Heptachlor epoxide	S21-Se10699	NCP	%	92			70-130	Pass	
Hexachlorobenzene	S21-Se10699	NCP	%	106			70-130	Pass	
Methoxychlor	S21-Se10699	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S21-Se10699	NCP	%	96			70-130	Pass	
Aroclor-1260	S21-Se10699	NCP	%	108			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Se08660	NCP	%	81			75-125	Pass	
Cadmium	S21-Se08660	NCP	%	97			75-125	Pass	
Chromium	S21-Se08660	NCP	%	115			75-125	Pass	
Copper	S21-Se08660	NCP	%	91			75-125	Pass	
Lead	S21-Se08660	NCP	%	109			75-125	Pass	
Mercury	S21-Se08660	NCP	%	89			75-125	Pass	
Molybdenum	S21-Se08660	NCP	%	94			75-125	Pass	
Nickel	S21-Se08660	NCP	%	100			75-125	Pass	
Selenium	S21-Se08660	NCP	%	105			75-125	Pass	
Silver	S21-Se08660	NCP	%	100			75-125	Pass	
Zinc	S21-Se08660	NCP	%	117			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-Se16451	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S21-Se08377	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Se08377	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-Se08377	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S21-Se16451	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Se16451	NCP	mg/kg	23	22	3.0	30%	Pass	
TRH >C10-C16	S21-Se08377	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Se08377	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Se08377	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Se16451	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Se16451	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Se16451	NCP	mg/kg	0.2	0.2	13	30%	Pass	
m&p-Xylenes	S21-Se16451	NCP	mg/kg	0.8	0.7	16	30%	Pass	
o-Xylene	S21-Se16451	NCP	mg/kg	0.4	0.3	14	30%	Pass	
Xylenes - Total*	S21-Se16451	NCP	mg/kg	1.2	1.0	15	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Se05721	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-Se05721	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S21-Se05721	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N21-Se05058	NCP	mg/kg	9.2	8.4	10	30%	Pass	
Cadmium	N21-Se05058	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	N21-Se05058	NCP	mg/kg	42	46	10	30%	Pass	
Copper	N21-Se05058	NCP	mg/kg	11	10	10	30%	Pass	
Lead	N21-Se05058	NCP	mg/kg	38	31	22	30%	Pass	
Mercury	N21-Se05058	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	N21-Se05058	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	N21-Se05058	NCP	mg/kg	6.5	7.0	7.0	30%	Pass	
Selenium	N21-Se05058	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Silver	N21-Se05058	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Tin	N21-Se05058	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	N21-Se05058	NCP	mg/kg	98	83	17	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Se10462	NCP	%	19	16	16	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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CERTIFICATE OF ANALYSIS 331865

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Ben Buckley
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E2670-2 St Leonards**
Number of Samples	26 Soil
Date samples received	31/08/2023
Date completed instructions received	31/08/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	07/09/2023
Date of Issue	07/09/2023

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Authorised by Asbestos Approved Signatory: Lucy Zhu

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Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		331865-1	331865-2	331865-3	331865-4	331865-5
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH3
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.4-.5	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	90	88	85	86	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		331865-6	331865-7	331865-8	331865-9	331865-10
Your Reference	UNITS	BH3	BH4	BH4	BH5	BH5
Depth		0.3-0.4	0.1-0.2	0.5-06	0.1-0.2	0.3-0.4
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	84	83	86	82	88

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		331865-11	331865-12	331865-13	331865-14	331865-15
Your Reference	UNITS	BH6	BH6	BH7	BH8	BH9
Depth		0-0.1	0.3-0.4	0.1-0.2	0-1.0	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	81	84	83	85	87

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		331865-16	331865-17	331865-18	331865-19	331865-20
Your Reference	UNITS	BH9	BH10	BH11	BH12	BH13
Depth		0.4-0.5	0.1-0.2	0-0.1	0.1-0.2	0.2-0.3
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	93	94	86	91

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		331865-21	331865-22	331865-23	331865-24	331865-25
Your Reference	UNITS	BH14	BH15	D1	D2	TS1
Depth		0.1-0.2	0.1-0.2	-	-	-
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	101%
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	101%
Ethylbenzene	mg/kg	<1	<1	<1	<1	100%
m+p-xylene	mg/kg	<2	<2	<2	<2	100%
o-Xylene	mg/kg	<1	<1	<1	<1	101%
Naphthalene	mg/kg	<1	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	86	82	84	89	97

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		331865-26
Your Reference	UNITS	TB1
Depth		-
Date Sampled		30/08/2023
Type of sample		Soil
Date extracted	-	01/09/2023
Date analysed	-	04/09/2023
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	91

svTRH (C10-C40) in Soil						
Our Reference		331865-1	331865-2	331865-3	331865-4	331865-5
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH3
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.4-.5	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023	02/09/2023	02/09/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	190	<100	230	<100	<100
TRH C_{29} - C_{36}	mg/kg	140	<100	160	<100	<100
Total +ve TRH (C10-C36)	mg/kg	330	<50	380	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	280	<100	330	<100	160
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	280	<50	330	<50	160
Surrogate o-Terphenyl	%	99	97	91	87	88

svTRH (C10-C40) in Soil						
Our Reference		331865-6	331865-7	331865-8	331865-9	331865-10
Your Reference	UNITS	BH3	BH4	BH4	BH5	BH5
Depth		0.3-0.4	0.1-0.2	0.5-06	0.1-0.2	0.3-0.4
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023	02/09/2023	02/09/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	180	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	150	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	320	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	280	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	280	<50
Surrogate o-Terphenyl	%	98	89	92	96	94

svTRH (C10-C40) in Soil						
Our Reference		331865-11	331865-12	331865-13	331865-14	331865-15
Your Reference	UNITS	BH6	BH6	BH7	BH8	BH9
Depth		0-0.1	0.3-0.4	0.1-0.2	0-1.0	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	03/09/2023	03/09/2023	03/09/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	110	<100	<100
TRH C_{29} - C_{36}	mg/kg	150	<100	150	<100	<100
Total +ve TRH (C10-C36)	mg/kg	150	<50	260	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	190	120	210	130	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	190	120	210	130	<50
Surrogate o-Terphenyl	%	95	90	98	88	91

svTRH (C10-C40) in Soil						
Our Reference		331865-16	331865-17	331865-18	331865-19	331865-20
Your Reference	UNITS	BH9	BH10	BH11	BH12	BH13
Depth		0.4-0.5	0.1-0.2	0-0.1	0.1-0.2	0.2-0.3
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	03/09/2023	03/09/2023	03/09/2023	03/09/2023	03/09/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	67	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	390	<100	120
TRH C_{29} - C_{36}	mg/kg	<100	<100	360	140	180
Total +ve TRH (C10-C36)	mg/kg	<50	<50	810	140	300
TRH >C_{10} -C_{16}	mg/kg	<50	<50	150	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	150	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	510	180	240
TRH >C_{34} -C_{40}	mg/kg	<100	<100	270	110	120
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	930	290	360
Surrogate o-Terphenyl	%	87	85	99	97	100

svTRH (C10-C40) in Soil					
Our Reference		331865-21	331865-22	331865-23	331865-24
Your Reference	UNITS	BH14	BH15	D1	D2
Depth		0.1-0.2	0.1-0.2	-	-
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	03/09/2023	03/09/2023	03/09/2023	03/09/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	780	120	110	<100
TRH C_{29} - C_{36}	mg/kg	580	<100	120	<100
Total +ve TRH (C10-C36)	mg/kg	1,400	120	240	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	1,200	180	190	<100
TRH >C_{34} -C_{40}	mg/kg	300	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	1,500	180	190	<50
Surrogate o-Terphenyl	%	89	101	100	90

PAHs in Soil						
Our Reference		331865-1	331865-2	331865-3	331865-4	331865-5
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH3
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.4-.5	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/09/2023	01/09/2023	04/09/2023	04/09/2023	01/09/2023
Date analysed	-	05/09/2023	04/09/2023	05/09/2023	05/09/2023	04/09/2023
Naphthalene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	0.6	<0.1	0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Phenanthrene	mg/kg	1.4	0.2	7.2	<0.1	0.8
Anthracene	mg/kg	0.3	<0.1	2.0	<0.1	0.2
Fluoranthene	mg/kg	3.1	0.5	12	<0.1	2.0
Pyrene	mg/kg	2.8	0.5	11	<0.1	1.8
Benzo(a)anthracene	mg/kg	1.2	0.2	5.2	<0.1	0.8
Chrysene	mg/kg	1.4	0.2	5.4	<0.1	1.0
Benzo(b,j+k)fluoranthene	mg/kg	2.6	0.8	9.0	<0.2	3.4
Benzo(a)pyrene	mg/kg	1.7	0.3	6.0	<0.05	1.1
Indeno(1,2,3-c,d)pyrene	mg/kg	0.8	0.2	2.6	<0.1	0.7
Dibenzo(a,h)anthracene	mg/kg	0.2	<0.1	0.7	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	1	0.2	3.1	<0.1	0.7
Total +ve PAH's	mg/kg	16	3.1	65	<0.05	13
Benzo(a)pyrene TEQ calc (zero)	mg/kg	2.4	<0.5	8.5	<0.5	1.7
Benzo(a)pyrene TEQ calc(half)	mg/kg	2.4	<0.5	8.5	<0.5	1.7
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	2.4	<0.5	8.5	<0.5	1.7
Surrogate p-Terphenyl-d14	%	106	113	116	109	115

PAHs in Soil						
Our Reference		331865-6	331865-7	331865-8	331865-9	331865-10
Your Reference	UNITS	BH3	BH4	BH4	BH5	BH5
Depth		0.3-0.4	0.1-0.2	0.5-06	0.1-0.2	0.3-0.4
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	04/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	05/09/2023	04/09/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	0.6	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	0.9	<0.1
Phenanthrene	mg/kg	<0.1	0.3	0.2	10	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	1.8	<0.1
Fluoranthene	mg/kg	<0.1	0.6	0.5	14	<0.1
Pyrene	mg/kg	<0.1	0.5	0.4	12	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.3	0.2	4.9	<0.1
Chrysene	mg/kg	<0.1	0.3	0.2	5.4	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.9	0.8	9.0	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.3	0.3	5.8	0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	0.2	2.7	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	0.6	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.2	0.2	3.0	<0.1
Total +ve PAH's	mg/kg	<0.05	3.4	3.0	71	0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	8.2	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	8.2	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.5	<0.5	8.2	<0.5
Surrogate p-Terphenyl-d14	%	110	108	108	117	114

PAHs in Soil						
Our Reference		331865-11	331865-12	331865-13	331865-14	331865-15
Your Reference	UNITS	BH6	BH6	BH7	BH8	BH9
Depth		0-0.1	0.3-0.4	0.1-0.2	0-1.0	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.4	0.4	1.4	0.6	0.3
Anthracene	mg/kg	<0.1	<0.1	0.2	0.1	<0.1
Fluoranthene	mg/kg	1.1	0.8	3.2	1.3	0.7
Pyrene	mg/kg	1	0.7	3.1	1.2	0.6
Benzo(a)anthracene	mg/kg	0.4	0.4	1.6	0.6	0.3
Chrysene	mg/kg	0.5	0.4	1.9	0.7	0.4
Benzo(b,j+k)fluoranthene	mg/kg	2	1	6.6	2.2	1
Benzo(a)pyrene	mg/kg	0.58	0.4	2.3	0.72	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	0.3	1.3	0.4	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.4	0.3	1.3	0.4	0.2
Total +ve PAH's	mg/kg	6.7	5.0	23	8.1	4.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.9	0.6	3.4	1.0	0.6
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.9	0.7	3.4	1.1	0.6
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1	0.7	3.4	1.1	0.7
Surrogate p-Terphenyl-d14	%	111	113	120	120	115

PAHs in Soil						
Our Reference		331865-16	331865-17	331865-18	331865-19	331865-20
Your Reference	UNITS	BH9	BH10	BH11	BH12	BH13
Depth		0.4-0.5	0.1-0.2	0-0.1	0.1-0.2	0.2-0.3
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	0.5	0.4	1.5
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Fluoranthene	mg/kg	<0.1	0.2	1.1	0.8	3.1
Pyrene	mg/kg	<0.1	0.2	1	0.7	2.8
Benzo(a)anthracene	mg/kg	<0.1	0.1	0.4	0.4	1.3
Chrysene	mg/kg	<0.1	0.1	0.5	0.4	1.4
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.4	2	1	4.8
Benzo(a)pyrene	mg/kg	<0.05	0.1	0.57	0.4	1.6
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.1	0.4	0.2	1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(g,h,i)perylene	mg/kg	<0.1	0.1	0.3	0.2	0.9
Total +ve PAH's	mg/kg	<0.05	1.5	6.5	4.9	19
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.8	0.6	2.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.9	0.7	2.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.9	0.7	2.5
Surrogate p-Terphenyl-d14	%	117	113	112	113	116

PAHs in Soil					
Our Reference		331865-21	331865-22	331865-23	331865-24
Your Reference	UNITS	BH14	BH15	D1	D2
Depth		0.1-0.2	0.1-0.2	-	-
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	04/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	05/09/2023	04/09/2023	04/09/2023	04/09/2023
Naphthalene	mg/kg	0.2	0.2	<0.1	<0.1
Acenaphthylene	mg/kg	0.9	<0.1	0.2	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.2	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	3.3	0.7	1.7	0.2
Anthracene	mg/kg	1.3	<0.1	0.3	<0.1
Fluoranthene	mg/kg	8.4	0.2	3.6	0.4
Pyrene	mg/kg	8.8	0.2	3.2	0.4
Benzo(a)anthracene	mg/kg	4.7	0.1	1.4	0.2
Chrysene	mg/kg	5.1	0.3	1.6	0.2
Benzo(b,j+k)fluoranthene	mg/kg	10	0.3	5.4	0.9
Benzo(a)pyrene	mg/kg	6.8	0.05	1.8	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	3.1	<0.1	1.1	0.2
Dibenzo(a,h)anthracene	mg/kg	0.3	<0.1	0.2	<0.1
Benzo(g,h,i)perylene	mg/kg	3.8	<0.1	1	0.2
Total +ve PAH's	mg/kg	57	2.1	22	2.8
Benzo(a)pyrene TEQ calc (zero)	mg/kg	9.0	<0.5	2.8	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	9.0	<0.5	2.8	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	9.0	<0.5	2.8	<0.5
Surrogate p-Terphenyl-d14	%	105	126	116	109

Organochlorine Pesticides in soil						
Our Reference		331865-1	331865-2	331865-3	331865-4	331865-5
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH3
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.4-.5	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/09/2023	01/09/2023	04/09/2023	04/09/2023	01/09/2023
Date analysed	-	05/09/2023	04/09/2023	05/09/2023	05/09/2023	04/09/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	119	120	120	122

Organochlorine Pesticides in soil						
Our Reference		331865-6	331865-7	331865-8	331865-9	331865-10
Your Reference	UNITS	BH3	BH4	BH4	BH5	BH5
Depth		0.3-0.4	0.1-0.2	0.5-06	0.1-0.2	0.3-0.4
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	04/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	05/09/2023	04/09/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	115	122	117	119	118

Organochlorine Pesticides in soil						
Our Reference		331865-11	331865-12	331865-13	331865-14	331865-15
Your Reference	UNITS	BH6	BH6	BH7	BH8	BH9
Depth		0-0.1	0.3-0.4	0.1-0.2	0-1.0	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	115	116	124	124	118

Organochlorine Pesticides in soil						
Our Reference		331865-16	331865-17	331865-18	331865-19	331865-20
Your Reference	UNITS	BH9	BH10	BH11	BH12	BH13
Depth		0.4-0.5	0.1-0.2	0-0.1	0.1-0.2	0.2-0.3
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	122	117	113	117	120

Organochlorine Pesticides in soil					
Our Reference		331865-21	331865-22	331865-23	331865-24
Your Reference	UNITS	BH14	BH15	D1	D2
Depth		0.1-0.2	0.1-0.2	-	-
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	04/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	05/09/2023	04/09/2023	04/09/2023	04/09/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	121	130	119	112

Organophosphorus Pesticides in Soil						
Our Reference		331865-1	331865-5	331865-11	331865-15	331865-22
Your Reference	UNITS	BH1	BH3	BH6	BH9	BH15
Depth		0.1-0.2	0-0.1	0-0.1	0-0.1	0.1-0.2
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	122	115	118	130

PCBs in Soil						
Our Reference		331865-1	331865-2	331865-3	331865-4	331865-5
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH3
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.4-.5	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	119	120	121	122

PCBs in Soil						
Our Reference		331865-6	331865-7	331865-8	331865-9	331865-10
Your Reference	UNITS	BH3	BH4	BH4	BH5	BH5
Depth		0.3-0.4	0.1-0.2	0.5-06	0.1-0.2	0.3-0.4
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	115	122	117	119	118

PCBs in Soil						
Our Reference		331865-11	331865-12	331865-13	331865-14	331865-15
Your Reference	UNITS	BH6	BH6	BH7	BH8	BH9
Depth		0-0.1	0.3-0.4	0.1-0.2	0-1.0	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	115	116	124	124	118

PCBs in Soil						
Our Reference		331865-16	331865-17	331865-18	331865-19	331865-20
Your Reference	UNITS	BH9	BH10	BH11	BH12	BH13
Depth		0.4-0.5	0.1-0.2	0-0.1	0.1-0.2	0.2-0.3
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	122	117	113	117	120

PCBs in Soil					
Our Reference		331865-21	331865-22	331865-23	331865-24
Your Reference	UNITS	BH14	BH15	D1	D2
Depth		0.1-0.2	0.1-0.2	-	-
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	121	130	119	112

Acid Extractable metals in soil						
Our Reference		331865-1	331865-2	331865-3	331865-4	331865-5
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH3
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.4-.5	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Arsenic	mg/kg	6	5	14	12	14
Cadmium	mg/kg	<0.4	<0.4	2	<0.4	<0.4
Chromium	mg/kg	12	7	15	11	16
Copper	mg/kg	40	22	53	38	46
Lead	mg/kg	140	25	260	22	95
Mercury	mg/kg	0.2	<0.1	0.2	<0.1	0.3
Nickel	mg/kg	7	3	13	6	8
Zinc	mg/kg	120	34	1,700	68	110

Acid Extractable metals in soil						
Our Reference		331865-6	331865-7	331865-8	331865-9	331865-10
Your Reference	UNITS	BH3	BH4	BH4	BH5	BH5
Depth		0.3-0.4	0.1-0.2	0.5-06	0.1-0.2	0.3-0.4
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Arsenic	mg/kg	13	12	13	5	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	12	9	10	8
Copper	mg/kg	23	43	28	39	22
Lead	mg/kg	17	170	72	140	17
Mercury	mg/kg	<0.1	0.1	<0.1	0.1	<0.1
Nickel	mg/kg	2	11	4	6	3
Zinc	mg/kg	25	280	86	120	27

Acid Extractable metals in soil						
Our Reference		331865-11	331865-12	331865-13	331865-14	331865-15
Your Reference	UNITS	BH6	BH6	BH7	BH8	BH9
Depth		0-0.1	0.3-0.4	0.1-0.2	0-1.0	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Arsenic	mg/kg	6	5	12	11	18
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	9	22	16	16
Copper	mg/kg	81	32	27	46	22
Lead	mg/kg	160	49	120	310	79
Mercury	mg/kg	0.1	<0.1	0.1	0.1	<0.1
Nickel	mg/kg	5	4	4	8	5
Zinc	mg/kg	170	75	120	310	70

Acid Extractable metals in soil						
Our Reference		331865-16	331865-17	331865-18	331865-19	331865-20
Your Reference	UNITS	BH9	BH10	BH11	BH12	BH13
Depth		0.4-0.5	0.1-0.2	0-0.1	0.1-0.2	0.2-0.3
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Arsenic	mg/kg	9	10	6	9	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	0.6	<0.4
Chromium	mg/kg	13	14	12	19	21
Copper	mg/kg	15	33	38	50	40
Lead	mg/kg	17	62	120	240	71
Mercury	mg/kg	<0.1	0.1	<0.1	0.3	0.7
Nickel	mg/kg	3	6	4	8	9
Zinc	mg/kg	9	110	170	360	88

Acid Extractable metals in soil						
Our Reference		331865-21	331865-22	331865-23	331865-24	331865-27
Your Reference	UNITS	BH14	BH15	D1	D2	BH14 - [TRIPLICATE]
Depth		0.1-0.2	0.1-0.2	-	-	0.1-0.2
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Arsenic	mg/kg	9	5	5	9	9
Cadmium	mg/kg	0.6	<0.4	<0.4	2	0.7
Chromium	mg/kg	23	8	10	16	22
Copper	mg/kg	91	29	36	86	100
Lead	mg/kg	200	31	150	180	160
Mercury	mg/kg	0.2	<0.1	0.2	0.2	0.2
Nickel	mg/kg	14	7	6	8	14
Zinc	mg/kg	450	97	110	400	540

Moisture						
Our Reference		331865-1	331865-2	331865-3	331865-4	331865-5
Your Reference	UNITS	BH1	BH1	BH2	BH2	BH3
Depth		0.1-0.2	0.4-0.5	0.1-0.2	0.4-.5	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023	02/09/2023	02/09/2023
Moisture	%	18	17	20	23	27

Moisture						
Our Reference		331865-6	331865-7	331865-8	331865-9	331865-10
Your Reference	UNITS	BH3	BH4	BH4	BH5	BH5
Depth		0.3-0.4	0.1-0.2	0.5-06	0.1-0.2	0.3-0.4
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023	02/09/2023	02/09/2023
Moisture	%	21	18	19	27	21

Moisture						
Our Reference		331865-11	331865-12	331865-13	331865-14	331865-15
Your Reference	UNITS	BH6	BH6	BH7	BH8	BH9
Depth		0-0.1	0.3-0.4	0.1-0.2	0-1.0	0-0.1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023	02/09/2023	02/09/2023
Moisture	%	27	21	29	22	17

Moisture						
Our Reference		331865-16	331865-17	331865-18	331865-19	331865-20
Your Reference	UNITS	BH9	BH10	BH11	BH12	BH13
Depth		0.4-0.5	0.1-0.2	0-0.1	0.1-0.2	0.2-0.3
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023	02/09/2023	02/09/2023
Moisture	%	21	15	17	14	21

Moisture					
Our Reference		331865-21	331865-22	331865-23	331865-24
Your Reference	UNITS	BH14	BH15	D1	D2
Depth		0.1-0.2	0.1-0.2	-	-
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023	02/09/2023
Moisture	%	24	32	6.5	16

Asbestos ID - soils						
Our Reference		331865-1	331865-3	331865-5	331865-7	331865-9
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0.1-0.2	0.1-0.2	0-0.1	0.1-0.2	0.1-0.2
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	06/09/2023	06/09/2023	06/09/2023	06/09/2023	06/09/2023
Sample mass tested	g	Approx. 40g	Approx. 20g	Approx. 50g	Approx. 45g	Approx. 40g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		331865-11	331865-13	331865-14	331865-15	331865-19
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH12
Depth		0-0.1	0.1-0.2	0-1.0	0-0.1	0.1-0.2
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	06/09/2023	06/09/2023	06/09/2023	06/09/2023	06/09/2023
Sample mass tested	g	Approx. 35g	Approx. 45g	Approx. 20g	Approx. 40g	Approx. 45g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils			
Our Reference		331865-21	331865-22
Your Reference	UNITS	BH14	BH15
Depth		0.1-0.2	0.1-0.2
Date Sampled		30/08/2023	30/08/2023
Type of sample		Soil	Soil
Date analysed	-	06/09/2023	06/09/2023
Sample mass tested	g	Approx. 35g	Approx. 25g
Sample Description	-	Brown fine-grained soil & rocks	Black fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

CEC			
Our Reference		331865-1	331865-2
Your Reference	UNITS	BH1	BH1
Depth		0.1-0.2	0.4-0.5
Date Sampled		30/08/2023	30/08/2023
Type of sample		Soil	Soil
Date prepared	-	04/09/2023	04/09/2023
Date analysed	-	05/09/2023	05/09/2023
Exchangeable Ca	meq/100g	8.0	2.1
Exchangeable K	meq/100g	0.3	0.1
Exchangeable Mg	meq/100g	2.1	0.9
Exchangeable Na	meq/100g	<0.1	<0.1
Cation Exchange Capacity	meq/100g	10	3.3

Clay 50-120g			
Our Reference		331865-1	331865-2
Your Reference	UNITS	BH1	BH1
Depth		0.1-0.2	0.4-0.5
Date Sampled		30/08/2023	30/08/2023
Type of sample		Soil	Soil
Date prepared	-	05/09/2023	05/09/2023
Date analysed	-	06/09/2023	06/09/2023
Clay in soils <2µm	% (w/w)	36	61

Misc Inorg - Soil			
Our Reference		331865-1	331865-2
Your Reference	UNITS	BH1	BH1
Depth		0.1-0.2	0.4-0.5
Date Sampled		30/08/2023	30/08/2023
Type of sample		Soil	Soil
Date prepared	-	04/09/2023	04/09/2023
Date analysed	-	04/09/2023	04/09/2023
pH 1:5 soil:water	pH Units	5.1	4.3

Method ID	Methodology Summary
AS1289.3.6.3	Particle Size Distribution using in house method INORG-107 by way of sieving and/or hydrometer sedimentation testing. Clay fraction at <2µm reported.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	331865-5
Date extracted	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			04/09/2023	1	04/09/2023	04/09/2023		04/09/2023	04/09/2023
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	116	108
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	116	108
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	109	101
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	108	99
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	116	107
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	124	116
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	122	113
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	93	1	90	88	2	91	84

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	331865-22
Date extracted	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			[NT]	11	04/09/2023	04/09/2023		04/09/2023	04/09/2023
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	11	<25	<25	0	118	105
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	11	<25	<25	0	118	105
Benzene	mg/kg	0.2	Org-023	[NT]	11	<0.2	<0.2	0	108	99
Toluene	mg/kg	0.5	Org-023	[NT]	11	<0.5	<0.5	0	108	97
Ethylbenzene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	118	106
m+p-xylene	mg/kg	2	Org-023	[NT]	11	<2	<2	0	128	112
o-Xylene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	124	111
Naphthalene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	11	81	84	4	93	80

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	01/09/2023	01/09/2023		[NT]	[NT]
Date analysed	-			[NT]	21	04/09/2023	04/09/2023		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	21	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	21	86	85	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	331865-5
Date extracted	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			03/09/2023	1	02/09/2023	02/09/2023		02/09/2023	02/09/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	116	104
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	190	120	45	114	110
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	140	120	15	114	118
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	116	104
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	280	200	33	114	110
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	114	118
Surrogate o-Terphenyl	%		Org-020	88	1	99	98	1	97	85

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	331865-22
Date extracted	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			[NT]	11	02/09/2023	02/09/2023		03/09/2023	03/09/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	106	106
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	105	107
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	11	150	160	6	100	102
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	11	<50	<50	0	106	106
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	11	190	180	5	105	107
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	11	<100	<100	0	100	102
Surrogate o-Terphenyl	%		Org-020	[NT]	11	95	102	7	92	90

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	01/09/2023	01/09/2023		[NT]	[NT]
Date analysed	-			[NT]	21	03/09/2023	03/09/2023		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	21	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	21	780	1100	34	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	21	580	760	27	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	21	<50	63	23	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	21	1200	1600	29	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	21	300	370	21	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	21	89	88	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	331865-5
Date extracted	-			05/09/2023	1	04/09/2023	04/09/2023		01/09/2023	01/09/2023
Date analysed	-			05/09/2023	1	05/09/2023	05/09/2023		04/09/2023	04/09/2023
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	115
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	117	117
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	105	111
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	1.4	1.5	7	112	118
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.3	0.3	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	3.1	3.4	9	116	93
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	2.8	3.1	10	113	93
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	1.2	1.3	8	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	1.4	1.6	13	115	97
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	2.6	2.9	11	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	1.7	1.9	11	114	106
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.8	0.9	12	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.2	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	1	1.1	10	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	119	1	106	106	0	99	108

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	331865-22
Date extracted	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			[NT]	11	04/09/2023	04/09/2023		04/09/2023	04/09/2023
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	111	124
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	119	133
Fluorene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	113	123
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	11	0.4	0.5	22	114	124
Anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	11	1.1	1.2	9	118	126
Pyrene	mg/kg	0.1	Org-022/025	[NT]	11	1	1.0	0	117	129
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	0.4	0.5	22	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	11	0.5	0.6	18	117	123
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	11	2	2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	11	0.58	0.60	3	120	130
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	11	0.4	0.4	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	11	0.4	0.4	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	11	111	119	7	103	118

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	04/09/2023	04/09/2023		[NT]	[NT]
Date analysed	-			[NT]	21	05/09/2023	05/09/2023		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	21	0.2	0.2	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	21	0.9	0.9	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	21	0.2	0.2	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	21	3.3	3.2	3	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	21	1.3	1.3	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	21	8.4	8.2	2	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	21	8.8	8.6	2	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	4.7	4.5	4	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	21	5.1	5.0	2	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	21	10	9.8	2	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	21	6.8	6.6	3	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	21	3.1	3.0	3	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	0.3	0.8	91	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	21	3.8	3.7	3	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	21	105	107	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	331865-5
Date extracted	-			05/09/2023	1	04/09/2023	04/09/2023		01/09/2023	01/09/2023
Date analysed	-			05/09/2023	1	05/09/2023	05/09/2023		04/09/2023	04/09/2023
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	122
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	117
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	119	119
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	101
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	116
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	131	135
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	133	118
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	111	117
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	112
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	111
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	123	1	114	115	1	106	114

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	331865-22
Date extracted	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			[NT]	11	04/09/2023	04/09/2023		04/09/2023	04/09/2023
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	118	132
HCB	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	112	124
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	95	117
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	101	116
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	112	128
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	133	104
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	139	130
Endrin	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	100	121
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	106	125
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	72	95
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	115	123	7	110	121

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	04/09/2023	04/09/2023		[NT]	[NT]
Date analysed	-			[NT]	21	05/09/2023	05/09/2023		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	21	121	113	7	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	331865-5
Date extracted	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			04/09/2023	1	04/09/2023	04/09/2023		04/09/2023	04/09/2023
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	125	135
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	114
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	119
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	120
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	119
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	109
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	115
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	123	1	114	115	1	106	114

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	[NT]
Date analysed	-			[NT]	11	04/09/2023	04/09/2023		04/09/2023	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	121	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	106	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	105	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	99	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	112	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	97	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	102	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	11	115	123	7	110	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	331865-5
Date extracted	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			04/09/2023	1	04/09/2023	04/09/2023		04/09/2023	04/09/2023
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	127	130
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	123	1	114	115	1	106	114

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	331865-22
Date extracted	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			[NT]	11	04/09/2023	04/09/2023		04/09/2023	04/09/2023
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	127	140
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	11	115	123	7	110	121

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	01/09/2023	01/09/2023		[NT]	[NT]
Date analysed	-			[NT]	21	04/09/2023	04/09/2023		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	21	121	113	7	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	331865-5
Date prepared	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Arsenic	mg/kg	4	Metals-020	<4	1	6	6	0	107	110
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	99	97
Chromium	mg/kg	1	Metals-020	<1	1	12	15	22	108	102
Copper	mg/kg	1	Metals-020	<1	1	40	40	0	107	108
Lead	mg/kg	1	Metals-020	<1	1	140	140	0	108	94
Mercury	mg/kg	0.1	Metals-021	<0.1	1	0.2	0.2	0	106	94
Nickel	mg/kg	1	Metals-020	<1	1	7	7	0	105	100
Zinc	mg/kg	1	Metals-020	<1	1	120	120	0	105	91

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	331865-22
Date prepared	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			[NT]	11	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Arsenic	mg/kg	4	Metals-020	[NT]	11	6	5	18	109	110
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	100	94
Chromium	mg/kg	1	Metals-020	[NT]	11	11	10	10	112	100
Copper	mg/kg	1	Metals-020	[NT]	11	81	82	1	111	108
Lead	mg/kg	1	Metals-020	[NT]	11	160	170	6	111	95
Mercury	mg/kg	0.1	Metals-021	[NT]	11	0.1	0.1	0	108	98
Nickel	mg/kg	1	Metals-020	[NT]	11	5	5	0	108	100
Zinc	mg/kg	1	Metals-020	[NT]	11	170	190	11	108	81

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	01/09/2023	01/09/2023		[NT]	[NT]
Date analysed	-			[NT]	21	01/09/2023	01/09/2023		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	21	9	9	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	21	0.6	0.5	18	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	21	23	21	9	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	21	91	75	19	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	21	200	150	29	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	21	0.2	0.2	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	21	14	16	13	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	21	450	250	57	[NT]	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	331865-2
Date prepared	-			04/09/2023	1	04/09/2023	04/09/2023		04/09/2023	04/09/2023
Date analysed	-			05/09/2023	1	05/09/2023	05/09/2023		05/09/2023	05/09/2023
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	1	8.0	7.9	1	99	96
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	1	0.3	0.3	0	103	96
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	1	2.1	2.0	5	99	94
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	1	<0.1	<0.1	0	97	93

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date prepared	-			04/09/2023	[NT]	[NT]	[NT]	[NT]	04/09/2023	[NT]
Date analysed	-			04/09/2023	[NT]	[NT]	[NT]	[NT]	04/09/2023	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 331865-21 for Zn. Therefore a triplicate result has been issued as laboratory sample number 331865-27.

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 331865

Date Received: 31/08/23
Time Received: 1450
Received By: CZ
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	**Foundation Earth Sciences** **PO Box 4405, East Gosford NSW 2250** **email: ben@foundationes.com.au** **michael@foundationes.com.au; d.gibbs@foundationes.com.au** **ph: +61466 385 221**	**Project Manager:** Ben Buckley **Sampled By:** RW/DG	**Project #: E2670-2** **Project Name: St Leonards**
Delivery Details:	**Envirolab Pty Ltd - Sydney Office** **12 Ashley Street, Chatswood NSW 2067** **email: ahle@envirolab.com.au** **ph: +612 9910 6200**	**Purchase Order #:** N/A **Page #:** 1 OF 2	**Quote #:** **Turnaround: Standard**

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC	%CLAY	Heavy Metals	TRH	BTEXN	PAH	OC	PCB	Asbestos ID	Asbestos %w/w (NEPM /WA)	OPP		Suites	
1	BH1	0.1-0.2	30/08/23	Soil	x	x	x	X	X	X	X	x	x	x		X		Combo6a	Keep
2	BH1	0.4-0.5	30/08/23	Soil	x	x	x	X	X	X	X	x	x					Combo5	Keep
3	BH2	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x	x				Combo5a	Keep
4	BH2	0.4-0.5	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
5	BH3	0-0.1	30/08/23	Soil				X	X	X	X	x	x	x		X		Combo6a	Keep
6	BH3	0.3-0.4	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
7	BH4	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x	x				Combo5a	Keep
8	BH4	0.5-0.6	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
9	BH5	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x	x				Combo5a	Keep
10	BH5	0.3-0.4	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
11	BH6	0-0.1	30/08/23	Soil				X	X	X	X	x	x	x		X		Combo6a	Keep
12	BH6	0.3-0.4	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
13	BH7	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x	x				Combo5a	Keep
14	BH8	0-0.1-0	30/08/23	Soil				X	X	X	X	x	x	x				Combo5a	Keep

Special Directions and Coments:

Relinquished by	DG	Received By	ELS CZ
Signature		Signature	
Date	30/08/23	Date	31/08/23

331865
31/08/23.
1450
GZ

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	**Foundation Earth Sciences** **PO Box 4405, East Gosford NSW 2250** **email: ben@foundationes.com.au** **michael@foundationes.com.au; d.gibbs@foundationes.com.au** **ph: +61466 385 221**	**Project Manager:**	**Ben Buckley**
		Sampled By:	**RW/DG**
Delivery Details:	**Envirolab Pty Ltd - Sydney Office** **12 Ashley Street, Chatswood NSW 2067** **email: ahle@envirolab.com.au** **ph: +612 9910 6200**	**Purchase Order #:**	**N/A**
		Page #:	**2 OF 2**

Project #: E2670-2

Project Name: St Leonards

Quote #:

Turnaround: Standard

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC	%CLAY	Heavy Metals	TRH	BTEXN	PAH	OC	PCB	Asbestos ID	Asbestos %w/w (NEPM /WA)	TRH C6-C10 & BTEXN	OPP	Suites	
15	BH9	0-0.1	30/08/23	Soil				X	X	X	X	x	x	x			X	Combo6a	Keep
16	BH9	0.4-0.5	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
17	BH10	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x					Combo5a	Keep
18	BH11	0-0.1	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
19	BH12	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x	x				Combo5a	Keep
20	BH13	0.2-0.3	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
21	BH14	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x	x				Combo5a	Keep
22	BH15	0.1-0.2	30/08/23	Soil				X	X	X	X	x	x	x			X	Combo6a	Keep
23	D1	-	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
24	D2	-	30/08/23	Soil				X	X	X	X	x	x					Combo5	Keep
25	TS1	-	-	Soil												x			Keep
26	TB1	-	-	Soil												x			Keep

Special Directions and Coments: .

Relinquished by	DG	**Received By**	ELS. GZ
Signature		**Signature**	
Date	30/08/23	**Date**	31/08/23

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Ben Buckley

Sample Login Details

Your reference	E2670-2 St Leonards
Envirolab Reference	331865
Date Sample Received	31/08/2023
Date Instructions Received	31/08/2023
Date Results Expected to be Reported	07/09/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	26 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	15
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils	CEC	Clay 50-120g	Misc Inorg - Soil
BH1-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BH1-0.4-0.5	✓	✓	✓	✓		✓	✓		✓	✓	✓
BH2-0.1-0.2	✓	✓	✓	✓		✓	✓	✓			
BH2-0.4-.5	✓	✓	✓	✓		✓	✓				
BH3-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓			
BH3-0.3-0.4	✓	✓	✓	✓		✓	✓				
BH4-0.1-0.2	✓	✓	✓	✓		✓	✓	✓			
BH4-0.5-06	✓	✓	✓	✓		✓	✓				
BH5-0.1-0.2	✓	✓	✓	✓		✓	✓	✓			
BH5-0.3-0.4	✓	✓	✓	✓		✓	✓				
BH6-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓			
BH6-0.3-0.4	✓	✓	✓	✓		✓	✓				
BH7-0.1-0.2	✓	✓	✓	✓		✓	✓	✓			
BH8-0-1.0	✓	✓	✓	✓		✓	✓	✓			
BH9-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓			
BH9-0.4-0.5	✓	✓	✓	✓		✓	✓				
BH10-0.1-0.2	✓	✓	✓	✓		✓	✓				
BH11-0-0.1	✓	✓	✓	✓		✓	✓				
BH12-0.1-0.2	✓	✓	✓	✓		✓	✓	✓			
BH13-0.2-0.3	✓	✓	✓	✓		✓	✓				
BH14-0.1-0.2	✓	✓	✓	✓		✓	✓	✓			
BH15-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓			
D1	✓	✓	✓	✓		✓	✓				
D2	✓	✓	✓	✓		✓	✓				
TS1	✓										
TB1	✓										

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E2670-2 St Leonards**
Order Number	**E2670-2**
Samples	2

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	**SE253188 R0**
Date Received	31/8/2023
Date Reported	7/9/2023

COMMENTS

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

SIGNATORIES

Akheeqar BENIAMEEN	**Dong LIANG**	**Ly Kim HA**	**Shane MCDERMOTT**
Chemist	Metals/Inorganics Team Leader	Organic Section Head	Inorganic/Metals Chemist

VOC's in Soil [AN433] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	**150**	<45
TRH C29-C36	mg/kg	45	**98**	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	**27**	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	**27**	<25
TRH >C16-C34 (F3)	mg/kg	90	**220**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	**250**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	**250**	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
Naphthalene	mg/kg	0.1	<0.1	<0.1
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	**0.1**	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	**1.8**	**0.2**
Anthracene	mg/kg	0.1	**0.3**	<0.1
Fluoranthene	mg/kg	0.1	**3.9**	**0.3**
Pyrene	mg/kg	0.1	**3.5**	**0.3**
Benzo(a)anthracene	mg/kg	0.1	**1.4**	**0.2**
Chrysene	mg/kg	0.1	**1.6**	**0.2**
Benzo(b&j)fluoranthene	mg/kg	0.1	**2.2**	**0.3**
Benzo(k)fluoranthene	mg/kg	0.1	**0.8**	<0.1
Benzo(a)pyrene	mg/kg	0.1	**1.9**	**0.2**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**1.4**	**0.2**
Dibenzo(ah)anthracene	mg/kg	0.1	**0.2**	<0.1
Benzo(ghi)perylene	mg/kg	0.1	**1.3**	**0.2**
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	**2.7**	**0.3**
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	**2.7**	**0.4**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	**2.7**	**0.3**
Total PAH (18)	mg/kg	0.8	**20**	**2.0**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**20**	**2.0**

OC Pesticides in Soil [AN420] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	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
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	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

PCBs in Soil [AN420] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
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	<0.2	<0.2
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

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
Arsenic, As	mg/kg	1	**5**	**6**
Cadmium, Cd	mg/kg	0.3	<0.3	**1.8**
Chromium, Cr	mg/kg	0.5	**11**	**13**
Copper, Cu	mg/kg	0.5	**33**	**770**
Lead, Pb	mg/kg	1	**150**	**200**
Nickel, Ni	mg/kg	0.5	**4.6**	**5.9**
Zinc, Zn	mg/kg	2	**92**	**420**

Mercury in Soil [AN312] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
Mercury	mg/kg	0.05	**0.17**	**0.15**

Moisture Content [AN002] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 SOIL - 30/8/2023 SE253188.001	SS2 SOIL - 30/8/2023 SE253188.002
% Moisture	%w/w	1	**17.8**	**15.8**

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.
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 AAS or ICP as per USEPA Method 200.8.
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
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.

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.

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STATEMENT OF QA/QC PERFORMANCE

SE253188 R0

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Ben Buckley	Manager	Huong Crawford
Client	FOUNDATION EARTH SCIENCES PTY LTD	Laboratory	SGS Alexandria Environmental
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	ben@foundationes.com.au	Email	au.environmental.sydney@sgs.com
Project	**E2670-2 St Leonards**	SGS Reference	**SE253188 R0**
Order Number	**E2670-2**	Date Received	31 Aug 2023
Samples	2	Date Reported	07 Sep 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	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items

SAMPLE SUMMARY

Sample counts by matrix	2 Soil	Date documentation received	31/8/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	9.4°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

HOLDING TIME SUMMARY

SE253188 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.

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253188.001	LB289795	30 Aug 2023	31 Aug 2023	27 Sep 2023	01 Sep 2023	27 Sep 2023	07 Sep 2023
SS2	SE253188.002	LB289795	30 Aug 2023	31 Aug 2023	27 Sep 2023	01 Sep 2023	27 Sep 2023	07 Sep 2023

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253188.001	LB289801	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	06 Sep 2023	06 Sep 2023
SS2	SE253188.002	LB289801	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	06 Sep 2023	06 Sep 2023

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253188.001	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	07 Sep 2023
SS2	SE253188.002	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	07 Sep 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
SS1	SE253188.001	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	06 Sep 2023
SS2	SE253188.002	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	06 Sep 2023

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253188.001	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	07 Sep 2023
SS2	SE253188.002	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	07 Sep 2023

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253188.001	LB289790	30 Aug 2023	31 Aug 2023	26 Feb 2024	01 Sep 2023	26 Feb 2024	07 Sep 2023
SS2	SE253188.002	LB289790	30 Aug 2023	31 Aug 2023	26 Feb 2024	01 Sep 2023	26 Feb 2024	07 Sep 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
SS1	SE253188.001	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	06 Sep 2023
SS2	SE253188.002	LB289768	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	11 Oct 2023	06 Sep 2023

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253188.001	LB289783	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	13 Sep 2023	06 Sep 2023
SS2	SE253188.002	LB289783	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	13 Sep 2023	06 Sep 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
SS1	SE253188.001	LB289783	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	13 Sep 2023	06 Sep 2023
SS2	SE253188.002	LB289783	30 Aug 2023	31 Aug 2023	13 Sep 2023	01 Sep 2023	13 Sep 2023	06 Sep 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)	SS1	SE253188.001	%	60 - 130%	88
	SS2	SE253188.002	%	60 - 130%	90

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	SS1	SE253188.001	%	70 - 130%	100
	SS2	SE253188.002	%	70 - 130%	104
d14-p-terphenyl (Surrogate)	SS1	SE253188.001	%	70 - 130%	102
	SS2	SE253188.002	%	70 - 130%	105
d5-nitrobenzene (Surrogate)	SS1	SE253188.001	%	70 - 130%	103
	SS2	SE253188.002	%	70 - 130%	106

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	SS1	SE253188.001	%	60 - 130%	90
	SS2	SE253188.002	%	60 - 130%	91

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	SS1	SE253188.001	%	60 - 130%	94
	SS2	SE253188.002	%	60 - 130%	95
d4-1,2-dichloroethane (Surrogate)	SS1	SE253188.001	%	60 - 130%	124
	SS2	SE253188.002	%	60 - 130%	117
d8-toluene (Surrogate)	SS1	SE253188.001	%	60 - 130%	104
	SS2	SE253188.002	%	60 - 130%	103

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	SS1	SE253188.001	%	60 - 130%	94
	SS2	SE253188.002	%	60 - 130%	95
d4-1,2-dichloroethane (Surrogate)	SS1	SE253188.001	%	60 - 130%	124
	SS2	SE253188.002	%	60 - 130%	117
d8-toluene (Surrogate)	SS1	SE253188.001	%	60 - 130%	104
	SS2	SE253188.002	%	60 - 130%	103

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 in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB289795.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB289768.001		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)	%	-	83

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB289768.001		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
		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)	%	-	103
		2-fluorobiphenyl (Surrogate)	%	-	104
		d14-p-terphenyl (Surrogate)	%	-	106

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB289768.001	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

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.

PCBs in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB289768.001		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)	%	-	85

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

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

Sample Number		Parameter	Units	LOR	Result
LB289790.001		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

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB289768.001		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

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB289783.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	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)	%	-	124
		d8-toluene (Surrogate)	%	-	108
		Bromofluorobenzene (Surrogate)	%	-	107
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB289783.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	124

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.

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253200.001	LB289795.014	Mercury	mg/kg	0.05	0.018352066	20.0207225903	200	0
SE253203.005	LB289795.023	Mercury	mg/kg	0.05	-0.00066990290	.0023683436	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253188.001	LB289801.011	% Moisture	%w/w	1	17.8	18.2	36	3
SE253203.005	LB289801.022	% Moisture	%w/w	1	25.362318840	25.868440502	34	2

OC Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253203.005	LB289768.023	Alpha BHC	mg/kg	0.1	9.4788482082	6.6755806440	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	0	0	200	0
		Beta BHC	mg/kg	0.1	1.1756352829	9.6799298356	200	0
		Lindane (gamma BHC)	mg/kg	0.1	3.5731271165	1.4832186670	200	0
		Delta BHC	mg/kg	0.1	2.3065331362	0.0003079842	200	0
		Heptachlor	mg/kg	0.1	1.4778433019	5.2007820333	200	0
		Aldrin	mg/kg	0.1	0.0012488379	0.0012043280	200	0
		Isodrin	mg/kg	0.1	3.8050253361	9.0843971739	200	0
		Heptachlor epoxide	mg/kg	0.1	0.0002311087	9.0345454762	200	0
		Gamma Chlordane	mg/kg	0.1	0.0020216003	0.0017412618	200	0
		Alpha Chlordane	mg/kg	0.1	0.0004415061	0.0002825693	200	0
		Alpha Endosulfan	mg/kg	0.2	5.3754681142	0.0016210956	200	0
		o,p'-DDE*	mg/kg	0.1	5.3754681142	0.0016210956	200	0
		p,p'-DDE	mg/kg	0.1	0.0050973100	0.0031189481	200	0
		Dieldrin	mg/kg	0.2	0.0098259445	0.0143889686	200	0
		Endrin	mg/kg	0.2	4.8636262113	0.0001413622	200	0
		Beta Endosulfan	mg/kg	0.2	7.0155752004	0.0001914131	200	0
		o,p'-DDD*	mg/kg	0.1	0.0001918755	0.0003489491	200	0
		p,p'-DDD	mg/kg	0.1	1.6192374169	0.0001244386	200	0
		Endrin aldehyde	mg/kg	0.1	0.0004598347	7.6322109209	200	0
		Endosulfan sulphate	mg/kg	0.1	6.2398723838	0.0001143011	200	0
		o,p'-DDT*	mg/kg	0.1	1.6192374169	0.0001244386	200	0
		p,p'-DDT	mg/kg	0.1	0.0002062465	0.0002940189	200	0
		Endrin ketone	mg/kg	0.1	0.0036799091	0.0097864941	200	0
		Methoxychlor	mg/kg	0.1	0.0017017056	0.0013575007	200	0
		Mirex	mg/kg	0.1	0.0011976738	0.0080229403	200	0
		trans-Nonachlor	mg/kg	0.1	0.0007558464	0.0001222736	200	0
		Total CLP OC Pesticides	mg/kg	1	0	0	200	0
		Total OC VIC EPA	mg/kg	1	0	0	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.1386651108	0.1324839700	30	5

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253200.001	LB289768.014	Naphthalene	mg/kg	0.1	0.0020364306	0.0014139207	200	0
		2-methylnaphthalene	mg/kg	0.1	0.0023658238	0.0008527869	200	0
		1-methylnaphthalene	mg/kg	0.1	0.0024464100	0.0007651611	200	0
		Acenaphthylene	mg/kg	0.1	0.0040639707	0.0035218168	200	0
		Acenaphthene	mg/kg	0.1	0.0010281067	0.0004781508	200	0
		Fluorene	mg/kg	0.1	0.0016432642	0.0007151076	200	0
		Phenanthrene	mg/kg	0.1	0.0320800912	0.0130379305	200	0
		Anthracene	mg/kg	0.1	0.0039705366	0.0033587715	200	0
		Fluoranthene	mg/kg	0.1	0.0237126379	0.0195626064	200	0
		Pyrene	mg/kg	0.1	0.0253284112	0.0215552076	200	0
		Benzo(a)anthracene	mg/kg	0.1	0.0164344332	0.0162346955	200	0
		Chrysene	mg/kg	0.1	0.0223695478	0.0123946924	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.0223981947	0.0185033172	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	0.0074663439	0	200	0
		Benzo(a)pyrene	mg/kg	0.1	0.0189088190	0.0166341093	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.0162439113	0.0143417500	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 Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253200.001	LB289768.014		Dibenzo(ah)anthracene	mg/kg	0.1	0.00352366790	0.0031749948	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.01847723200	0.0160326799	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.121	0.121	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.242	0.242	134	0
			Total PAH (18)	mg/kg	0.8	0	0	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.534014055	20.5201917441	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.522875738	0.5134956736	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.528834567	50.5236177156	30	1
SE253203.005	LB289768.023		Naphthalene	mg/kg	0.1	0.00207422630	0.0032409157	200	0
			2-methylnaphthalene	mg/kg	0.1	0.00035370490	0.0004174171	200	0
			1-methylnaphthalene	mg/kg	0.1	0.00032262270	0.0003677910	200	0
			Acenaphthylene	mg/kg	0.1	0.00570722410	0.0043583347	200	0
			Acenaphthene	mg/kg	0.1	0.0005891362	0	200	0
			Fluorene	mg/kg	0.1	0.00120665600	0.0012580900	200	0
			Phenanthrene	mg/kg	0.1	0.00107225160	0.0011467439	200	0
			Anthracene	mg/kg	0.1	0.00077178040	0.0009977209	200	0
			Fluoranthene	mg/kg	0.1	0.00161406870	0.0012857481	200	0
			Pyrene	mg/kg	0.1	0.00192591360	0.0015827167	200	0
			Benzo(a)anthracene	mg/kg	0.1	0.00601431050	0.0057679310	200	0
			Chrysene	mg/kg	0.1	0.0010057312	0	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.00178418780	0.0013348714	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	0.0007618018	0	200	0
			Benzo(a)pyrene	mg/kg	0.1	0.00142342080	0.0010162615	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.00116147450	0.0008097023	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	0	0	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.00123084430	0.0007796087	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.121	0.121	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.242	0.242	134	0
			Total PAH (18)	mg/kg	0.8	0	0	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.429408581	20.5521312903	30	25
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.437166936	0.5545518903	30	24
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.452438253	60.5852410084	30	26

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253203.005	LB289768.023		Arochlor 1016	mg/kg	0.2	0	0	200	0
			Arochlor 1221	mg/kg	0.2	0	0	200	0
			Arochlor 1232	mg/kg	0.2	0	0	200	0
			Arochlor 1242	mg/kg	0.2	0	0	200	0
			Arochlor 1248	mg/kg	0.2	0	0	200	0
			Arochlor 1254	mg/kg	0.2	0	0	200	0
			Arochlor 1260	mg/kg	0.2	0	0	200	0
			Arochlor 1262	mg/kg	0.2	0	0	200	0
			Arochlor 1268	mg/kg	0.2	0	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	0	0	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0.141196816	90.1351157554	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 %
SE253200.001	LB289790.014		Arsenic, As	mg/kg	1	8.089743258	78.4895649583	42	5
			Cadmium, Cd	mg/kg	0.3	0.172204532	40.1455962083	200	0
			Chromium, Cr	mg/kg	0.5	6.571828026	3 7.033602875	37	7
			Copper, Cu	mg/kg	0.5	5.014247705	1 4.98896775	40	1
			Nickel, Ni	mg/kg	0.5	1.799924340	2 2.16798075	55	19
			Lead, Pb	mg/kg	1	12.97822360	820.280439291	36	44 ②
			Zinc, Zn	mg/kg	2	16.78835843	375.031794708	34	4
SE253203.005	LB289790.023		Arsenic, As	mg/kg	1	7.281675777	1 7.33373025	44	1
			Cadmium, Cd	mg/kg	0.3	0.0833156563	0.0882035	200	0
			Chromium, Cr	mg/kg	0.5	4.7078975279	4.8020665	41	2
			Copper, Cu	mg/kg	0.5	0.6805988414	0.6151915	107	10

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.

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253203.005	LB289790.023	Nickel, Ni	mg/kg	0.5	1.6713796198	1.65856075	60	1
		Lead, Pb	mg/kg	1	1.5824345272	1.4771295	95	7
		Zinc, Zn	mg/kg	2	4.6037529574	4.9427455	72	7

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253200.001	LB289768.014		TRH C10-C14	mg/kg	20	3.2278936103	2.9243372119	200	0
			TRH C15-C28	mg/kg	45	37.0454667257	28.1032977075	168	0
			TRH C29-C36	mg/kg	45	22.4098773193	21.4783531044	200	0
			TRH C37-C40	mg/kg	100	4.4282158574	7.1324167499	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	3.8442753048	3.0958118187	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	54.7027167698	34.0921461723	200	0
			TRH >C34-C40 (F4)	mg/kg	120	8.5644614385	12.4481295584	200	0
SE253203.005	LB289768.023		TRH C10-C14	mg/kg	20	2.8053020173	2.8373931748	200	0
			TRH C15-C28	mg/kg	45	3.9338410557	4.0167432126	200	0
			TRH C29-C36	mg/kg	45	1.0135457240	2.3533515493	200	0
			TRH C37-C40	mg/kg	100	0.0829021568	0.0695308412	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	2.9791291203	3.1208650659	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	4.6799604674	5.8914016626	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0.1176675774	0.2647520492	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253188.001	LB289783.014	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	-	12.4	13.6	50	9
			d8-toluene (Surrogate)	mg/kg	-	10.4	10.5	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	9.3	50	2
		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
SE253203.005	LB289783.025	Monocyclic	Benzene	mg/kg	0.1	0	0	200	0
		Aromatic	Toluene	mg/kg	0.1	0.0067499264	0.0068798584	200	0
			Ethylbenzene	mg/kg	0.1	0.0005656663	0.0004709467	200	0
			m/p-xylene	mg/kg	0.2	0.0019514530	0.0012728725	200	0
			o-xylene	mg/kg	0.1	0.0005786065	0.0006343444	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	0.0008336391	0.0018748026	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.4821460789	0.4415410207	50	0
			d8-toluene (Surrogate)	mg/kg	-	9.0659489142	9.2431275961	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5419753867	8.2434989224	50	4
		Totals	Total BTEX*	mg/kg	0.6	0	0	200	0
			Total Xylenes*	mg/kg	0.3	0.0025300595	0.0019072170	200	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253188.001	LB289783.014		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	-	12.4	13.6	50	9
			d8-toluene (Surrogate)	mg/kg	-	10.4	10.5	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	9.3	50	2
		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
SE253203.005	LB289783.025		TRH C6-C10	mg/kg	25	0.0236469645	0.1533029897	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.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253203.005	LB289783.025		TRH C6-C9	mg/kg	20	0	0.1019508963	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.48214607	89 0.4415410207	50	0
			d8-toluene (Surrogate)	mg/kg	-	9.065948914	29.2431275961	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.541975386	78.2434989224	50	4
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	0.023646964	50.1533029897	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 %
LB289795.002	Mercury	mg/kg	0.05	0.20	0.2	80 - 120	98

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289768.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	80
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	86
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	83
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	83
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	79
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	85

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289768.002		Naphthalene	mg/kg	0.1	3.6	4	60 - 140	89
		Acenaphthylene	mg/kg	0.1	3.7	4	60 - 140	92
		Acenaphthene	mg/kg	0.1	3.9	4	60 - 140	98
		Phenanthrene	mg/kg	0.1	3.9	4	60 - 140	97
		Anthracene	mg/kg	0.1	3.8	4	60 - 140	95
		Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	93
		Pyrene	mg/kg	0.1	3.8	4	60 - 140	95
		Benzo(a)pyrene	mg/kg	0.1	3.9	4	60 - 140	97
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	102
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	104
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289768.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	102

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 %
LB289790.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	105
	Cadmium, Cd	mg/kg	0.3	4.3	4.81	70 - 130	88
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	104
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	110
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	103
	Zinc, Zn	mg/kg	2	280	273	80 - 120	101

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289768.002		TRH C10-C14	mg/kg	20	45	40	60 - 140	113
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	111
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	85
	TRH F Bands	TRH >C10-C16	mg/kg	25	46	40	60 - 140	115
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	100
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	82

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289783.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.6	5	60 - 140	92
		Toluene	mg/kg	0.1	5.6	5	60 - 140	112
		Ethylbenzene	mg/kg	0.1	4.6	5	60 - 140	92
		m/p-xylene	mg/kg	0.2	9.3	10	60 - 140	93
		o-xylene	mg/kg	0.1	4.8	5	60 - 140	96
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.0	10	70 - 130	120
		d8-toluene (Surrogate)	mg/kg	-	11.0	10	70 - 130	110
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	10	70 - 130	99

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 %
LB289783.002		TRH C6-C10	mg/kg	25	77	92.5	60 - 140	83
		TRH C6-C9	mg/kg	20	66	80	60 - 140	83
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.0	10	70 - 130	120
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	10	70 - 130	99
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	48	62.5	60 - 140	76

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%
SE253185.001	LB289795.004	Mercury	mg/kg	0.05	0.20	0.02530797293	0.2	89

OC Pesticides in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253185.001	LB289768.004	Alpha BHC	mg/kg	0.1	<0.1	4.17276860459	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	0	-	-
		Beta BHC	mg/kg	0.1	<0.1	8.15615051872	-	-
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	2.31722325018	-	-
		Delta BHC	mg/kg	0.1	0.2	0.00017048379	0.2	82
		Heptachlor	mg/kg	0.1	0.2	4.55179673604	0.2	87
		Aldrin	mg/kg	0.1	0.2	0.00016943276	0.2	84
		Isodrin	mg/kg	0.1	<0.1	8.42345154971	-	-
		Heptachlor epoxide	mg/kg	0.1	<0.1	0.00215500160	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	0.00383120659	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	0.00141873473	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	1.65667437827	-	-
		o,p'-DDE*	mg/kg	0.1	<0.1	1.65667437827	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	0.00182349669	-	-
		Dieldrin	mg/kg	0.2	<0.2	0.00071842019	0.2	83
		Endrin	mg/kg	0.2	<0.2	0.00157983030	0.2	92
		Beta Endosulfan	mg/kg	0.2	<0.2	0.00247259329	-	-
		o,p'-DDD*	mg/kg	0.1	<0.1	7.26658525448	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	0.00112601043	-	-
		Endrin aldehyde	mg/kg	0.1	<0.1	4.78906776766	-	-
		Endosulfan sulphate	mg/kg	0.1	<0.1	0.00227206891	-	-
		o,p'-DDT*	mg/kg	0.1	<0.1	0.00112601043	-	-
		p,p'-DDT	mg/kg	0.1	0.2	1.18820045980	0.2	81
		Endrin ketone	mg/kg	0.1	<0.1	0.00017777992	-	-
		Methoxychlor	mg/kg	0.1	<0.1	0.00029105859	-	-
		Mirex	mg/kg	0.1	<0.1	0.00015458531	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	0.00209101334	-	-
		Total CLP OC Pesticides	mg/kg	1	1	0	-	-
		Total OC VIC EPA	mg/kg	1	1	0	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.13542825483	-	90

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253185.001	LB289768.004	Naphthalene	mg/kg	0.1	3.6	0.00282933740	4	89
		2-methylnaphthalene	mg/kg	0.1	<0.1	0.00647243588	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	0.00572690046	-	-
		Acenaphthylene	mg/kg	0.1	3.7	0.00760809962	4	92
		Acenaphthene	mg/kg	0.1	3.9	0.00446038907	4	97
		Fluorene	mg/kg	0.1	<0.1	0.00601400491	-	-
		Phenanthrene	mg/kg	0.1	3.9	0.04251410743	4	98
		Anthracene	mg/kg	0.1	3.8	0.01289562703	4	95
		Fluoranthene	mg/kg	0.1	3.9	0.07989101764	4	95
		Pyrene	mg/kg	0.1	3.8	0.08761575496	4	94
		Benzo(a)anthracene	mg/kg	0.1	<0.1	0.03889127455	-	-
		Chrysene	mg/kg	0.1	0.1	0.05763195711	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.1	0.05257955034	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.01952655366	-	-
		Benzo(a)pyrene	mg/kg	0.1	3.9	0.04518276016	4	97
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.03187646451	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0.00977858612	-	-
		Benzo(ghi)perylene	mg/kg	0.1	0.1	0.05187924872	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	3.9	0	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.0	0.121	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.1	0.242	-	-
		Total PAH (18)	mg/kg	0.8	31	0	-	-

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%
SE253185.001	LB289768.004	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.52510784278	-	102
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.52662315962	-	103
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.54179071178	-	102

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253185.001	LB289768.004		Arochlor 1016	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1260	mg/kg	0.2	0.4	0	0.4	106
			Arochlor 1262	mg/kg	0.2	<0.2	0	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	0	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	0	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0.13799983803	-	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%
SE253185.001	LB289790.004		Arsenic, As	mg/kg	1	50	4.98713794275	50	89
			Cadmium, Cd	mg/kg	0.3	44	0.08577996262	50	88
			Chromium, Cr	mg/kg	0.5	53	6.75480017837	50	93
			Copper, Cu	mg/kg	0.5	60	19.0634810583	50	82
			Nickel, Ni	mg/kg	0.5	51	16.5118990486	50	70 ⑨
			Lead, Pb	mg/kg	1	59	15.9372228828	50	85
			Zinc, Zn	mg/kg	2	78	58.4543340694	50	39 ⑨

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253185.001	LB289768.004		TRH C10-C14	mg/kg	20	48	6.56703626943	40	104
			TRH C15-C28	mg/kg	45	<45	0	40	106
			TRH C29-C36	mg/kg	45	47	19.33815544041	40	70
			TRH C37-C40	mg/kg	100	<100	10.3320725388	-	-
			TRH C10-C36 Total	mg/kg	110	<110	0	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	0	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	49	8.59473575129	40	101
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	49	0	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	0	40	115
			TRH >C34-C40 (F4)	mg/kg	120	<120	15.7352383419	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253185.001	LB289783.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.2	0.03988603240	5	84
			Toluene	mg/kg	0.1	5.5	0.02426123559	5	110
			Ethylbenzene	mg/kg	0.1	4.6	0.01208574317	5	91
			m/p-xylene	mg/kg	0.2	9.2	0.02457148486	10	92
			o-xylene	mg/kg	0.1	4.7	0.01297883807	5	94
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	0.00630733059	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	11.2722306823	10	93
			d8-toluene (Surrogate)	mg/kg	-	11.8	9.20489896523	10	118
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.5	8.74308809429	10	105
		Totals	Total BTEX*	mg/kg	0.6	28	0	-	-
			Total Xylenes*	mg/kg	0.3	14	0.03755032294	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253185.001	LB289783.004		TRH C6-C10	mg/kg	25	110	0.72808997073	92.5	121
			TRH C6-C9	mg/kg	20	97	0.44252621552	80	121
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.3	11.2722306823	10	93
			d8-toluene (Surrogate)	mg/kg	-	11.8	9.20489896523	10	118
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.5	8.74308809429	-	105
		VPH F	Benzene (F0)	mg/kg	0.1	4.2	0.03988603240	-	-

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.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253185.001	LB289783.004	VPH F	TRH C6-C10 minus BTEX (F1)	mg/kg	25	85	0.72808997073	62.5	134

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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source: Sydney.pdf page: 1 SGS Ref: SE253188_COC

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	**Foundation Earth Sciences** **PO Box 4405, East Gosford NSW 2250** **email: ben@foundationes.com.au** **michael@foundationes.com.au; D.gibbs@foundationes.com.au** **ph: +61466 385 221**	**Project Manager:** Ben Buckley **Sampled By:** DG/RW	**Project #:E2670-2** **Project Name: St Leonards**
Delivery Details:	**SGS Laboratories Pty Ltd** **Unit 16, 33 Maddox Street, Alexandria NSW 2015** **email: au.samplereceipt@sgs.com** **ph: +612 8594 0400**	**Purchase Order #:** N/A **Page #:** 1 of 1	**Quote #:** **Turnaround: Standard**

#	Sample ID	Depth	Date Sampled	Matrix	Analytes															Sample Comments
					ph	CEC	%CLAY	Heavy Metals (8)	TRH	BTEXN	PAH		OPP		Asbestos ID	Asbestos %w/w (NEPM /WA)	TRH C6-C10 & BTEXN	OCP PCB	SGS Suites	
1	SS1	-	30/08/23	Soil				X	X	X	X							X	CL16	Keep
2	SS2	-	30/08/23	Soil				X	X	X	X							X	CL16	Keep
3																				
4																				
5																				
6																				
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10																				
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12																				
13																				
14																				
15																				
16																				

SGS EHS Sydney COC

SE253188

Special Directions and Coments:

Relinquished by	DG	**Received By**	
Signature		**Signature**	
Date	30/08/23	**Date**	31/08/23 @ 4:10

SAMPLE RECEIPT ADVICE

SE253188

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E2670-2 St Leonards**
Order Number	**E2670-2**
Samples	2

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 31/8/2023
Report Due	Thu 7/9/2023
SGS Reference	**SE253188**

SUBMISSION DETAILS

This is to confirm that 2 samples were received on Thursday 31/8/2023. Results are expected to be ready by COB Thursday 7/9/2023. Please quote SGS reference SE253188 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	2 Soil	Date documentation received	31/8/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	9.4°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

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

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SAMPLE RECEIPT ADVICE

SE253188

CLIENT DETAILS

Client FOUNDATION EARTH SCIENCES PTY LTD

Project E2670-2 St Leonards

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	SS1	30	26	11	7	10	11	7
002	SS2	30	26	11	7	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

SE253188

CLIENT DETAILS

Client FOUNDATION EARTH SCIENCES PTY LTD

Project E2670-2 St Leonards

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content
001	SS1	1	1
002	SS2	1	1

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 .

Envirolab Services Pty Ltd
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CERTIFICATE OF ANALYSIS 331859

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Ben Buckley
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E2670-2 St Leonards**
Number of Samples	5 Water
Date samples received	31/08/2023
Date completed instructions received	31/08/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	07/09/2023
Date of Issue	06/09/2023

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Results Approved By
Liam Timmins, Organics Supervisor
Loren Bardwell, Development Chemist
Tim Toll, Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in water					
Our Reference		331859-1	331859-2	331859-3	331859-5
Your Reference	UNITS	GW2	GW3	D1	TB1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Water	Water	Water	Water
Date Extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date Analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1

VOCs in water					
Our Reference		331859-1	331859-2	331859-3	331859-5
Your Reference	UNITS	GW2	GW3	D1	TB1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Water	Water	Water	Water
Bromoform	µg/L	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	102	102	102	99
Surrogate Toluene-d8	%	97	97	96	98
Surrogate 4-Bromofluorobenzene	%	103	104	105	105

vTRH(C6-C10)/BTEXN in Water						
Our Reference	UNITS	331859-1	331859-2	331859-3	331859-4	331859-5
Your Reference		GW2	GW3	D1	TS1	TB1
Date Sampled		30/08/2023	30/08/2023	30/08/2023	30/08/2023	30/08/2023
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	01/09/2023	01/09/2023	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	04/09/2023	04/09/2023	04/09/2023	04/09/2023	04/09/2023
TRH C_6 - C_9	µg/L	<10	<10	<10	[NA]	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	[NA]	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	[NA]	<10
Benzene	µg/L	<1	<1	<1	109%	<1
Toluene	µg/L	<1	<1	<1	103%	<1
Ethylbenzene	µg/L	<1	<1	<1	96%	<1
m+p-xylene	µg/L	<2	<2	<2	91%	<2
o-xylene	µg/L	<1	<1	<1	92%	<1
Naphthalene	µg/L	<1	<1	<1	[NA]	<1
Surrogate Dibromofluoromethane	%	102	102	102	103	99
Surrogate Toluene-d8	%	97	97	96	114	98
Surrogate 4-Bromofluorobenzene	%	103	104	105	93	105

svTRH (C10-C40) in Water				
Our Reference		331859-1	331859-2	331859-3
Your Reference	UNITS	GW2	GW3	D1
Date Sampled		30/08/2023	30/08/2023	30/08/2023
Type of sample		Water	Water	Water
Date extracted	-	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	02/09/2023	02/09/2023	02/09/2023
TRH C_{10} - C_{14}	µg/L	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50
Surrogate o-Terphenyl	%	70	65	64

PAHs in Water				
Our Reference		331859-1	331859-2	331859-3
Your Reference	UNITS	GW2	GW3	D1
Date Sampled		30/08/2023	30/08/2023	30/08/2023
Type of sample		Water	Water	Water
Date extracted	-	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	01/09/2023	01/09/2023	02/09/2023
Naphthalene	µg/L	<0.2	<0.2	<0.2
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+k)fluoranthene	µg/L	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	73	71	70

HM in water - dissolved				
Our Reference		331859-1	331859-2	331859-3
Your Reference	UNITS	GW2	GW3	D1
Date Sampled		30/08/2023	30/08/2023	30/08/2023
Type of sample		Water	Water	Water
Date prepared	-	01/09/2023	01/09/2023	01/09/2023
Date analysed	-	01/09/2023	01/09/2023	01/09/2023
Arsenic-Dissolved	µg/L	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1
Copper-Dissolved	µg/L	11	<1	10
Lead-Dissolved	µg/L	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	5	4	6
Zinc-Dissolved	µg/L	33	18	33

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date Extracted	-			01/09/2023	1	01/09/2023	05/09/2023		01/09/2023	[NT]
Date Analysed	-			04/09/2023	1	04/09/2023	06/09/2023		04/09/2023	[NT]
Dichlorodifluoromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	95	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-023	<1	1	<1	<1	0	97	[NT]
2,2-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	101	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	94	[NT]
1,1-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	100	[NT]
Dibromomethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	93	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	89	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	101	[NT]
1,3-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	83	[NT]
1,2-dibromoethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	100	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	89	[NT]
Bromoform	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	94	[NT]
Styrene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	93	[NT]
1,2,3-trichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	1	102	105	3	96	[NT]
Surrogate Toluene-d8	%		Org-023	98	1	97	98	1	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	103	1	103	108	5	99	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/09/2023	1	01/09/2023	05/09/2023		01/09/2023	[NT]
Date analysed	-			04/09/2023	1	04/09/2023	06/09/2023		04/09/2023	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	1	<10	<10	0	96	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	1	<10	<10	0	96	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	100	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	101	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	89	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	94	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	93	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	1	102	105	3	96	[NT]
Surrogate Toluene-d8	%		Org-023	98	1	97	98	1	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	103	1	103	108	5	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	331859-2
Date extracted	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			02/09/2023	1	02/09/2023	02/09/2023		02/09/2023	02/09/2023
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	1	<50	<50	0	103	108
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	1	<100	<100	0	112	121
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	1	<100	<100	0	100	111
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	1	<50	<50	0	103	108
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	1	<100	<100	0	112	121
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	1	<100	<100	0	100	111
Surrogate o-Terphenyl	%		Org-020	79	1	70	70	0	75	80

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	331859-2
Date extracted	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	02/09/2023
Naphthalene	µg/L	0.1	Org-022/025	<0.2	1	<0.2	<0.2	0	75	118
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	100
Fluorene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	111
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	108
Anthracene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	111
Pyrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	116
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	73	106
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	110
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	72	1	73	63	15	78	98

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	331859-2
Date prepared	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Date analysed	-			01/09/2023	1	01/09/2023	01/09/2023		01/09/2023	01/09/2023
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	94	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	95	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	92	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	1	11	10	10	97	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	96	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	99	99
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	5	5	0	92	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	33	33	0	95	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 331659

Date Received: 31/8/23
Time Received: 1450
Received By: CH
Temp: Cool/Ambient 12°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; reece@foundationes.com.au; d.gibbs@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Ben Buckley
		Sampled By:	DG/RW
Delivery Details:	Envirolab Pty Ltd 12 Ashley Street, Chatswood NSW 2067 email: ahle@envirolab.com.au ph: +612 9910 6200	**Purchase Order #:**	N/A
		Page #:	1

					Analytes													Sample Comments
#	Sample ID	Depth	Date Sampled	Matrix	Heavy Metals (8)	TRH	BTEXN	PAH Low	VOC	TRH C6-C10 & BTEXN							Envirolab Suites	
1	GW2	-	30/08/23	Water	X	X	X	X	X								Combo 3L	Keep
2	GW3	-	30/08/23	Water	X	X	X	X	X								Combo 3L	Keep
3	D1	-	30/08/23	Water	X	X	X	X	X								Combo 3L	Keep
4	TS1	-	-	Water					X	X							-	Keep
5	TB1	-	-	Water					X	X							-	Keep
6																		
7																		
8																		
9																		
10																		

Special Directions and Coments:

Relinquished by	DG	Received By	Christine Ho	Method of shipment
Signature		Signature		Courier
Date	30/08/23	Date	31/8/23 1450	

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Ben Buckley

Sample Login Details

Your reference	E2670-2 St Leonards
Envirolab Reference	331859
Date Sample Received	31/08/2023
Date Instructions Received	31/08/2023
Date Results Expected to be Reported	07/09/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	5 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	12
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	HM in water - dissolved
GW2	✓	✓	✓	✓	✓
GW3	✓	✓	✓	✓	✓
D1	✓	✓	✓	✓	✓
TS1		✓			
TB1	✓	✓			

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E2670-2 St. Leonards**
Order Number	**E2670-2**
Samples	1

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	**SE253189 R0**
Date Received	31/8/2023
Date Reported	7/9/2023

COMMENTS

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

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

VOCs in Water [AN433] Tested: 6/9/2023

PARAMETER	UOM	LOR	SS1 WATER - 30/8/2023 SE253189.001
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
Chloromethane	µg/L	5	<5
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3
Bromomethane	µg/L	10	<10
Chloroethane	µg/L	5	<5
Trichlorofluoromethane	µg/L	1	<1
Acetone (2-propanone)	µg/L	10	<10
Iodomethane	µg/L	5	<5
1,1-dichloroethene	µg/L	0.5	<0.5
Acrylonitrile	µg/L	0.5	<0.5
Dichloromethane (Methylene chloride)	µg/L	5	<5
Allyl chloride	µg/L	2	<2
Carbon disulfide	µg/L	2	<2
trans-1,2-dichloroethene	µg/L	0.5	<0.5
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2
1,1-dichloroethane	µg/L	0.5	<0.5
Vinyl acetate*	µg/L	10	<10
MEK (2-butanone)	µg/L	10	<10
cis-1,2-dichloroethene	µg/L	0.5	<0.5
Bromochloromethane	µg/L	0.5	<0.5
Chloroform (THM)	µg/L	0.5	<0.5
2,2-dichloropropane	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
Benzene	µg/L	0.5	<0.5
Dibromomethane	µg/L	0.5	<0.5
1,2-dichloropropane	µg/L	0.5	<0.5
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
2-nitropropane	µg/L	100	<100
Bromodichloromethane (THM)	µg/L	0.5	<0.5
MIBK (4-methyl-2-pentanone)	µg/L	5	<5
cis-1,3-dichloropropene	µg/L	0.5	<0.5
trans-1,3-dichloropropene	µg/L	0.5	<0.5
1,1,2-trichloroethane	µg/L	0.5	<0.5
Toluene	µg/L	0.5	<0.5
1,3-dichloropropane	µg/L	0.5	<0.5
Dibromochloromethane (THM)	µg/L	0.5	<0.5
2-hexanone (MBK)	µg/L	5	<5
1,2-dibromoethane (EDB)	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
Chlorobenzene	µg/L	0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5
Bromoform (THM)	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
Styrene (Vinyl benzene)	µg/L	0.5	<0.5
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
1,2,3-trichloropropane	µg/L	0.5	<0.5
trans-1,4-dichloro-2-butene	µg/L	1	<1
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
Bromobenzene	µg/L	0.5	<0.5
n-propylbenzene	µg/L	0.5	<0.5

VOCs in Water [AN433] Tested: 6/9/2023 (continued)

PARAMETER	UOM	LOR	SS1 WATER - 30/8/2023 SE253189.001
2-chlorotoluene	µg/L	0.5	<0.5
4-chlorotoluene	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
1,3-dichlorobenzene	µg/L	0.5	<0.5
1,4-dichlorobenzene	µg/L	0.3	<0.3
p-isopropyltoluene	µg/L	0.5	<0.5
1,2-dichlorobenzene	µg/L	0.5	<0.5
n-butylbenzene	µg/L	0.5	<0.5
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
1,2,4-trichlorobenzene	µg/L	0.5	<0.5
Naphthalene (VOC)*	µg/L	0.5	<0.5
Hexachlorobutadiene	µg/L	0.5	<0.5
1,2,3-trichlorobenzene	µg/L	0.5	<0.5
Total BTEX	µg/L	3	<3
Total VOC	µg/L	10	<10

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 6/9/2023

PARAMETER	UOM	LOR	SS1 WATER - 30/8/2023 SE253189.001
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 WATER - 30/8/2023 SE253189.001
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320

Low Level PAH (Poly Aromatic Hydrocarbons) in Water [AN420] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 WATER - 30/8/2023 SE253189.001
Naphthalene	µg/L	0.02	**0.03**
2-methylnaphthalene	µg/L	0.01	**0.07**
1-methylnaphthalene	µg/L	0.01	**0.02**
Acenaphthylene	µg/L	0.01	<0.01
Acenaphthene	µg/L	0.01	<0.01
Fluorene	µg/L	0.01	<0.01
Phenanthrene	µg/L	0.01	**0.02**
Anthracene	µg/L	0.01	<0.01
Fluoranthene	µg/L	0.01	**0.03**
Pyrene	µg/L	0.01	**0.03**
Benzo(a)anthracene	µg/L	0.01	**0.01**
Chrysene	µg/L	0.01	**0.02**
Benzo(b&j&k)fluoranthene	µg/L	0.02	**0.03**
Benzo(a)pyrene	µg/L	0.01	**0.02**
Indeno(1,2,3-cd)pyrene	µg/L	0.01	**0.01**
Dibenzo(ah)anthracene	µg/L	0.01	<0.01
Benzo(ghi)perylene	µg/L	0.01	**0.01**
Carcinogenic PAHs (as BaP TEQ) - assume non detects	TEQ (µg/L)	0.012	**0.022**
Total PAH VIC EPA Guidelines (16)*	µg/L	0.1	**0.2**
Total PAH (18)*	µg/L	0.1	**0.3**

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 5/9/2023

PARAMETER	UOM	LOR	SS1 WATER - 30/8/2023 SE253189.001
Arsenic	µg/L	1	<1
Cadmium	µg/L	0.1	<0.1
Copper	µg/L	1	**12**
Chromium	µg/L	1	<1
Nickel	µg/L	1	**5**
Lead	µg/L	1	<1
Zinc	µg/L	5	**32**

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 1/9/2023

PARAMETER	UOM	LOR	SS1 WATER - 30/8/2023 SE253189.001
Mercury	mg/L	0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
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.
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). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoveerable Hydrocarbons - Silica (TRH-Silica) 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	PAH Compounds: The determination the concentration of polynuclear aromatic hydrocarbons (PAH) in solid waste matrices, soils and waters by Gas Chromatography with Mass Spectrometric Detection (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all < LOR results are half the LOR and the third assuming all <LOR results are the LOR.
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.

FOOTNOTES

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

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.

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STATEMENT OF QA/QC PERFORMANCE

SE253189 R0

CLIENT DETAILS

Contact	Ben Buckley
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Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E2670-2 St. Leonards**
Order Number	**E2670-2**
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
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Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE253189 R0**
Date Received	31 Aug 2023
Date Reported	07 Sep 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 (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	1 Water	Date documentation received	31/8/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	9.4°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

HOLDING TIME SUMMARY

SE253189 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.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253189.001	LB289684	30 Aug 2023	31 Aug 2023	06 Sep 2023	01 Sep 2023	11 Oct 2023	07 Sep 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
SS1	SE253189.001	LB289686	30 Aug 2023	31 Aug 2023	27 Sep 2023	01 Sep 2023	27 Sep 2023	01 Sep 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
SS1	SE253189.001	LB289963	30 Aug 2023	31 Aug 2023	26 Feb 2024	05 Sep 2023	26 Feb 2024	05 Sep 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
SS1	SE253189.001	LB289684	30 Aug 2023	31 Aug 2023	06 Sep 2023	01 Sep 2023	11 Oct 2023	07 Sep 2023

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE253189.001	LB290068	30 Aug 2023	31 Aug 2023	13 Sep 2023	06 Sep 2023	13 Sep 2023	07 Sep 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
SS1	SE253189.001	LB290068	30 Aug 2023	31 Aug 2023	13 Sep 2023	06 Sep 2023	13 Sep 2023	07 Sep 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.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	SS1	SE253189.001	%	40 - 130%	58
d14-p-terphenyl (Surrogate)	SS1	SE253189.001	%	40 - 130%	77
d5-nitrobenzene (Surrogate)	SS1	SE253189.001	%	40 - 130%	61

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	SS1	SE253189.001	%	40 - 130%	105
d4-1,2-dichloroethane (Surrogate)	SS1	SE253189.001	%	40 - 130%	101
d8-toluene (Surrogate)	SS1	SE253189.001	%	40 - 130%	103

Volatile Petroleum Hydrocarbons in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	SS1	SE253189.001	%	40 - 130%	105
d4-1,2-dichloroethane (Surrogate)	SS1	SE253189.001	%	60 - 130%	101
d8-toluene (Surrogate)	SS1	SE253189.001	%	40 - 130%	103

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.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result
LB289684.001		Naphthalene	µg/L	0.02	<0.02
		2-methylnaphthalene	µg/L	0.01	<0.01
		1-methylnaphthalene	µg/L	0.01	<0.01
		Acenaphthylene	µg/L	0.01	<0.01
		Acenaphthene	µg/L	0.01	<0.01
		Fluorene	µg/L	0.01	<0.01
		Phenanthrene	µg/L	0.01	<0.01
		Anthracene	µg/L	0.01	<0.01
		Fluoranthene	µg/L	0.01	<0.01
		Pyrene	µg/L	0.01	<0.01
		Benzo(a)anthracene	µg/L	0.01	<0.01
		Chrysene	µg/L	0.01	<0.01
		Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02
		Benzo(a)pyrene	µg/L	0.01	<0.01
		Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01
		Dibenzo(ah)anthracene	µg/L	0.01	<0.01
		Benzo(ghi)perylene	µg/L	0.01	<0.01
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	76
		2-fluorobiphenyl (Surrogate)	%	-	66
		d14-p-terphenyl (Surrogate)	%	-	77

Mercury (dissolved) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB289686.001	Mercury	mg/L	0.0001	<0.0001

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number	Parameter	Units	LOR	Result
LB289963.001	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 Water

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

Sample Number	Parameter	Units	LOR	Result
LB289684.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB290068.001	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
		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

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
LB290068.001	Halogenated Aliphatics	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)	%	-	105
		d8-toluene (Surrogate)	%	-	114
		Bromofluorobenzene (Surrogate)	%	-	80
	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 Water

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

Sample Number	Parameter	Units	LOR

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.

Volatile Petroleum Hydrocarbons in Water (continued) — **Method: ME-(AU)-[ENV]AN433**

Sample Number		Parameter	Units	LOR	Result
LB290068.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	105
		d8-toluene (Surrogate)	%	-	114
		Bromofluorobenzene (Surrogate)	%	-	80

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253286.056	LB289963.009	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
		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	195	0

TRH (Total Recoverable Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253174.001	LB289684.025		TRH C10-C14	µg/L	50	89.81875	60.8375	96	38
			TRH C15-C28	µg/L	200	48.16875	47.325	200	0
			TRH C29-C36	µg/L	200	8.0375	7.375	200	0
			TRH C37-C40	µg/L	200	0.93125	0.99375	200	0
			TRH C10-C40	µg/L	320	146.95625	116.53125	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	116.55625	80.38125	91	37
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	16.455356968	80.38125	91	37
			TRH >C16-C34 (F3)	µg/L	500	23.74375	29.65	200	0
			TRH >C34-C40 (F4)	µg/L	500	6.65625	6.5	200	0

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE252852.008	LB290068.026	Monocyclic	Benzene	µg/L	0.5	0.0120805588	0	200	0
		Aromatic	Toluene	µg/L	0.5	0.12144791400	.2010672865	200	0
			Ethylbenzene	µg/L	0.5	0.00516792090	.1174430443	200	0
			m/p-xylene	µg/L	1	0.01735446400	.2440055012	200	0
			o-xylene	µg/L	0.5	0.00750376510	.1076933310	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.02511539860	.0118037599	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.811144156	11.901452186	30	10
			d8-toluene (Surrogate)	µg/L	-	10.795362336	10.315019303	30	5
			Bromofluorobenzene (Surrogate)	µg/L	-	11.391679188	9.7876230738	30	15
		Totals	Total BTEX	µg/L	3	0	0	200	0
SE253218.036	LB290068.027	Monocyclic	Benzene	µg/L	0.5	0.0297926929	0	200	0
		Aromatic	Toluene	µg/L	0.5	0.041506461	20.0649000604	200	0
			Ethylbenzene	µg/L	0.5	0.006319751	10.0246019021	200	0
			m/p-xylene	µg/L	1	0.013447107	70.0557425535	200	0
			o-xylene	µg/L	0.5	0.005752849	80.0233342942	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.001999636	20.0095465930	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.121455874	22.017925455	30	8
			d8-toluene (Surrogate)	µg/L	-	12.672433645	80.506459749	30	19
			Bromofluorobenzene (Surrogate)	µg/L	-	9.1821723481	10.030187600	30	9
		Totals	Total BTEX	µg/L	3	0	0	200	0

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE253218.036	LB290068.027		TRH C6-C10	µg/L	50	0	5.3568911134	200	0
			TRH C6-C9	µg/L	40	0	2.8256624642	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.121455874	22.017925455	30	8
			d8-toluene (Surrogate)	µg/L	-	12.672433645	80.506459749	30	19
			Bromofluorobenzene (Surrogate)	µg/L	-	9.1821723481	10.030187600	30	9
		VPH F Bands	Benzene (F0)	µg/L	0.5	0.0297926929	0	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	0	5.3568911134	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.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289684.002		Naphthalene	µg/L	0.02	26	40	60 - 140	66
		Acenaphthylene	µg/L	0.01	30	40	60 - 140	74
		Acenaphthene	µg/L	0.01	30	40	60 - 140	76
		Phenanthrene	µg/L	0.01	31	40	60 - 140	78
		Anthracene	µg/L	0.01	31	40	60 - 140	77
		Fluoranthene	µg/L	0.01	32	40	60 - 140	79
		Pyrene	µg/L	0.01	34	40	60 - 140	84
		Benzo(a)pyrene	µg/L	0.01	32	40	60 - 140	79
	Surrogates	d14-p-terphenyl (Surrogate)	%	-	0.8	1.08	39 - 130	78

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289963.002		Arsenic	µg/L	1	20	20	80 - 120	99
		Cadmium	µg/L	0.1	20	20	80 - 120	99
		Chromium	µg/L	1	20	20	80 - 120	102
		Copper	µg/L	1	21	20	80 - 120	105
		Lead	µg/L	1	21	20	80 - 120	107
		Nickel	µg/L	1	20	20	80 - 120	102
		Zinc	µg/L	5	20	20	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB289684.002		TRH C10-C14	µg/L	50	1100	1200	60 - 140	89
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	101
		TRH C29-C36	µg/L	200	1300	1200	60 - 140	108
	TRH F Bands	TRH >C10-C16	µg/L	60	1100	1200	60 - 140	94
		TRH >C16-C34 (F3)	µg/L	500	1300	1200	60 - 140	104
		TRH >C34-C40 (F4)	µg/L	500	700	600	60 - 140	116

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB290068.002	Halogenated	1,1-dichloroethene	µg/L	0.5	48	45.45	60 - 140	106
	Aliphatics	1,2-dichloroethane	µg/L	0.5	52	45.45	60 - 140	115
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	53	45.45	60 - 140	116
	Halogenated	Chlorobenzene	µg/L	0.5	56	45.45	60 - 140	124
	Monocyclic	Benzene	µg/L	0.5	51	45.45	60 - 140	112
	Aromatic	Toluene	µg/L	0.5	51	45.45	60 - 140	112
		Ethylbenzene	µg/L	0.5	50	45.45	60 - 140	109
		m/p-xylene	µg/L	1	97	90.9	60 - 140	106
		o-xylene	µg/L	0.5	48	45.45	60 - 140	106
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.3	10	60 - 140	83
		d8-toluene (Surrogate)	µg/L	-	11.3	10	70 - 130	113
		Bromofluorobenzene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
	Trihalomethan	Chloroform (THM)	µg/L	0.5	58	45.45	60 - 140	129

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB290068.002		TRH C6-C10	µg/L	50	1100	946.63	60 - 140	115
		TRH C6-C9	µg/L	40	940	818.71	60 - 140	115
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.3	10	60 - 140	83
		d8-toluene (Surrogate)	µg/L	-	11.3	10	70 - 130	113
		Bromofluorobenzene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	790	639.67	60 - 140	124

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 (dissolved) in Water

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253132.020	LB289686.004	Mercury	mg/L	0.0001	0.0020	0.004	0.008	100

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE253094A.021	LB289963.004	Arsenic	µg/L	1	20	<1	20	102
		Cadmium	µg/L	0.1	20	<0.1	20	102
		Chromium	µg/L	1	21	<1	20	104
		Copper	µg/L	1	22	<1	20	108
		Lead	µg/L	1	22	<1	20	108
		Nickel	µg/L	1	21	<1	20	103
		Zinc	µg/L	5	20	<5	20	100

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Original	Spike	Recovery%
SE252852.001	LB290068.028	Monocyclic Aromatic	Benzene	µg/L	0.5	0.01328616403	45.45	128
			Toluene	µg/L	0.5	0.01423024119	45.45	131
			Ethylbenzene	µg/L	0.5	0.00500635943	45.45	129
			m/p-xylene	µg/L	1	0.01374542905	90.9	131
			o-xylene	µg/L	0.5	0.00609278228	45.45	129
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	0.05828666953	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.4835073896	-	132
			d8-toluene (Surrogate)	µg/L	-	10.3629143156	-	113
			Bromofluorobenzene (Surrogate)	µg/L	-	11.0922384903	-	113
		Totals	Total BTEX	µg/L	3	0	-	-

MATRIX SPIKE DUPLICATES

SE253189 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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SGS EHS Sydney COC

SE253189

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	**Foundation Earth Sciences** **PO Box 4405, East Gosford NSW 2250** **email: ben@foundationes.com.au** **michael@foundationes.com.au; d.gibbs@foundationes.com.au** **reece@foundationes.com.au** **ph: +61466 385 221**	**Project Manager:** Ben Buckley	**Project #: E2670-2**
		Sampled By: DG/RW	**Project Name: St Leonards**
Delivery Details:	**SGS Laboratories Pty Ltd** **Unit 16, 33 Maddox Street, Alexandria NSW 2015** **email: au.samplereceipt@sgs.com** **ph: +612 8594 0400**	**Purchase Order #:** N/A	**Quote #:**
		Page #: 1	**Turnaround:Standard**

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC	PFAS	HM	TRH	BTEXN	PAH (low)	OC	VOC	Asbestos ID	Asbestos %w/w (NEPM /WA)	Phenol		Suites	
1	SS1	-	30/08/23	Water				X	X	X	X		X					CL12 & CL18	Keep

Special Directions and Coments:

Relinquished by	DG	**Received By**	
Signature		**Signature**	
Date	30/08/23	**Date**	31/08/23 @ 4:10

SAMPLE RECEIPT ADVICE

SE253189

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E2670-2 St. Leonards**
Order Number	**E2670-2**
Samples	1

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 31/8/2023
Report Due	Thu 7/9/2023
SGS Reference	**SE253189**

SUBMISSION DETAILS

This is to confirm that 1 sample was received on Thursday 31/8/2023. Results are expected to be ready by COB Thursday 7/9/2023. Please quote SGS reference SE253189 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	1 Water	Date documentation received	31/8/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	9.4°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

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

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SAMPLE RECEIPT ADVICE

SE253189

CLIENT DETAILS

Client FOUNDATION EARTH SCIENCES PTY LTD

Project E2670-2 St. Leonards

SUMMARY OF ANALYSIS

No.	Sample ID	Low Level PAH (Poly Aromatic Hydrocarbons) in	Mercury (dissolved) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	SS1	23	1	7	9	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 .

APPENDIX I: FIELD RECORD FORMS

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GROUNDWATER MONITORING RECORD FORM

PROJECT INFORMAION			
Client:		Monitoring Well ID:	GW1
Site Address:		Logged By:	JG
Project:	E2670-2	Date:	30/8/23
MONITORING WELL DETAILS			
Depth (m) as constructed:		Depth (m) as measured:	7.75
Finish:		Co-ordinates:	
Condition:		Surveyed levels:	
METHODOLOGY AND EQUIPMENT			
Water measurement device:	Dip water	Reference point:	
Water quality meter:	✓	Reference point to ground surface (mm):	
GW Extraction method:			
GROUNDWATER GAUGING (PRE-PURGE)		GROUNDWATER GAUGING (POST-PURGE)	
SWL (m bgl):	6.8 m	SWL (m bgl):	6.8
Depth to Product (m bgl):		Depth to product (m bgl):	
Product thickness (mm):		Product thickness (mm):	
Time:	10:00	Time:	10:10

PURGING AND PHYSICO-CHEMICAL PARAMETERS

Time (started)	Time (finished)	Volume purged	Pump rate (mL/min)	Temperature (°c)	DO (mg/L)	pH (pH units)	EC (us/cm)	Redox potential (mv)
10:00	10:05	0						
		Stabilisation criteria		± 0.2 °c	± 0.2 mg/L	± 0.1 pH Units	± 5%	± 10 mV

OBSERVATIONS			
Odour:	None	Sheen:	None
Colour/ Turbidity:	brown/darkbrown Sludge	Recent rain (days):	

SAMPLING						
Samples taken:	Primary	Blind		Split	Rinsate	TS/TB
Containers:						
Field filtered:						
Preservation:						

GROUNDWATER MONITORING RECORD FORM

PROJECT INFORMAION			
Client:		Monitoring Well ID:	GW2
Site Address:		Logged By:	DG
Project:	E2570-2	Date:	30/8/23

MONITORING WELL DETAILS			
Depth (m) as constructed:		Depth (m) as measured:	8.65m
Finish:		Co-ordinates:	
Condition:		Surveyed levels:	

METHODOLOGY AND EQUIPMENT			
Water measurement device:		Reference point:	
Water quality meter:		Reference point to ground surface (mm):	
GW Extraction method:			

GROUNDWATER GAUGING (PRE-PURGE)		GROUNDWATER GAUGING (POST-PURGE)	
SWL (m bgl):	3.3m	SWL (m bgl):	4.8
Depth to Product (m bgl):		Depth to product (m bgl):	
Product thickness (mm):		Product thickness (mm):	
Time:	10:40	Time:	11:00

PURGING AND PHYSICO-CHEMICAL PARAMETERS

Time (started)	Time (finished)	Volume purged	Pump rate (mL/min)	Temperature (°c)	DO (mg/L)	pH (pH units)	EC (us/cm)	Redox potential (mv)
10:40	10:45			18.5	26.6	3.56	255.6	105
10:45	10:50			18.4	23.7	3.23	246.9	125
10:50	10:55			18.3	22.8	3.19	246.6	130
10:55	11:00			18.3	22.7	3.15	243.5	139
		Stabilisation criteria		± 0.2 °c	± 0.2 mg/L	± 0.1 pH Units	± 5%	± 10 mV

OBSERVATIONS			
Odour:	None	Sheen:	None
Colour/ Turbidity:	brown/med-high	Recent rain (days):	

SAMPLING					
Samples taken:	Primary	Blind	Split	Rinsate	TS/TB
Containers:	x	x	x		
Field filtered:					
Preservation:					

GROUNDWATER MONITORING RECORD FORM

PROJECT INFORMAION			
Client:		Monitoring Well ID:	GW3
Site Address:		Logged By:	DG
Project:	E2670-2	Date:	30/8/23
MONITORING WELL DETAILS			
Depth (m) as constructed:		Depth (m) as measured:	7.6m
Finish:		Co-ordinates:	
Condition:		Surveyed levels:	
METHODOLOGY AND EQUIPMENT			
Water measurement device:		Reference point:	
Water quality meter:		Reference point to ground surface (mm):	
GW Extraction method:			
GROUNDWATER GAUGING (PRE-PURGE)		GROUNDWATER GAUGING (POST-PURGE)	
SWL (m bgl):	2.8	SWL (m bgl):	4.4
Depth to Product (m bgl):		Depth to product (m bgl):	
Product thickness (mm):		Product thickness (mm):	
Time:	12:00	Time:	12:20

PURGING AND PHYSICO-CHEMICAL PARAMETERS

Time (started)	Time (finished)	Volume purged	Pump rate (mL/min)	Temperature (°c)	DO (mg/L)	pH (pH units)	EC (us/cm)	Redox potential (mv)
12:00	12:05			18.1	10.7	3.18	194.7	95.5
12:05	12:10			17.8	10.2	3.31	194.3	95.5
12:10	12:15			17.7	10.4	3.24	194.1	98.5
		Stabilisation criteria		± 0.2 °c	± 0.2 mg/L	± 0.1 pH Units	± 5%	± 10 mV

OBSERVATIONS			
Odour:	None	Sheen:	None
Colour/ Turbidity:	light brown/ med	Recent rain (days):	

SAMPLING					
Samples taken:	Primary	Blind	Split	Rinsate	TS/TB
Containers:	X				
Field filtered:					
Preservation:					

SITE INSPECTION
DAILY WORKSHEET RECORD

Project name: St Leonards	**Project #:** E2670-2
Client:	**Date:** 30/8/23
Site Address: Holdsworth Avenue, St Leonards	
Site Contact:	**Phone:**
Representative:	
Title:	**Phone:**
Field Notes:	

Start Time: 7:00 am	**Finish Time:** 3:00 pm
Weather: clear	**Rainfall (mm):** None
Wind Direction:	**Wind Speed:** low
Humidity: low	
Odours present: N/A	**Staining Present:** N/A
Environmental and Safety Concerns: None	
Actions: N/A	
Site Safety Induction: N/A	**Stormwater Control:** N/A
Dust Suppression: N/A	**Traffic Control:** N/A
Machinery onsite: N/A	**Equipment onsite:**
	Hand Auger

Additional Observations:

10 Berry Road gates locked

APPENDIX J: CALIBRATION CERTIFICATE

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3/5/23

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **17B100729**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	*Solution Bottle* Number	*Instrument* Reading
1. pH 7.00		pH 7.00		393774	pH 6.88
2. pH 4.00		pH 4.00		399527	pH 3.96
3.ORP		236.26mV		398884 / 400204	241.1 mV
4. EC		2760 uS/cm		396172	2763uS/cm
5. D.O		0.0%		391223	-0.2%
6. Temp		22.3C		MultiTherm	22.0C

Calibrated by: **Christopher Young**

Calibration date: **3/05/2023**

Next calibration due: **2/06/2023**

CY 03-May-23

APPENDIX K: SUMMARY TABLES

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Table K1

Sample Information				Heavy Metals (mg/kg)								TRH (mg/kg)						BTEX (mg/kg)					PAH (mg/kg)				OCP (mg/kg)										OPP (mg/kg)			
Label	Depth (m BGL)	Date	Soil Type	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC	F1 (C_6-C_{10}) [2]	F2 (>C_{10}-C_{16}) [3]	F1 (C_6-C_{10})	F2 (>C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	NAPHTHALENE	BENZO(A)PYRENE	CARINOGENIC PAHs (as Bap TEQ)	TOTAL PAH	NAPHTHALENE	DDT + DDD + DDE	ALDRIN + DIELDRIN	CHLORDANE	ENDOSULFAN	ENDRIN	HEPTACHLOR	HCB	METHOXYCHLOR	TOXAPHENE	DDT	Chlorpyrifos	Other OPP	TOTAL PCB	Asbestos ID
Foundation Earth Sciences PSI 2021																																							
BH1	0.0-0.1	01.09.2021	F - Gravelly Silt	<4	<0.4	12	34	100	0.1	6	200	<25	130	<25	130	970	340	<0.2	<0.5	<1	<3	<1	0.84	1.2	9.8	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH2	0.0-0.1	01.09.2021	F - Silty Clay	<4	<0.4	10	16	28	<0.1	7	63	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.1	<0.5	1.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3	0.1-0.2	01.09.2021	F - Sandy Silt	<4	<0.4	5	16	25	<0.1	3	51	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	<0.05	<0.5	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.1	ND
BH4	0.1-0.2	01.09.2021	F - Silty Clay	<4	<0.4	6	22	65	<0.1	2	51	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	0.4	<0.5	4.3	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
D1	-	01.09.2021	F - Gravelly Silt	4	<0.4	12	41	130	0.2	7	230	<25	73	<25	73	650	260	<0.2	<0.5	<1	<3	<1	0.84	1.2	8.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.1	-
SS1	-	01.09.2021	F - Gravelly Silt	<2	<0.4	8.1	20	62	<0.1	<5	97	<20	84	<20	84	910	440	<0.1	<0.1	<0.1	<0.3	<0.5	1.3	2	12.3	0.9	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	-	<0.1	-
Foundation Earth Sciences DSI 2023																																							
BH1	0.1-0.2	30.08.2023	F - Silty Clay	6	<0.4	12	40	140	0.2	7	120	<25	<50	<25	<50	280	<100	<0.2	<0.5	<1	<1	<1	1.7	2.4	16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	ND
BH1	0.4-0.5	30.08.2023	N - Silty CLAY	5	<0.4	7	22	25	<0.1	3	34	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.3	<0.5	3.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH2	0.1-0.2	30.08.2023	F - Silty Clay	14	2	15	53	260	0.2	13	1,700	<25	<50	<25	<50	330	<100	<0.2	<0.5	<1	<1	<1	6	8.5	65	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH2	0.4-0.5	30.08.2023	N - Silty CLAY	12	<0.4	11	38	22	<0.1	6	68	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH3	0.0-0.1	30.08.2023	F - Silty Clay	14	<0.4	16	46	95	0.3	8	110	<25	<50	<25	<50	160	<100	<0.2	<0.5	<1	<1	<1	1.1	1.7	13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
BH3	0.3-0.4	30.08.2023	N - Silty CLAY	13	<0.4	8	23	17	<0.1	2	25	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH4	0.1-0.2	30.08.2023	F - Silty Clay	12	<0.4	12	43	170	0.1	11	280	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.3	0.5	3.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH4	0.5-0.6	30.08.2023	N - Silty CLAY	13	<0.4	9	28	72	<0.1	4	86	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.3	<0.5	3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH5	0.1-0.2	30.08.2023	F - Silty Clay	5	<0.4	10	39	140	0.1	6	120	<25	<50	<25	<50	280	<100	<0.2	<0.5	<1	<1	<1	5.8	8.2	71	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH5	0.3-0.4	30.08.2023	N - Silty CLAY	8	<0.4	8	22	17	<0.1	3	27	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.05	<0.5	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH6	0.0-0.1	30.08.2023	F - Silty Clay	6	<0.4	11	81	160	0.1	5	170	<25	<50	<25	<50	190	<100	<0.2	<0.5	<1	<1	<1	0.58	1	6.7	<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	ND
BH6	0.3-0.4	30.08.2023	N - Silty CLAY	5	<0.4	9	32	49	<0.1	4	75	<25	<50	<25	<50	120	<100	<0.2	<0.5	<1	<1	<1	0.4	0.7	5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH7	0.1-0.2	30.08.2023	F - Silty Clay	12	<0.4	22	27	120	0.1	4	120	<25	<50	<25	<50	210	<100	<0.2	<0.5	<1	<1	<1	2.3	3.4	23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH8	0.0-0.1	30.08.2023	F - Silty Clay	11	<0.4	16	46	310	0.1	8	310	<25	<50	<25	<50	130	<100	<0.2	<0.5	<1	<1	<1	0.72	1.1	8.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH9	0.0-0.1	30.08.2023	F - Silty Clay	18	<0.4	16	22	79	<0.1	5	70	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.4	0.7	4.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	ND
BH9	0.4-0.5	30.08.2023	N - Silty CLAY	9	<0.4	13	15	17	<0.1	3	9	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH10	0.1-0.2	30.08.2023	F - Silty Clay	10	<0.4	14	33	62	0.1	6	110	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.1	<0.5	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH11	0.0-0.1	30.08.2023	F - Sandy Clay	6	<0.4	12	38	120	<0.1	4	170	<25	150	<25	152	510	270	<0.2	<0.5	<1	<1	<1	0.57	0.9	6.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH12	0.1-0.2	30.08.2023	F - Sandy Clay	9	0.6	19	50	240	0.3	8	360	<25	<50	<25	<50	180	109	<0.2	<0.5	<1	<1	<1	0.4	0.7	4.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH13	0.2-0.3	30.08.2023	F - Clayey Silt	5	<0.4	21	40	71	0.7	9	88	<25	<50	<25	<50	240	120	<0.2	<0.5	<1	<1	<1	1.6	2.5	19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
BH14	0.1-0.2	30.08.2023	F - Silty Clay	9	0.6	23	91	200	0.2	14	450	<25	<50	<25	<50	1,200	297	<0.2	<0.5	<1	<1	<1	6.8	9	57	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	ND
BH15	0.1-0.2	30.08.2023	F - Silty Clay	5	<0.4	8	29	31	<0.1	7	97	<25	<50	<25	<50	180	<100	<0.2	<0.5	<1	<1	<1	0.05	<0.5	2.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ND
D1	-	30.08.2023	-	5	<0.4	10	36	150	0.2	6	110	<25	<50	<25	<50	190	<100	<0.2	<0.5	<1	<1	<1	1.8	2.8	22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
D2	-	30.08.2023	-	9	2	16	86	180	0.2	8	400	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.2	<0.5	2.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	-	<0.1	-
SS1	-	30.08.2023	-	5	<0.3	11	33	150	0.2	4.6	92	<25	27	<25	27	220	<120	<0.1	<0.1	<0.1	<0.3	<0.1	1.9	2.7	20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	-	-	<1	-
SS2	-	30.08.2023	-	6	1.8	13	770	200	0.2	5.9	420	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	0.2	0.3	2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	-	-	<1	-
BH14 (Triplicate)	-	-	-	9	0.7	22	100	160	0.2	14	540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Limit of Resolution (LOR)				4	0.4	1	1	1	0.1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	1	0.05	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.1	0.1
NEPM (2013) HIL B				**500**	**150**	**500**	**30,000**	**1,200**	**120**	**1,200**	**60,000**													**4**	**400**		**600**	**10**	**90**	**400**	**20**	**10**	**15**	**500**	**30**					**1**	
NEPM (2013) EIL & ESLs [1]				100																		170												180					
Fill (BH1 0.1-0.2)						410	170	1200		180	300																												
Nat (BH1 0.4-0.5)						410	80	1100		30	130																												
NEPM (2013) ESLs - (Fine Grain Soil - Clay / Silt) [1]												180	120			1,300	5,600	65	105	125	45		0.7																
NEPM (2013) HSL A & HSL B (SILT)																																							
0m to <1m												40	230					0.6	390	NL	95	4																	
Soil Saturation Concentration (Csat)												910	570					440	640	69	330	10																	
NEPM (2013) HSL A (CLAY)																																							
0m to <1m												50	280					0.7	480	NL	110	5																	
Soil Saturation Concentration (Csat)												850	560					430	630	68	330	10																	
NEPM (2013) Management Limit (Fine Grain Soil)														800	1,000	3,500	10,000																						
NEPM (2013) HSL - Asbestos																																							Detected

Notes

1 Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2 To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
3 To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
NL Calculated HSL is Non Limiting per NEPM (2013)
ND Not detected

Table K2

Sample Information		Heavy Metals								TRH		BTEX							PAH					
SAMPLE ID	Date	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC	F1 (C_6-C_{10}) [2]	F2 (>C_{10}-C_{16}) [3]	BENZENE	TOLUENE	ETHYL BENZENE	M/P-XYLENE	O-XYLENE	NAPHTHALENE	TOTAL-XYLENE	BENZO(A)PYRENE	ANTHRACENE	PHENANTHRENE	FLUORANTHENE	NAPHTHALENE
FES DSI 2023																								
GW2	30.08.2023	<1	<0.1	<1	**11**	<1	<0.05	5	**33**	<10	<50	<1	<1	<1	<2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.2
GW3	30.08.2023	<1	<0.1	<1	<1	<1	<0.05	4	**18**	<10	<50	<1	<1	<1	<2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.2
D1	30.08.2023	<1	<0.1	<1	**10**	<1	<0.05	6	**33**	<10	<50	<1	<1	<1	<2	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.2
SS1	30.08.2023	<1	<0.1	<1	**12**	<1	<0.1	6	**32**	<50	<60	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1.5	0.02	<0.01	0.02	0.03	0.03
Limit of Resolution (LOR)		1	0.1	1	1	1	0.05	1	1	100	100	1	1	1	2	1	1	-	0.1	0.1	0.1	0.1	0.2
GILs - NEPM (2013) - Groundwater Investigation Levels																								
Marine Water [2]		-	0.70	4.40	1.30	4.40	0.10	7.00	15.00			500	-	-	-	-			-	-	-	-	50
Groundwater HSLs - NEPM (2013) HSL A & B (CLAY)																								
2m to <4m										NL	NL	5,000	NL	NL	-	-	NL	NL						
4m to <8m										NL	NL	5,000	NL	NL	-	-	NL	NL						
8m +										NL	NL	5,000	NL	NL	-	-	NL	NL						
Solubility Limit										9,000	3,000	59,000	61,000	3,900	-	-	170	21,000						

Notes

1	All units are in ug/L
2	Investigation Levels apply to typical slightly-moderately disturbed systems
3	QSAR derived, statistical distribution method used, 95% trigger values applied as per ANZECC 2000
4	Investigation levels are taken from the health values of the Australian Drinking Water Guidelines NHMRC 2011
NL	Non Limiting

Table K3

Sample Information		ALKANES								ALKENES					BENZENES											Other VOC	
SAMPLE ID	GME DATE	TETRACHLOROMETHANE (CARBON TETRACHLORID	TRICHLOROMETHANE (CHLOROFORM)	BROMODICHLOROMETHANE	TRIHALOMETHANES (TOTAL)	1, 2-DICHLOROETHANE	CYCLOHEXANE	DICHLOROMETHANE (METHYLENE CHLORIDE)	1,1,2-TRICHLOROETHANE	CHLOROETHENE (VINYL CHLORIDE)	TRICHLOROETHENE	CIS-1,2-DICHLOROETHENE	1,1-DICHLOROETHENE	TETRACHLOROETHENE (PCE PERCHLOROETHENE)	CHLOROBENZENE	1,2-DICHLOROBENZENE	1,3-DICHLOROBENZENE	1,4-DICHLOROBENZENE	1,2,3-TRICHLOROBENZENE	1,2,4-TRICHLOROBENZENE	ISOPROPYL BENZENE (CUMENE)	SEC-BUTYL BENZENE	1,3,5-TRIMETHYL BENZENE	N-PROPYL BENZENE	N-BUTYL BENZENE	1.2.4 - TRIMETHYLBENZENE	4-ISOPROPYL TOULENE	HEXACHLOROBUTADIENE
FES DSI 2023																												
GW2	30.08.2023	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW3	30.08.2023	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
D1	30.08.2023	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SS1	30.08.2023	<0.5	<0.5	<0.5	-	<0.5	-	<5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Limit of Resolution (LOR)		1	1			1			1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GILs - NEPM (2013) - Groundwater Investigation Levels																												
Marine Waters [2]									**1,900**									**60**		**20**								
Marine Low reliability										**330.00**																		

Notes

1	All units are in ug/L
2	Investigation levels apply to typical slightly-moderately disturbed systems
4	Investigation levels are taken from the health values of the Australian Drinking Water Guidelines NHMRC 2011
-	NV - no derived value
-	" - " Not Tested
a:	QSAR derived, statistical distribution method used, 99% trigger value applied as per ANZECC guidelines for slightly-moderately disturbed systems
b:	QSAR derived, statistical distribution method used, 95% trigger value applied as per ANZECC guidelines for slightly-moderately disturbed systems
c:	US EPA Region 9 RSL (MCLs) utilised in absence of criteria from NEPM 2013. MCLs are legally enforceable USEPA drinking water standards
d:	US EPA Region 9 RSL (Tapwater) utilised in absence of criteria from NEPM 2013. Non cancer

Table K4

	Heavy Metals (mg/kg)								TRH (mg/kg)					BTEX (mg/kg)				PAH (mg/kg)		OCP (mg/kg)		OPP	PCB (mg/kg)	
FOUNDATION EARTH SCIENCES	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC	C6-C9	C10-C14	C15-C28	C29-C36	C10-C36 [3]	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	BENZO(a)PYRENE	TOTAL PAH	Other OCPs	TOTAL ENDOSULFAN [11]	CHLORPYRIPHOS (OPP)	TOTAL PCB	ASBESTOS ID (Presence / Absence
NSW EPA Waste Criteria (No Leachates)																								
CT1	100	20	100	-	100	4	40	-	NA	-	-	-	NA	10	288	600	1000	0.8	200	<50	60	4	<50	Detected
CT2	400	80	400	-	400	16	160	-	NA	-	-	-	NA	40	1152	2400	4000	3.2	800	<50	240	16	<50	
NSW EPA Waste Criteria (With Leachates)																								
SCC1	500	100	1900	-	1500	50	1050	-	650	-	-	-	10000	18	518	1080	1800	10	200	Total = <50**	108	7.5	<50**	
SCC2	2000	400	7600	-	6000	200	4200	-	2600	-	-	-	40000	72	2073	4320	7200	23	800	Total = <50**	432	30	<50**	
Limit of Resolution (LOR)	4	0.4	5	5	5	0.10	5	5	25	50	100	100	NA	0.2	0.5	1	3	0.05	0.05	0.1	0.1	0.1	0.1	
Sample ID	**Date Sampled**	**Depth**																						
FES PSI 2021																								
BH1	01.09.2021	0.0-0.1	<4	<0.4	12	34	100	0.1	6	200	<25	83	580	620	1,300	<0.2	<0.5	<1	<3	0.84	9.8	<0.1	<0.1	-	<0.1	ND
BH2	01.09.2021	0.0-0.1	<4	<0.4	10	16	28	<0.1	7	63	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	0.1	1.1	-	-	-	-	-
BH3	01.09.2021	0.1-0.2	<4	<0.4	5	16	25	<0.1	3	51	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	<0.05	0.6	<0.1	<0.1	-	<0.1	ND
BH4	01.09.2021	0.1-0.2	<4	<0.4	6	22	65	<0.1	2	51	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	0.4	4.3	-	-	-	-	-
D1	01.09.2021	-	4	<0.4	12	41	130	0.2	7	230	<25	<50	340	500	840	<0.2	<0.5	<1	<3	0.84	8.8	<LOR	<LOR		<LOR	-
SS1	01.09.2021	-	<2	<0.4	8.1	20	62	<0.1	<5	97	<20	50	520	330	900	<0.1	<0.1	<0.1	<0.3	1.3	12.3	<LOR	<LOR		<LOR	-
FES DSI 2023																							<0.1	ND
BH1	30.08.2023	0.1-0.2	6	<0.4	12	40	140	0.2	7	120	<25	<50	190	140	330	<0.2	<0.5	<1	<1	1.7	16	<0.1	<0.1	<0.1	<0.1	ND
BH2	30.08.2023	0.1-0.2	14	2	15	53	260	0.2	13	1,700	<25	<50	230	160	380	<0.2	<0.5	<1	<1	6	65	<0.1	<0.1	-	<0.1	ND
BH3	30.08.2023	0.0-0.1	14	<0.4	16	46	95	0.3	8	110	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	1.1	13	<0.1	<0.1	<0.1	<0.1	ND
BH4	30.08.2023	0.1-0.2	12	<0.4	12	43	170	0.1	11	280	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	0.3	3.4	<0.1	<0.1	-	<0.1	ND
BH5	30.08.2023	0.1-0.2	5	<0.4	10	39	140	0.1	6	120	<25	<50	180	150	320	<0.2	<0.5	<1	<1	5.8	71	<0.1	<0.1	-	<0.1	ND
BH6	30.08.2023	0.0-0.1	6	<0.4	11	81	160	0.1	5	170	<25	<50	<100	150	150	<0.2	<0.5	<1	<1	0.58	6.7	<0.1	<0.1	<0.1	<0.1	ND
BH7	30.08.2023	0.1-0.2	12	<0.4	22	27	120	0.1	4	120	<25	<50	110	150	260	<0.2	<0.5	<1	<1	2.3	23	<0.1	<0.1	-	<0.1	ND
BH8	30.08.2023	0.0-0.1	11	<0.4	16	46	310	0.1	8	310	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	0.72	8.1	<0.1	<0.1	-	<0.1	ND
BH9	30.08.2023	0.0-0.1	18	<0.4	16	22	79	<0.1	5	70	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	0.4	4.3	<0.1	<0.1	<0.1	<0.1	ND
BH10	30.08.2023	0.1-0.2	10	<0.4	14	33	62	0.1	6	110	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	0.1	1.5	<0.1	<0.1	-	<0.1	ND
BH11	30.08.2023	0.0-0.1	6	<0.4	12	38	120	<0.1	4	170	<25	67	390	360	810	<0.2	<0.5	<1	<1	0.57	6.5	<0.1	<0.1	-	<0.1	ND
BH12	30.08.2023	0.1-0.2	9	0.6	19	50	240	0.3	8	360	<25	<50	<100	140	140	<0.2	<0.5	<1	<1	0.4	4.9	<0.1	<0.1	-	<0.1	ND
BH13	30.08.2023	0.2-0.3	5	<0.4	21	40	71	0.7	9	88	<25	<50	120	180	300	<0.2	<0.5	<1	<1	1.6	19	<0.1	<0.1	-	<0.1	ND
BH14	30.08.2023	0.1-0.2	9	0.6	23	91	200	0.2	14	450	<25	<50	780	580	1,400	<0.2	<0.5	<1	<1	6.8	57	<0.1	<0.1	-	<0.1	ND
BH15	30.08.2023	0.1-0.2	5	<0.4	8	29	31	<0.1	7	97	<25	<50	120	<100	120	<0.2	<0.5	<1	<1	0.05	2.1	<0.1	<0.1	<0.1	<0.1	ND
D1	30.08.2023	-	5	<0.4	10	36	150	0.2	6	110	<25	<50	110	120	240	<0.2	<0.5	<1	<1	1.8	22	<LOR	<LOR	-	<0.1	-
D2	30.08.2023	-	9	2	16	86	180	0.2	8	400	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	0.2	2.8	<LOR	<LOR	-	<0.1	-
SS1	30.08.2023	-	5	<0.3	11	33	150	0.2	4.6	92	<20	<20	150	98	250	<0.1	<0.1	<0.1	<0.3	1.9	20	<LOR	<LOR	-	<1	-
SS2	30.08.2023	-	6	1.8	13	770	200	0.2	5.9	420	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	0.2	2	<LOR	<LOR	-	<1	-
BH14 - Triplicate	30.08.2023	-	9	0.7	22	100	160	0.2	14	540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes

1 CT1,
2 SCC1,
3 Concent
4 Concent
5 Concent
6 Concent
7 Concentrations in YELLOW indicate the presence of Asbestos
8 NA = Not Applicable
9 " - " Not Tested
10 *** Indicates Retest Result
11 Total Endosulfan = Endosulfan I, Endosulfan II and Endosulfan Sulphate

APPENDIX L: HISTORICAL AERIAL PHOTOGRAPHS

© Foundation Earth Sciences 2023

Historical Aerial Photographs

2-10 Berry Road, 14-16
Marshall Avenue, 5-9
Holdsworth Avenue,
St Leonards NSW 2065

1943:

60m
© Department of Customer Service 2020 | Esri, HERE, Garmin, USGS
esri

1965:

60m
© Department of Customer Service 2020 | Esri, HERE, Garmin, USGS
POWERED BY esri

1971:

60m
© Department of Customer Service 2020 | Esri, HERE, Garmin, USGS
esri

1986:

60m
© Department of Customer Service 2020 | Esri, HERE, Garmin, USGS
esri

1994:

60m
© Department of Customer Service 2020 | Esri, HERE, Garmin, USGS
POWERED BY esri

2005:

60m
© Department of Customer Service 2020 | Esri, HERE, Garmin, USGS
POWERED BY esri

Current (Six Maps):

APPENDIX M: LAND TITLE INFORMATION

© Foundation Earth Sciences 2023

Title Search

18/08/2021 01:59 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 38/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:00 PM	2	27/1/2017

LAND

LOT 38 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

MARSHALL LAND PTY LTD (T AM103126)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A265905 COVENANT

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
18/08/2021 02:02 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:02PM

FOLIO: 38/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3169 FOL 33

Recorded	Number	Type of Instrument	C.T. Issue
17/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
21/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
26/3/2001	7496726	TRANSFER	EDITION 1
27/10/2015	AJ933063	CAVEAT	
29/4/2016	AK387264	WITHDRAWAL OF CAVEAT	
29/4/2016	AK387265	CAVEAT	
11/1/2017	AM49087	WITHDRAWAL OF CAVEAT	
11/1/2017	AM49088	CAVEAT	
27/1/2017	AM103126	TRANSFER	EDITION 2

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R368849 /Doc:DL AM103126 /Rev:31-Jan-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:14 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
Holman Fenwick Willan

(1)

TRANSFER

New South Wales
Real Property Act 1900

AM103126B

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

STAMP DUTY Office of State Revenue use only

Office of State Revenue (NSW)
Client No: 136378671 4602
Duty: $10.00 Trans No: 8989116-001
Asst details: TS ON AGREEMENT FOR SALE OF LAND

(A) **TORRENS TITLE** 38/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
1W	HOLMAN FENWICK WILLAN Level 3A, 1 Bligh Street Sydney NSW 2000 Tel: +61 (0)2 9320 4600 Reference (optional): 79539/1	T TW

(C) **TRANSFEROR** MENKA MONACO

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $per contract dated 15 December 2016 and as regards the land

(E) **ESTATE** specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** MARSHALL LAND PTY LTD (ACN 611 458 925)

(I) **TENANCY:**

DATE ..... / ..... / .....

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness: L Mon

Name of witness: Louie Monaco
Address of witness: 2 Berry Rd
St Leonards
N.S.W 2065

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: M. Monaco

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: WINNIE YING XIN LIANG
Capacity: Solicitor for the transferee

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1220036 Full Name: WINNIE YING XIN LIANG Signature:

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

Req:R505074 /Doc:CT 03169-033 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 12:37 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

New South Wales.

S 9154—1

[CERTIFICATE OF TITLE.]

Appn. No. 3083.
Reference to Last Certificate
Vol. 2699 Fol. 117

REGISTER BOOK,
VOL. 3169 FOL. 33

S
GRY

CANCELLED W
ON ISSUE OF NEW FOLIO 38/2/7259.

Katherine Lily Harris wife of Richard Charles Harris of North Sydney, Salesman Transferee under Instrument of Transfer from John Winder No A 6448114 is now the proprietor of an Estate in Fee Simple

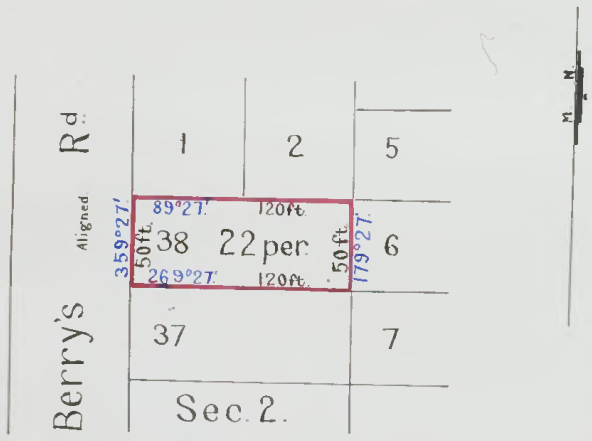
subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens and interests, as are notified hereon, in That piece of land situated at St Leonards. in the Municipality of Lane Cove. Parish of Willoughby, and County of Cumberland containing Twenty two perches. , or thereabouts, as shown in the Plan hereon and therein edged red, being Lot 38 of Section 2. in a Plan deposited in the Land Titles Office, Sydney, No. 7259 and being part of 524 acres (Portion 338 of Parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to Edward Wollstonecraft by Crown Grant dated the thirtieth day of June one thousand eight hundred and twenty five

In witness whereof, I have herennto signed my name and affixed my Seal, this 5th day of April 1921

Signed in the presence of L. Mulay

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES



Scale 80ft to one inch.

1677814
R.S.A.
30.
1906

Notification referred to:

CV

Instrument of Transfer No A 265905 comprising inter alia the land above described contains a covenant by John Winder the transferee thereunder.

(a) That no building shall be erected within fifteen feet of the building line of Berry's Road.

(b) That any building or buildings erected on the lots therein described shall be erected to front the said road.

(c) That only one house or a pair of semi-detached houses shall be erected upon each of the said lots.

(d) That any building erected on the said lots shall be constructed in a proper and workmanlike manner of brick and stone and concrete or brick or stone or concrete or brick and concrete or stone and concrete with slate or tiled roof at a cost of not less than Five hundred pounds if only one house and of not less than nine hundred pounds if a pair of semi-detached houses are erected on the said lots

(e) That no building erected upon the said lots shall be used for any noxious or offensive trade or purpose which shall be a damage nuisance or annoyance to the owners or occupiers of adjoining property or the neighbourhood.

(f) That all buildings erected on the said lots shall not at any time be used and occupied except as private dwellings.

(g) That the said lots shall not be used at any time as a quarry and the stone thereon shall not be worked or quarried except for the purpose of cutting down as far as is necessary and quarrying the same away so as to bring the land upon which it is situated to the level or natural contour of the surrounding land and so as to prepare the said lots for building purposes.

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

No. C647432 APPLICATION BY TRANSMISSION
Public Trustee and Euphemia Agnes Dan wife of George Dan of Drows Nest Farmer
as joint tenants are now the registered Proprietors of the Land within described in pursuance of the above Application Produced 14th April 1938 and entered 3rd May 1938 at 12 o'clock noon. the
Roy W Wills
REGISTRAR GENERAL.

REGISTRAR GENERAL NEW SOUTH WALES

No. C647433 CAVEAT dated 14th April 1938
by the Registrar General.
Produced 14th April 1938
entered 3rd May 1938
at 12 o'clock noon.
Roy W Wills
REGISTRAR GENERAL.

REGISTRAR GENERAL NEW SOUTH WALES

C647432
3

Req:R505074 /Doc:CT 03169-033 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 12:37 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

The within Caveat No. C 642433 is hereby withdrawn
Dated 19th October 1938
Roy W Wills
REGISTRAR GENERAL.

No. C 711938 TRANSFER dated 4th October 1938
from the said Public Trustee and Euphemia Agnes Dan
to Frederick Ludwell Webb of Summer Hill
Clerk and Elizabeth Webb his wife as Joint
Tenants of the land within described
Produced 10th October 1938 and entered 19th October 1938
at 10 o'clock in the fore noon.
Roy W Wills
REGISTRAR GENERAL

No. C 711939 MORTGAGE dated 4th October 1938
from the said Frederick Ludwell Webb and Elizabeth
Webb to Hassett Jacobs and Florence Jacobs both
of Summer Hill Spinsters
Produced 10th October 1938 and entered 19th October 1938
at 10 o'clock in the fore noon.
Roy W Wills
REGISTRAR GENERAL

No. E831050 DISCHARGE of within mortgage
No. C 711939 dated 4th March 1953
Produced and entered 30th March 1953
at 12 o'clock in the noon.
J. Wells
REGISTRAR GENERAL

Elizabeth Webb
, the surviving joint tenant, is
now registered sole proprietor of the land within described.
See Notice of Death (Section 101) No. H760558
Entered 27th April 1961.
Jan Watson
REGISTRAR GENERAL

Betty Ludwell Webb of St. Leonards
Spinster is
now the registered proprietor of the land within described.
See Section 93, Application No. D50479
Entered 25th November 1975
Jan Watson
REGISTRAR GENERAL

TRANSMISSION NO. R45536 Agnes Patricia Hayes of
Rockdale, Widow etc
now the registered proprietor of the land within described
Registered 25 - 1 - 1979
REGISTRAR GENERAL

TRANSFER NO. R187138 Fortunato Monaco of Belmore,
Hospital Employee is
now the registered proprietor of the land within described
Registered 30 - 4 - 1979
REGISTRAR GENERAL

NO FURTHER DEALINGS TO BE REGISTERED

C 711938
R 45536 T/A
R 187138/2

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Title Search

18/08/2021 02:04 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 37/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:05 PM	4	19/12/2017

LAND

LOT 37 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

HOLDSWORTH LAND PTY LTD (T AM983588)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A265905 COVENANT

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
18/08/2021 02:05 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:06PM

FOLIO: 37/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3399 FOL 72

Recorded	Number	Type of Instrument	C.T. Issue
17/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
7/6/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
31/1/1995	U979672	TRANSMISSION APPLICATION	EDITION 1
28/3/2003	9488024	TRANSFER	
28/3/2003	9488025	MORTGAGE	EDITION 2
2/5/2016	AK374636	CAVEAT	
5/7/2017	AM537980	DISCHARGE OF MORTGAGE	EDITION 3
24/10/2017	AM830524	WITHDRAWAL OF CAVEAT	
24/10/2017	AM830532	CAVEAT	
19/12/2017	AM983588	TRANSFER	EDITION 4

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R368991 /Doc:DL AM983588 /Rev:20-Dec-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:19 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
HFW Australia

(1)

TRANSFER

New South Wales
Real Property Act 1900

AM983588W

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

STAMP DUTY Revenue NSW use only

Office of State Revenue (NSW)
Client No: 136378671 4602
Duty: $10.00 Trans No: 9254976-001
Asst details: TS ON AGREEMENT FOR SALE OF LAND

(A) **TORRENS TITLE** 37/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
273L	InfoTrack Pty Ltd GPO Box 4029 Sydney NSW 2001 Ph: 02 8203 7600 LLPN: 124725J Reference (optional): LANA URGENT	T TW

(C) **TRANSFEROR** JOHN THOMAS ROY MCKAY

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ as per contract dated 19.10.17 and as regards the land

(E) **ESTATE** specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** HOLDSWORTH LAND PTY LTD (ACN 611 697 404)

(I) **TENANCY:**

DATE 19 / 12 / 2017

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness:

Name of witness: HUGH SCAMMELL
Address of witness: 'ALDERGROVE'
18 ELOVERA RD
COWRA 2794

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Company: HOLDSWORTH LAND PTY LTD (ACN 611 697 404)
Authority: Section 127(1) of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: YUANTAO WANG
Office held: Director

Signature of authorised person:
Name of authorised person: Chang Lu
Office held: Director

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1436631 Full Name: Winnie Ying Xin Liang Signature:

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

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

Number additional pages sequentially

Req:R505201 /Doc:CT 03399-072 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 12:47 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

St 9154—1 68847 $.22

New South Wales.

[CERTIFICATE OF TITLE.]

Appn. No. 3083

Reference to last Certificate

Vol. 2699 Fol. 117

REGISTER BOOK,

VOL. 3399 FOL. 72

CANCELLED W

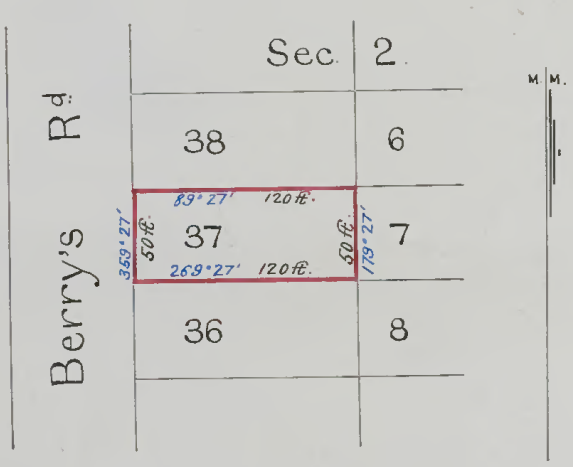
ON ISSUE OF NEW FOLIO 37/2/7259

KATE LINDEMAN wife of Edward Henry Lindeman of Greenwich, Agent, Transferee under Instrument of Transfer from John Winder No.A.885649 is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens and interests, as are notified hereon, in that piece of land situated at St.Leonards in the Municipality of Lane Cove Parish of Willoughby, and County of Cumberland containing ~~, or thereabouts,~~ as shown in the Plan hereon and therein edged red, being lot 37 of Section 2 in a Plan deposited in the Land Titles Office, Sydney, No. 7259 and being part of 524 acres (Portion 323 of Parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to Edward Wollstonecraft by Crown Grant dated the thirtieth day of June One thousand eight hundred and twenty five.

In witness whereof, I have hereunto signed my name and affixed my Seal, this 14th day of December 1927

Signed in the presence of L. Mcnay

Registrar General.



Scale: 80ft to one inch.

NOTIFICATION REFERRED TO.

Instrument of Transfer No.A.265905 comprising inter alia the land above described contains a covenant by John Winder the transferee thereunder

(a) That no building shall be erected within fifteen feet of the building line of Berry's Road

(b) That any building or buildings erected on the lots therein described shall be erected to front the said road

(c) That only one house or a pair of semi-detached houses shall be erected upon each of the said lots

(d) That any building erected on the said lots shall be constructed in a proper and workmanlike manner of brick and stone and concrete or brick or stone or concrete or brick and concrete or stone and concrete with slate or tiled roof at a cost of not less than five hundred pounds if only one house and of not less than nine hundred pounds if a pair of semi-detached houses are erected on the said lots

(e) That no building erected upon the said lots shall be used for any noxious or offensive trade or purpose which shall be a damage nuisance or annoyance to the owners or occupiers of adjoining property or the neighbourhood

(f) That all buildings erected on the said lots shall not at any time be used and occupied except as private dwellings

(g) That the said lots shall not be used at any time as a quarry and the stone thereon shall not be worked or quarried except for the purpose of cutting down so far as is necessary and quarrying the same away so as to bring the land upon which it is situated to the level or natural contour of the surrounding land and so as to prepare the said lots for building purposes.

Registrar General.

No. B 508831 APPLICATION BY TRANSMISSION
Herbert William Moffitt of Sydney Barrister
is now the registered Proprietor of the Land within described in pursuance of the above Application. Prooduced 20th May 1927 and entered 1st June 1927 at 4 o'clock in the after noon.

REGISTRAR GENERAL.

No. B 508832 CAVEAT dated 20th May 1927 by the Registrar General. ~~22nd May 1927~~ Produced and entered 1st June 1927 at 4 o'clock in the after noon.

REGISTRAR GENERAL.

The within Caveat No. B 508832 is hereby withdrawn.

Dated 12th July 1927

REGISTRAR GENERAL.

No. B 527809 TRANSFER dated 23rd June 1927 from the said Herbert William Moffitt to John Roberts Brindley of St Leonards Gent attendant and Fanny Ford Brindley his wife as Joint Tenants ~~for July 1927~~ of the land within described Produced and entered 12th July 1927 at 10 o'clock in the fore noon.

REGISTRAR GENERAL.

Req:R505201 /Doc:CT 03399-072 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 12:47 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

No. B 549420. MORTGAGE dated 17th August 1927 from the said John Robert Brindley and Fanny Eva Brindley to Commissioners of the Government Savings Bank of New South Wales.

Produced 19th August 1927 and entered 19th August 1927 at 47mts pt 10 o'clock in the [illegible] noon.

REGISTRAR GENERAL.

No. D469441 DISCHARGE of within mortgage No. B549420 dated 6th March 1946.
Produced and entered 13th March 1946 at 59mts pt 12 o'clock in the after noon.

J. Wells
REGISTRAR GENERAL.

No. F588477 MORTGAGE dated 6th December 1951 from the said John Robert Brindley and Fanny Eva Brindley to Commonwealth Bank of Australia

Produced and entered 11th December 1951 at 6mts pt 10 o'clock in the forenoon.

J. Wells
REGISTRAR GENERAL.

No. F638304 DISCHARGE of within mortgage No. F588477 dated 21st March 1952
Produced and entered 24th March 1952 at 12mts pt 10 o'clock in the fore noon.

J. Wells
REGISTRAR GENERAL

No. F767319 CODE of DEATH. Proof having been furnished to me of the death of the said John Robert Brindley the surviving Joint Tenant Fanny Eva Brindley is now registered sole proprietor of the land within described
Produced and entered 24th November 1952 at 8mts pt 3 o'clock in the after noon.

J. Wells
REGISTRAR GENERAL.

John William Noel Brindley of Chatswood Insurance Manager, and Trevor Henry Brindley of Avalon, Retail Buyer as joint tenants now the registered proprietor of the land within described.
See Section 94 Application No. J309621
Entered 18th April 1963.

REGISTRAR GENERAL

Max Mauer of St Leonards, Company Director is now the registered proprietor of the land within described.
See TRANSFER No. J309622 dated 18th March 1963.
Entered 18th April 1963.

REGISTRAR GENERAL

No. J309623 MORTGAGE dated 18th March 1963 to Australian Mutual Provident Society
Entered 18th April 1963.

REGISTRAR GENERAL.

MORTGAGE No. J309623 has been discharged.
See K670037 Entered 16th May 1967.

REGISTRAR GENERAL

Esmee Mabel McKay of Cowra West Widow is now the registered proprietor of land within described.
See TRANSFER No. K924785 dated 10th January 1968
Entered 12nd January 1968

REGISTRAR GENERAL

COMPUTER ... DEALINGS TO BE REGISTERED. NO FURTHER

Title Search

18/08/2021 02:21 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 7/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:22 PM	4	19/12/2017

LAND

LOT 7 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

HOLDSWORTH LAND PTY LTD (T AM983601)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A247733 COVENANT

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
18/08/2021 02:22 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:22PM

FOLIO: 7/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 2671 FOL 28

Recorded	Number	Type of Instrument	C.T. Issue
16/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
27/9/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
25/8/1994	U559608	DISCHARGE OF MORTGAGE	
25/8/1994	U559609	MORTGAGE	EDITION 1
16/1/2013	AH493405	DISCHARGE OF MORTGAGE	EDITION 2
19/4/2016	AK369583	NOTICE OF DEATH	EDITION 3
2/5/2016	AK374651	CAVEAT	
24/10/2017	AM830523	WITHDRAWAL OF CAVEAT	
24/10/2017	AM830527	CAVEAT	
19/12/2017	AM983601	TRANSFER	EDITION 4

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R369041 /Doc:DL AM983601 /Rev:20-Dec-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:22 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
HFW Australia

(1)

TRANSFER

New South Wales
Real Property Act 1900

AM983601J

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

STAMP DUTY Revenue NSW use only

Office of State Revenue (NSW)
Client No: 136378671 4602
Duty: $10.00 Trans No: 9254808-001
Asst details: TS ON AGREEMENT FOR SALE OF LAND.

(A) **TORRENS TITLE** 7/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
273L	InfoTrack Pty Ltd GPO Box 4029 Sydney NSW 2001 Ph: 02 8203 7600 LLPN: 124725J Reference (optional): LANA URGENT	T TW

(C) **TRANSFEROR** JUSTIN SIDNEY HORAN

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ as per contract dated 19.10.17 and as regards the land

(E) **ESTATE** specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** HOLDSWORTH LAND PTY LTD (ACN 611 697 404)

(I) **TENANCY:**

DATE 18 / 12 / 2017

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness:

Name of witness: JUSTIN SIMON ADAM
Address of witness: 21 BROMLEY AVENUE
ARNCLIFF NSW 2205

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Company: HOLDSWORTH LAND PTY LTD (ACN 611 697 404)
Authority: Section 127(1) of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: YUANTAO WANG
Office held: Director

Signature of authorised person:
Name of authorised person: Chong Lu
Office held: Director

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1436573 Full Name: Winnie Ying Xin Liang Signature:

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

Req:R507306 /Doc:CT 02671-028 CT /Rev:31-Jul-2012 /NSW LRS /Prt:09-Sep-2021 15:39 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

CERTIFICATE OF TITLE.

(C.)

New South Wales.

[App^n No. 3083]
[Reference to last certificate]
[Vol. 2390 Folio 13]

REGISTER BOOK,
VOL. 2671 FOLIO 28

CANCELLED [W]
ON ISSUE OF NEW FOLIO 7/2/7259

S
GPY

Walter Jackson of Gindfield freeholder Transferee under Instrument of Transfer from Joseph Cuthbert Kershaw Albert Augustus Kew and Percy Leslie Hipsley N° A 247733 is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interest as are notified hereon, in That piece of land situated at St Leonards in the Municipality of Lane Cove, Parish of Willoughby, and County of Cumberland containing Twenty two perches, or thereabouts, as shown on the Plan hereon, and therein edged red, being Lot 7 of Section 2 on a Plan deposited in the Land Titles Office, Sydney, No. 7259 and part of five hundred and twenty four acres (Portion 323 of Parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to Edward Wollstonecraft by Crown Grant dated the thirtieth day of June One thousand eight hundred and twenty five

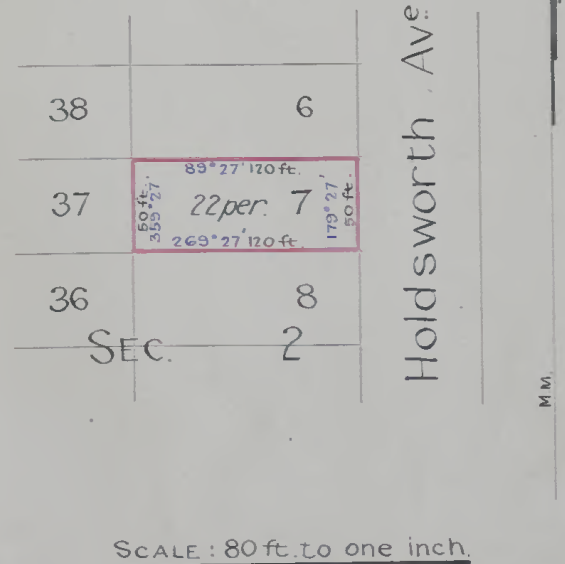
In witness whereof, I have hereunto signed my name and affixed my Seal, this Second day of June one thousand nine hundred and Sixteen

Signed the 2nd day of June 1916,
in the presence of P L Deane

Chas Fry

REGISTRAR GENERAL NEW SOUTH WALES

Deputy Registrar General.



SCALE: 80 ft. to one inch.

1st
1247733

NOTIFICATION REFERRED TO.

CV

The above mentioned Transfer N° A 247733 contains a covenant by Walter Jackson for himself his heirs executors administrators and transferees
(a) That no building shall be erected within fifteen feet of the building line of Holdsworth Avenue
(b) That any building or buildings erected on the land above described shall be erected to front the said Avenue
(c) That only one house or a pair of semi-detached houses shall be erected upon the said land
(d) That any building erected on the said land shall be constructed in a proper and workmanlike manner of brick and stone and concrete or brick or stone or concrete or brick and concrete or stone and concrete with slate or tiled roof at a cost of not less than five hundred pounds if only one house and of not less than nine hundred pounds if a pair of semi-detached houses are erected on the said land
(e) That no building erected upon the said land shall be

55239

Req:R507306 /Doc:CT 02671-028 CT /Rev:31-Jul-2012 /NSW LRS /Prt:09-Sep-2021 15:39 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

be used for any noxious or offensive trade or purpose which shall be a damage nuisance or annoyance to the owners or occupiers of adjoining property or the neighbourhood

(f) That all buildings erected on the said land shall not at any time be used and occupied except as private dwellings.

(g) That the said land shall not be used at any time as a quarry and the stone thereon shall not be worked or quarried except for the purpose of cutting down so far as is necessary and quarrying the same away so as to bring the land upon which it is situated to the level of natural contour of the surrounding land and so as to prepare the said land for building purposes

Chas Bry
Deputy Registrar General

REGISTRAR GENERAL NEW SOUTH WALES

Ethel Lindsay Russell of Wollstonecraft, Widow

now the registered proprietor of the land within described.
See Section 94 Application No. H37989
Entered 16th September 19.58.

REGISTRAR GENERAL

REGISTERED PROPRIETOR Margaret Elizabeth Brook of Kogarah in ½ share and Ethel Frances Coopland of Lane Cove in ½ share both married women as tenants in common by transmission S279171. Registered 3-2-1981

REGISTRAR GENERAL

REGISTERED PROPRIETOR Justin Sidney Horan and Wise Paula Horan as joint tenants by Transfer S515021. Registered 16/6/1981.

REGISTRAR GENERAL

S515022 Mortgage to Government Insurance Office of New South Wales. Registered 16/6/1981.
Z17147 23/6/1995

REGISTRAR GENERAL

Z171457 Mortgage to Qantas Staff Credit Union Limited. Registered 23/8/1990.

COMPUTER FOLIO NO FURTHER DEALINGS TO BE REGISTERED.

No. A996507 TRANSFER dated 20th September 1928
from the said Walter Jackson to William James Drake of Sydney Insurance Clerk

of the land within described

Produced and entered 25th September 1923
at 10 mts pt 3 o'clock in the after noon.

REGISTRAR GENERAL

No. B38015 MORTGAGE dated 11th January 1924
from the said William James Drake To
Commissioners of the Government Savings Bank of New South Wales

Produced and entered 17th January 1924
at 9 mts pt 11 o'clock in the fore noon.

REGISTRAR GENERAL

No. B52580 MORTGAGE dated 21st February 1924
from the said William James Drake To
Walter Woodbine Heiron of Burwood Gentleman

Produced and entered 26th February 1924
at 5 mts pt 3 o'clock in the after noon.

REGISTRAR GENERAL

No. C680728 DISCHARGE of within mortgage
No. B38015 dated 13th July 1938
Produced and entered 15th July 1938
at 7 mts pt 12 o'clock in the after noon.

REGISTRAR GENERAL

No. C680729 DISCHARGE of within mortgage
No. B52580 dated 16th February 1927
Produced and entered 15th July 1938
at 7 mts pt 12 o'clock in the after noon.

REGISTRAR GENERAL

No. C680730 TRANSFER dated 13th June 1938
from the said William James Drake to Francis Charles Kennedy Russell of Sydney Marine Engineer

of the land within described

Produced and entered 15th July 1938
at 7 mts pt 12 o'clock in the after noon.

REGISTRAR GENERAL

TA H37989 R
S279171 A-R
S515021 22 M.R
Z171457 M
57 M R

Title Search

18/08/2021 02:09 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 36/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:09 PM	6	7/1/2019

LAND

LOT 36 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

HOLDSWORTH LAND PTY LTD (T AN982255)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A265905 COVENANT

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Historical Search

18/08/2021 02:09 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:10PM

FOLIO: 36/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3131 FOL 211

Recorded	Number	Type of Instrument	C.T. Issue
17/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
15/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
16/2/1998	3800548	DISCHARGE OF MORTGAGE	EDITION 1
14/5/1998	3987395	TRANSFER	
14/5/1998	3987396	MORTGAGE	EDITION 2
23/6/2007	AD211802	DISCHARGE OF MORTGAGE	
23/6/2007	AD211803	TRANSFER	
23/6/2007	AD211804	MORTGAGE	EDITION 3
3/12/2014	AI976764	TRANSFER SEVERING JOINT TENANCY	
9/5/2017	AM371467	CAVEAT	
27/6/2017	AM444774	DISCHARGE OF MORTGAGE	
27/6/2017	AM444775	TRANSFER WITHOUT MONETARY CONSIDERATION	
27/6/2017	AM444776	MORTGAGE	EDITION 4
28/6/2017	AM518343	WITHDRAWAL OF CAVEAT	
28/6/2017	AM518344	CAVEAT	
2/9/2018	AN678864	DEPARTMENTAL DEALING	EDITION 5 CORD ISSUED
14/11/2018	AN853390	CAVEAT	

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5/12/2018 AN909197 WITHDRAWAL OF CAVEAT

7/1/2019 AN982254 DISCHARGE OF MORTGAGE
7/1/2019 AN982255 TRANSFER EDITION 6

*** END OF SEARCH ***

DI-E2670 PRINTED ON 18/8/2021

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Req:R369116 /Doc:DL AN982255 /Rev:08-Jan-2019 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:24 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
HFW Australia

TRANSFER

New South Wales
Real Property Act 1900

AN982255G

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

STAMP DUTY Revenue NSW use only

Office of State Revenue (NSW)
Client No: 136378671 4602
Duty: $10.00 Trans No: 950728-00
Asst details: TS ON AGREEMENT FOR SALE OF LAND

(A) **TORRENS TITLE** 36/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
1W	HFW Australia Level 3A, 1 Bligh Street, Sydney NSW 2000 Tel: 9320 4600 Reference (optional):	T TW

(C) **TRANSFEROR** ANDREW ROBERT FOURNIER

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ per contract dated 9/1/18 and as regards the land

(E) **ESTATE** specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** HOLDSWORTH LAND PTY LTD (ACN 611 697 404)

(I) **TENANCY:**

DATE 7 January 2019

(J) I certify I am an eligible witness and that Andrew Robert Fournier signed this dealing in my presence.
[See note* below]

Signature of witness:

Name of witness: JUSTIN ADAM
Address of witness: 21 BRAMLEY AVE
PYMBLE NSW 2073

Certified correct for the purposes of the Real Property Act 1900 by Andrew Robert Fournier.

Signature of Andrew Robert Fournier:

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Company: HOLDSWORTH LAND PTY LTD (ACN 611 697 404)
Authority: Section 127(1) of the Corporations Act 2001

Signature of authorised person:
Name of authorised person:
Office held: Director

Signature of authorised person:
Name of authorised person: YUANTAO WONG
Office held: Director

(K) The transferee / transferee's solicitor / transferee's agent certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 171506 Full Name: Hin Tan Fong Signature:

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

Req:R505442 /Doc:DL AD211803 /Rev:26-Jun-2007 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 13:09 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

(1)

Form: 01T
Licence: 01-05-025
Licensee: David Kam & Co

TRANSFE

New South Wales
Real Property Act 19

AD211803F

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

STAMP DUTY Office of State Revenue use only

Office of State Revenue 11/6/07
NSW Treasury
Client No: 1411509 1404
Duty: 2 Trans No: 43826[illegible]
Asst details:

(A) **TORRENS TITLE** If appropriate, specify the part transferred
36/2/7259

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODES
23L	LPN:123835G CSB Reference (optional): 511744204	T TW (Sheriff)

(C) **TRANSFEROR** Derek Angus CRICHTON and Anne Catherine CRICHTON

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $950,000.00 and as regards
(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple.
(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** Katherine Po Chu Wong FOURNIER and Andrew Robert FOURNIER

(I) **TENANCY:** Joint Tenants JN

DATE DO/06/07

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

Signature of witness: Y [signature]

FULL Name of witness: Y FIONA HASTINGS-PROSSER

Address of witness: Y20 WELLMAN ROAD
FORESTVILLE NSW 2087
NAB 32 WILLOUGHBY RD
CROWS NEST 2065

National Australia Bank Limited ABN 12004044937 082-212 15 Crows Nest NSW 082-212

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

X DC
Signature of transferor:

X AC
Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: DAVID KAM
Signatory's capacity: Solicitor

DEREK/ANNE CRICHTON
17/6 HUME STREET
CROWS NEST - SYDNEY
AUSTRALIA 2065
TEL (61-2) 9906 3048

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

Req:R505430 /Doc:CT 03131-211 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 13:08 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

New South Wales.

St 9154—1 93333 - 1

Appn. No. 3083

Reference to Last Certificate

Vol. 2699 Fol. 117

S GRY

[CERTIFICATE OF TITLE.]

TENANCY BY ENTIRETIES

REGISTER BOOK,

VOL. 3131 FOL. 211

CANCELLED W

ON ISSUE OF NEW FOLIO 36/2/7259

JOHN GRAHAM of North Sydney, Tailor's Cutter and LUCY GRAHAM, his wife, Transferees under Instrument of Transfer from John Winder No.A.638998 are now the proprietors of an Estate in Fee Simple as Tenants by entireties.

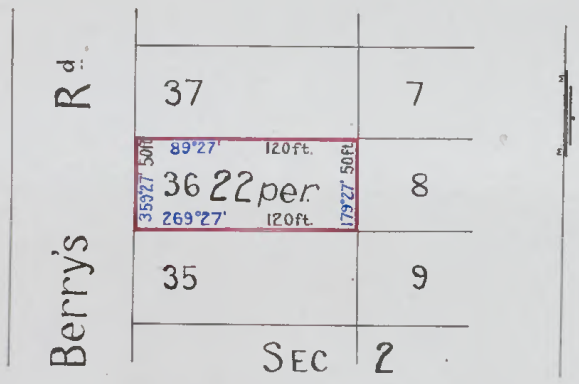
subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens and interests, as are notified hereon, in that piece of land situated at St Leonards in the Municipality of Lane Cove Parish of Willoughby, and County of Cumberland containing twenty two perches , or thereabouts, as shown in the Plan hereon and therein edged red, being lot 36 of section 2 in a Plan deposited in the Land Titles Office, Sydney, No. 7259 and being part of 524 acres (portion 323 of Parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to Edward Wollstonecraft by Crown Grant dated the thirtieth day of June One thousand eight hundred and twenty five.

In witness whereof, I have hereunto signed my name and affixed my Seal, this 29th day of November 1920

Signed in the presence of A. Mulay

D. Millearn

Registrar General.



Scale: 80ft to one inch.

No. C855822 NOTICE of DEATH. Proof having been furnished to me of the death of the said John Graham the surviving Joint Tenant Lucy Graham is now registered sole proprietor of the Land within-described. Produced and entered 6th December 1939. at 4 minutes past 12 o'clock in the after noon.

REGISTRAR GENERAL

Katherine Paul of St. Leonards, widow

is now the registered proprietor of the land within described.

See Section 94 Application No. H443743

Entered 11th April 1960.

REGISTRAR GENERAL

Ling Yeong Chiu of St. Leonards, University Lecturer

now the registered proprietor of the land within described.

See TRANSFER No. K447023 dated 14th September 1966

Entered 19th September 1966

REGISTRAR GENERAL

A.638998 B.M.A. CV

NOTIFICATION REFERRED TO.

Instrument of Transfer No.A.265905 P comprising lots 23 and 32 to 38 inclusive of section 2 Deposited Plan No.7259 contains covenants by John Winder the Transferee thereunder

(a) That no building shall be erected within fifteen feet of the building line of Berry's Road.

(b) That any building or buildings erected on the lots therein described shall be erected to front the said road.

(c) That only one house or a pair of semi-detached houses shall be erected upon each of the said lots.

(d) That any building erected on the said lots shall be constructed in a proper and workmanlike manner of brick and stone and concrete or brick or stone or concrete or brick and concrete or stone and concrete with slate or tiled roof at a cost of not less than five hundred pounds if only one house and of not less than nine hundred pounds if a pair of semi-detached houses are erected on the said lots.

(e) That no building erected upon the said lots shall be used for any noxious or offensive trade or purpose which shall be a damage nuisance or annoyance to the owners or occupiers of adjoining property or the neighbourhood.

(f) That all buildings erected on the said lots shall not at any time be used and occupied except as private dwellings.

(g) That the said lots shall not be used at any time as a quarry and the stone thereon shall not be worked or quarried except for the purpose of cutting down so far as is necessary and quarrying the same away so as to bring the land upon which it is situated to the level or natural contour of the surrounding land and so as to prepare the said lots for building purposes.

D. Millearn

Registrar General.

T.A. (H443743)

T.A. H443743

Req:R505430 /Doc:CT 03131-211 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 13:08 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

No. K447024 MORTGAGE dated 14th September 1966
to The Commercial Banking Company of Sydney Limited

Entered 19th September 1966

REGISTRAR GENERAL

M
K458089

No. K458089 MORTGAGE dated 13th September 1966
to The University of Sydney

Entered 19th October 1966

REGISTRAR GENERAL

D/M
16/9/13

MORTGAGE No. K447024 has been discharged.
See 466091 2 Entered 20th November 1969

REGISTRAR GENERAL

D/M
9/13

MORTGAGE No. K458089 has been discharged.
See 466091 3 Entered 20th November 1969

REGISTRAR GENERAL

MS
M
9/13

No. 466091 4 P MORTGAGE dated 9th September 1969
to Rural Bank of New South Wales

Entered 20th November 1969

REGISTRAR GENERAL

COMPUTER FOLIO NO FURTHER
DEALINGS TO BE REGISTERED.

K458089 M R

Title Search

18/08/2021 02:18 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 8/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:18 PM	5	19/12/2017

LAND

LOT 8 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

HOLDSWORTH LAND PTY LTD (T AM983595)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A139813 COVENANT

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
18/08/2021 02:20 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:20PM

FOLIO: 8/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 5304 FOL 166

Recorded	Number	Type of Instrument	C.T. Issue
9/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
1/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
31/3/1998	3890858	DISCHARGE OF MORTGAGE	
31/3/1998	3890859	DISCHARGE OF MORTGAGE	
31/3/1998	3890860	MORTGAGE	EDITION 1
9/5/2001	7596503	DISCHARGE OF MORTGAGE	
9/5/2001	7596504	MORTGAGE	
9/5/2001	7596505	MORTGAGE	EDITION 2
2/5/2016	AK374642	CAVEAT	
29/8/2017	AM683521	DISCHARGE OF MORTGAGE	EDITION 3 CORD ISSUED
4/9/2017	AM698061	DISCHARGE OF MORTGAGE	EDITION 4
24/10/2017	AM830511	WITHDRAWAL OF CAVEAT	
24/10/2017	AM830529	CAVEAT	
19/12/2017	AM983595	TRANSFER	EDITION 5
15/9/2020	AP912711	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R369190 /Doc:DL AM983595 /Rev:20-Dec-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:28 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
HFW Australia

TRANSFER

New South Wales
Real Property Act 1900

AM983595A

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

STAMP DUTY Revenue NSW use only

Office of State Revenue (NSW)
Client No: 136378671 4602
Duty: $10.00 Trans No: 925482-001
Asst details: TS ON AGREEMENT FOR SALE OF LAND.

(A) **TORRENS TITLE** 8/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
273L	InfoTrack Pty Ltd GPO Box 4029 Sydney NSW 200 Ph: 02 8203 7600 LLPN: 124725J Reference (optional): LANA URGENT	T TW

(C) **TRANSFEROR** DUNCAN PETER REID AND HEATHER ELIZABETH REID

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ as per contract dated 19.10.17 and as regards the land

(E) **ESTATE** specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** HOLDSWORTH LAND PTY LTD (ACN 611 697 404)

(I) **TENANCY:**

DATE 18 / 12 / 2017

(J) See Annexure A for execution by the Transferor.

See Annexure A for execution by the Transferor.

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Company: HOLDSWORTH LAND PTY LTD (ACN 611 697 404)
Authority: Section 127(1) of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: YUANTAO WANG
Office held: Director

Signature of authorised person:
Name of authorised person: Chang Lu
Office held: Director

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1436594 Full Name: Winnie Ying Xin Liang Signature:

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

Req:R369190 /Doc:DL AM983595 /Rev:20-Dec-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:28 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Annexure A to TRANSFER

Parties: From DUNCAN PETER REID AND HEATHER ELIZABETH REID to HOLDSWORTH LAND PTY LTD (ACN 611 697 404)

Dated: ...../...../.....

I certify I am an eligible witness and that Duncan Peter Reid signed this dealing in my presence.
[See note* below]

Signature of witness:

Name of witness: JUSTIN SIMON ADAM
Address of witness: 21 BROMLEY AVENUE
PYMBLE 2073

Certified correct for the purposes of the Real Property Act 1900 by Duncan Peter Reid.

Signature of Duncan Peter Reid:

I certify I am an eligible witness and that Heather Elizabeth Reid signed this dealing in my presence.
[See note* below]

Signature of witness:

Name of witness: JUSTIN SIMON ADAM
Address of witness: 21 BROMLEY AVE
PYMBLE 2073

Certified correct for the purposes of the Real Property Act 1900 by Heather Elizabeth Reid:

Signature of Heather Elizabeth Reid: Heather Reid

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

Req:R507445 /Doc:CT 05304-166 CT /Rev:07-Aug-2012 /NSW LRS /Prt:09-Sep-2021 15:46 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

201.

Appn. No. 3083

Reference to last certificate

Vol. 2527 Fol. 54

New South Wales.

[CERTIFICATE OF TITLE.]

ORDER NO. D96205

REGISTER BOOK.

Vol. 5304 Fol. 166

CANCELLED [W]

ON ISSUE OF NEW FOLIO 8/2/7259

S

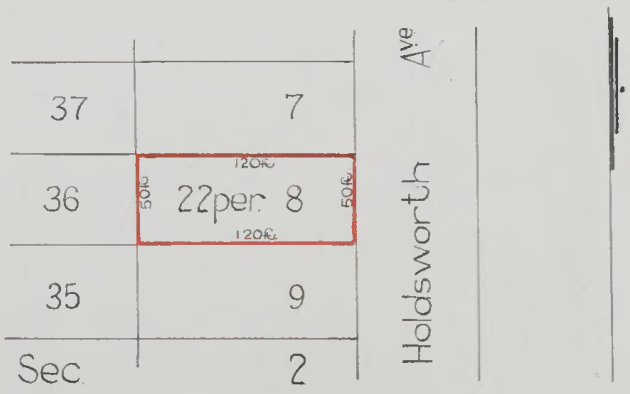
GRY

WILLIAM JOSEPH TURNER, of Crow's Nest, Builder, by virtue of Certificate of Title Volume 2527 Folio 54 now surrendered is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in that piece of land situated in the Municipality of Lane Cove Parish of Willoughby, and County of Cumberland containing Twenty two perches or thereabouts as shown in the plan hereon and therein edged red being Lot 8 of Section 2 in Deposited Plan No. 7259 and being part of 524 acres (Portion 323 of Parish) originally granted to Edward Wollstonecraft by Crown Grant dated the 30th day of June 1825.

In witness whereof I have hereunto signed my name and affixed my Seal, this sixteenth day of February, 1942.

Signed in the presence of J. H. Sidgard

Registrar General.



Scale:- 80ft. to one inch.

D 96205

NOTIFICATION REFERRED TO

Instrument of Transfer No. A139813 comprising the land above described contains a covenant in the following words:-

"(a) That no building shall be erected within "fifteen feet of the building line of Holdsworth "Avenue.

"(b) That any building or buildings erected on the "said lot shall be erected to front the said Avenue.

"(c) That only one house or a pair of semi-detach- "ed houses ahall be erected upon the said lot.

"(d) That any building erected on the said lot "shall be constructed in a proper and workmanlike "manner of brick and stone and concrete or brick or "stone or concrete or brick and concrete or stone "and concrete with slate or tiled roof at a cost of "not less than Five hundred pounds if only one "house and of not less than Nine hundred pounds if "a pair of semi-detached houses are erected on the "said lot.

"(e) That no building erected upon the said lot "shall be used for any noxious or offensive trade "or purpose which shall be a damage nuisance or "annoyance to the owners or occupiers of adjoining "property or the neighbourhood.

"(f) That all buildings erected in the said lot "shall not at any time be used and occupied except "as private dwellings.

Registrar General.

"(g) That the said lot shall not be used at any "time as a quarry and the stone thereon shall not be "worked or quarried except for the purpose of putting "down so far as is necessary and quarrying the same "away so as to bring the land upon which it is situ- "ated to the level or natural contour of the surround- "ing land and so as to prepare the said lot for "building purposes."

Registrar General.

No. B859661 Mortgage dated the 1st day of August 1929 from William Joseph Turner to The Permanent Trustee Company of New South Wales Limited. Produced and entered the 2nd day of August 1929 at 5 minutes past 3 o'clock in the afternoon.

Registrar General.

No. B859662 Mortgage dated the 2nd day of August 1929 from William Joseph Turner to Robert Le Neve Scrutton of Wahroonga, Gentleman. Produced and entered the 2nd day of August 1929 at 5 minutes past 3 o'clock in the afternoon.

Registrar General.

No. D89328 TRANSFER dated 4th December 1941 from the said Caroline Maude Brimacombe and Annie Isobel Scrutton (present Mortgagee under Mortgage No. B 859662 [illegible] exercising a power of sale) to Nancy Mary Bereen of North Sydney, Spinster of the land within described Produced 11th December 1941 and entered 26th February 1942 at 12 o'clock in the [illegible] noon.

REGISTRAR GENERAL.

D89328.

Req:R507445 /Doc:CT 05304-166 CT /Rev:07-Aug-2012 /NSW LRS /Prt:09-Sep-2021 15:46 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

No. D331209 DISCHARGE of within mortgage
No. B859661 dated 14th November, 1944
Produced and entered 22nd November, 1944
at 14 mts pt 2 o'clock in the after noon.

REGISTRAR GENERAL.

No. D331210 MORTGAGE dated 13th November 1944
from the said Nancy Mary Bereory to The Bank of Australasia

Produced and entered 22nd November, 1944
at 14 mts pt 2 o'clock in the after noon.

REGISTRAR GENERAL.

No. F955352 MORTGAGE dated 24th September 1953
from the said Nancy Mary Bereory to Australia and New Zealand Bank Limited

Produced 22nd October 1953 and entered 22nd October 1953
at 24 mts pt 10 o'clock in the fore noon.

REGISTRAR GENERAL.

No. F955353 DISCHARGE of within mortgage
D 331210 dated 1st October 1953

Produced 22nd October 1953 and entered 22nd October 1953
at 24 mts pt 10 o'clock in the fore noon.

REGISTRAR GENERAL.

MORTGAGE No. F 955352 has been discharged.
See H767599 Entered 27th March 1961

REGISTRAR GENERAL.

REGISTERED PROPRIETOR Duncan Peter Reid and Heather Elizabeth Reid as joint tenants by 2 transfer W783991. Registered 13-3-1987.

W783992P Mortgage to Australia and New Zealand Savings Bank Limited. Registered 13-3-1987.

MZ

W946412P Mortgage to Australia and New Zealand Banking Group Limited. Registered 30.6.1987

MY

COMPUTER FOLIO NO FURTHER
DEALINGS TO BE REGISTERED.

W783991T 2 mtg
W946412 mtg

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Title Search

18/08/2021 02:11 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 35/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:12 PM	3	20/11/2017

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO.
CONTROL OF THE RIGHT TO DEAL IS HELD BY ING BANK (AUSTRALIA) LIMITED.

LAND

LOT 35 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

SJD ST LEONARDS PTY LTD (T AM898834)

SECOND SCHEDULE (3 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AM898865 MORTGAGE TO ING BANK (AUSTRALIA) LIMITED
* 3 AR341911 CAVEAT BY HOLDSWORTH LAND PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
18/08/2021 02:12 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:12PM

FOLIO: 35/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3076 FOL 62

Recorded	Number	Type of Instrument	C.T. Issue
17/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED
		FOLIO NOT CREATED	
30/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED
		CT NOT ISSUED	
25/5/1992	E478703	REQUEST	
25/5/1992	E478704	TRANSMISSION APPLICATION	EDITION 1
6/10/1993	I696888	TRANSFER	EDITION 2
1/3/1999	5637860	DEPARTMENTAL DEALING	
14/6/2016	AK506683	CAVEAT	
20/11/2017	AM898833	WITHDRAWAL OF CAVEAT	
20/11/2017	AM898834	TRANSFER	
20/11/2017	AM898865	MORTGAGE	EDITION 3
		CORD ISSUED	
26/4/2018	AN290834	DEPARTMENTAL DEALING	
17/8/2021	AR341911	CAVEAT	

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R369377 /Doc:DL AM898834 /Rev:21-Nov-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:34 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:

Form: 01T
Release: 6-1

TRANSFER

New South Wales
Real Property Act 1900

AM898834H

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

STAMP DUTY Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 119578250 3560
Duty: $10.00 Trans No: 9201547-001
Asst details:

(A) **TORRENS TITLE** 35/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
	M J ARMSTRONG & CO - DENTONS **654X LPP:131317K** Reference: 396195	T TW

(C) **TRANSFEROR** Cheong Ying John Sung and Yu Ling Wong Sung

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 6,541,666.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** SJD St Leonards Pty Ltd ACN 606 429 896

(I) **TENANCY:**

DATE 13/11/2017

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness:

Name of witness: Michael John Beverley
Address of witness: Solicitor & Attorney
L2, 1 Innovation Road
North Ryde NSW 2113
Law Society # 1205

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: Daniel John Marucci
Signatory's capacity: solicitor

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1438685 Full name: Daniel John Marucci Signature:

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

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

1303

Req:R505582 /Doc:CT 03076-062 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 13:24 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

New South Wales.

[CERTIFICATE OF TITLE.]

Appn. No. 3083

Reference to last Certificate

Vol. 2699 Fol. 117

Register Book,

Vol. 3076 Fol. 62

St 8830—1

S
GRY

CANCELLED W

ON ISSUE OF NEW FOLIO 35/2/7259

ARTHUR MILES of North Sydney, Builder, Transferee under Instrument of Transfer from John Winder No. A.590734 is now the proprietor of an Estate in Fee Simple subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens and interests, as are notified hereon, in that piece of land situated at St. Leonards in the Municipality of Lane Cove Parish of Willoughby, and County of Cumberland containing twenty two perches, or thereabouts, as shown in the Plan hereon and therein edged red, being lot 35 of Section 2 in a Plan deposited in the Land Titles Office, Sydney, No. 7259, and being part of 524 acres (Portion 323 of Parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to Edward Wollstonecraft by Crown Grant dated the thirtieth day of June One thousand eight hundred and twenty five.

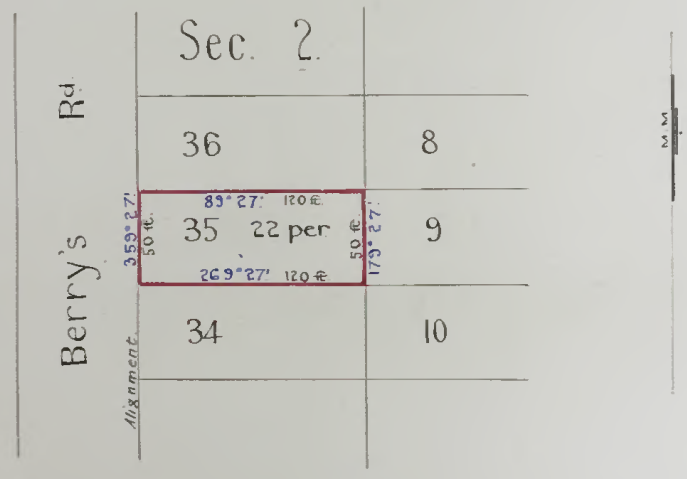
In witness whereof, I have hereunto signed my name and affixed my Seal, this 15th day of July 1920

Signed in the presence of L. Mulay.

D. H. Kelleaway

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES



Scale: 80 feet to one inch

1.590734

AA

NOTIFICATION REFERRED TO.

This Certificate of Title is issued subject to the covenants and conditions contained in Instrument of Transfer ~~No.~~ 658032.

D. H. Kelleaway

Registrar General

CV

Instrument of Transfer No. A.265905 contains a covenant by John Winder the transferee thereunder:

(a) That no building shall be erected within fifteen feet of the alignment of Berry's Road.

(b) That any building or buildings erected on the land above described shall be erected to front the said road.

(c) That only one house or a pair of semi-detached houses shall be erected upon the said land.

(d) That any building erected on the said land shall be constructed in a proper and workmanlike manner of brick and stone and concrete or brick or stone or concrete or brick and concrete or stone and concrete with slate or tiled roof at a cost of not less than Five hundred pounds if only one house and of not less than Nine hundred pounds if a pair of semi-detached houses are erected on the said land.

(e) That no building erected upon the said land shall be used for any noxious or offensive trade or purpose which shall be a damage nuisance or annoyance to the owners or occupiers of adjoining property or the neighbourhood.

(f) That all buildings erected on the said land shall not at any time be used and occupied except as private dwellings.

(g) That the said land shall not be used at any time as a quarry and the stone thereon shall not be worked or quarried except for the purpose of cutting down so far as is necessary and quarrying the same away so as to bring the land upon which it is situated to the level or natural contour of the surrounding land and so as to prepare the said land for building purposes.

D. H. Kelleaway

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

No. A 687139 MORTGAGE dated 8th April 1921 from the said Arthur Miles To John Hunter Stephenson of Sydney Accountant

Produced and entered 23rd April 1921 at 1 min to 10 o'clock in the fore noon.

D. H. Kelleaway

REGISTRAR GENERAL

REGISTRAR GENERAL NEW SOUTH WALES

No. A 731535. DISCHARGE of within Mortgage A687139. dated 31st August 1921

Produced 5th September 1921 and entered 5th September 1921 at 50 minutes past 11 o'clock in the fore noon.

D. H. Kelleaway

REGISTRAR GENERAL

REGISTRAR GENERAL NEW SOUTH WALES

No. A 767122. Caveat. dated 17th December 1921 Produced and entered 17th December 1921 at 5 minutes to 11 o'clock in the fore noon.

D. H. Kelleaway

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

Req:R505582 /Doc:CT 03076-062 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 13:24 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

No. A 470446 WITHDRAWAL of the within Caveat
No. 876/122 dated 13th January 1922.
Produced 13th January 1922 and entered 13th January 1922.
at 1mts 1pt 10 o'clock in the after noon.
REGISTRAR GENERAL

No. A770496 MORTGAGE dated 2nd December 1921
from the said Arthur Miles to Alfred Edmund Jaques Reks King Edward William Geoffrey and Percy George Stephen Knowlton
Produced and entered 13th January 1922 and 13th January 1922.
at 1 o'clock in the after noon.
REGISTRAR GENERAL.

No. B 633409 TRANSFER dated 6th March 1928.
from the said Arthur Miles to Leslie Whitney of Greenwich, Clerk.
of the land within described
Produced 9th March 1928 and entered 9th March 1928.
at 2 mts pt 12 o'clock in the after noon.
Acting REGISTRAR GENERAL

No. D712458 DISCHARGE of within mortgage
No. A770496 dated 16th July 1947.
Produced and entered 20th August 1947
at 4 mts pt 12 o'clock in the after noon.
REGISTRAR GENERAL.

No. D712459 TRANSFER dated 3rd June 1947.
from the said Leslie Whitney to William Henry George Fitzsimons of Randwick, Plumbing Contractor.
of the land within described
Produced and entered 20th August 1947.
at 4 mts pt 12 o'clock in the after noon.
REGISTRAR GENERAL.

No. D712460 MORTGAGE dated 27th June 1947.
from the said William Henry George Fitzsimons
to R.A.A.C. Co-operative Building Society No. 1 Limited
Produced and entered 20th August 1947.
at 4 mts pt 12 o'clock in the after noon.
REGISTRAR GENERAL

No. D784994 MORTGAGE dated 12th January 1948
from the said William Henry George Fitzsimons
to R.A.A.C. Co-operative Building Society No. 1 Limited
Produced and entered 22nd January 1948
at 4 3mts pt 12 o'clock in the after noon.
REGISTRAR GENERAL.

No. F502338 DISCHARGE of within mortgage
No. D784994 dated 26th July 1957
Produced and entered 30th July 1957
at 2 mts pt 10 o'clock in the fore noon.
REGISTRAR GENERAL.

No. F502339 DISCHARGE of within mortgage
No. D712460 dated 26th July 1957
Produced and entered 30th July 1957
at 2 mts pt 10 o'clock in the fore noon.
REGISTRAR GENERAL.

No. F502340 MORTGAGE dated 26th July 1957
from the said William Henry George Fitzsimons to Commonwealth Bank of Australia
Produced and entered 30th July 1957
at 2 mts pt 10 o'clock in the fore noon.
REGISTRAR GENERAL.

MORTGAGE No. F502340 has been discharged.
See K400009 Entered 3rd August 1966
REGISTRAR GENERAL

John James McCullum of Commercy, Foreman Stevedore and Thelma May McCullum his wife are
now the registered proprietors of land within described.
as joint tenants
See TRANSFER No. K40000 dated 1st July 1966
Entered 3rd August 1966
REGISTRAR GENERAL

John James McCullum of St Leonards, Foreman Stevedore as to an undivided one half share, and Thelma May McCullum his wife as to the one remaining undivided one half share as tenants in common are now the registered proprietors of the land within described.
See Transfer No. N826000 dated 1st March 1974
Registered 14th May 1974
Registrar General

THELMA MAY McCULLUM Registrar General
* Thelma May McCullum of St. Leonards, Married Woman, is now the registered proprietor of the land within described
See Transfer No. N826001 dated 1st March 1974
Registered 14th May 1974
Registrar General

COMPUTER FOLIO NO FURTHER
DEALINGS TO BE REGISTERED.

Title Search

18/08/2021 02:16 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 9/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:16 PM	9	19/12/2017

LAND

LOT 9 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

HOLDSWORTH LAND PTY LTD (T AM983538)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 658032 COVENANT

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Historical Search

18/08/2021 02:16 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:17PM

FOLIO: 9/2/7259

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

Prior Title(s): VOL 3166 FOL 65

Recorded	Number	Type of Instrument	C.T. Issue
17/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
16/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
15/3/2001	7475317	MORTGAGE	EDITION 1
27/11/2006	AC766361	TRANSMISSION APPLICATION	EDITION 2
4/12/2006	AC786283	DISCHARGE OF MORTGAGE	EDITION 3
7/6/2007	AD113226	TRANSFER	
7/6/2007	AD113227	MORTGAGE	EDITION 4
5/3/2012	AG851123	DISCHARGE OF MORTGAGE	
5/3/2012	AG851124	TRANSFER	EDITION 5
29/1/2013	AH514057	MORTGAGE	EDITION 6
30/5/2013	AH583857	REQUEST	EDITION 7
5/1/2015	AJ144965	DISCHARGE OF MORTGAGE	
5/1/2015	AJ144966	TRANSFER	
5/1/2015	AJ144967	MORTGAGE	EDITION 8
2/5/2016	AK374644	CAVEAT	
24/10/2017	AM830518	WITHDRAWAL OF CAVEAT	
24/10/2017	AM830534	CAVEAT	
19/12/2017	AM983537	DISCHARGE OF MORTGAGE	

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R369427 /Doc:DL AM983538 /Rev:20-Dec-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 16:36 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
HFW Australia

(1)

TRANSFER

New South Wales
Real Property Act 1900

AM983538N

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

STAMP DUTY Revenue NSW use only

Office of State Revenue (NSW)
Client No: 136378671 4602
Duty: $10.00 Trans No: 9254918-001
Asst details: IS ON AGREEMENT FOR SALE OF LAND.

(A) **TORRENS TITLE** 9/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
273L	InfoTrack Pty Ltd GPO Box 4029 Sydney NSW 2001 Ph: 02 8203 7600 LLPN: 124725J Reference (optional): LANA URGENT	T TW

(C) **TRANSFEROR** JOHN KAM HUNG SINN

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ as per contract dated 19.10.17 and as regards the land

(E) **ESTATE** specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** HOLDSWORTH LAND PTY LTD (ACN 611 697 404)

(I) **TENANCY:**

DATE 16 / 12 / 2017

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence.
[See note* below]

Signature of witness:

Name of witness: JUSTIN SIMON ADAM
Address of witness: 21 BROMLEY AVENUE
PYMBLE 2073

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Company: HOLDSWORTH LAND PTY LTD (ACN 611 697 404)
Authority: Section 127(1) of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: YUANTAO WANG
Office held: Director

Signature of authorised person:
Name of authorised person:
Office held: Director

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 1436613 Full Name: Winnie Ying Xin Liang Signature:

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

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

Req:R507570 /Doc:CT 03166-065 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 15:58 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

New South Wales.

St 0154—1 16517

[CERTIFICATE OF TITLE.]

Appn. No. 3083

Reference to last Certificate

Vol. 3390 Fol. 13

REGISTER BOOK,

VOL. 3166 FOL. 65

CANCELLED ON ISSUE OF NEW FOLIO 9/2/7259

S GRY

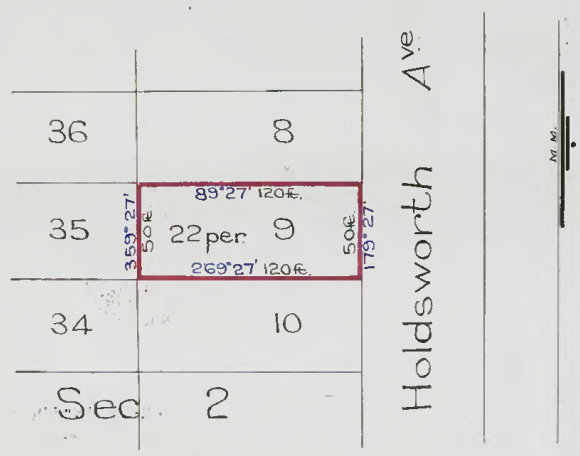
Kate Lindeman Wife of Edward Henry Lindeman of Greenwich Agent transferee under instrument of transfer from Joseph Cuthbert Kershaw Albert Augustus Kerr and Percy Leslie Hopeley No A 671885 is now the proprietor of an estate in fee simple

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens and interests, as are notified hereon, in That piece of land situated at St Leonards in the Municipality of Lane Cove Parish of Willoughby, and County of Cumberland containing twenty two perches, or thereabouts, as shown in the Plan hereon and therein edged red, being Lot 9 of Section 2 in a Plan deposited in the Land Titles Office, Sydney, No. 7359 and being part of 544 acres (Portion 323 of Parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to Edward Wollstonecraft by Crown Grant dated the thirtieth day of June One thousand eight hundred and twenty five

In witness whereof, I have hereunto signed my name and affixed my Seal, this 21st day of March 1921

Signed in the presence of W P Friend

Registrar General.



Scale 80ft. to one inch

A674885 NVS 4 4/06

CV Notification referred to

Title Certificate of Title is issued subject to the covenants and conditions contained in instrument of transfer No 458032 P

Registrar General

No. B. 502.574 APPLICATION BY TRANSMISSION HERBERT WILLIAM MOFFITT of Sydney, Barrister, is now the registered proprietor of the land within described in pursuance of the above application. Produced 6th. May 1927 and entered 14th May 1927 at 12 o'clock noon.

Registrar General.

No. B. 502.575. CAVEAT dated 6th. May 1927. Produced 6th. May 1927 and entered 14th. May 1927 at 12 o'clock noon.

Registrar General.

The within Caveat No. B 502575 is hereby withdrawn.

Dated 18th. July 1928

Registrar General.

No. B. 674.297. TRANSFER dated 1st. December 1927 from the said HERBERT WILLIAM MOFFITT to EDWARD HENRY LINDEMAN of Greenwich, Agent, of the land within described. Produced 11th. June 1928 and entered 18th. July 1928 at 12 o'clock noon.

Registrar General.

No B 843.244. MORTGAGE dated 15th. June 1929 from the said EDWARD HENRY LINDEMAN to THE UNION BANK OF AUSTRALIA LIMITED. Produced 1st. July 1929 and entered 4th. July 1929 at 12 o'clock noon.

Registrar General.

No. C188.085. Appointment of Receiver dated 12th. June 1933 by THE UNION BANK OF AUSTRALIA LIMITED of ARTHUR CHARLES ABRAHAMS of Crows Nest, Property Agent in respect of the within mortgage No. B 843244 Produced 28th June 1933 and entered 8th September 1933 at 12 o'clock noon.

Registrar General.

The above notification with reference to Appointment of Receiver No C188085 is hereby cancelled.

Dated 5th December 1933 Vide C 297022-P

Registrar General.

C297022-P 1/1

Req:R507570 /Doc:CT 03166-065 CT /Rev:03-Aug-2012 /NSW LRS /Prt:09-Sep-2021 15:58 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

No. C 297022 Transfer dated 19th October 1934
from the said The Union Bank of Australia Limited (mortgagee exercising Power of Sale) To Camellia Violet Lillie Mc Donald wife of John Malcolm Mc Donald of North Wollstonecraft Marine Engineer of the land within described
Produced and entered 7th December 1934
at 12 o'clock in the noon.
Roy W. Ariell
REGISTRAR GENERAL

Clare Gavins of Cammeray
Married woman is
now the registered proprietor of the land within described.
See TRANSFER No. G608205 dated 25th October 56
Entered 13th November 56.
J. Wells
REGISTRAR GENERAL

No. G608206 MORTGAGE dated 25th October 1956
from the said Clare Gavins to Wallace James Williams of Sutherland Engineer and Phyllis Jean Williams his wife
Entered 13th November 56
J. Wells
REGISTRAR GENERAL

MORTGAGE No. G608206 has been discharged.
See G945308 Entered 5th May 1958
J. Wells
REGISTRAR GENERAL.

Harold Maxwell Bagnall of North Wollstonecraft Lecturer is
now the registered proprietor of the land within described.
See TRANSFER No. G945309 dated 18th April 1958
Entered 5th ~~April~~ May 1958
J. Wells
REGISTRAR GENERAL

No. G945310 MORTGAGE dated 18th April 1958
from the said Harold Maxwell Bagnall to Australian Mutual Provident Society
Entered 5th May 1958
J. Wells
REGISTRAR GENERAL

No. G952207 MORTGAGE dated 10th February 58
from the said Harold Maxwell Bagnall to Southern Districts Starr-Bowkett Co-operative Building Society No 1 Limited
Entered 13th May 1958
J. Wells
REGISTRAR GENERAL

MORTGAGE No. G952207 has been discharged.
See J587320 Entered 2nd March 1964
J. Watson
REGISTRAR GENERAL

No. J587321 M[illegible] 19th February 1964
to The Hunter River No. 10 Co-Operative Starr-Bowkett Limited
Entered 2nd March 1964
Discharged P2700056 3.6.1975
J. Watson
REGISTRAR GENERAL

MORTGAGE No. G945310 has been discharged.
See L956495 Entered 19th August 1970.
J. Watson
REGISTRAR GENERAL.

REGISTERED PROPRIETOR Norma Kathleen Bagnall by Transfer W895100, Registered 1-6-1987.

COMPUTER FOLIO NO FURTHER DEALINGS TO BE REGISTERED.

CT 25-2-64

Req:R507575 /Doc:DL AG851124 /Rev:08-Mar-2012 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 15:59 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Release: 6·0

TRANSFER

New South Wales
Real Property Act 1900

AG851124F

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

STAMP DUTY Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 109163208 3490
Duty: $10 Trans No: G589913
Asst details: 24-2-12

(A) **TORRENS TITLE** FOLIO IDENTIFIER 9/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
392 C	SYDNEY LEGAL AGENTS LLP : 128005 Y Reference: Bray/Trankiem	T TW

(C) **TRANSFEROR** SARAH SOUTHALL

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 2,320,000.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** TERENCE KEVIN TRANKIEM

(I) **TENANCY:**

DATE

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness: X

Name of witness: X MARK MCINNES

Address of witness: X 27 MARIOS ST
X NARRABURN 2065
NSW

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: X SSouthall X
34.

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: MICHAEL JOHN BRAY
Signatory's capacity: solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. [ ] Full name: Signature:

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

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Title Search

06/09/2021 03:20 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 34/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
6/9/2021	3:21 PM	3	20/11/2017

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO.
CONTROL OF THE RIGHT TO DEAL IS HELD BY ING BANK (AUSTRALIA) LIMITED.

LAND

LOT 34 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

SJD ST LEONARDS PTY LTD (T AM898836)

SECOND SCHEDULE (3 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AM898865 MORTGAGE TO ING BANK (AUSTRALIA) LIMITED
* 3 AR341913 CAVEAT BY HOLDSWORTH LAND PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Historical Search

06/09/2021 03:22 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

6/9/2021 3:22PM

FOLIO: 34/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 10853 FOL 118

Recorded	Number	Type of Instrument	C.T. Issue
5/8/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
24/8/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
29/5/1995	O263549	TRANSFER	EDITION 1
26/7/2007	AD299370	DISCHARGE OF MORTGAGE	
26/7/2007	AD299371	TRANSFER	EDITION 2
14/6/2016	AK506682	CAVEAT	
20/11/2017	AM898835	WITHDRAWAL OF CAVEAT	
20/11/2017	AM898836	TRANSFER	
20/11/2017	AM898865	MORTGAGE	EDITION 3 CORD ISSUED
15/9/2020	AP912711	DEPARTMENTAL DEALING	
17/8/2021	AR341913	CAVEAT	

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R481965 /Doc:DL AD299371 /Rev:27-Jul-2007 /NSW LRS /Pgs:ALL /Prt:06-Sep-2021 15:25 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Release: 3.3
www.lands.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

AD299371N

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

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
26-07-2007 0004441148-001
SECTION 18(2)
DUTY $ **********2.00

(A) **FOLIO OF THE REGISTER** FOLIO IDENTIFIER 34/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and LLPN if any	CODES
674R	LLPN: 123495E PR + JM White P/L Reference: Beattie | Jones	T TW (Sheriff)

(C) **TRANSFEROR** DAVID VICTOR HEALEY and KAY PATRICIA HEALEY

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,350,000.00 and as regards

(E) **ESTATE** the above folio of the Register transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED** _____

(G) Encumbrances (if applicable): _____

(H) **TRANSFEREE** JASON MARK JONES and KATHERINE FIONA JONES

(I) **TENANCY:** Joint Tenants

DATE 25/7/07

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

Signature of witness: W. Coleman

Name of witness: WILLIAM CLIFTON COLEMAN
Address of witness: 108 OLIVER STREET
HARBORD NSW

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature: David Beattie

Signatory's name: David John Beattie
Signatory's capacity: transferees' solicitor

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.
0706

DEPARTMENT OF LANDS
LAND AND PROPERTY INFORMATION DIVISION

Req:R481997 /Doc:DL O263549 /Rev:05-Mar-2010 /NSW LRS /Pgs:ALL /Prt:06-Sep-2021 15:27 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

97-01 T

[redacted]

TRANSFER

Real Property Act, 1900

O 263549 Y

Office of State Revenue use only

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 1994/95 $6 NO STAMP DUTY IS PAYABLE ON THIS INSTRUMENT

(A) **LAND TRANSFERRED**

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

Folio Identifier 34/2/7259

(B) **LODGED BY**

L.T.O. Box	Name, Address or DX and Telephone
45A	NATIONAL AUSTRALIA BANK LIMITED Nat... Australia Bank Limited 2... Sydney 237-1111 FAX 237-1284 HV690
	REFERENCE (max. 15 characters): 454

(C) **TRANSFEROR** DAVID VICTOR HEALEY

(D) acknowledges receipt of the consideration of One dollar ($1.00)

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

(E) subject to the following **ENCUMBRANCES** 1. Mortgage R699018 2. ..... 3. .....

(F) **TRANSFEREE**

T	DAVID VICTOR HEALEY and KAY PATRICIA HEALEY

(G) **TENANCY:** JOINT TENANTS

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATED** 20 FEBRUARY 1995

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

Signature of Witness

J. W. COLEMAN

Name of Witness (BLOCK LETTERS)

3 KERR CLOSE NARRAWEENA

Address of Witness

Signature of Transferor

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

Signature of Witness

JW Coleman

Name of Witness (BLOCK LETTERS)

3 Kerr Close Narraweena

Address of Witness

Signature of Transferee

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

CHECKED BY (office use only)

Ausdoc Commercial and Law Stationers 1991

Req:R482007 /Doc:CT 10853-118 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:06-Sep-2021 15:28 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

[redacted]

RTIFICATE OF TITLE

NEW SOUTH WALES — ROPERTY ACT, 1900, as amended.

Application No.3083

Prior Title Vol.6738 Fol.131

Vol. 10853 Fol. 118

Edition issued 6-8-1968

JG L107907

(Page 1) Vol. 10853 Fol. 118

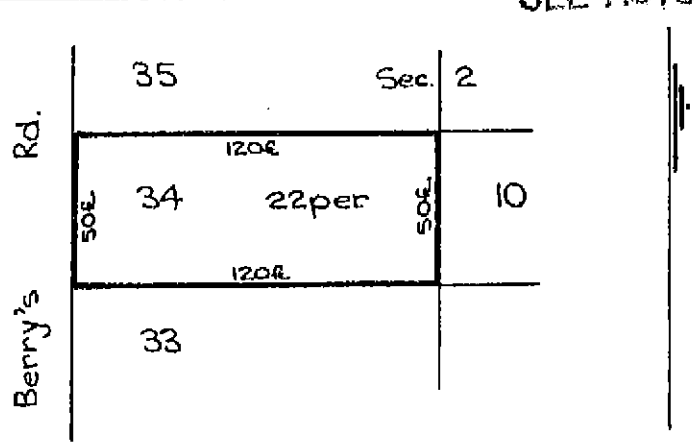
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness L. Bellinger

CANCELLED
Registrar General.

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND



L107907

Scale: 60feet to one inch.

S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 34 of Section 2 in Deposited Plan 7259 in the Municipality of Lane Cove Parish of Willoughby and County of Cumberland being part of Portion 323 granted to Edward Wollstonecraft on 30-6-1825.

FIRST SCHEDULE(continued overleaf)

~~FRANCIS DOMINIC LLOYD of Wollstonecraft, Solicitor and JOAN MARGARET LLOYD his wife as Joint Tenants.~~

GRY

SECOND SCHEDULE(continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. ~~Mortgage No.K414079 to The City Mutual Life Assurance Society Limited. Entered 17-8-1966.~~ Discharged L524244
3. ~~Covenants contained in Transfers Nos. 65C032 and A265905.~~ Cancelled L524243

Registrar General

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

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

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

PT 1.17 V.C.N. Blight, Government Printer

Vol. 10853 Fol 118

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
~~David Victor Healey of St Leonards, Solicitor and Kaye Louise Healey his wife as joint tenants~~	Transfer	L524246	1-8-1969	18-8-1969	
David Victor Healey of St. Leonards, Solicitor.	Transfer	R699016	-------	11-3-1980	
CANCELLED					
SEE AUTO FOLIO					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
~~Mortgage~~	~~L555103~~	~~29.8.1967~~	~~to The Commercial Bank of Australia Limited~~	~~5.9.1968~~		Discharged	L524245	
~~Mortgage~~	~~L524247~~	~~1.8.1969~~	~~to The Commercial Banking Company of Sydney Limited~~	~~18.8.1969~~		Discharged	M658603	
~~Mortgage~~	~~M658604~~	~~18-11-1969~~	~~to Permanent Building Society of Australia Limited~~	~~4-12-1969~~		Discharged	N541718	
~~Mortgage~~	~~N541719~~	~~19-9-1973~~	~~to C.B.C. Savings Bank Limited~~	~~7-11-1973~~		Discharged	R699014	
~~Mortgage~~	~~N541720~~	~~19-9-1973~~	~~to The Commercial Banking Company of Sydney Limited~~	~~7-11-1973~~		Discharged	R699015	
~~Mortgage~~	~~R699017~~		~~to C.B.C. Savings Bank Limited~~	~~11-3-1980~~		Discharged	T936044	
Mortgage	R699018 P	------	to The Commercial Banking Company of Sydney Limited	11-3-1980				

MM

(Page 2 of 2 pages)

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

CT 23/5

L524246 Cancn 4C 45 40 47 M

N541718 - 19M - 20M

R699014 5 6 7 8

T936044

Req:R482007 /Doc:CT 10853-118 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:06-Sep-2021 15:28 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670.

Req:R505753 /Doc:CT 06738-131 CT /Rev:09-Aug-2012 /NSW LRS /Prt:09-Sep-2021 13:37 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

202

Appn. No. 3083

Reference to Last Title

Vol. 3095 Fol. 18

New South Wales.

[CERTIFICATE OF TITLE.]

Register Book.
Vol. 6738 Fol. 131

Issued on Order No. F939455

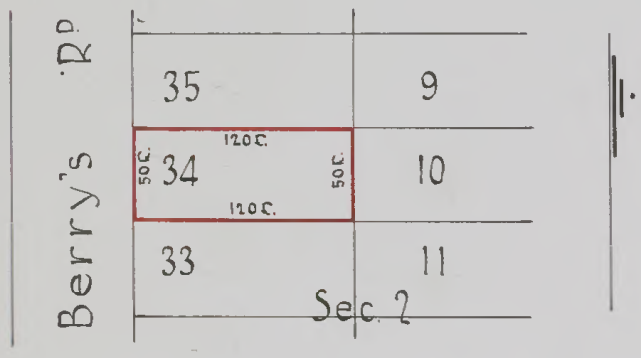
CANCELLED W

FREDERICK LESTER CUNNINGHAM, of St. Leonards, Company Director, is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in that piece of land situated in the Municipality of Lane Cove Parish of Willoughby , and County of Cumberland containing 22 perches or thereabouts as shown in the plan hereon and therein edged red being Lot 34 of Section 2 in Deposited Plan No.7259 and being part of Portion 323 granted to Edward Wollstonecraft on 30th June 1825.

In witness whereof I have hereunto signed my name and affixed my Seal, this Fourth day of November , 1953

Signed in the presence of E. G. Poynton

J. Wells
Registrar-General.



Area: 22 per.

Scale: 80 feet to one inch.

NOTIFICATION REFERRED TO

Covenants contained in Transfers Nos.658032 and A265905.

J. Wells
Registrar General.

No. F712631 Mortgage dated 28th July 1952 from Frederick Lester Cunningham to Leslie Vernon Harris, Ernest David Farrell and Henry James Babbage Produced and entered 13th August 1952 at 35 minutes past 2 o'clock in the afternoon.

J. Wells
Registrar General.

F939456 M

No. F939456 MORTGAGE dated 17th September 1953 from the said Frederick Lester Cunningham to Leslie Vernon Harris, Ernest David Farrell and Henry James Babbage 12th November 1953
Produced 25th September 1953 and entered 14th September 1953 at 12 o'clock in the noon.
J. Wells
REGISTRAR GENERAL.

MORTGAGE No. F939456 has been discharged.
See G964557 Entered 29th May 1958.
J. Wells
REGISTRAR GENERAL.

MORTGAGE No. F712631 has been discharged.
See G964558 Entered 29th May 1958.
J. Wells
REGISTRAR GENERAL.

William Henry McAuliffe of St Leonards Retired and Vera Jabbe McAuliffe his wife are now the registered proprietors of the land within described. as joint tenants
See TRANSFER No. G964559 dated 3rd April 1958.
Entered 29th May 1958
J. Wells
REGISTRAR GENERAL.

39455 J C

F939456 R

Req:R505753 /Doc:CT 06738-131 CT /Rev:09-Aug-2012 /NSW LRS /Prt:09-Sep-2021 13:37 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Alfred John Blakey of North Willoughby, Clerk and Brenda Louise Dark Blakey his wife are now the registered proprietors of the land within described, as joint tenants

See TRANSFER No. H503027 dated 9th May 1960

Entered 15th June 1960

REGISTRAR GENERAL

No. H503028 MORTGAGE dated 9th May 1960 to Government Insurance Office of New South Wales

Entered 15th June 1960

REGISTRAR GENERAL

MORTGAGE No. H503028 has been discharged

See K414077 Entered 11th August 1966

REGISTRAR GENERAL

Francis Dominic Lloyd of Cremorne, Solicitor and Joan Margaret Lloyd his wife are now the registered proprietors of land within described. as joint Tenants

See TRANSFER No K414078 dated 7th August 1966

Entered 17th August 1966

REGISTRAR GENERAL

No K414079 MORTGAGE dated 11th August 1966 to The City Mutual Life Assurance Society Limited

Entered 17th August 1966

REGISTRAR GENERAL

This Deed is cancelled and Certificate of Title issued.

Vol. 10853 Fol 118 dated 6-8-1968

VIDE L107907 (DUPLICATE CT LOST)

REGISTRAR GENERAL

L107907 - Issued

Title Search

18/08/2021 02:26 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/2/7259

SEARCH DATE	TIME	EDITION NO	DATE
18/8/2021	2:26 PM	9	27/1/2017

LAND

LOT 2 OF SECTION 2 IN DEPOSITED PLAN 7259
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

MARSHALL LAND PTY LTD (T AM103130)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AI385106 LEASE TO ULTRASOUND CARE NORTH SHORE PTY LIMITED
EXPIRES: 12/8/2016.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Historical Search

18/08/2021 02:27 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:27PM

FOLIO: 2/2/7259

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

Prior Title(s): VOL 11953 FOL 119

Recorded	Number	Type of Instrument	C.T. Issue
5/8/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/9/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
3/6/1993	I383786	DISCHARGE OF MORTGAGE	
3/6/1993	I383787	MORTGAGE	EDITION 1
11/9/2002	8941661	MORTGAGE	
11/9/2002	8941663	DISCHARGE OF MORTGAGE	
11/9/2002	8941664	CHANGE OF NAME	
11/9/2002	8941665	MORTGAGE	EDITION 2
14/9/2004	AA953838	DISCHARGE OF MORTGAGE	
14/9/2004	AA953839	DISCHARGE OF MORTGAGE	
14/9/2004	AA953840	MORTGAGE	EDITION 3
28/2/2006	AC144434	TRANSMISSION APPLICATION	EDITION 4
22/11/2006	AC756316	DISCHARGE OF MORTGAGE	
22/11/2006	AC756317	TRANSFER	
22/11/2006	AC756318	MORTGAGE	EDITION 5
3/8/2007	AD318865	LEASE	EDITION 6
24/5/2011	AG253373	LEASE	EDITION 7
19/2/2014	AI385106	LEASE	EDITION 8
2/7/2015	AJ596759	CAVEAT	

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29/4/2016 AK387278 WITHDRAWAL OF CAVEAT
29/4/2016 AK387279 CAVEAT

11/1/2017 AM49115 WITHDRAWAL OF CAVEAT
11/1/2017 AM49116 CAVEAT

27/1/2017 AM103129 DISCHARGE OF MORTGAGE
27/1/2017 AM103130 TRANSFER EDITION 9

END OF PAGE 1 - CONTINUED OVER

DI-E2670 PRINTED ON 18/8/2021

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:27PM

FOLIO: 2/2/7259 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R366071 /Doc:DL AM103130 /Rev:31-Jan-2017 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 14:49 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
Holman Fenwick Willan

(1)

TRANSFER

New South Wales
Real Property Act 1900

AM103130L

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

STAMP DUTY Office of State Revenue use only

Office of State Revenue (NSW)
Client No: 136378671 4602
Duty: $10.00 Trans No: 8989059-001
Asst details: TS ON AGREEMENT FOR SALE OF LAND

(A) **TORRENS TITLE** 2/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
IW	HOLMAN FENWICK WILLAN Level 3A, 1 Bligh Street Sydney NSW 2000 Tel: +61 (0)2 9320 4600 Reference (optional): 79539/1	T TW

(C) **TRANSFEROR** RICHARD NORMAN PORTER

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $per contract dated 15 December 2016 and as regards the land

(E) **ESTATE** specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** MARSHALL LAND PTY LTD (ACN 611 458 925)

(I) **TENANCY:**

DATE 27 / 01 / 17

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness:

Name of witness: JARVIS CAMPAZ

Address of witness: 185 MACQUARIE ST. SYDNEY NSW 2000

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

RICHARD NORMAN PORTER

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: WINNIE YING XIN LIANG

Capacity: Solicitor for the transferee

(K) The transferee's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 12 20 262 Full Name: WINNIE YING XIN LIANG Signature:

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

Req:R365980 /Doc:DL AC756317 /Rev:23-Nov-2006 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 14:45 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

Form: 01T
Release: 3.1
www.lands.nsw.gov.au

(1)

TRANSFER

New South Wales
Real Property Act 1900

AC756317Y

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

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
06-11-2006 0003849586-001
SECTION 18(2)
DUTY $ **********2.00

(A) **TORRENS TITLE** Folio Identifier 2/2/7259

(B) **LODGED BY**

Document Collection Box	Name, Address or DX and Telephone	CODES
Westpac 37Y	Westpac Banking Corporation 1 KING ST CONCORD WEST 2138 IBN 43 (02) 9767 1955 LLPN: 123839X 37Y Reference: 09146889 P1	T TW (Sheriff)

(C) **TRANSFEROR** Oleh Suchowersky

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,210,000.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** Richard Norman PORTER

(I) **TENANCY:**

DATE 10/11/06

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

Signature of witness:

Name of witness: AMANDA JANE PORTER
Address of witness: 17 NELSON ST
GORDON NSW 2072

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

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

Signature of witness:

Name of witness: AMANDA JANE PORTER
Address of witness: 17 NELSON ST GORDON
NSW 2072

Certified correct for the purposes of the Real Property Act 1900 by the transferee.

Signature of transferee:

Req:R506963 /Doc:CT 11953-119 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 15:13 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

[redacted]IFICATE OF TITLE

NEW SOUTH WALES

[redacted]EAL PROPERTY ACT, 1900

11953119

(Page 1) Vol. 11953 Fol. 119

Appln. No.3083

Prior Title Vol.7305 Fol.105

Vol. 11953 Fol. 119

Edition issued 18-10-1972

M866037 CANCELLED

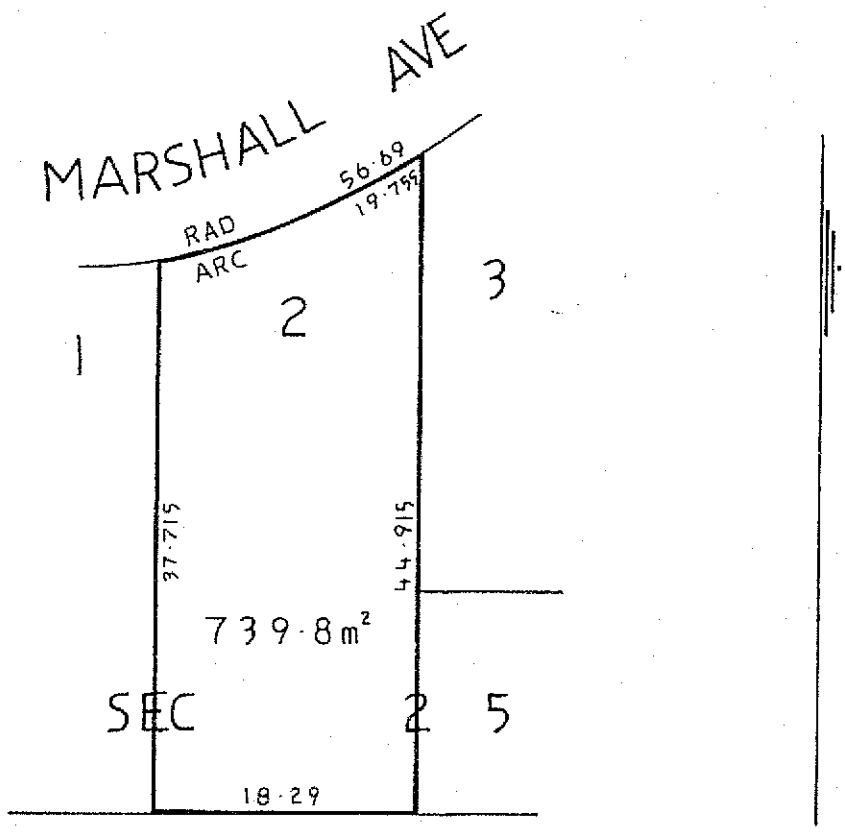
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

SEE AUTO FOLIO

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



M866037 [illegible]

REDUCTION RATIO 1:500

GRY

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 of Section 2 in Deposited Plan 7259 in the Municipality of Lane Cove Parish of Willoughby and County of Cumberland being part of Portion 323 granted to Edward Wollstonecraft on 30-6-1825.

FIRST SCHEDULE

~~GESEN PTY. LIMITED as to an undivided one-half share, JUDITH BELL of Greenwich, Married Woman, as to an undivided one-fourth share, and MARGARET MEISENHELTER of North Sydney, Schoolteacher, as to the remaining undivided one-fourth share, as Tenants in Common.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. ~~Mortgage No.M866037 to Servicemen's & Citizens' Permanent Building Society~~ Limited. ~~Entered 31-8-1972.~~ Discharged P462915

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.

RG 2/62 NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 11953 Fol. 119

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
~~Crown Pty. Limited~~	Transfer	N53703	~~17-12-1979~~	~~20-3-1980~~	
Diana Liliana Jakubowicz by Transfer X593367 Registered 6.6.1988					

N153703 - C
P462916 - C
R958630 M
X593367 C

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
Mortgage	P462916	----	~~to Rhona Margaret Hayes, of Wangi Wangi, Married Woman~~	28-10-1975		Discharged	R958630	
M X593368P 6-6-88			mortgage to Barclays Australia (Finance) Limited ~~Registered~~ Registered	6.6.1988				

CANCELLED

SEE AUTO FOLIO

(Page 2 of 2 pages)

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

Req:R506963 /Doc:CT 11953-119 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 15:13 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-e2670

Req:R507033 /Doc:CT 07305-105 CT /Rev:10-Aug-2012 /NSW LRS /Prt:09-Sep-2021 15:19 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

202

Primary Appn. No. 3083

Reference to Last Title s

Vol. 6632 Fol. s. 110 to 113 inclusive

New South Wales.

[CERTIFICATE OF TITLE.]

JOINT TENANCY

REGISTER BOOK.

VOL. 7305 FOL. 105

DW Issued on Transfer No. G704275

CANCELLED W

ROBIN KEITH MACKENZIE, of Wollstonecraft, Bank Officer, and JESSIE VICTORIA MACKENZIE, his wife, are now the proprietors of an Estate in Fee Simple as Joint Tenants,

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in that piece of land

in the Municipality of Lane Cove Parish of Willoughby , and County of Cumberland

being Lot 2 of Section 2 in Deposited Plan No.7259 and being part of Portion 323 granted to Edward Wollstonecraft on 30th June 1825.

In witness whereof I have hereunto signed my name and affixed my Seal, this Fourteenth day of June , 1957

Signed in the presence of G. W. Moss

J. Wells
Registrar-General

NOTIFICATION REFERRED TO

Covenant contained in Transfer No. 658032.

J. Wells
Registrar General

Benjamin Slavin of Wollstonecraft, Civil Engineer is

now the registered proprietor of the land within described.

See TRANSFER No. G774610 dated 9th August 1957

Entered 20th August 1957

J. Wells
REGISTRAR GENERAL

No. G774611 MORTGAGE dated 9th August 1957

from the said Benjamin Slavin

to RURAL BANK OF NEW SOUTH WALES

Entered 20th August 1957

J. Wells
REGISTRAR GENERAL.

MORTGAGE No. G774611 has been discharged.

See H 85129 Entered 14th November 1958.

Jawatson
REGISTRAR GENERAL

No. H85130 MORTGAGE dated 28th October 1958

from the said Benjamin Slavin to Director of Naval Reserve Service Homes.

Entered 14th November 1958

Jawatson
REGISTRAR GENERAL

MORTGAGE No. H85130 has been discharged.

See H239208 Entered 29th June 1959.

Jawatson
REGISTRAR GENERAL

Elise Madeline Lee of Wollstonecraft, Widow is

now the registered proprietor of the land within described.

See TRANSFER No. H239209 dated 22nd June 1959.

Entered 29th June 1959.

Jawatson
REGISTRAR GENERAL

Persons are cautioned against altering or adding to this Certificate or any notification thereon.

61011 8.56 K 2006—] A. E. Pettifer, Government Printer.

Req:R507033 /Doc:CT 07305-105 CT /Rev:10-Aug-2012 /NSW LRS /Prt:09-Sep-2021 15:19 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

No. H239210 MORTGAGE dated 22nd June 1959.
from the said Elise Madeline Lee to Kathleen Mary Murray of Bellevue Hill, Spinster

Entered 29th June 1959.

REGISTRAR GENERAL

The within notification with reference to covenant contained in Transfer No. 658032. is hereby cancelled.
See 1959 M 10467.
Entered 19th October 1959.

Registrar General

No. L984531 MORTGAGE dated 16th July 19 70
to The Australian and Eastern Suburbs Building Co-operative Building Society Limited

Entered 15th September 1970

REGISTRAR GENERAL

MORTGAGE No. C691482 has been discharged.
See M721796 Entered 19th May 1972

REGISTRAR GENERAL

MORTGAGE No. H239210 has been discharged.
See T94216 Entered 18th July 1962

REGISTRAR GENERAL

MORTGAGE No. L984531 has been discharged.
See M721797 Entered 19th May 1972

REGISTRAR GENERAL

No. T94217 MORTGAGE dated 22nd June 1962
to Dorothy Mary Eyres wife of Keith William Eyres of Double Bay, Company Director

Entered 18th July 1962

REGISTRAR GENERAL

No. M721798 MORTGAGE dated 24th April 1972
to Commonwealth Trading Bank of Australia

Entered 19th May 1972

REGISTRAR GENERAL

MORTGAGE No. T94217 has been discharged.
See C691480 Entered 6th January 1970

REGISTRAR GENERAL

MORTGAGE No. M721798 has been discharged.
See M769972 Entered 23rd June 1972

REGISTRAR GENERAL

Paul Dixon Kerr of North Wollstonecraft Architect and Carol Lorraine Kerr his wife as joint tenants are now the registered proprietors of the land within described.

See TRANSFER No. L691481 dated 8th December 1969

Entered 6th January 1970

REGISTRAR GENERAL

Jesen Pty Limited ~~of Roseville~~ as to ~~an undivided one half~~ fourth shares Judith Bell of Greenwich Married Woman and Margaret Meisenhelter of North Sydney Schoolteacher each as to an undivided one ~~quarter~~ fourth share all as tenants in common are now the registered proprietors of the land within described.

See Transfer No M769973 dated 9th June 1972
Registered 23rd June 1972

REGISTRAR GENERAL

No. L691482 MORTGAGE dated 8th December 1969
to Commonwealth Savings Bank of Australia

Entered 6th January 1970

REGISTRAR GENERAL

No. M866037 MORTGAGE dated 11th August 1972
to Servicemans Citizen Permanent Building Society Limited

Entered 31st August 1972
As to land in this
this Deed is cancelled
and new Certificate issued
Vol. 1953 Fol. 119

REGISTRAR GENERAL

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Title Search

19/08/2021 04:12 PM

Client Reference: DI-e2670

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/2/7259A

SEARCH DATE	TIME	EDITION NO	DATE
19/8/2021	4:12 PM	4	27/1/2017

SUB FOLIO

LAND

1/2 SHARE IN LOT 1 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

MARSHALL LAND PTY LTD (T AM103140)

SECOND SCHEDULE (1 NOTIFICATION)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Title Search

19/08/2021 04:12 PM

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/2/7259B

SEARCH DATE	TIME	EDITION NO	DATE
19/8/2021	4:13 PM	1	27/1/2017

SUB FOLIO

LAND

1/2 SHARE IN LOT 1 OF SECTION 2 IN DEPOSITED PLAN 7259
AT ST LEONARDS
LOCAL GOVERNMENT AREA LANE COVE
PARISH OF WILLOUGHBY COUNTY OF CUMBERLAND
TITLE DIAGRAM DP7259

FIRST SCHEDULE

MARSHALL LAND PTY LTD (T AM103140)

SECOND SCHEDULE (1 NOTIFICATION)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
18/08/2021 02:29 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

18/8/2021 2:30PM

FOLIO: 1/2/7259

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3182 FOL 70

Recorded	Number	Type of Instrument	C.T. Issue
17/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
22/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
2/4/1992	E310382	DEPARTMENTAL DEALING	
2/4/1992	E361552	DEPARTMENTAL DEALING	FOLIO CANCELLED
16/8/2005	AB699127	SUB FOLIOS CREATED: 1/2/7259A-B.	

RELATED VOL FOLS:
VOL 8643 FOLS 100-101.

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R366159 /Doc:DL AB699127 /Rev:19-Aug-2005 /NSW LRS /Pgs:ALL /Prt:18-Aug-2021 14:52 /Seq:1 of 1
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

New South Wales Land Titles Office

Form Number:
97-18DD
Licence Number:
10V/0162/95
Page 1 of 1 Page(s)

DEPARTMENTAL DEALING

AB699127U

This document is designed to record the effect of Departmental actions and amendments on computer folios

DD

Folio Identifier

8643-100	8643-101		

Reason for Preparation: CREATE SUB FOLIOS FOR LOT 1 SECTION 2 IN DP7259

(MANUAL CONVERSION PROJECT)

FIRST SCHEDULE DIRECTIONS

FOLIO IDENTIFIER	DIRECTION	DETAILS

SECOND SCHEDULE AND OTHER DIRECTIONS

FOLIO IDENTIFIER	DIRECTION	NOTFN TYPE	DEALING NUMBER	DETAILS

Deliver Title to:	Prepared by	Table No	Directed by	Table No	Authorised by	Table No
NOCT	RM	TCB54				

Req:R366935 /Doc:CT 03182-070 CT /Rev:03-Aug-2012 /NSW LRS /Prt:18-Aug-2021 15:12 /Seq:1 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

St 9154—1 16517

New South Wales.

[CERTIFICATE OF TITLE.]

Appn. No. 3083

Reference to last Certificate

Vol. 2390 Fol. 13

REGISTER BOOK,

VOL. 3182 FOL. 70

CANCELLED ON ISSUE OF NEW FOLIO 1/2/7259

BERYL BERTRAM of St. Leonards, Health Inspector, Transferee under Instrument of Transfer from Joseph Cuthbert Kershaw, Albert Augustus Kerr and Percy Leslie Hipsley No. A. 690713 is now the proprietor of an Estate in Fee Simple,

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens and interests, as are notified hereon, in that piece of land situated at St. Leonards in the Municipality of Lane Cove Parish of Willoughby, and County of Cumberland containing twenty six and one half perches, or thereabouts, as shown in the Plan hereon and therein edged red, being lot 1 of Section 2 in a Plan deposited in the Land Titles Office, Sydney, No. 7259 and being part of 524 acres (Portion 323 of Parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to Edward Wollstonecraft by Crown Grant dated the thirtieth day of June One thousand eight hundred and twenty five.

In witness whereof, I have hereunto signed my name and affixed my Seal, this 11th day of May 1921

Signed in the presence of A. Murray

Registrar General.

Scale: 80ft to one inch.

A. 690713

Notification referred to

No. A 690714 MORTGAGE dated 7th March 1921 from the said Boyle Bertram to War Service Homes Commissioner

5th May 1921

Produced and entered 13th May 1921 at 11 o'clock in the fore noon.

REGISTRAR GENERAL.

No. B 917163 APPLICATION BY TRANSMISSION Edith Lillian Bertram of Greenwich Widow is now the registered Proprietors of the Land within described in the above Application. Produced 10th December 1929 and entered 6th January 1930 at 10 o'clock in the fore noon.

REGISTRAR GENERAL

No. B 989684 DISCHARGE of within Mortgage No. 690714 dated 11th April 1930 Produced 4th July 1930 and entered 4th July 1930 at 15 mins. past 2 o'clock in the afternoon.

REGISTRAR GENERAL.

No. B 989690 MORTGAGE dated 11th April 1930 from the said Edith Lillian Bertram to War Service Homes Commissioner

Produced and entered 4th July 1930 at 15 mins. past 2 o'clock in the afternoon.

Discharged 0681986 17-5-1978

REGISTRAR GENERAL.

No. F 662920 MORTGAGE dated 9th April 1952 from the said Edith Lillian Bertram to Director of War Service Homes

Produced and entered 12th May 1952 at 47 mins. past 2 o'clock in the afternoon.

Discharged 0681986 17-5-1978

J. Wells

REGISTRAR GENERAL.

B 917163 R

0681986 D/M 2

Req:R366935 /Doc:CT 03182-070 CT /Rev:03-Aug-2012 /NSW LRS /Prt:18-Aug-2021 15:12 /Seq:2 of 2
© Office of the Registrar-General /Src:DIRECTINFO /Ref:DI-E2670

TRANSMISSION NO. R673695 to Alma Frances Cathcart of Long Cove, Home Duties and Norma Edith ~~Freeman~~ Inman of Greenwich, Home Duties, as joint tenants are now the registered proprietor of the land within described

Registered 25 - 2 - 1980

REGISTRAR GENERAL

V597438 Mortgage to Lebuna Pty Limited Registered 27/2/1985

Discharged W468703 20-8-1986.

TRANSFER NO. R780387 Cavdor Pty. Limited is now the registered proprietor of the land within described

Registered 28 - 4 - 1980

REGISTRAR GENERAL

W468704 Mortgage to Advance Bank Australia Limited. Registered 20-8-1986.

Y468565

REGISTERED PROPRIETOR JOHN W RILEY PTY LIMITED AND RICHARD NORMAN PORTER AS TENANTS IN COMMON IN EQUAL SHARES BY TRANSFER Y468566. REGISTERED 12-7-1989.

MW

Y468567 P MORTGAGE TO WESTPAC SAVINGS BANK LIMITED. REGISTERED 12-7-1989.

MORTGAGE No. R780388 to Phillip Street Finance Pty. Limited.

Registered 28 - 4 - 1980

Discharged V597436 21/2/1985

REGISTRAR GENERAL

COMPUTER FOLIO NO FURTHER DEALINGS TO BE REGISTERED.

R780388 Mortgage S980688 Variation. Registered 29-3-1982.

Cancelled V597436 21/2/1985

REGISTRAR GENERAL

R780388 Mortgage V55940 Variation. Registered 5.4.1984

Cancelled V597436 27/2/1985

REGISTRAR GENERAL

REGISTERED PROPRIETOR John W Riley Pty. Limited by Transfer V597437 Registered 27/2/1985

R780388 (Te) & m/R

S980688 VM R

V55940 m/m (R780388) R

V597436 m 37 Te 38 m/R

W468703 m & R

Y468565 m — 66 T — 67 m R

Req:R506747 /Doc:CT 08643-100 CT /Rev:19-Aug-2005 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 14:56 /Seq:1 of 2
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CERTIFICATE OF TITLE

CT08643-100

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

Vol. 8643 Fol. 100

CANCELLED EDITION ISSUED
SEE AUTO FOLIO
-4 APR 1992

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

K. Mottle

Deputy Registrar General.

8643 Fol. 100
(Page 1) Vol.

First Title Old System

Prior Title 1/2/7259

LAND REFERRED TO

1/2 share in Lot 1 of Section 2 in DP7259 at St Leonards in the Municipality of Lane Cove Parish of Willoughby County of Cumberland

Title Diagram:
DP7259

FIRST SCHEDULE

S2
7.7.1998 RICHARD NORMAN PORTER ~~(Y468566)~~
~~RICHARD NORMAN PORTER~~ (Y468566

SECOND SCHEDULE

1. Reservations and conditions in the Crown Grant.
~~2. Y468567 Mortgage to Westpac Savings Bank Limited~~ I453268

LT 2/64

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

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

Req:R506747 /Doc:CT 08643-100 CT /Rev:19-Aug-2005 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 14:56 /Seq:2 of 2
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Vol 8643 Fol 100

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L.O. 55

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR | Registrar General

SECOND SCHEDULE (continued)

PARTICULARS | Registrar General | CANCELLATION

FOLIO CANCELLED NEW FOLIO IS 1/2/7259 A
NO FURTHER DEALINGS TO BE REGISTERED

NOTATIONS AND UNREGISTERED DEALINGS

I453268 04 R

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

Req:R506753 /Doc:CT 08643-101 CT /Rev:19-Aug-2005 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 14:57 /Seq:1 of 2
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CERTIFICATE OF TITLE

CT08643-101

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

Vol. 8643 Fol. 101

EDITION ISSUED

CANCELLED
SEE AUTO FOLIO

-4 APR 1992

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

K. Mottle

Deputy Registrar General.

8643 Fol. 101
(Page 1) Vol.

First Title Old System

Prior Title 1/2/7259

LAND REFERRED TO

1/2 share in Lot 1 of Section 2 in DP7259 at St Leonards in the Municipality of Lane Cove Parish of Willoughby County of Cumberland

Title Diagram:
DP7259

FIRST SCHEDULE

JOHN W. RILEY PTY LIMITED (Y468566)

SECOND SCHEDULE

1. Reservations and conditions in the Crown Grant.
2. ~~Y468567 Mortgage to Westpac Savings Bank Limited~~

RELEASED 7/5/1992 Q29

LT 2/64

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

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

Req:R506753 /Doc:CT 08643-101 CT /Rev:19-Aug-2005 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 14:57 /Seq:2 of 2
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FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR

Registrar General

~~Mithraya Pty Limited Transfer E468101. Registered 28-7-1992~~

~~John William Riley by Transfer 0311653. Registered 22-6-1995~~

Ricam Pty Ltd by Transfer 5443376. Registered 8-12-1998.

SECOND SCHEDULE (continued)

PARTICULARS

Registrar General

CANCELLATION

~~0311654 Mortgage to National Australia Bank Limited. Registered 22-6-1995~~

5443375
8-12-1998

5443377 Mortgage to Westpac Banking Corporation. Registered 8-12-1998.

FOLIO CANCELLED NEW FOLIO IS 1/2/7259 B
NO FURTHER DEALINGS TO BE REGISTERED

NOTATIONS AND UNREGISTERED DEALINGS

E468101 T.R
0311653 } R
- 54M }
5443375 Dm)
76T
77m

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

Historical Search

09/09/2021 03:02 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

9/9/2021 3:03PM

FOLIO: 1/2/7259A

Recorded	Number	Type of Instrument	C.T. Issue
16/8/2005	AB699127	DEPARTMENTAL DEALING	FOLIO CREATED CT NOT ISSUED
24/4/2013	AH659102	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 1
14/5/2014	AI574688	TRANSFER	
14/5/2014	AI574689	TRANSFER WITHOUT MONETARY CONSIDERATION	EDITION 2
2/7/2015	AJ596777	CAVEAT	
22/7/2015	AJ673227	CHANGE OF NAME	EDITION 3
29/4/2016	AK387270	WITHDRAWAL OF CAVEAT	
29/4/2016	AK387271	CAVEAT	
11/1/2017	AM49109	WITHDRAWAL OF CAVEAT	
11/1/2017	AM49110	CAVEAT	
27/1/2017	AM103140	TRANSFER	EDITION 4

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 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.

Req:R506857 /Doc:DL AI574688 /Rev:16-May-2014 /NSW LRS /Pgs:ALL /Prt:09-Sep-2021 15:04 /Seq:1 of 1
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Form: 01T
Release: 6·1

TRANSFER

New South Wales
Real Property Act 1900

AI574688Y

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

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
24-04-2014 0007157956-003
SECTION 57
DUTY $ *********50.00

(A) **TORRENS TITLE** Folio Identifier 1/2/7259A

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
674R	~~Amanda Porter Solicitor~~ ~~17 Nelson St~~ ~~Gordon NSW 2072~~ 1234956 Porter. PRYOR WHITE PL 9GG1 5720	T TW
	Reference: A Porter /	

(C) **TRANSFEROR** Richard Norman Porter

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ ~~72,500.00~~ ~~$116,667~~ $116,667 and as regards the abovementioned land transfers to the transferee an estate in fee simple

(E) **SHARE TRANSFERRED** one third share

(F) Encumbrances (if applicable):

(G) **TRANSFEREE** Ricam Pty Limited ACN 064 953 484

(I) **TENANCY:** Tenants in Common

OFFICE OF STATE REVENUE (NSW) 8736885 ALTERATION NO

DATE

(J) I certify I am an eligible witness and that the transferor signed this dealing in my presence. [See note* below]

Signature of witness:

Name of witness: AMANDA JANE PORTER
Address of witness: 17 NELSON ST
GORDON 2072

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Common Seal RICAM PTY LTD A.C.N. 064 953 484

Certified correct for the purposes of the Real Property Act 1900 by the company named below the common seal of which was affixed pursuant to the authority specified and in the presence of the authorised person(s) whose signature(s) appear(s) below.

Company: RICAM PTY LIMITED ACN 064 953 484
Authority: Board Resolution

Signature of authorised person:

Name of authorised person: AMANDA JANE PORTER
Office held: DIRECTOR

Signature of authorised person:

Name of authorised person: RICHARD NORMAN PORTER
Office held: SECRETARY/DIRECTOR

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. _____ Full name: Signature:

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

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

1303

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

Historical Search
09/09/2021 03:08 PM

Client Reference: DI-E2670

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

9/9/2021 3:09PM

FOLIO: 1/2/7259B

Recorded	Number	Type of Instrument	C.T. Issue
16/8/2005	AB699127	DEPARTMENTAL DEALING	FOLIO CREATED CT NOT ISSUED
2/7/2015	AJ596777	CAVEAT	
29/4/2016	AK387270	WITHDRAWAL OF CAVEAT	
29/4/2016	AK387271	CAVEAT	
11/1/2017	AM49109	WITHDRAWAL OF CAVEAT	
11/1/2017	AM49110	CAVEAT	
27/1/2017	AM103139	DISCHARGE OF MORTGAGE	
27/1/2017	AM103140	TRANSFER	EDITION 1

*** END OF SEARCH ***

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