NEO CONSULTING

PRELIMINARY SITE INVESTIGATION

N09527

Ideal Corp

PROPOSED DEVELOPMENT AT:

15 Loane Circuit,

Farley NSW 2320

21st August 2024

Report Distribution

Preliminary Site Investigation

Address: 15 Loane Circuit, Farley NSW 2320

Report No: N09527

Date: 21st August 2024

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Nick Caltabiano

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Executive Summary

NEO Consulting were appointed by Ideal Corp (the client) to undertake a Preliminary Site Investigation (PSI) for the property located at No. 15 Loane Circuit, Farley NSW 2320 (the site). The site is legally identified as Lot 527/-/DP1275320 and has an area of approximately 1967m^2. The site is currently zoned as R1 - General Residential.

NEO Consulting understands that the proposed development for the site includes the construction of a childcare centre with on-grade carpark.

The objective of this PSI was to provide a preliminary assessment of potentially contaminating activities which may have impacted the site. The scope of work undertaken includes:

- A site inspection to identify potential sources of contamination;
- Soil sampling to identify any contaminants (if present);
- Historical investigations relating to the site (if any);
- Local Council records and planning certificates;
- NSW Environment Protection Authority (EPA) environmental contaminated lands register;
- Protection of the Environment Operations (POEO) Act public register;
- Dial-Before-You-Dig enquiry for an evaluation into local underground services and assets;
- Review of local geological and hydrogeological information, including an evaluation of the WaterNSW registered groundwater bore database; and
- Acid Sulphate Soils (ASS) data maps

A site investigation was undertaken on the 12th August 2024 by qualified environmental consultants. During the site inspection, a soil investigation program was undertaken with a judgemental approach within the southern portion of the site to identify areas of contamination. Eight (8) soil samples were obtained from the topsoil (0-0.15m). The samples were submitted to a National Association of Testing Authorities, Australia (NATA) accredited laboratory for analysis of Chemicals of Potential Concern (CoPC) that may have impacted the site during historical or present activities.

Historical aerial images indicate that no onsite structures have been featured onsite since 2010, and that at this time the site was a vacant lot. Minimal earthworks have been undertaken onsite between May 2023 and June 2024, consisting of what appears to be 'cut and fill' to level the site with the potential importation of topsoil. No foreign material was noted.

The soil underlying the site consisted of dark Sandy Clay topsoil which ranged from 0 to ~0.3m followed by natural sandstone in some areas and red and light-brown Clay.

Analytical results indicate no exceedances of the NEPM 2013 Health and Ecological Assessment Criteria for Residential (A) sites.

Based on the site investigation and analytical results, NEO Consulting finds that the site may be considered suitable for the proposed subdivision and development for Residential (A) land use, provided the recommendations within **Section 14** are undertaken.

1. Introduction

1.1 Background

NEO Consulting were appointed by Ideal Corp (the client) to undertake a Preliminary Site Investigation (PSI) for the property located at No. 15 Loane Circuit, Farley NSW 2320 (the site). The site is legally identified as Lot 527/-/DP1275320 and has an area of approximately 1967m^2. The site is currently zoned as R1 - General Residential.

A site inspection was undertaken on 12th August 2024 by qualified environmental consultants. Reporting, photographs and sampling were conducted on this day and with reference to the relevant regulatory criterial **(2. Scope of Work**). Further information of the inspection is described in **4. Site Condition**.

NEO Consulting understands that the proposed development for the site includes the construction of a childcare centre with on-grade carpark.

1.2 Objectives

This report provides a preliminary assessment of current and/or historical potentially contaminating activities that may have impacted the soils and will determine if the site is suitable for the proposed development.

1.3 Trigger for Assessment

The trigger for the assessment is to support a Development Application submitted to Maitland City Council. As the proposed use for the site is sensitive in nature (Childcare Centre), a preliminary site investigation has been requested.

1.4 Regulatory Framework

This PSI has been prepared in general accordance with the following regulatory framework:

- State Environmental Planning Policy (Resilience and Hazard) 2021;
- National Environment Protection Measures (NEPM), 2013;
- NSW Environmental Protection Authority, *Guidelines on the Duty to Report Contamination under Contaminated Land Management Act*, 1997;
- NSW Environmental Protection Authority, *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines,* 2020;
- Protection of the Environment and Operation Act 1997
- Protection of the Environment Operations (Waste) Regulations, 2005;
- Maitland Local Environmental Plan (2015); and
- Maitland Development Control Plan (MDCP 2023).

2. Scope of Work

To meet the requirements in Section 1.3 of this report, the following scope of works were included:

- A site inspection to identify potential sources of contamination on site;
- Soil sampling to identify any contaminants (if present);
- Historical investigations relating to the site (if any);
- Review of current and historical Certificates of Title and Local Council records and planning certificates and NSW EPA Contaminated Land Records and NSW POEO Register;
- Review of local geological and hydrogeological information, including an evaluation of the NSW Groundwater registered groundwater bore database;
- Review of Acid Sulphate Soil data maps;
- Development of a Conceptual Site Model (CSM) to identify the connections between potential sources of contamination and exposure pathways, human and/or ecological receptors; and
- Recommendations for additional investigations (if any), based on the identified data gaps and findings of this report.

3. Site Details

Table 1. Site Details

Address	15 Loane Circuit, Farley NSW 2320
Deposited plan	Lot 527/-/DP1275320
Zoning	R1 - General Residential
Locality map	Figure 1, Appendix A
Site Boundary	Figure 2, Appendix A
Area	1967m^2
LGA	Maitland City Council
Site Coordinates	-32.729176, 151.507805
GDA 94	360170.99m E, : 6377751.23m S, 56H

Table 2. Surrounding land-use

Direction from site	Land-use
North	Vacant lots
East	Loane Circuit, Residential lots
South	Wollombi Road, Residential lots
West	Residential lots

4. Site Condition

A site inspection was undertaken on 12th August 2024 by NEO Consulting. During the site inspection, the following observations were noted (photographs in **Appendix A**):

- The site consisted of a vacant lot;
- The site surface featured minimal vegetation, with much of the underlying soil being exposed;
- The soil underlying the site was consisted of dark Sandy Clay topsoil to a depth of ~0.3m followed by natural red and light brown Clay (>~0.3m).
- No oil staining was observed within the topsoil and subsoil.
- The site gradient was overall flat.

The nearest human receptors include adjoining rural and residential properties, and environmental receptors include numerous creeks and dams on neighbouring properties (The closest running waterway is an unnamed tributary of Stony Creek, ~200m NW of the site)

5. Site History

5.1 History of Site

Historical aerial images indicate that the current residential dwelling has been present on the site since at least 1947. Over the years, various sheds have been added and removed. Currently, the southwestern portion of the site contains two metal sheds and one fibrocement shed.

A summary of available historical aerial imagery is contained below, and the images referenced can be seen in **Appendix A**.

Table 3. Historical aerial images of the site and surrounding area.

Year	Description
2010	The site was a vacant block at the time, featuring trees and grass.
2017	No significant changes appear to have occurred since the previous image was taken.
2020	No significant changes appear to have occurred since the previous image was taken.
January 2023	No significant changes appear to have occurred since the previous image was taken.
May 2023	Significant land clearing and scraping have been undertaken onsite, as well as to the property immediately north. Soil appears to have been stockpiled along the site's western boundary.
June 2023	The Site featured three large stockpiles in the center, likely imported fill material
October 2023	Previously visible stockpiles are not visible in the image, potentially spread across the site to create a consistent level.
June 2024	Vehicle tracks are visible onsite in the image.

5.2 Section 10.7 (2) Planning Certificate

A Section 10.7 Planning Certificate describes how a property may be used and the restrictions on development. The Planning Certificate is issued under Section 149 of the Environmental Planning and Assessment Act 1979. At the time of reporting, the Planning Certificate was not available.

5.3 NSW EPA Contaminated Land Register

A search within the NSW EPA contaminated land register was undertaken for the site. No results were found for the site and 500m radius of the site.

5.4 Protection of the Environment Operation Act (POEO) Public Register

A search on the POEO public register of licensed and delicensed premises (DECC) was undertaken for the site. No results were found for the site and 500m radius of the site.

5.5 SafeWork NSW Hazardous Goods

A search was not undertaken with SafeWork NSW for historical dangerous goods stored onsite. No evidence of underground storage of chemicals was encountered during the site inspection.

5.6 Product Spill and Loss History

The visual site inspection did not identify evidence of surface and subsurface stating within the site.

5.7 PFAS Investigation Program

The NSW Government PFAS Investigation Program map indicates the site is not currently listed or located within 1km of a listed site for PFAS contamination investigation and management programs.

6. Environmental Setting

6.1 Geology

Data obtained from the MinView NSW Geological Database indicates that the site is underlain by the Rutherford Formation, a layer formed in the Permian Period. This unit regionally consists of Siltstone, marl and minor sandstone.

6.2 Soil Landscape

A review of the regional maps by the NSW Department of Planning, Industry and Environment indicates the site is generally located within the Bolwarra Heights soil landscape. This landscape generally consists of rolling low hills on Permian sediments in the centre-west of the sheet in the East Maitland Hills region. Slopes are 5–20%, elevation to 100 m, local relief to 80 m. Cleared tall open-forest.

6.3 Groundwater

A groundwater bore search was conducted on the 21st of August 2024. No Bore was found within 1km radius of the site.

It was beyond the scope of works to study the groundwater flow direction. However, based on the regional topography, groundwater is expected to flow northwest toward Stony Creek (740m NW of the site).

6.4 Topography

The site gradient is overall flat. The regional topography surrounding the site has a gentle sloping (<5%) towards the northwest.

6.5 Site Drainage

Site drainage is likely consistent with the local topography. Stormwater probably flows northwest via the municipal stormwater system and reaches Stony Creek located approximately 740m northwest of the site.

6.6 Acid Sulphate Soils

To determine whether there is a potential for ASS to be present at the site, information was reviewed utilising the NSW Department of Planning, Industry and Environment eSPADE map viewer. The ASS risk maps show the chance of acid sulphate soil occurrence. This search indicated that there is "no known occurrence" of ASS underlying the soil at this site.

7. Areas of Environmental Concern

Based on the above information, the potential Areas of Environmental Concern (AEC) and their associated Contaminants of Potential Concern (CoPC) for the site were identified and summarised (**Table 4**).

Table 4. Potential Areas and Contaminants of Concern

AEC	Potentially Contaminating / Hazardous Activity	CoPC	Likelihood of Site Impact	Comments
Entire site	Importation of fill material from unknown origin Site activities Onsite Carparking	TRH, BTEX, PAH, OCP/OPP, PCBs, Metals, Asbestos	Low	No staining was observed within this area. Anthropogenic materials were not identified within onsite fill.

ABBREVIATIONS: TOTAL RECOVERABLE HYDROCARBONS (TRH), BENZENE TOLUENE ETHYLBENZENE AND XYLENE (BTEX), POLYCYCLIC AROMATIC HYDROCARBON (PAH), ORGANOCHLORINE PESTICIDES (OCPS), ORGANOPHOSPHORUS PESTICIDES (OPPS), POLYCHLORINATED BIPHENYLS (PCBS), ASBESTOS CONTAINING MATERIALS (ACM), HAZARDOUS MATERIALS SURVEY (HMS), OZONE DEPLETING SUBSTANCES (ODS), SYNTHETIC MINERAL FIBRES (SMF), POLYCHLORINATED BIPHENYLS (PCBS), METALS INCLUDING ARSENIC (AS), CADMIUM (CD), CHROMIUM (CR), COPPER (CU), LEAD (PB), NICKEL (NI), ZINC (ZN) AND MERCURY (HG).

8. Conceptual Site Model

A Conceptual Site Model (CSM) was developed to provide an indication of potential risks associated with contamination source and contamination migration pathways, receptors and exposure mechanisms. The CSM provides a framework for the review of the reliability and useability of the data collected and to identify data gaps in the existing site characterisation. Here, we consider the connections between the following elements:

- Potential contamination sources and their associated CoPC;
- Potential human receptors that may be impacted by the site contamination are current and future site users including occupants to the dwelling/infrastructures onsite, site workers and the general public within the immediate vicinity of the site;
- Potential environmental receptors to the site including but not limited to: groundwater and surface water bodies, residual soils at and/or nearby the site;
- Potential exposure pathways; and
- Whether source-pathway-receptor connections are complete based on current and future site conditions.

Table 5. Conceptual Site Model

Potential Sources and Mechanism of Contamination	Potential Receptor	Potential Exposure Pathway	Complete connection	Risk	Justification/ Control Measures
Importation of fill material from unknown origin (entrained in Fill) Site activities (Top down) Onsite Carparking (Top down)	Future site occupant, construction workers, general public, surrounding sensitive receptors	Dermal contact, inhalation/ ingestion of particulates.	Complete (current)	Medium	Exposure to potentially contaminated soils is possible due to unsealed surfaces. If present, impacted soils are to be disposed of off-site in accordance with an unexpected finds protocol.
			Complete (Future)	Low	
	Natural soils	Migration of contamination from fill layer.	Complete (current)	Low	If contamination is present in the fill layer, migration to the natural layer is likely to be limited. If present, impacted soils are to be disposed of off-site.
			Complete (Future)	Low	
	Stony Creek (~740m NW)	Migration of impacted groundwater and surface water run-off.	Incomplete (current)	Low	The local topography surrounding the site falls toward an Stony Creek (~740m NW). It is unlikely surface waters from the site reach this waterway. If present,

			Incomplete (future)	Low	contaminated soils and groundwater are likely to be remediated.
	Underlying aquifer	Leaching and migration of contaminants through groundwater infiltration.	Incomplete (current)	Low	leachability of contaminants is likely to be limited due to presence of cohesive clayey subsoil. If present, contaminated soil and/or groundwater is likely to be remediated.
			Incomplete (future)	Low	

9. Assessment Criteria

The following assessment criteria were adopted for the investigation.

9.1 NEPM Health Investigation Level A (HIL-A) – Residential

HILs are scientific, risk-based guidance levels to be used as in the primary stage of assessing soil contamination to evaluate the potential risks to human health from chronic exposure to contaminants. HILs are applicable to a broad range of metals and organic substances, and generally apply to depths up to 3m below the surface for residential use.

Tier 1 HILs are divided into sub-criteria. The sub-criteria appropriate to the site is HIL A – residential with garden/accessible soils.

Table 6. HIL-A

Assessment Criteria	Residential Soil HIL-A, mg/kg
HCB	10
Heptachlor	6
Chlordane	50
Aldrin & Dieldrin	6
Endrin	10
DDD+DDE+DDT	240
Endosulfan	270
Methoxychlor	300
Mirex	10
Arsenic, As	100
Cadmium, Cd	20
Chromium, Cr	100
Copper, Cu	6,000
Lead, Pb	300
Nickel, Ni	400
Zinc, Zn	7,400
Mercury, Hg	40
Carcinogenic PAHs (as BaP TEQ)	3
Total PAH (18)	300
Total PCBs	1

9.2 NEPM Health Screening Level A (HSL-A) – Residential

HSLs have been developed for selected petroleum compounds and fractions and are used for the assessment of potential risks to human health from chronic inhalation and direct contact pathways of petroleum vapour emanating off petroleum contaminated soils (Vapour Risk). HSLs are guided by land-use scenarios, specific soil physicochemical properties and generally apply to depths below surface to >4m.

Tier 1 HSLs are divided into sub-criteria. The sub-criteria appropriate to the site is HSL A – residential with garden/accessible soils. NL = Not Limiting.

Table 7. HSL-A

Assessment Criteria	Residential Soil HSL-A for Vapour Intrusion, 0-<1m depth, Clay, mg/kg	Residential Soil HSL-A for Vapour Intrusion, 1-<2m depth, Clay, mg/kg
Benzene	0.7	1
Toluene	480	NL
Ethylbenzene	NL	NL
Xylenes	110	310
Naphthalene	5	NL
TRH C_6-C_{10} - BTEX (F1)	50	90
TRH >C_{10}-C_{16} - N (F2)	280	NL

9.3 NEPM Ecological Investigation Level (EIL) – Urban Residential and Public Open Space

Ecological investigation levels (EILs) have been developed to assess the risk for the presence of metals and organic substance in a terrestrial ecosystem. EILs are guided by land-use scenarios, specific soil physicochemical properties and generally apply to the top 2m of soil. EILs can be applied for arsenic (As), copper (Cu), chromium III (Cr(III)), dichlorodiphenyltrichloroethane (DDT), naphthalene, nickel (Ni), lead (Pb) and zinc (Zn). The NEPM Soil Quality Guidelines (SQG) for EILs are calculated using the Added Contamination Limit (ACL) to determine the amount of contamination that had to be added to the soil to cause toxicity, including ambient background concentration (ABC).

Table 8. Generic EIL

Assessment Criteria	Urban Residential and Public Open Space, mg/kg
Arsenic, As	100
Lead, Pb	1100
DDT	640
Naphthalene	370

9.4 NEPM Ecological Screening Level (ESL) – Urban Residential and Public Open Space

ESLs have been developed for selected petroleum hydrocarbons (BTEX, benzo(a)pyrene, TRH F1 and F2) in soil, based on fresh contamination. These parameters are applicable to coarse and fine-grained soil and apply from the surface of the soil to 2m below ground level, which corresponds with the root and habitat zone for many species.

Table 9. ESL

Assessment Criteria	Residential and Public Open Spaces, Fine-Grained Soil, mg/kg
Benzene	65
Toluene	105
Ethylbenzene	125
Xylenes	45
BaPyr (BaP)	0.7
TRH C_6-C_{10}	180
TRH >C_{10}-C_{16}	120
TRH >C_{16}-C_{34} (F3)	1,300
TRH >C_{34}-C_{40} (F4)	5,600

9.5 NEPM Management Limits – Residential, Parkland and Public Open Space

Management Limits for petroleum have been developed for prevention of explosive vapour accumulation, prevention of the formation of observable Light Non-Aqueous Phase Liquids (LNAPL) and protection against effects on buried infrastructure. Residential, parkland and public open space limits have been adopted based on the proposed land use

Table 10. Management Limits

Assessment Criteria	Residential, Parkland and Public Open Space, Fine-Grained Soil, mg/kg
TRH C_6-C_{10}	800
TRH >C_{10}-C_{16}	1000
TRH >C_{16}-C_{34} (F3)	3,500
TRH >C_{34}-C_{40} (F4)	10,000

9.6 NEPM Health Screening Level A (HSL-A) – Residential for Asbestos

The assessed soil must not contain Asbestos Containing Materials (ACM) in the excess of 0.01%w/w and Asbestos Fines (AF) and Fibrous Asbestos (FA) in excess of 0.001%w/w. Moreover, surface soil within the site must be free of visible ACM, Asbestos Fines (AF) and Fibrous Asbestos (FA).

Table 11. HSL-A for asbestos

Assessment Criteria	Health Screening Level (%w/w) Residential (A)
ACM	0.01%
FA and AF (friable asbestos)	0.001%
All forms of asbestos	No visible asbestos for surface soils

10. Sampling and Analysis Plan

10.1 Sampling Rationale

Table 12. Sampling Rationale

Sampling Criteria	Chosen Approach	Justification
Sampling Pattern	Judgemental sampling pattern within accessible areas	This pattern was selected due to the area of the site, access to underlying soil, the AEC and CoPC as well as the potential heterogeneity of any contamination.
Sampling Density	Eight (8) soil samples from eight (8) test pits.	This sampling density was selected based on the extent of the potential contaminated area to be detected, feasibility, the site history, distribution of current and historical uses on site, location and condition of structures
Field QA/QC Samples	None collected	QA/QC sampling was undertaken in general accordance with specifications outlined in Australian Standards (AS) 4482.1-2005, Standard Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil and NEPM 2013 Schedule B2; *Guideline on Site Characterisation*.
Sampling Depths	0-0.15m	These depths were selected in compliment with sampling density and to target depths of potential contaminants.

10.2 Field Sampling Methodology

Sampling was undertaken using test pit excavation. Test pits were excavated with a shovel to a depth of ~0.3m bgl. The samples were collected using clean nitril gloves and placed into laboratory 250m sample jars. The samples were screened in the field using a handheld Photoionisation Detector (PID). The equipment was decontaminated with detergent and deionised water between test pits. Samples were stored on ice in an esky while on-site and in transit to a NATA accredited laboratory for the analysis of the CoPC under Chain of Custody (COC) documentation.

Table 13. Sample details

Sample ID	Depth (m)	Sample Description	Matrix	PID (ppm)
S1	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0
S2	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0
S3	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0
S4	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0
S5	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0
S6	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0
S7	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0
S8	0-0.15	Sandy CLAY FILL CH: firm, high plasticity, dark brown, organic, moist, plant rootlets .	Fill	<1.0

Table 14. Laboratory Testing Program

Sample	Analyses
All samples	TRH, BTEX, PAH, OCP, OPP, PCBs, Metals and Asbestos.

11. Analytical Results

11.1 Soil Analytical Results

All analytes were below the NEPM 2013 Health and Ecological Assessment Criteria for Residential (A) sites.

Results worth noting:

- TRH was not detected in any samples;
- BTEX was not detected in any samples;
- PAH was not detected in any samples;
- Pesticides were not detected in any samples;
- Asbestos was not detected in any samples; and
- Heavy metals were detected all analytes were below the criteria.

11.2 QA/QC Results

SGS laboratory report SE267631 R0 indicates all Data Quality Objectives were met with the exception of the following:

- Duplicate: PAH in soil , 17 items; and
- Matrix Spike: Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES, 2 item.

Overall, the QA/QC results indicate a good quality data set.

12. Data Gaps

NEO Consulting have not identified any data gaps significant enough to warrant further investigations.

13. Conclusion

A site investigation was undertaken on the 12th August 2024 by qualified environmental consultants. During the site inspection, a soil investigation program was undertaken with a judgemental approach within the southern portion of the site to identify areas of contamination. Eight (8) soil samples were obtained from the topsoil (0-0.15m). The samples were submitted to a National Association of Testing Authorities, Australia (NATA) accredited laboratory for analysis of Chemicals of Potential Concern (CoPC) that may have impacted the site during historical or present activities.

Historical aerial images indicate that no onsite structures have been featured onsite since 2010, and that at this time the site was a vacant lot. Minimal earthworks have been undertaken onsite between May 2023 and June 2024, consisting of what appears to be 'cut and fill' to level the site with the potential importation of topsoil. No foreign material was noted.

The soil underlying the site consisted of dark Sandy Clay topsoil which ranged from 0 to ~0.3m followed by natural sandstone in some areas and red and light-brown Clay.

Analytical results indicate no exceedances of the NEPM 2013 Health and Ecological Assessment Criteria for Residential (A) sites.

Based on the site investigation and analytical results, NEO Consulting finds that the site may be considered suitable for the proposed subdivision and development for Residential (A) land use, provided the recommendations within **Section 14** are undertaken.

14. Recommendations

Based on the information collected and available during this investigation, the following recommendations have been made:

- Any other soils requiring excavation, onsite reuse and/or removal must be classified in accordance with "Waste Classification Guidelines Part 1: Classifying Waste" NSW EPA (2014);

References

Statutory Requirements

- National Environment Protection Council Act 1994;
- Protection of the Environment and Operation Act 1997;
- The Contaminated Land Management Act 1997;
- Work Health and Safety Act, 2011.

Regulatory Framework

- State Environmental Planning Policy (Resilience and Hazard) 2021;
- NSW EPA, *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act*, 1997;
- NSW EPA, *Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation, 2014*;
- NSW EPA, *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines,* 2020;
- NSW EPA, *Contaminated Land Management, Guidelines for the NSW Site Auditor Scheme,* 2017 (3rd Edition);
- NSW EPA, *Waste Classification Guidelines Part 1: Classifying Waste,* 2014;
- NEPC, National Environment Protection (Assessment of Site Contamination) Measures (NEPM), 2013;
- HEPA, PFAS National Environmental Management Plan, Version 2.0, 2020;
- Protection of the Environment Operations (Waste) Regulations, 2005;
- SafeWork NSW, *Managing Asbestos in or On Soil*, 2014; and
- Work Health and Safety Regulation, 2011.

Limitations

The findings of this report are based on the Scope of Work outlined in Section 2. NEO Consulting performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental consulting profession. No warranties, express or implied are made.

The results of this assessment are based upon the information documented and presented in this report. All conclusions and recommendations regarding the site are the professional opinions of NEO Consulting personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, NEO Consulting assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements from sources outside of NEO Consulting, or developments resulting from situations outside the scope of this project.

The results of this assessment are based on the site conditions identified at the time of the site inspection and validation sampling. NEO Consulting will not be liable to revise the report to account for any changes in site characteristics, regulatory requirements, assessment criteria or the availability of additional information, subsequent to the issue date of this report.

NEO Consulting is not engaged in environmental consulting and reporting for the purpose of advertising sales promoting, or endorsement of any client interests, including raising investment capital, recommending investment decisions, or other publicity purposes.

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NEO CONSULTING

APPENDIX A

Figures and Photographic Log

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Figure 1. The site is located approximately 31.6km northwest of the Newcastle CBD.

Site location

Source: Six Maps

Figure 1	Locality Map
Project	15 Loane Circuit, Farley NSW 2320

Figure 2. The approximate area of the property is 1967m^2. Eight (8) soil samples were obtained from the site.

Soil Sample Locations

Source: Nearmap 2024

Figure 2	Site Area
Project	15 Loane Circuit, Farley NSW 2320

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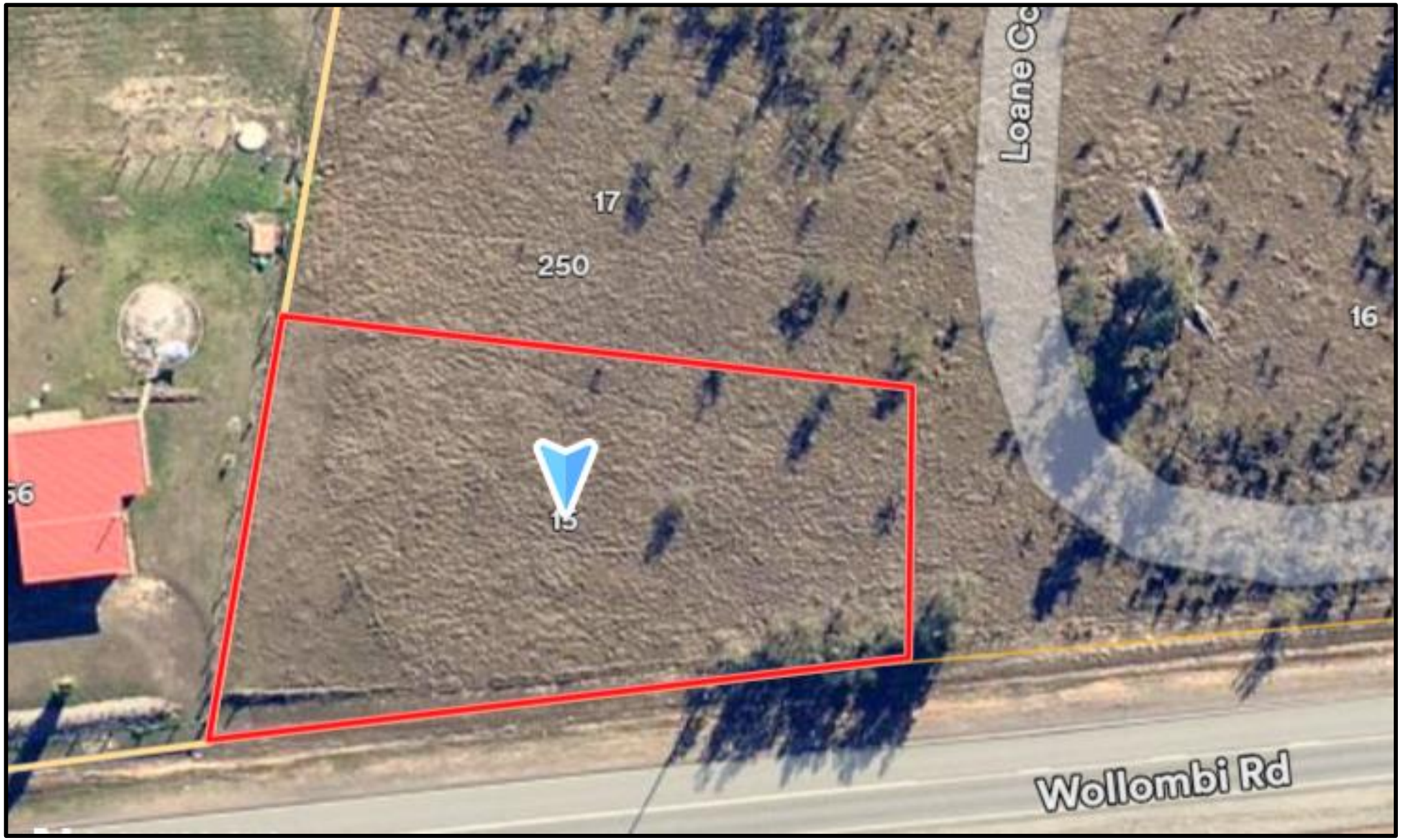
Figure 3. Aerial image of the site and surrounding area 2010. The site was a vacant block at the time, featuring trees and grass.



Source: Nearmap 2024

Figure 3	Aerial Image 2010
Project	15 Loane Circuit, Farley NSW 2320

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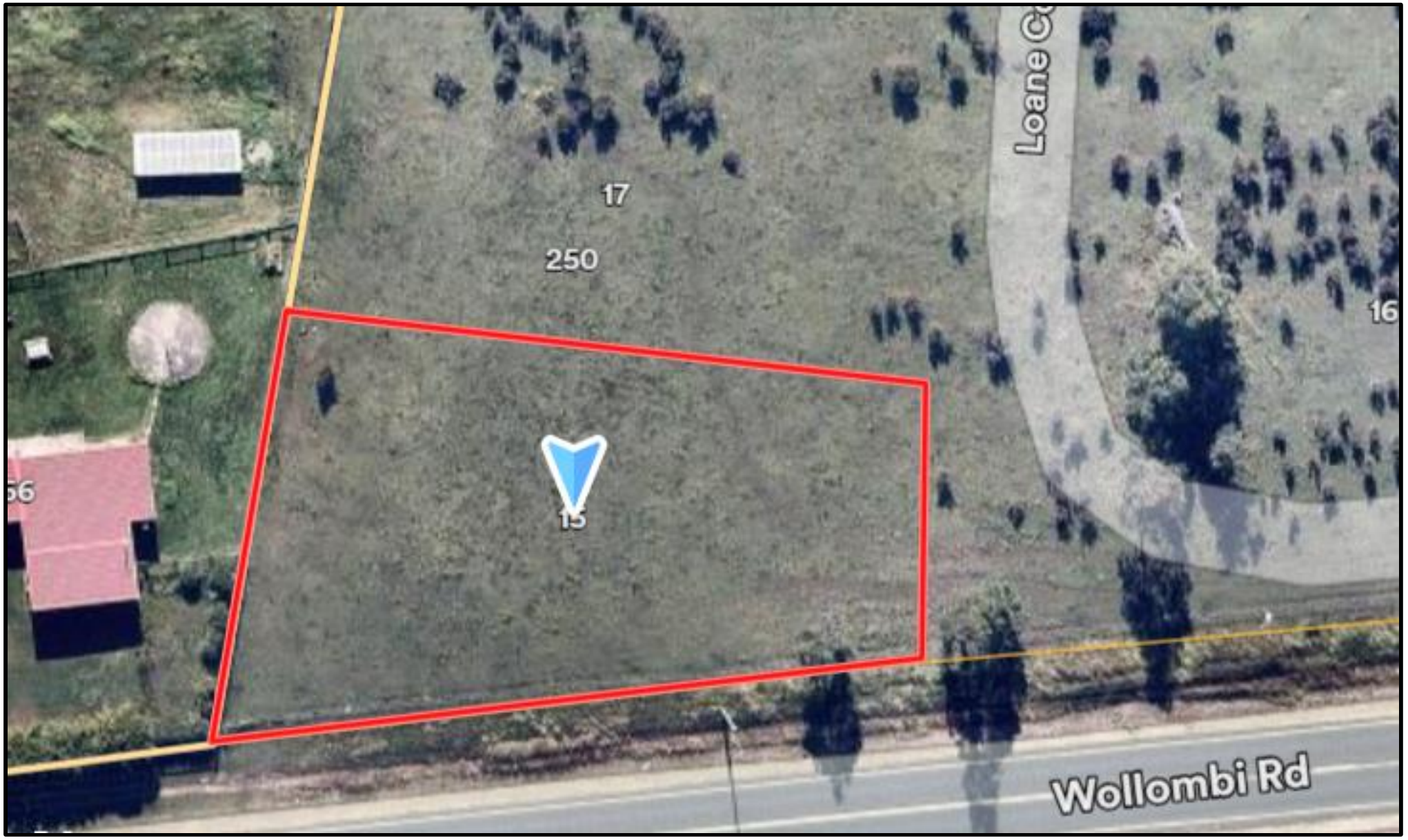
Figure 4. Aerial image of the site and surrounding area 2017. No significant changes appear to have occurred since the previous image was taken.



Source: Nearmap 2024

Figure 4	Aerial Image 2017
Project	15 Loane Circuit, Farley NSW 2320

Figure 5. Aerial image of the site and surrounding area 2020. No significant changes appear to have occurred since the previous image was taken.

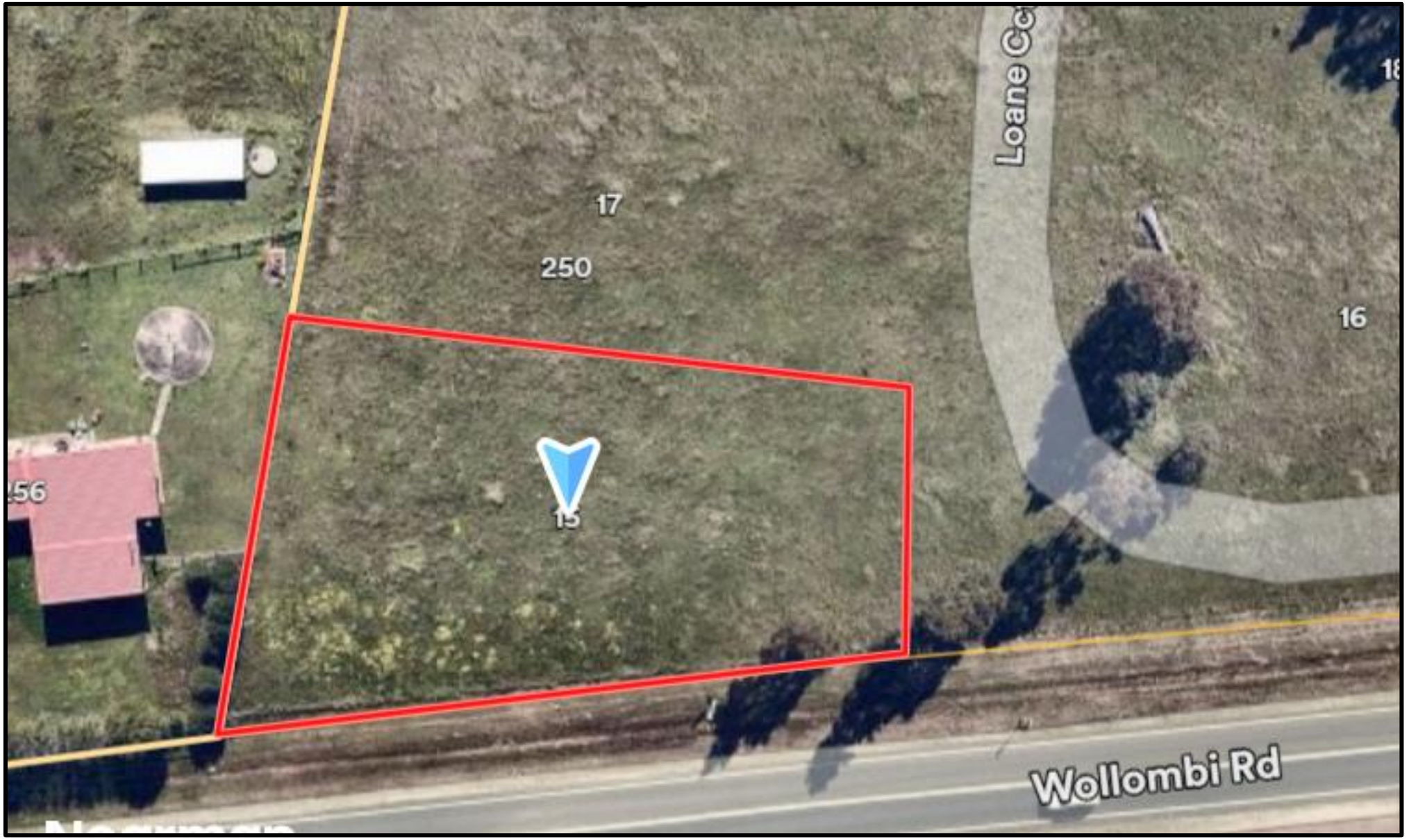


Figure 5	Aerial Image 2020
Project	15 Loane Circuit, Farley NSW 2320

Source: Nearmap 2024

N

Figure 6. Aerial image of the site and surrounding area January 2023. No significant changes appear to have occurred since the previous image was taken.

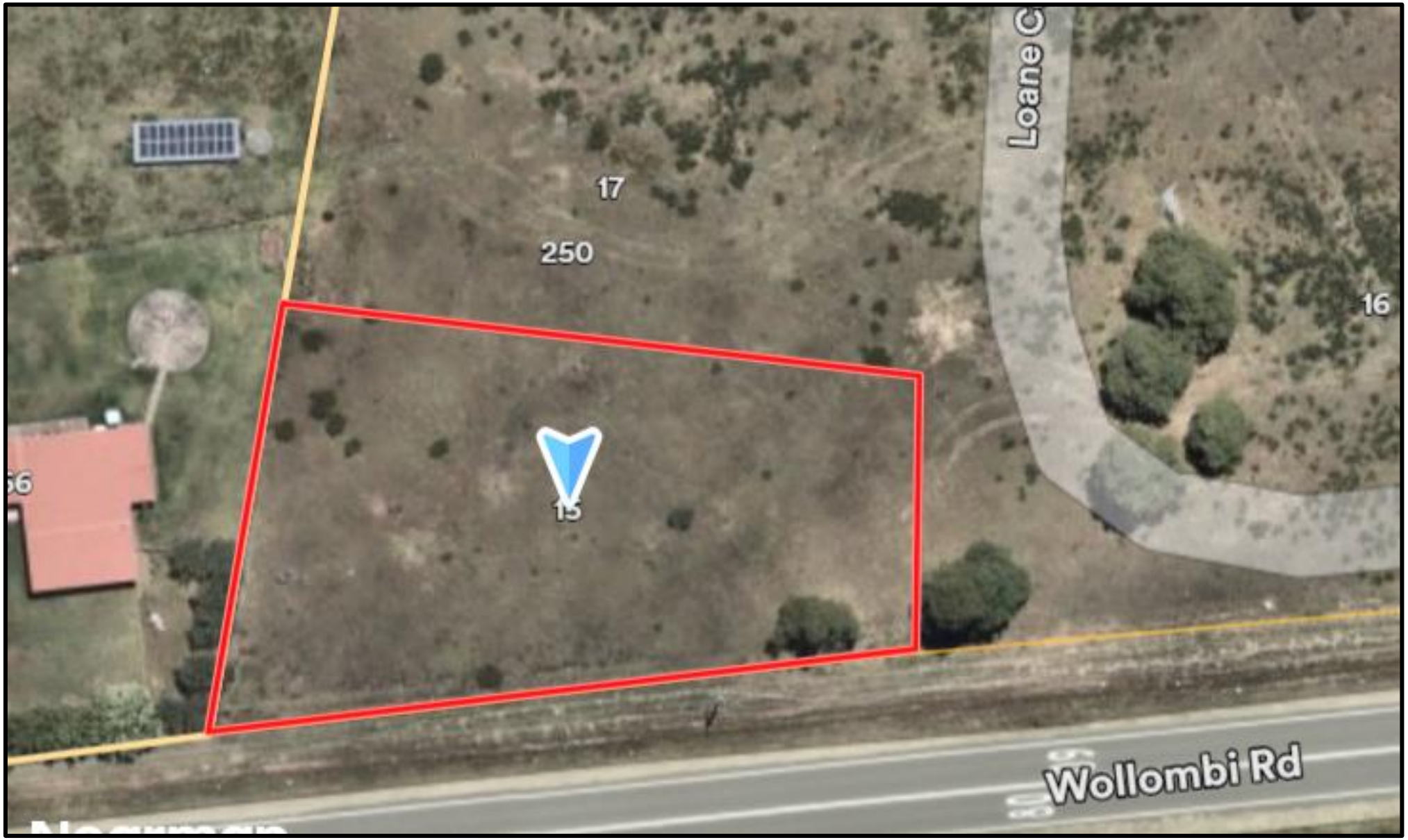


Figure 6	Aerial Image January 2023
Project	15 Loane Circuit, Farley NSW 2320

Source: Nearmap 2024

Figure 7. Aerial image of the site and surrounding area May 2023. Significant land clearing and scraping have been undertaken onsite, as well as to the property immediately north. Soil appears to have been stockpiled along the site's western boundary.

Figure 7	Aerial Image May 2023
Project	15 Loane Circuit, Farley NSW 2320

Source: Nearmap 2024

N

Figure 8. Aerial image of the site and surrounding area June 2023. The Site featured three large stockpiles in the center, likely imported fill material

Figure 8	Aerial Image June 2023
Project	15 Loane Circuit, Farley NSW 2320

Source: Nearmap 2024

N

Figure 9. Aerial image of the site and surrounding area June 2023. Previously visible stockpiles are not visible in the image, potentially spread across the site to create a consistent level.

Figure 9	Aerial Image October 2023
Project	15 Loane Circuit, Farley NSW 2320

Source: Nearmap 2024

Figure 10. Aerial image of the site and surrounding area June 2024. Vehicle tracks are visible onsite in the image.

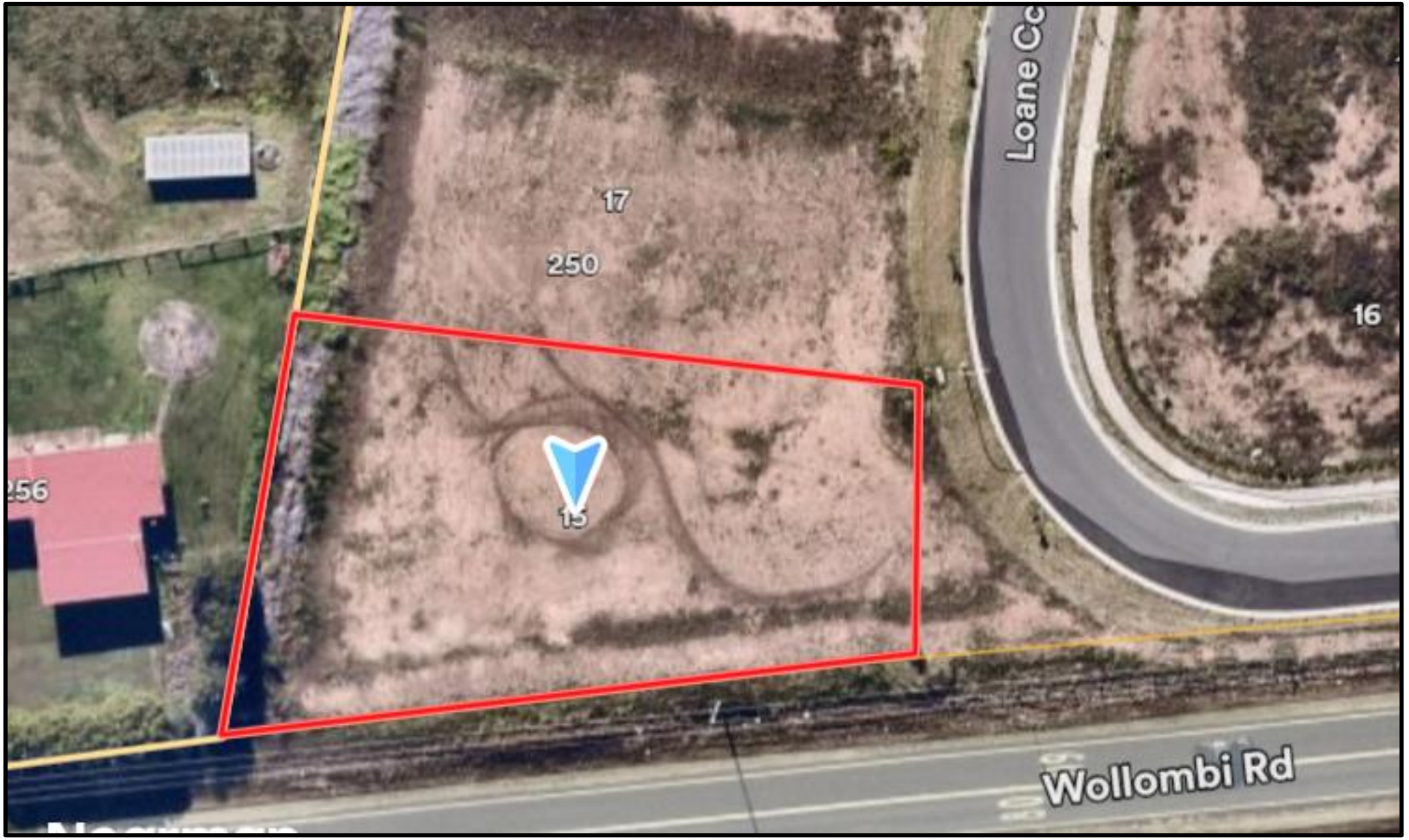


Figure 10	Aerial Image June 2024
Project	15 Loane Circuit, Farley NSW 2320

Source: Nearmap 2024

Figure 11 & 12. Site overview.

Figure 13 & 14. Site surface (Sandy clay soils and minimal vegetation.

Figure 15 & 16. Test pit excavation revealing clay dominant fill and natural layers.

NEO CONSULTING

APPENDIX B

QA/QC Discussion

Data Quality Objectives (DQOs)

The DQOs have been developed in accordance with the NEPM Appendix B of Schedule B2 and provide the type, quantity and quality of data to support decisions regarding the environmental conditions of this site.

Table 15. DQOs

Step 1: State the problem	NEO Consulting have identified the following risks to human and environmental receptors: - The proposed development for the site includes demolition of onsite buildings, subdivision and construction of a residential dwelling within southern portion of the site. The intended future use of the site is considered a sensitive human health risk setting.
Step 2: Identify the decision/goal of the study	NEO Consulting considered the site history, the use of this site, and the NEPM Guidelines, when identifying the decisions required for the site to be considered suitable for its continued land use. The decisions required to meet these decisions are as follows: - Was the sampling, analysis and quality plan designed appropriate to achieve the aim of the report? - If present, is on-site contamination capable of migrating off-site? - Are there any unacceptable risks to the future on site or off-site receptors in the soil or groundwater? - Is the site suitable for its continued land use?
Step 3: Identify the information inputs	NEO Consulting has identified issues of potential environmental concern; - Appropriate identification of CoPC; - Soil sampling and analysis programs across the site; - Appropriate quality assurance/quality control to enable an evaluation of the reliability of the analytical data; and - Screening sampler analytical results against appropriate assessment criteria for the intended land use.
Step 4: Define the boundaries of the study	The study boundaries are: - Lateral boundary: The legally defined area of the site; - Vertical boundary: The soil interface to the maximum depth reached during soil sampling; and - Temporal boundary: Constrained to a single visit to the site.
Step 5: Develop the analytical approach	Here, NEO Consulting integrate the information from steps 1 – 4 to support and justify our proposed analytical approach. Our aim is to confirm if the site is suitable for the proposed development. If the findings of the SAQP identify; - Any exceedance of the adopted assessment criteria for soil; - Professional opinion that further assessment is required; and/or

	- Adopted RPD for QC data not met. Further assessment may be required to confirm suitability of the site in the form of; Data Gap investigation, Remediation Action Plan and Site Validation.
Step 6: Specify performance or acceptance criteria	For judgemental soil sampling the data must meet the following qualifiers; - Acceptable recovery on all surrogate spikes used in laboratory analyses; - Acceptable analytical method to ensure detection limit appropriate for all analytes; If these conditions are not met, then chemical analysis will require re-testing for all samples with fresh aliquot.
Step 7: Optimise the design for obtaining data	Judgemental sampling pattern within the AEC will provide suitable coverage of the site to produce reliable data in alignment with the Data Quality Indicators (DQIs) to cover precision, accuracy, representativeness, completeness and comparability (PARCC). This sampling pattern will ensure that critical locations are assessed and analysed appropriately for COPC.
The DQOs align with CSM	Yes

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APPENDIX C

Laboratory Results and Chain of Custody (NATA)

NEO CONSULTING

Table 16. Total Recoverable Hydrocarbon (TRH) analytical results. Values are presented as mg/kg. NL = Not Limiting.

Assessment Criteria		TRH C_6-C_{10}	TRH C_6-C_{10} - BTEX (F1)	TRH >C_{10}-C_{16}	TRH >C_{10}-C_{16} - N (F2)	TRH >C_{16}-C_{34} (F3)	TRH >C_{34}-C_{40} (F4)
NEPM 2013 Residential Soil HSL-A for Vapour Intrusion, 0-<1m depth, Clay, mg/kg			50		280		
NEPM 2013 Soil Generic ESL for Urban, Residential and Public Open Spaces, fine-grained soil, mg/kg		180		120		1300	5600
NEPM 2013 Management Limits for Residential, Parkland and Public Open Space, fine-grained soil, mg/kg		800		1000		3500	10 000
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S1	0-0.15	<25	<25	<25	<25	<90	<120
S2	0-0.15	<25	<25	<25	<25	<90	<120
S3	0-0.15	<25	<25	<25	<25	<90	<120
S4	0-0.15	<25	<25	<25	<25	<90	<120
S5	0-0.15	<25	<25	<25	<25	<90	<120
S6	0-0.15	<25	<25	<25	<25	<90	<120
S7	0-0.15	<25	<25	<25	<25	<90	<120
S8	0-0.15	<25	<25	<25	<25	<90	<120

Table 17. Benzene, Toluene, Ethylbenzene and Xylene (BTEX) analytical results. Values are presented as mg/kg. NL = Not Limiting.

Assessment Criteria		Benzene	Toluene	Ethylbenzene	Xylenes
NEPM 2013 Residential Soil HSL-A for Vapour Intrusion, 0-<1m depth, Clay, mg/kg		0.7	480	NL	110
NEPM 2013 Soil ESL for Urban, Residential and Public Open Spaces, fine-grained soil, mg/kg		65	105	125	45
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg
S1	0-0.15	<0.1	<0.1	<0.1	<0.3
S2	0-0.15	<0.1	<0.1	<0.1	<0.3
S3	0-0.15	<0.1	<0.1	<0.1	<0.3
S4	0-0.15	<0.1	<0.1	<0.1	<0.3
S5	0-0.15	<0.1	<0.1	<0.1	<0.3
S6	0-0.15	<0.1	<0.1	<0.1	<0.3
S7	0-0.15	<0.1	<0.1	<0.1	<0.3
S8	0-0.15	<0.1	<0.1	<0.1	<0.3

Table 18. Polycyclic Aromatic Hydrocarbon (PAH) and Polychlorinated biphenyl (PCBs) analytical results. Not Analysed (N.A.)

Assessment Criteria		Naphthalene	Benzo(a)pyrene	Carcinogenic PAH (as BaP TEQ)	Total PAH (18)	Total PCBs
NEPM 2013 Residential Soil HSL-A for Vapour Intrusion, 0-<1m depth, Clay, mg/kg		5				
NEPM 2013 Soil Generic EIL for Urban Residential and Public Open Space, mg/kg		170				
Soil ESL for Urban, Residential and Public Open Spaces, fine-grained soil, mg/kg			0.7			
NEPM 2013 Residential Soil HIL-A, mg/kg			1.00 TEF	3	300	1
Sample	Depth (m)	mg/kg	mg/kg	TEQ (mg/kg)	mg/kg	mg/kg
S1	0-0.15	<0.1	<0.1	<0.3	<0.8	<1
S2	0-0.15	<0.1	<0.1	<0.3	<0.8	<1
S3	0-0.15	<0.1	<0.1	<0.3	<0.8	<1
S4	0-0.15	<0.1	<0.1	<0.3	<0.8	<1
S5	0-0.15	<0.1	<0.1	<0.3	<0.8	<1
S6	0-0.15	<0.1	<0.1	<0.3	<0.8	<1
S7	0-0.15	<0.1	<0.1	<0.3	<0.8	<1
S8	0-0.15	<0.1	<0.1	<0.3	<0.8	<1

Table 19. Heavy Metal analytical results. Values are presented as mg/kg.

Assessment Criteria		Arsenic, As	Cadmium, Cd	Chromium, Cr	Copper, Cu	Lead, Pb	Nickel, Ni	Zinc, Zn	Mercury, Hg
NEPM 2013 Residential Soil HIL-A, mg/kg		100	20	100	6000	300	400	7400	40
NEPM 2013 Soil Generic EIL for Urban Residential and Public Open Space, mg/kg		100				1100			
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S1	0-0.15	**5**	<0.3	**11**	**1.8**	**10**	**3.2**	**18**	<0.05
S2	0-0.15	**8**	<0.3	**24**	**0.8**	**10**	**2.7**	**21**	<0.05
S3	0-0.15	**4**	<0.3	**9.9**	**1.8**	**7**	**3.0**	**15**	<0.05
S4	0-0.15	**4**	<0.3	**14**	**2.3**	**9**	**3.6**	**21**	<0.05
S5	0-0.15	**6**	<0.3	**17**	**1.6**	**9**	**3.4**	**20**	<0.05
S6	0-0.15	**6**	<0.3	**17**	**1.0**	**10**	**3.3**	**22**	<0.05
S7	0-0.15	**4**	<0.3	**11**	**1.7**	**8**	**2.8**	**16**	<0.05
S8	0-0.15	**6**	<0.3	**16**	**2.2**	**10**	**3.4**	**26**	<0.05

Table 20. Pesticides analytical results. Values are presented as mg/kg. Not Analysed (N.A.)

Assessment Criteria		HCB	Heptachlor	Chlordane	Aldrin & Dieldrin	Endrin	DDT	DDD+DDE +DDT	Endosulfan	Methoxychlor	Mirex
NEPM 2013 Residential Soil HIL-A, mg/kg		10	6	50	6	10		240	270	300	10
NEPM 2013 Soil Generic EIL for Urban Residential and Public Open Space, mg/kg							180				
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S1	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
S2	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
S3	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
S4	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
S5	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
S6	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
S7	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
S8	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1

Table 21. Asbestos analytical results. Not Analysed (N.A.)

Asbestos HSL-A		Detection	ACM 0.01 (AS4964)	AF/FA 0.001 (NEPM Gravimetric Method)
Sample	Depth (m)	Yes/No	%w/w	%w/w
S1	0-0.15	No	<0.01%w/w	N.A.
S2	0-0.15	No	<0.01%w/w	N.A.
S3	0-0.15	No	<0.01%w/w	N.A.
S4	0-0.15	No	<0.01%w/w	N.A.
S5	0-0.15	No	<0.01%w/w	N.A.
S6	0-0.15	No	<0.01%w/w	N.A.
S7	0-0.15	No	<0.01%w/w	N.A.
S8	0-0.15	No	<0.01%w/w	N.A.

CHAIN OF CUSTODY & ANALYSIS REQUEST

SGS Environmental Services Sydney
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

SGS EHS Sydney COC

SE269675

Company Name:	Neo Consulting Pty Ltd	Project Name/No:	N09527
Address:	186 Riverstone Parade	Purchase Order No:	**QUOTE NUMER: 1655473**
	Riverstone NSW 2765	Results Required Date:	Next Day/**3 day**/Standard
		Telephone:	0416680375 Fax:
Contact Name:	Nick Caltabiano	Email Results and invoices to :	nick@neoconsulting.com.au, admin@neoconsulting.com.au
Quotation No:			oskar@neoconsulting.com.au, sarah@neoconsulting.com.au, ehsan@neoconsulting.com.au, isabella@neoconsulting.com.au

SGS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other_Cartridge__	NO. OF CONTAINERS	ANALYSIS REQUESTED: ASBESTOS ID	CL17
1	S1	16/08/2024		x		1	x	x
2	S2	16/08/2024		x		1	x	x
3	S3	16/08/2024		x		1	x	x
4	S4	16/08/2024		x		1	x	x
8	S5	16/08/2024		x		1	x	x
5	S6	16/08/2024		x		1	x	x
6	S7	16/08/2024		x		1	x	x
7	S8	16/08/2024		x		1	x	x

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines ---------
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

Relinquished By: Jacob King	Date/Time: **16/08/2024 10am**	Received By: G.F	Date/Time: 16-8-24 10:05
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: Yes / No	Temperature: 16.8 °C	Sample Security Sealed: Yes / No	Hazards: *e.g. may contain Asbestos*
Comments / Subcontracting details:			

SAMPLE RECEIPT ADVICE

SE269675

CLIENT DETAILS

Contact	Admin
Client	NEO CONSULTING PTY LTD
Address	PO BOX 279 RIVERSTONE NSW 2765
Telephone	0416 680 375
Facsimile	(Not specified)
Email	admin@neoconsulting.com.au
Project	**N09527**
Order Number	**N09527**
Samples	8

LABORATORY DETAILS

Manager	Shane McDermott
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	Fri 16/8/2024
Report Due	Wed 21/8/2024
SGS Reference	**SE269675**

SUBMISSION DETAILS

This is to confirm that 8 samples were received on Friday 16/8/2024. Results are expected to be ready by COB Wednesday 21/8/2024. Please quote SGS reference SE269675 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	8 Soil	Type of documentation received	COC
Date documentation received	16/8/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	16.8°C
Sample container provider	SGS	Turnaround time requested	Three Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

SAMPLE RECEIPT ADVICE

SE269675

CLIENT DETAILS

Client NEO CONSULTING PTY LTD

Project N09527

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP 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	S1	30	14	26	11	7	10	11	7
002	S2	30	14	26	11	7	10	11	7
003	S3	30	14	26	11	7	10	11	7
004	S4	30	14	26	11	7	10	11	7
005	S6	30	14	26	11	7	10	11	7
006	S7	30	14	26	11	7	10	11	7
007	S8	30	14	26	11	7	10	11	7
008	S5	30	14	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

SE269675

CLIENT DETAILS

Client NEO CONSULTING PTY LTD

Project N09527

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content
001	S1	3	1	1
002	S2	3	1	1
003	S3	3	1	1
004	S4	3	1	1
005	S6	3	1	1
006	S7	3	1	1
007	S8	3	1	1
008	S5	3	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 .

STATEMENT OF QA/QC PERFORMANCE

SE269675 R0

CLIENT DETAILS

Contact	Admin
Client	NEO CONSULTING PTY LTD
Address	PO BOX 279 RIVERSTONE NSW 2765
Telephone	0416 680 375
Facsimile	(Not specified)
Email	admin@neoconsulting.com.au
Project	**N09527**
Order Number	**N09527**
Samples	8

LABORATORY DETAILS

Manager	Shane McDermott
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	**SE269675 R0**
Date Received	16 Aug 2024
Date Reported	21 Aug 2024

COMMENTS

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

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

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

Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	17 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items

SAMPLE SUMMARY

Sample counts by matrix	8 Soil	Type of documentation received	COC
Date documentation received	16/8/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	16.8°C
Sample container provider	SGS	Turnaround time requested	Three Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE269675 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

Fibre Identification in soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024
S2	SE269675.002	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024
S3	SE269675.003	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024
S4	SE269675.004	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024
S6	SE269675.005	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024
S7	SE269675.006	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024
S8	SE269675.007	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024
S5	SE269675.008	LB321047	16 Aug 2024	16 Aug 2024	16 Aug 2025	19 Aug 2024	16 Aug 2025	21 Aug 2024

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024
S2	SE269675.002	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024
S3	SE269675.003	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024
S4	SE269675.004	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024
S6	SE269675.005	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024
S7	SE269675.006	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024
S8	SE269675.007	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024
S5	SE269675.008	LB320971	16 Aug 2024	16 Aug 2024	13 Sep 2024	18 Aug 2024	13 Sep 2024	20 Aug 2024

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024
S2	SE269675.002	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024
S3	SE269675.003	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024
S4	SE269675.004	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024
S6	SE269675.005	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024
S7	SE269675.006	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024
S8	SE269675.007	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024
S5	SE269675.008	LB320967	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	23 Aug 2024	20 Aug 2024

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S2	SE269675.002	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S3	SE269675.003	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S4	SE269675.004	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S6	SE269675.005	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S7	SE269675.006	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S8	SE269675.007	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S5	SE269675.008	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S2	SE269675.002	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S3	SE269675.003	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S4	SE269675.004	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S6	SE269675.005	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S7	SE269675.006	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S8	SE269675.007	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S5	SE269675.008	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024

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
S1	SE269675.001	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S2	SE269675.002	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S3	SE269675.003	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S4	SE269675.004	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S6	SE269675.005	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S7	SE269675.006	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S8	SE269675.007	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024

HOLDING TIME SUMMARY

SE269675 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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S5	SE269675.008	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S2	SE269675.002	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S3	SE269675.003	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S4	SE269675.004	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S6	SE269675.005	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S7	SE269675.006	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S8	SE269675.007	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024
S5	SE269675.008	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	21 Aug 2024

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
S1	SE269675.001	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024
S2	SE269675.002	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024
S3	SE269675.003	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024
S4	SE269675.004	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024
S6	SE269675.005	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024
S7	SE269675.006	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024
S8	SE269675.007	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024
S5	SE269675.008	LB320969	16 Aug 2024	16 Aug 2024	12 Feb 2025	18 Aug 2024	12 Feb 2025	21 Aug 2024

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
S1	SE269675.001	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S2	SE269675.002	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S3	SE269675.003	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S4	SE269675.004	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S6	SE269675.005	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S7	SE269675.006	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S8	SE269675.007	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024
S5	SE269675.008	LB320962	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	27 Sep 2024	20 Aug 2024

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S2	SE269675.002	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S3	SE269675.003	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S4	SE269675.004	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S6	SE269675.005	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S7	SE269675.006	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S8	SE269675.007	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S5	SE269675.008	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1	SE269675.001	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S2	SE269675.002	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S3	SE269675.003	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S4	SE269675.004	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S6	SE269675.005	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S7	SE269675.006	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S8	SE269675.007	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024
S5	SE269675.008	LB320966	16 Aug 2024	16 Aug 2024	30 Aug 2024	18 Aug 2024	30 Aug 2024	20 Aug 2024

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)	S1	SE269675.001	%	60 - 130%	102
	S2	SE269675.002	%	60 - 130%	101
	S3	SE269675.003	%	60 - 130%	105
	S4	SE269675.004	%	60 - 130%	107
	S6	SE269675.005	%	60 - 130%	104
	S7	SE269675.006	%	60 - 130%	101
	S8	SE269675.007	%	60 - 130%	104
	S5	SE269675.008	%	60 - 130%	106

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	S1	SE269675.001	%	60 - 130%	101
	S2	SE269675.002	%	60 - 130%	100
	S3	SE269675.003	%	60 - 130%	100
	S4	SE269675.004	%	60 - 130%	103
	S6	SE269675.005	%	60 - 130%	100
	S7	SE269675.006	%	60 - 130%	106
	S8	SE269675.007	%	60 - 130%	99
	S5	SE269675.008	%	60 - 130%	98
d14-p-terphenyl (Surrogate)	S1	SE269675.001	%	60 - 130%	103
	S2	SE269675.002	%	60 - 130%	103
	S3	SE269675.003	%	60 - 130%	104
	S4	SE269675.004	%	60 - 130%	103
	S6	SE269675.005	%	60 - 130%	106
	S7	SE269675.006	%	60 - 130%	110
	S8	SE269675.007	%	60 - 130%	101
	S5	SE269675.008	%	60 - 130%	103

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	S1	SE269675.001	%	70 - 130%	101
	S2	SE269675.002	%	70 - 130%	100
	S3	SE269675.003	%	70 - 130%	100
	S4	SE269675.004	%	70 - 130%	103
	S6	SE269675.005	%	70 - 130%	100
	S7	SE269675.006	%	70 - 130%	106
	S8	SE269675.007	%	70 - 130%	99
	S5	SE269675.008	%	70 - 130%	98
d14-p-terphenyl (Surrogate)	S1	SE269675.001	%	70 - 130%	103
	S2	SE269675.002	%	70 - 130%	103
	S3	SE269675.003	%	70 - 130%	104
	S4	SE269675.004	%	70 - 130%	103
	S6	SE269675.005	%	70 - 130%	106
	S7	SE269675.006	%	70 - 130%	110
	S8	SE269675.007	%	70 - 130%	101
	S5	SE269675.008	%	70 - 130%	103
d5-nitrobenzene (Surrogate)	S1	SE269675.001	%	70 - 130%	107
	S2	SE269675.002	%	70 - 130%	103
	S3	SE269675.003	%	70 - 130%	104
	S4	SE269675.004	%	70 - 130%	111
	S6	SE269675.005	%	70 - 130%	104
	S7	SE269675.006	%	70 - 130%	111
	S8	SE269675.007	%	70 - 130%	99
	S5	SE269675.008	%	70 - 130%	108

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	S1	SE269675.001	%	60 - 130%	98
	S2	SE269675.002	%	60 - 130%	97
	S3	SE269675.003	%	60 - 130%	101
	S4	SE269675.004	%	60 - 130%	102
	S6	SE269675.005	%	60 - 130%	99

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.

PCBs in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	S7	SE269675.006	%	60 - 130%	97
	S8	SE269675.007	%	60 - 130%	99
	S5	SE269675.008	%	60 - 130%	101

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	S1	SE269675.001	%	60 - 130%	90
	S2	SE269675.002	%	60 - 130%	101
	S3	SE269675.003	%	60 - 130%	92
	S4	SE269675.004	%	60 - 130%	91
	S6	SE269675.005	%	60 - 130%	83
	S7	SE269675.006	%	60 - 130%	95
	S8	SE269675.007	%	60 - 130%	94
	S5	SE269675.008	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	S1	SE269675.001	%	60 - 130%	88
	S2	SE269675.002	%	60 - 130%	99
	S3	SE269675.003	%	60 - 130%	92
	S4	SE269675.004	%	60 - 130%	90
	S6	SE269675.005	%	60 - 130%	80
	S7	SE269675.006	%	60 - 130%	91
	S8	SE269675.007	%	60 - 130%	94
	S5	SE269675.008	%	60 - 130%	87
d8-toluene (Surrogate)	S1	SE269675.001	%	60 - 130%	91
	S2	SE269675.002	%	60 - 130%	102
	S3	SE269675.003	%	60 - 130%	87
	S4	SE269675.004	%	60 - 130%	91
	S6	SE269675.005	%	60 - 130%	82
	S7	SE269675.006	%	60 - 130%	97
	S8	SE269675.007	%	60 - 130%	97
	S5	SE269675.008	%	60 - 130%	91

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	S1	SE269675.001	%	60 - 130%	90
	S2	SE269675.002	%	60 - 130%	101
	S3	SE269675.003	%	60 - 130%	92
	S4	SE269675.004	%	60 - 130%	91
	S6	SE269675.005	%	60 - 130%	83
	S7	SE269675.006	%	60 - 130%	95
	S8	SE269675.007	%	60 - 130%	94
	S5	SE269675.008	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	S1	SE269675.001	%	60 - 130%	88
	S2	SE269675.002	%	60 - 130%	99
	S3	SE269675.003	%	60 - 130%	92
	S4	SE269675.004	%	60 - 130%	90
	S6	SE269675.005	%	60 - 130%	80
	S7	SE269675.006	%	60 - 130%	91
	S8	SE269675.007	%	60 - 130%	94
	S5	SE269675.008	%	60 - 130%	87
d8-toluene (Surrogate)	S1	SE269675.001	%	60 - 130%	91
	S2	SE269675.002	%	60 - 130%	102
	S3	SE269675.003	%	60 - 130%	87
	S4	SE269675.004	%	60 - 130%	91
	S6	SE269675.005	%	60 - 130%	82
	S7	SE269675.006	%	60 - 130%	97
	S8	SE269675.007	%	60 - 130%	97
	S5	SE269675.008	%	60 - 130%	91

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
LB320971.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB320962.001		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)	%	-	104

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB320962.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	103
		d14-p-terphenyl (Surrogate)	%	-	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB320962.001	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

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB320962.001		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)	%	-	104
		2-fluorobiphenyl (Surrogate)	%	-	103
		d14-p-terphenyl (Surrogate)	%	-	101

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB320962.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	104

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

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

Sample Number		Parameter	Units	LOR	Result
LB320969.001		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
LB320962.001		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
LB320966.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	81
		d8-toluene (Surrogate)	%	-	86
		Bromofluorobenzene (Surrogate)	%	-	83
	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
LB320966.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	81

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

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320971.023	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE269717.010	LB320971.014	Mercury	mg/kg	0.05	0.08	0.08	96	1

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320967.020	% Moisture	%w/w	1	11.0	10.5	39	5
SE269717.010	LB320967.011	% Moisture	%w/w	1	24.4	23.9	34	2

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320962.025		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.17	30	7
SE269717.010	LB320962.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0

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

OC Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269717.010	LB320962.014		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.19	0.18	30	6

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320962.023		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
SE269717.010	LB320962.014		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320962.023	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320962.023		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
SE269717.010	LB320962.014		Naphthalene	mg/kg	0.1	<0.1	0.1	161	36
			2-methylnaphthalene	mg/kg	0.1	<0.1	0.2	154	43
			1-methylnaphthalene	mg/kg	0.1	<0.1	0.3	107	86
			Acenaphthylene	mg/kg	0.1	<0.1	0.6	59	145 ②
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	0.4	76	122 ②
			Phenanthrene	mg/kg	0.1	0.2	3.7	35	177 ②
			Anthracene	mg/kg	0.1	<0.1	1.0	48	165 ②
			Fluoranthene	mg/kg	0.1	0.4	3.5	35	158 ②
			Pyrene	mg/kg	0.1	0.4	3.4	35	158 ②
			Benzo(a)anthracene	mg/kg	0.1	0.2	1.5	42	155 ②
			Chrysene	mg/kg	0.1	0.2	1.5	42	150 ②
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	1.3	44	145 ②
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.5	62	137 ②
			Benzo(a)pyrene	mg/kg	0.1	0.2	1.1	45	142 ②
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.5	65	131 ②
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	0.1	158	27
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.4	73	117 ②
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0.2	1.7	31	149 ②
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.3	1.7	30	139 ②
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.4	1.7	40	130 ②
			Total PAH (18)	mg/kg	0.8	1.9	20	31	165 ②
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320962.026		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	7
SE269717.010	LB320962.014		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	6

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

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

Original	Duplicate		Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

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 %
SE269675.008	LB320969.023	Arsenic, As	mg/kg	1	6	4	49	27
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	16	13	33	26
		Copper, Cu	mg/kg	0.5	2.2	2.4	52	7
		Nickel, Ni	mg/kg	0.5	3.4	3.3	45	4
		Lead, Pb	mg/kg	1	10	9	40	15
		Zinc, Zn	mg/kg	2	26	18	39	38
SE269717.010	LB320969.014	Arsenic, As	mg/kg	1	13	13	38	5
		Cadmium, Cd	mg/kg	0.3	0.6	0.6	81	5
		Chromium, Cr	mg/kg	0.5	24	24	32	1
		Copper, Cu	mg/kg	0.5	44	42	31	5
		Nickel, Ni	mg/kg	0.5	9.9	10	35	4
		Lead, Pb	mg/kg	1	240	260	30	8
		Zinc, Zn	mg/kg	2	300	310	31	3

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320962.023		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE269717.010	LB320962.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	79	127	55
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	100	182	10
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320966.023	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.7	8.0	50	8
			d8-toluene (Surrogate)	mg/kg	-	9.1	8.4	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.1	50	7
		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
SE269717.010	LB320966.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.7	7.4	50	16
			d8-toluene (Surrogate)	mg/kg	-	9.1	7.7	50	17
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	7.4	50	19
		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

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

Volatile Petroleum Hydrocarbons in Soil — **Method: ME-(AU)-[ENV]AN433**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE269675.008	LB320966.023		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	-	8.7	8.0	50	8
			d8-toluene (Surrogate)	mg/kg	-	9.1	8.4	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.1	50	7
		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
SE269717.010	LB320966.014		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	-	8.7	7.4	50	16
			d8-toluene (Surrogate)	mg/kg	-	9.1	7.7	50	17
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	7.4	50	19
		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

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 %
LB320971.002	Mercury	mg/kg	0.05	0.17	0.2	80 - 120	84

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB320962.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	85
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	82
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	88
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	84
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	95
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	89
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.17	0.15	40 - 130	112

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB320962.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	92
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	100
		Dichlorvos	mg/kg	0.5	1.3	2	60 - 140	66
		Ethion	mg/kg	0.2	2.1	2	60 - 140	107
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	107

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB320962.002		Naphthalene	mg/kg	0.1	4.5	4	60 - 140	111
		Acenaphthylene	mg/kg	0.1	4.6	4	60 - 140	116
		Acenaphthene	mg/kg	0.1	4.4	4	60 - 140	110
		Phenanthrene	mg/kg	0.1	4.4	4	60 - 140	111
		Anthracene	mg/kg	0.1	4.5	4	60 - 140	113
		Fluoranthene	mg/kg	0.1	4.3	4	60 - 140	108
		Pyrene	mg/kg	0.1	4.9	4	60 - 140	122
		Benzo(a)pyrene	mg/kg	0.1	5.4	4	60 - 140	134
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	107

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB320962.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	122

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 %
LB320969.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	91
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	103
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	108
	Nickel, Ni	mg/kg	0.5	200	187	80 - 120	106
	Lead, Pb	mg/kg	1	96	89.9	80 - 120	106
	Zinc, Zn	mg/kg	2	290	273	80 - 120	105

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB320962.002		TRH C10-C14	mg/kg	20	38	40	60 - 140	96
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	94
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	88
	TRH F Bands	TRH >C10-C16	mg/kg	25	37	40	60 - 140	94
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	92
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	92

VOC's in Soil

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

Sample Number	Parameter	Units	LOR

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB320966.002	Monocyclic	Benzene	mg/kg	0.1	4.3	5	60 - 140	86
	Aromatic	Toluene	mg/kg	0.1	4.4	5	60 - 140	88
		Ethylbenzene	mg/kg	0.1	4.4	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.7	10	60 - 140	87
		o-xylene	mg/kg	0.1	4.4	5	60 - 140	89
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
		d8-toluene (Surrogate)	mg/kg	-	9.9	10	70 - 130	99
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.8	10	70 - 130	98

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB320966.002		TRH C6-C10	mg/kg	25	66	92.5	60 - 140	71
		TRH C6-C9	mg/kg	20	58	80	60 - 140	73
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.8	10	70 - 130	98
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	40	62.5	60 - 140	64

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%
SE269717.001	LB320971.004	Mercury	mg/kg	0.05	0.21	<0.05	0.2	81

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320962.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	91
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	91
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	93
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	91
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	100
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	105
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.17	-	119

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320962.004		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.0	<0.2	2	102
			Diazinon (Dimpylate)	mg/kg	0.5	2.1	<0.5	2	97
			Dichlorvos	mg/kg	0.5	1.3	<0.5	2	63
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	2.5	<0.2	2	122
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	7.8	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.7	0.5	-	133

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320962.004	Naphthalene	mg/kg	0.1	4.0	<0.1	4	99
		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	4.4	<0.1	4	111
		Acenaphthene	mg/kg	0.1	4.2	<0.1	4	105
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320962.004		Phenanthrene	mg/kg	0.1	4.5	<0.1	4	112
			Anthracene	mg/kg	0.1	4.3	<0.1	4	107
			Fluoranthene	mg/kg	0.1	4.5	<0.1	4	111
			Pyrene	mg/kg	0.1	5.5	<0.1	4	135
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.2	<0.1	4	128
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	5.2	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	5.2	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.3	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	37	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	103
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.7	0.5	-	133

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320962.004		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	0.5	<0.2	0.4	133
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	-	117

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%
SE269717.001	LB320969.004	Arsenic, As	mg/kg	1	56	7	50	98
		Cadmium, Cd	mg/kg	0.3	50	0.4	50	100
		Chromium, Cr	mg/kg	0.5	65	15	50	102
		Copper, Cu	mg/kg	0.5	82	32	50	99
		Nickel, Ni	mg/kg	0.5	59	6.4	50	105
		Lead, Pb	mg/kg	1	190	120	50	149 ⑨
		Zinc, Zn	mg/kg	2	240	150	50	171 ⑨

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320962.004		TRH C10-C14	mg/kg	20	51	<20	40	121
			TRH C15-C28	mg/kg	45	56	<45	40	116
			TRH C29-C36	mg/kg	45	52	<45	40	120
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	160	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	50	<25	40	116
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	50	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	125
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320966.004	Monocyclic	Benzene	mg/kg	0.1	4.7	<0.1	5	93
		Aromatic	Toluene	mg/kg	0.1	4.9	<0.1	5	98
			Ethylbenzene	mg/kg	0.1	5.0	<0.1	5	100
			m/p-xylene	mg/kg	0.2	10	<0.2	10	101

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

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

VOC's in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320966.004	Monocyclic	o-xylene	mg/kg	0.1	5.3	<0.1	5	106
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.5	9.0	10	95
			d8-toluene (Surrogate)	mg/kg	-	9.8	9.5	10	98
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	9.4	10	99
		Totals	Total BTEX*	mg/kg	0.6	30	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE269717.001	LB320966.004		TRH C6-C10	mg/kg	25	72	<25	92.5	77
			TRH C6-C9	mg/kg	20	65	<20	80	81
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.5	9.0	10	95
			d8-toluene (Surrogate)	mg/kg	-	9.8	9.5	10	98
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	9.4	-	99
		VPH F	Benzene (F0)	mg/kg	0.1	4.7	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	42	<25	62.5	66

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

No matrix spike duplicates were required for this job.

id samples expressed on a dry weight basis.

criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found he
ps://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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Admin
Client	NEO CONSULTING PTY LTD
Address	PO BOX 279 RIVERSTONE NSW 2765
Telephone	0416 680 375
Facsimile	(Not specified)
Email	admin@neoconsulting.com.au
Project	**N09527**
Order Number	**N09527**
Samples	8

LABORATORY DETAILS

Manager	Shane McDermott
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	**SE269675 R0**
Date Received	16 Aug 2024
Date Reported	21 Aug 2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE269675.001	S1	Soil	101g Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE269675.002	S2	Soil	101g Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE269675.003	S3	Soil	78g Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE269675.004	S4	Soil	89g Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE269675.005	S6	Soil	123g Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE269675.006	S7	Soil	101g Clay, Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE269675.007	S8	Soil	68g Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE269675.008	S5	Soil	102g Clay, Sand, Soil, Rocks	16 Aug 2024	21 Aug 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service .
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy , including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos -containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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

ANALYTICAL REPORT

Accreditation No. 2562

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Contact	Admin
Client	NEO CONSULTING PTY LTD
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LABORATORY DETAILS

Manager	Shane McDermott
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SGS Reference	**SE269675 R0**
Date Received	16/8/2024
Date Reported	21/8/2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES

Akheeqar BENIAMEEN
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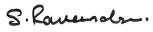


Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane MCDERMOTT
Laboratory Manager

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
TRH C6-C9	mg/kg	20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
TRH C10-C14	mg/kg	20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 18/8/2024 (continued)

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Arsenic, As	mg/kg	1	5	8	4	4	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	24	9.9	14	17
Copper, Cu	mg/kg	0.5	1.8	0.8	1.8	2.3	1.6
Lead, Pb	mg/kg	1	10	10	7	9	9
Nickel, Ni	mg/kg	0.5	3.2	2.7	3.0	3.6	3.4
Zinc, Zn	mg/kg	2	18	21	15	21	20

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Arsenic, As	mg/kg	1	6	4	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	17	11	16
Copper, Cu	mg/kg	0.5	1.0	1.7	2.2
Lead, Pb	mg/kg	1	10	8	10
Nickel, Ni	mg/kg	0.5	3.3	2.8	3.4
Zinc, Zn	mg/kg	2	22	16	26

Mercury in Soil [AN312] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 18/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
% Moisture	%w/w	1	**9.5**	**10.1**	**14.0**	**12.9**	**10.8**

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
% Moisture	%w/w	1	**11.7**	**8.8**	**11.0**

Fibre Identification in soil [AS4964/AN602] Tested: 19/8/2024

PARAMETER	UOM	LOR	S1 SOIL - 16/8/2024 SE269675.001	S2 SOIL - 16/8/2024 SE269675.002	S3 SOIL - 16/8/2024 SE269675.003	S4 SOIL - 16/8/2024 SE269675.004	S6 SOIL - 16/8/2024 SE269675.005
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	21/08/2024 00:00	21/08/2024 00:00	21/08/2024 00:00	21/08/2024 00:00	21/08/2024 00:00

PARAMETER	UOM	LOR	S7 SOIL - 16/8/2024 SE269675.006	S8 SOIL - 16/8/2024 SE269675.007	S5 SOIL - 16/8/2024 SE269675.008
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	21/08/2024 00:00	21/08/2024 00:00	21/08/2024 00:00

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.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection /reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

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.

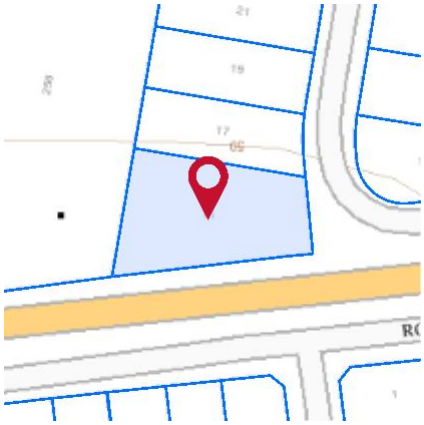
NEO CONSULTING

APPENDIX D

Property Report and Relevant Information

Property Report

15 LOANE CIRCUIT FARLEY 2320



Property Details

Address:	15 LOANE CIRCUIT FARLEY 2320
Lot/Section /Plan No:	527/-/DP1275320
Council:	MAITLAND CITY COUNCIL

Summary of planning controls

Planning controls held within the Planning Database are summarised below. The property may be affected by additional planning controls not outlined in this report. Please contact your council for more information.

Local Environmental Plans	Maitland Local Environmental Plan 2011 (pub. 16-12-2011)
Land Zoning	R1 - General Residential: (pub. 21-4-2023)
Height Of Building	NA
Floor Space Ratio	NA
Minimum Lot Size	450 m²
Heritage	NA
Land Reservation Acquisition	NA
Foreshore Building Line	NA
Acid Sulfate Soils	Class 5
Urban Release Area	Urban Release Area
Greenfield Housing Code Area	Complying Development Code: https://www.planningportal.nsw.gov.au/greenfield-housing-code Building type: 1-2 storey homes, residential alterations and additions Development consent authority: Council or accredited certifier Note: Applications which meet all relevant requirements in the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 may be approved within 20 days. Exclusions may apply. https://legislation.nsw.gov.au/#/view/EPI/2008/572/full

Detailed planning information

State Environmental Planning Policies which apply to this property

State Environmental Planning Policies can specify planning controls for certain areas and/or types of development. They can also identify the development assessment system that applies and the type of environmental assessment that is required.

- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Allowable Clearing Area (pub. 21-10-2022)
- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Subject Land (pub. 2-12-2021)
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008: Greenfield Housing Code Area (pub. 6-5-2018)
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008: Land Application (pub. 12-12-2008)
- State Environmental Planning Policy (Housing) 2021: Land Application (pub. 26-11-2021)
- State Environmental Planning Policy (Industry and Employment) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Planning Systems) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Primary Production) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Resilience and Hazards) 2021: Land Application (pub. 2 -12-2021)
- State Environmental Planning Policy (Resources and Energy) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Sustainable Buildings) 2022: Land Application (pub. 29-8-2022)
- State Environmental Planning Policy (Transport and Infrastructure) 2021: Land Application (pub. 2-12-2021)

Property Report

15 LOANE CIRCUIT FARLEY 2320

Other matters affecting the property

Information held in the Planning Database about other matters affecting the property appears below. The property may also be affected by additional planning controls not outlined in this report. Please speak to your council for more information

Bushfire Prone Land	Vegetation Category
Housing and Productivity Contribution	Lower Hunter - Base HPC
Local Aboriginal Land Council	MINDARIBBA
Regional Plan Boundary	Hunter

M.G.A.

LOT 526
DP 1275320
VACANT

LOT 1
DP 513480
SINGLE STOREY
BRICK RESIDENCE
METAL ROOF
No. 256

LOT 527
1967m²
VACANT

SSM 222511
RL.49.97(AHD)

LOANE CIRCUIT

ROAD WOLLOMBI

BM PAINT ON
D.HOLE&W IN KERB
RL.50.32(AHD)

LEGEND

- TOP OF BANK
- TOE OF BANK
- (PP) POWER POLE
- (SAC) SEWER ACCESS CHAMBER
- (ELEC) ELECTRICITY BOX
- (NBN) NBN PIT
- (LP) STREET LIGHT
- SSM
- (RWO) ROOF WATER OUTLET
- (HYD) HYDRANT
- (FP) FLUSH POINT

NOTES:
1. SURVEY IS FOR CONTOUR PURPOSES ONLY
2. BM IS AHD AS SHOWN
3. CONTOUR INTERVAL IS 0.2m
4. SERVICES LOCATED BY FIELD SURVEY ONLY
5. TREE SPREADS ARE DIAGRAMMATIC ONLY AND MAY NOT BE SYMMETRICAL

0 2 4 6 8 10 12 14 16 18 20
SCALE 1:200 @ A2

NOTE: NO SUBTERRANEAN INVESTIGATIONS HAVE BEEN UNDERTAKEN. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT DIAL BEFORE YOU DIG ON PHONE No. 1100 PRIOR TO ANY EXCAVATION OR EARTHWORKS.

DATE	REVISION	BY

DRAWN JM | SHEET 1 OF 1 SHEETS

RENNIE GOLLEDGE PTY. LTD.
SURVEYORS & PLANNERS
P.O. BOX 132 PH (02) 49334977
36 St ANDREWS ST FAX (02) 49338579
MAITLAND NSW 2320
ABN: 55 002 622 317 mail@renniegolledge.com.au

CLIENT
ALLWIN HOMES

THIS PLAN WAS PRODUCED SOLELY FOR THIS CLIENT.

CONTOUR AND DETAIL PLAN
LOT 527 D.P. 1275320
No. 15 LOANE CIRCUIT, FARLEY

FILE NO. 072.24 | RATIO 1:200 | DATE 21/03/24 | SURVEYED JD | DATUM AHD

ARCHITECTURAL DRAWING LIST - DA			
SHEET NUMBER	SHEET NAME	CURRENT REVISION	CURRENT REVISION DATE
DA00.00	COVER PAGE	A	XX.XX.XX
DA02.01	SITE PLAN / DEMOLITION	A	XX.XX.XX
DA03.01	GROUND FLOOR PLAN	A	XX.XX.XX
DA03.02	AREA CALCULATIONS	A	XX.XX.XX
DA04.01	EXTERNAL ELEVATIONS	A	XX.XX.XX
DA05.01	SECTIONS & EXTERNAL FINISHES	A	XX.XX.XX
DA06.01	SHADOW DIAGRAMS & VIEW FROM SUN	A	XX.XX.XX
DA06.02	OUTDOOR PLAY AREA SOLAR/SHADE CALCULATIONS	A	XX.XX.XX

ARTISTS IMPRESSION

15 LOANE CIRCUIT
FARLEY NSW 2320

CHILDCARE CENTRE

DEVELOPMENT APPLICATION

A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION
ISSUE	DATE	DESCRIPTION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
ACOUSTIC	DAY DESIGN
EVACUATION	SPS
QS	CAPITAL QP&C
TRAFFIC	STANBURY

NOTES

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CLIENT

S. PINGALA

ARCHITECT

ArtMade Architects

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PROJECT

CHILDCARE CENTRE

PROJECT ADDRESS

15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME

COVER PAGE

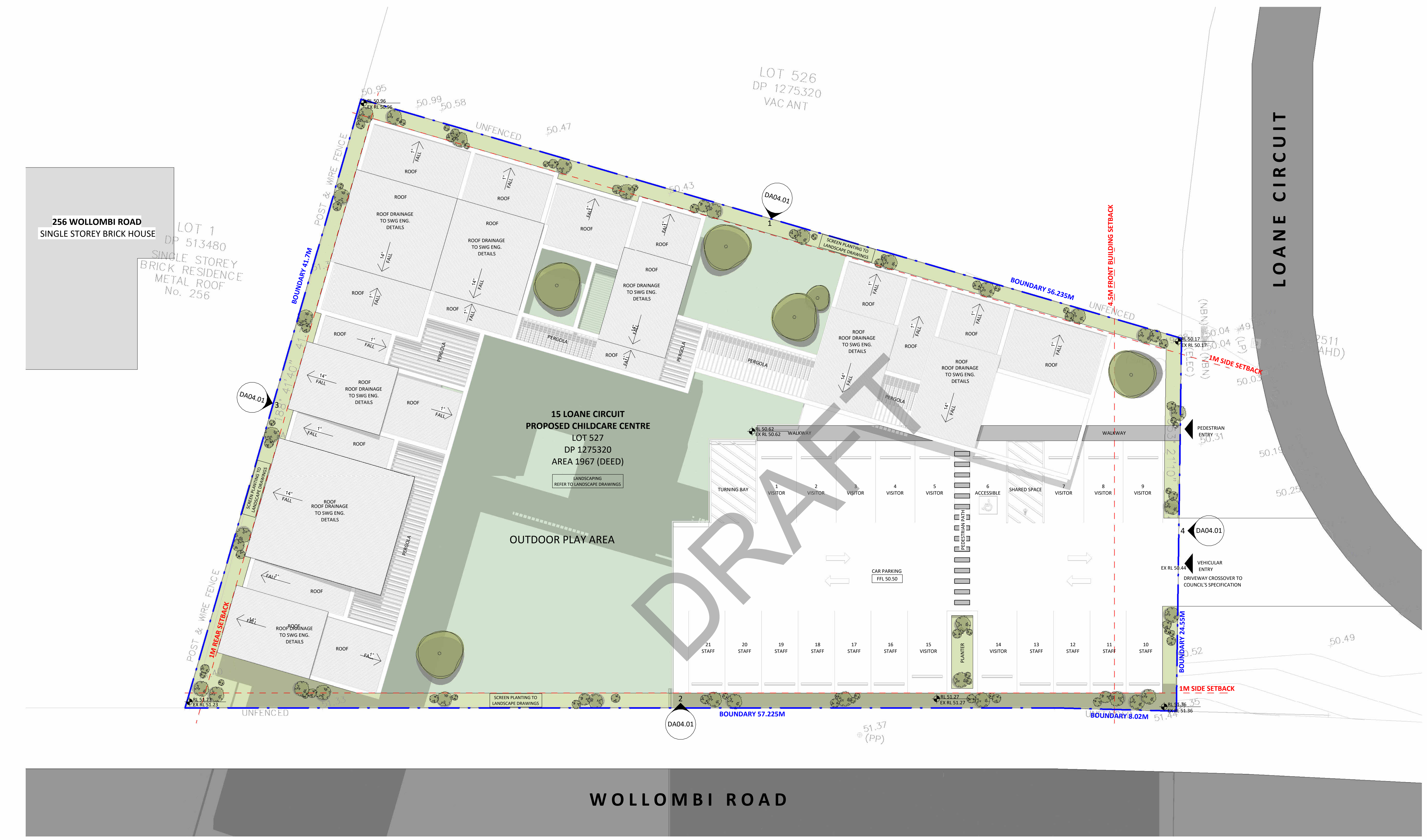
ISSUED FOR DEVELOPMENT APPLICATION

Project number	Sheet No.	Issue	Phase
24750	DA00.00	A	DA

Sheet Size	Scale	L.G.A.
A1	N T S	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX

NOT FOR CONSTRUCTION



1 SITE PLAN
1 : 200

INDOOR PLAYROOM SCHEDULE					
ROOM	AGE	NO. CHLDRN	NO. STAFF	UNENCUMBERED REQ AREA	UNENCUMBERED AREA
PLAYROOM 1	AGE 3-5	10	1	32.5 m²	34.80 m²
PLAYROOM 2	AGE 3-5	20	2	65 m²	65.25 m²
PLAYROOM 3	AGE 2-3	10	2	32.5 m²	34.80 m²
PLAYROOM 4	AGE 3-5	20	2	65 m²	65.80 m²
PLAYROOM 5	AGE 2-3	15	3	48.75 m²	49.90 m²
PLAYROOM 6	AGE 0-2	8	2	26 m²	34.40 m²
TOTAL		83	12	269.75 m²	284.95 m²

OUTDOOR PLAY AREA SCHEDULE				
AREA	AGE	NO. CHLDRN	UNENCUMBERED REQ AREA	UNENCUMBERED AREA
OUTDOOR PLAY AREA	(AGE 0-5)	83	581 m²	605.10 m²
TOTAL		83	581 m²	605.10 m²

INTERNAL STORAGE SCHEDULE			
NAME	NO. CHLDRN	REQ VOL	VOL
INT ST. 1	20	4.00 m³	2.95 m³
INT ST. 2	20	4.00 m³	11.25 m³
INT ST. 3	20	4.00 m³	Not Placed
INT ST. 4	15	3.00 m³	3.30 m³
INT ST. 5	8	1.60 m³	1.95 m³
TOTAL	83	16.60 m³	19.40 m³

EXTERNAL STORAGE SCHEDULE			
NAME	NO. CHLDRN	REQ VOL	VOL
EX ST 1	83	24.90 m³	25.50 m³
TOTAL	83	24.90 m³	25.50 m³

PARKING SCHEDULE	
PARKING	NO. SPACES
ACCESSIBLE	1
STAFF	10
VISITOR	10
TOTAL	21

NOT FOR CONSTRUCTION

0 1 2 4 6 8 10
1 : 200

ABBREVIATIONS

ENG. - ENGINEER
ESL - EXISTING SLAB LEVEL
EXT - EXTERIOR
FFL - FINISH FLOOR LEVEL
F. - FIXED
FSL - FINISH SURFACE LEVEL
GL - GROUND LINE
GLZ - GLAZING
EX.GL - EXISTING GROUND LINE
REQ. - REQUIREMENTS

XX.XX - PROPOSED LEVEL
XX.XX - EXISTING LEVEL
XX.XX - SPOT LEVEL (PLAN)
XX.XX - SPOT LEVEL (ELEVATION)

LANDSCAPE LEGEND

EXISTING TREE / TREE TO BE RETAINED
TREE TO BE REMOVED
NEW TREE
LANDSCAPING / BUFFER
TURF/ ARTIFICIAL TURF
EXTERNAL FLOOR FINISH
LINE OF STRUCTURAL ROOT ZONE (SRZ)
LINE OF TREE EXCLUSION ZONE (TEZ)
LINE OF TREE PROTECTION ZONE (TPZ)
NOTE: REFER TO ARBORIST REPORT FOR FURTHER DETAILS

GENERAL NOTES

- ALL EXISTING BUILDING ELEMENTS TO BE CHECKED ON SITE U.N.O
- DEMOLITION TO BE IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND TO BE CARRIED OUT BY A LICENCED CONTRACTOR U. N.O
- REFER TO SW DRAWINGS FOR DRAINAGE DESIGN.
- REFER TO LANDSCAPE DRAWINGS FOR LANDSCAPE DESIGN.
- KITCHEN AREA TO BE ACCORDANCE WITH NSW AS4674, FOOD ACT 2003, FOOD REGULATION 2015 AND FOOD STANDARD CODES 3.2.2 AND 3.2.3.

ISSUE	DATE	DESCRIPTION
A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
ACOUSTIC	DAY DESIGN
EVACUATION	SPS
QS	CAPITAL QP&C
TRAFFIC	STANBURY

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PROJECT

CHILDCARE CENTRE

PROJECT ADDRESS

15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME

SITE PLAN / DEMOLITION

ISSUED FOR DEVELOPMENT APPLICATION

Project number	Sheet No.	Issue	Phase
24750	DA02.01	A	DA

Sheet Size	Scale	L.G.A.
A1	As indicated	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX

1 GROUND FLOOR PLAN
1 : 100

2 FENCE/BARRIER DIAGRAM
1 : 500

DA - FENCE LEGEND

- EG. 1.2M HT LAPPED & CAPPED BOUNDARY FENCE
- 1.2M HT BALUSTRADE
- 1.2M HT ACOUSTIC BARRIER
- ??
- 1.8M HT LAPPED & CAPPED BOUNDARY FENCE
- ??
- ??
- ??

NOTE:
- ALL ACOUSTIC BARRIERS IN ACCORDANCE WITH ACOUSTIC REPORT.
- REFER TO SHEET A05.01 FOR FENCE DETAILS.

INDOOR PLAYROOM SCHEDULE					
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STAFF	10
VISITOR	10
TOTAL	21

1 : 100

ABBREVIATIONS

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XX.XX	- PROPOSED LEVEL
XX.XX	- EXISTING LEVEL
XX.XX	- SPOT LEVEL (PLAN)
XX.XX	- SPOT LEVEL (ELEVATION)

LANDSCAPE LEGEND

- EXISTING TREE / TREE TO BE RETAINED
- TREE TO BE REMOVED
- NEW TREE
- LANDSCAPING / BUFFER
- TURF/ ARTIFICIAL TURF
- EXTERNAL FLOOR FINISH
- LINE OF STRUCTURAL ROOT ZONE (SRZ)
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ISSUE	DATE	DESCRIPTION
A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
ACOUSTIC	DAY DESIGN
EVACUATION	SPS
QS	CAPITAL QP&C
TRAFFIC	STANBURY

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PROJECT

CHILDCARE CENTRE

PROJECT ADDRESS

15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME

GROUND FLOOR PLAN

ISSUED FOR DEVELOPMENT APPLICATION

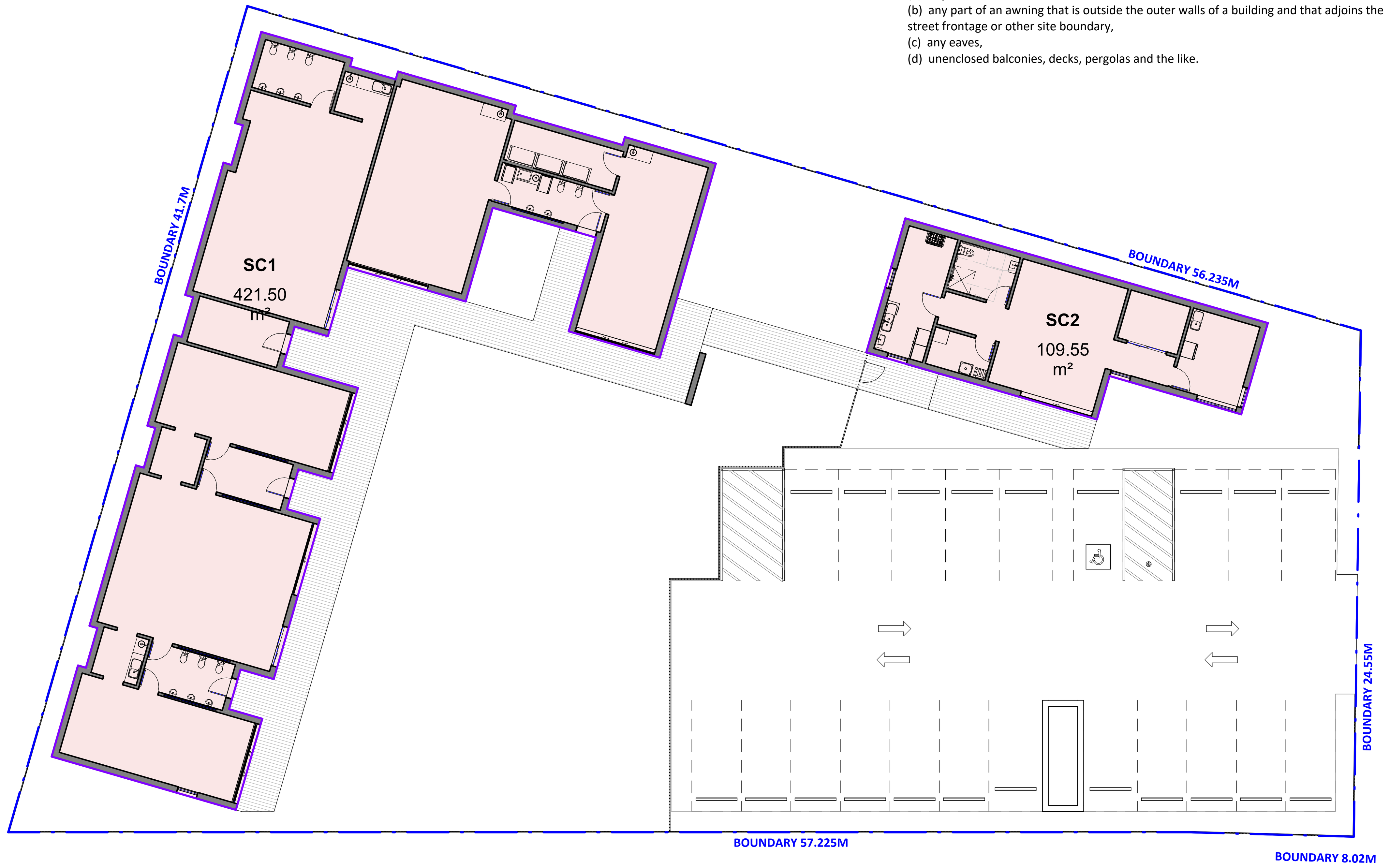
Project number	Sheet No.	Issue	Phase
24750	DA03.01	A	DA

Sheet Size	Scale	L.G.A.
A1	As indicated	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX

NOT FOR CONSTRUCTION

site area means the area of any land on which development is or is to be carried out. The land may include the whole or part of one lot, or more than one lot if they are contiguous to each other, but does not include the area of any land on which development is not permitted to be carried out under this Plan.
Note—
The effect of this definition is varied by clause 4.5 for the purpose of the determination of permitted floor space area for proposed development.
site coverage means the proportion of a site area covered by buildings. However, the following are not included for the purpose of calculating site coverage—
(a) any basement,
(b) any part of an awning that is outside the outer walls of a building and that adjoins the street frontage or other site boundary,
(c) any eaves,
(d) unenclosed balconies, decks, pergolas and the like.



1 SITE COVERAGE
1 : 200

2 GFA - GROUND FLOOR LEVEL
1 : 200

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.

3 LANDSCAPE - GROUND FLOOR LEVEL
1 : 200

landscaped area means a part of a site used for growing plants, grasses and trees, but does not include any building, structure or hard paved area.

DCP - SITE COVERAGE (SITE AREA 1967m²)	
MAX SITE COVERAGE AREA	MAX SITE COVERAGE %
1180 m²	60%

PROPOSED - SITE COVERAGE		
Name	Area	Site Coverage %
SC1	421 m²	21%
SC2	110 m²	6%

DCP - GFA (SITE AREA1967M²)	
PERMITTED AREA	MIN FSR
590.10 m²	0.5

PROPOSED - GFA		
Name	Area	FSR
FS1	169.90 m²	0.086387
FS2	197.60 m²	0.100461
FS3	95.05 m²	0.048312
TOTAL	462.55 m²	0.235161

DCP - LANDSCAPE AREA (SITE AREA 1967M²)	
MIN LS AREA	MIN LS %
590.10 m²	30%

PROPOSED - LANDSCAPE AREA		
Name	Area	LS %
<varies>	734.35 m²	37.3%
TOTAL	734.35 m²	37.3%

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0 1 2 4 6 8 10
1 : 200

A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION
ISSUE	DATE	DESCRIPTION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
ACOUSTIC	DAY DESIGN
EVACUATION	SPS
QS	CAPITAL QP&C
TRAFFIC	STANBURY

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PROJECT
CHILDCARE CENTRE

PROJECT ADDRESS
15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME
AREA CALCULATIONS

ISSUED FOR DEVELOPMENT APPLICATION

Project number	Sheet No.	Issue	Phase
24750	DA03.02	A	DA

Sheet Size	Scale	L.G.A.
A1	1 : 200	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX

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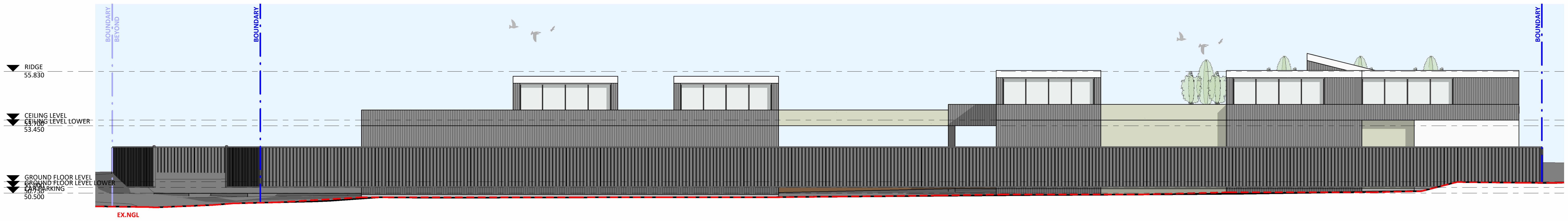
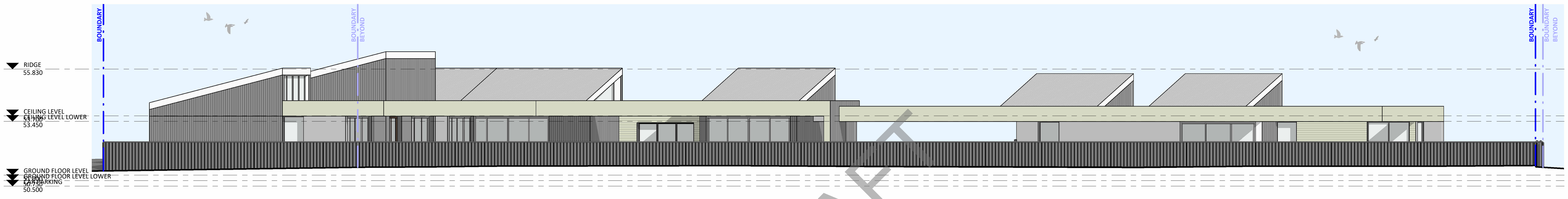
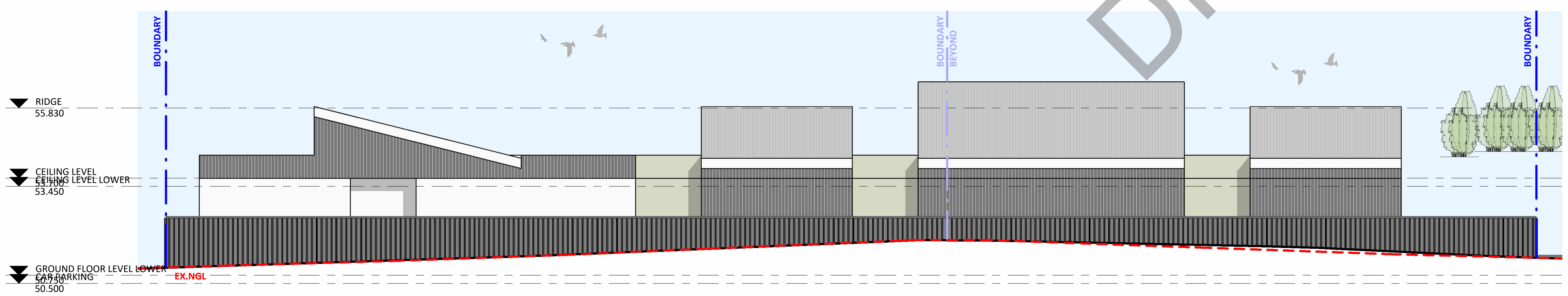
1 : 100



1 NORTHERN ELEVATION
1 : 100



2 SOUTHERN ELEVATION
1 : 100



3 WESTERN ELEVATION
1 : 100

4 EASTERN ELEVATION
1 : 100

EXTERNAL FINISHES

BK-01	BRICK BAGGED DULUX COLOUR: WOODLAND GREY OR SIMILAR
CB-01	GARAGE DOOR COLORBOND COLOUR: WOODLAND GREY OR SIMILAR
CB-02	ROOF,GUTTER, DOWNPIPES COLORBOND COLOUR: WOODLAND GREY OR SIMILAR
CB-03	STANDING SEAM COLORBOND LONG LINE COLOUR: WOODLAND GREY OR SIMILAR
CL-01	GROOVED CLADDING WEATHERTEX WEATHERGROOVE WOODSMAN 75MM PAINTED COLOUR: DULUX WOODLAND GREY OR SIMILAR
CL-02	GROOVED CLADDING WEATHERTEX WEATHERGROOVE WOODSMAN 75MM PAINTED COLOUR: DULUX DIESKAU OR SIMILAR
CL-03	CONCRETE CLADDING BARESTONE CEMINTEL COLOUR: ORIGINAL
FC-01	JAMES HARDIE FC SHEETING AXON CLADDING PAINTED COLOUR: DULUX DIESKAU OR SIMILAR
PC-01	ALUMINIUM WINDOW & DOOR FRAMES DURALLOY POWDERCOAT COLOUR: WOODLAND GREY OR SIMILAR
PT-01	RENDER & PAINT DULUX COLOUR: WOODLAND GREY OR SIMILAR
TB-01	TIMBER DECKING INNOWOOD COLOUR: WESTERN RED CEDAR OR SIMILAR

NOT FOR CONSTRUCTION

A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION
ISSUE	DATE	DESCRIPTION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
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PROJECT

CHILDCARE CENTRE

PROJECT ADDRESS

15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME

EXTERNAL ELEVATIONS

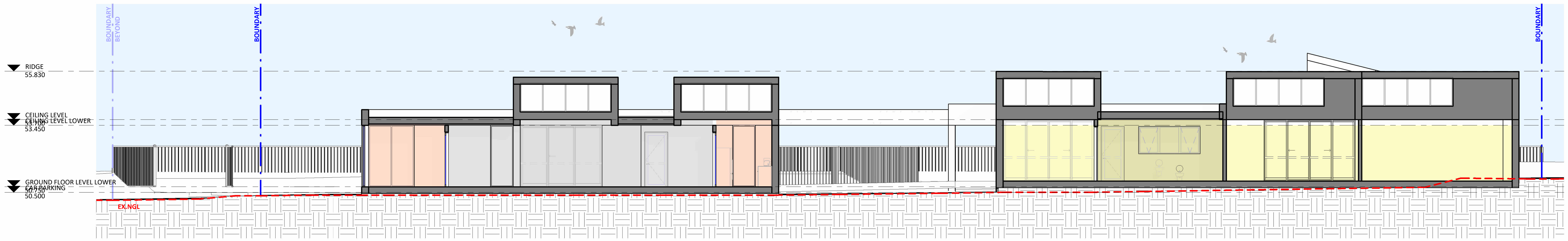
ISSUED FOR DEVELOPMENT APPLICATION

Project number	Sheet No.	Issue	Phase
24750	DA04.01	A	DA

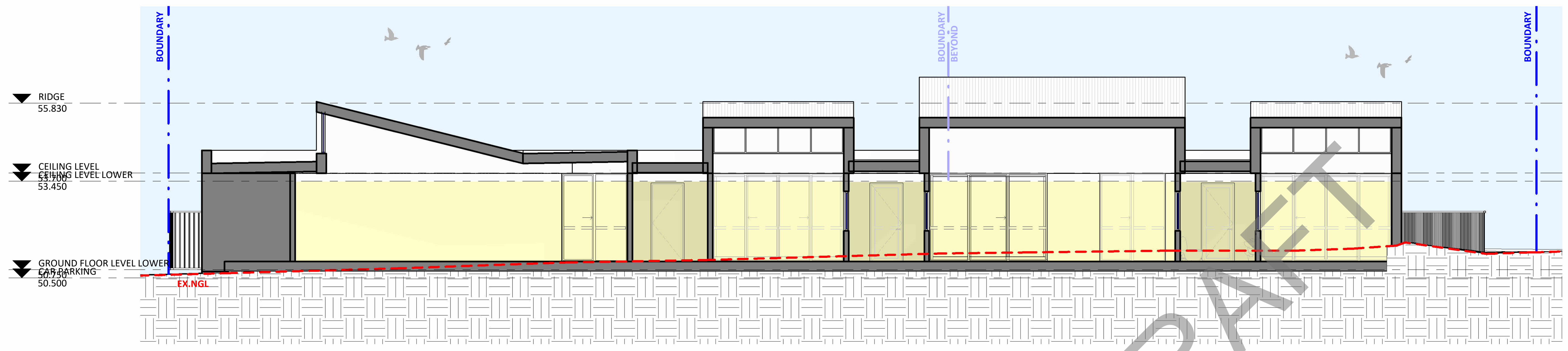
Sheet Size	Scale	L.G.A.
A1	1 : 100	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX

0 1 2 3 4 5
1 : 100

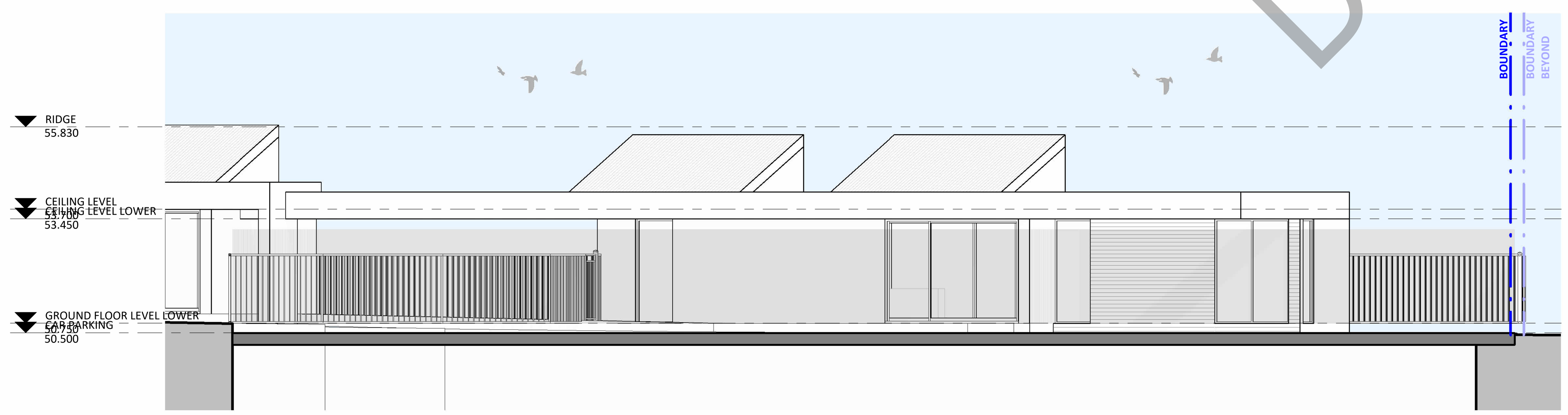


A SECTION A-A
1 : 100



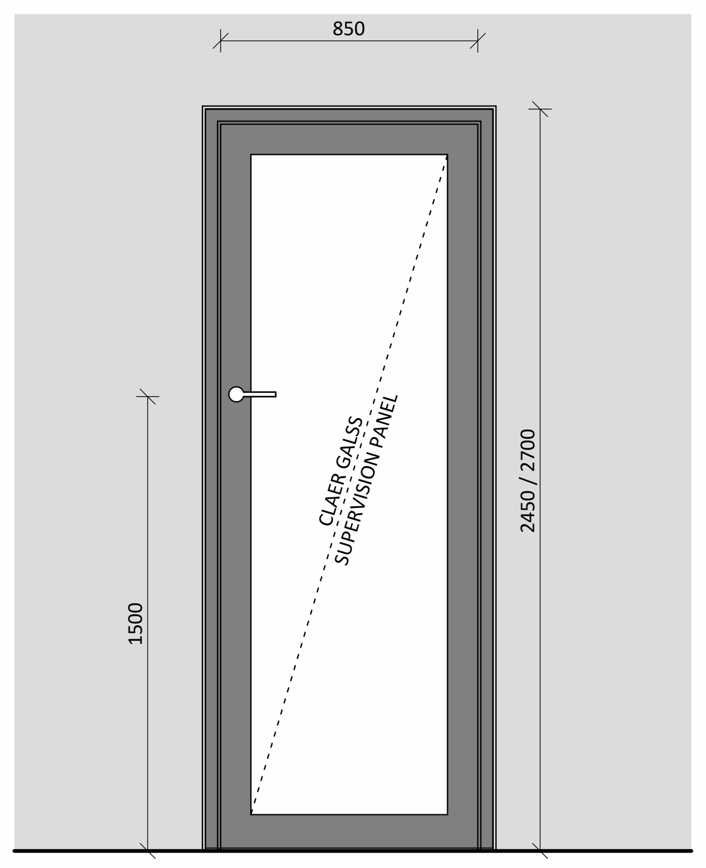
B SECTION B-B
1 : 100

DRAFT

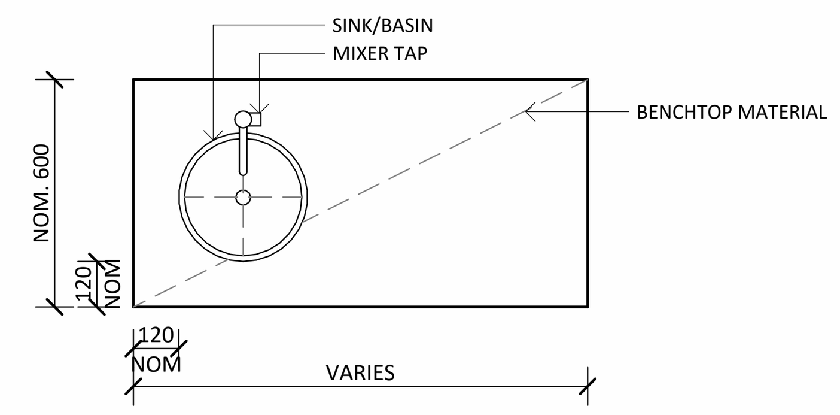


C SECTION C-C
1 : 100

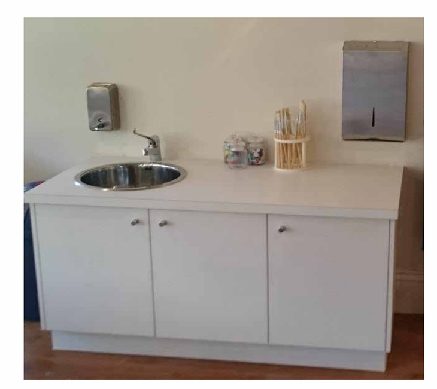
ARTIST'S IMPRESSION



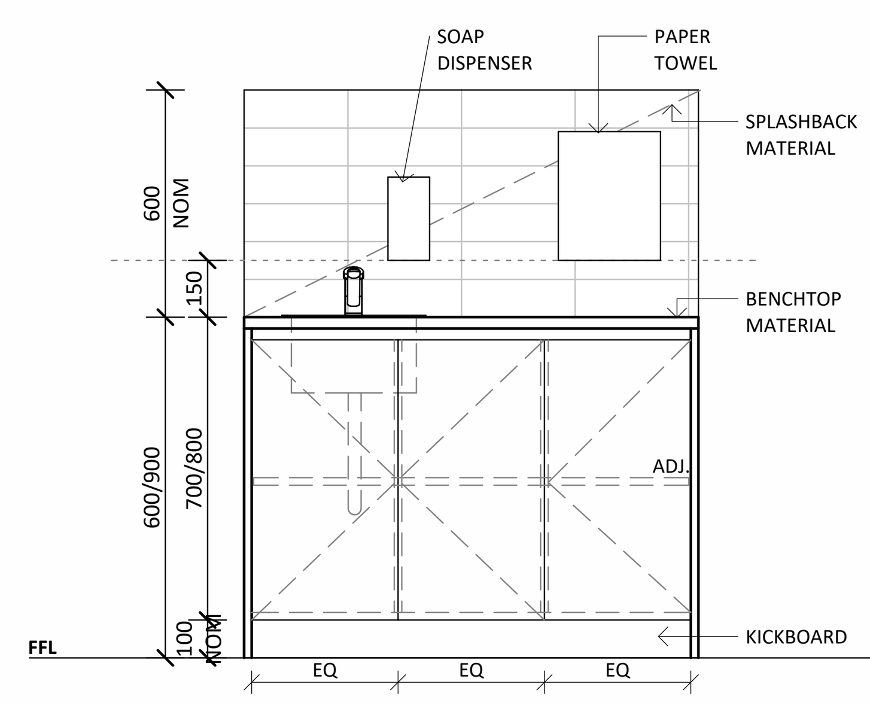
TYP GLASS DOORS TO COT ROOMS, JNR WC



TYPICAL CRAFT SINK - PLAN

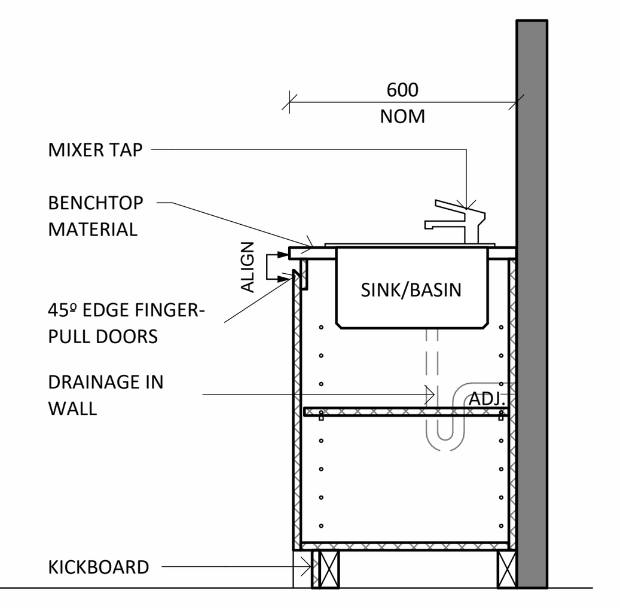


NOTE: SIMILAR CRAFT SINK. IMAGE FOR JOINERY REFERENCE ONLY



TYPICAL CRAFT SINK - ELEVATION

NOTE: PROVIDE MAGNETIC CHILDPROOF LOCKS TO ALL CABINETS IN INDOOR PLAY AREA (CRAFT SINKS & BOTTLE PREP.)



TYPICAL CRAFT SINK - SECTION

NOT FOR CONSTRUCTION

A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION
ISSUE	DATE	DESCRIPTION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
ACOUSTIC	DAY DESIGN
EVACUATION	SPS
QS	CAPITAL QP&C
TRAFFIC	STANBURY

NOTES
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CLIENT

S. PINGALA

ARCHITECT

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|P: 02 8760 9300 |hello@artmade.com.au | www.artmade.com.au

PROJECT

CHILDCARE CENTRE

PROJECT ADDRESS

15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME

SECTIONS & EXTERNAL FINISHES

ISSUED FOR DEVELOPMENT APPLICATION

Project number	Sheet No.	Issue	Phase
24750	DA05.01	A	DA

Sheet Size	Scale	L.G.A.
A1	As indicated	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX

28/05/2024 6:00:10 PM C:\Users\User\OneDrive - ArtMade\Desktop\KG1\24750_SK_V2 (Client Comments)_KG1(Recovery)_240528.rvt

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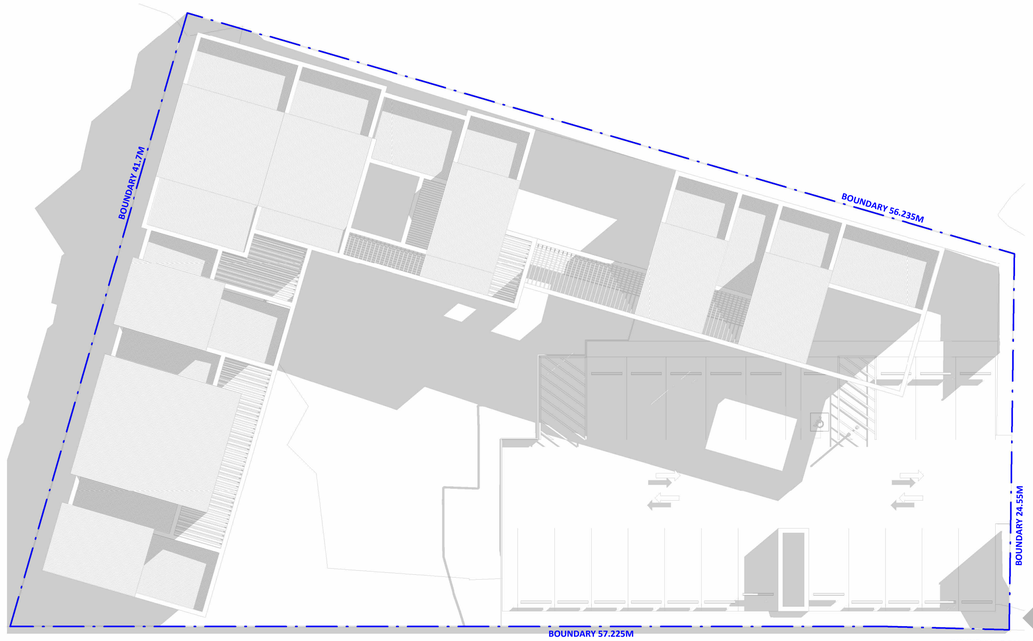
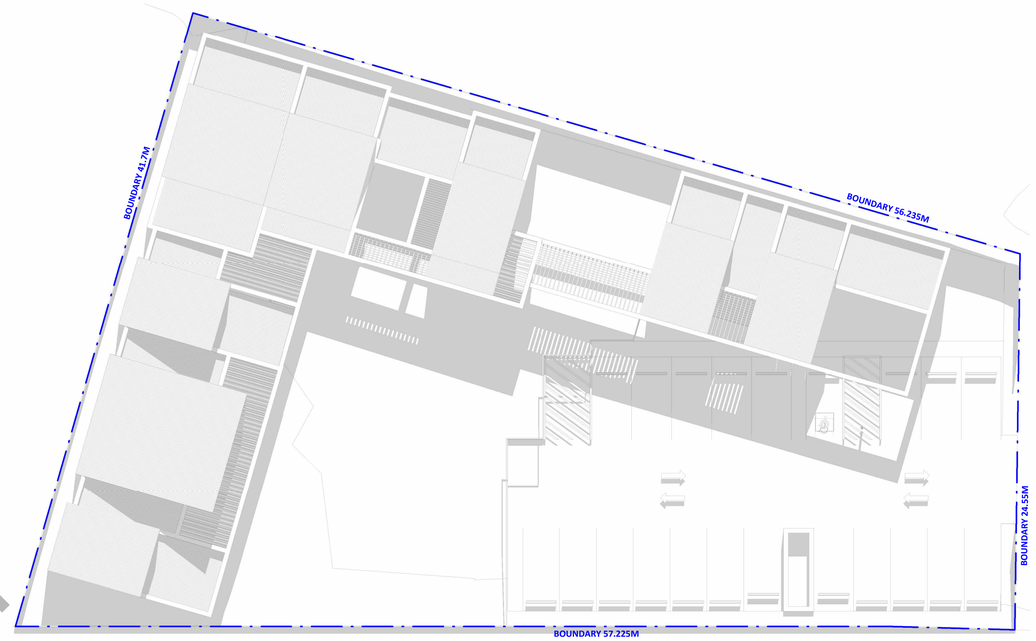


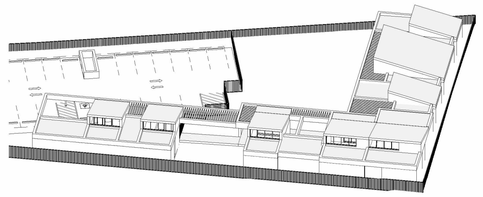
1 SHADOW DIAGRAM- WINTER SOLSTICE - 21 JUNE - 9 AM
1 : 200



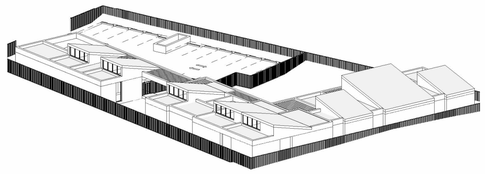
2 SHADOW DIAGRAM- WINTER SOLSTICE - 21 JUNE - 12 PM
1 : 200

3 SHADOW DIAGRAM- WINTER SOLSTICE - 21 JUNE - 3 PM
1 : 200

4 VIEW FROM SUN - WINTER SOLSTICE - 21 JUNE - 9 AM



5 VIEW FROM SUN - WINTER SOLSTICE - 21 JUNE - 12 PM



6 VIEW FROM SUN - WINTER SOLSTICE - 21 JUNE - 3 PM

LEGEND

- NEIGHBOUR SHADOW
- EXISTING SHADOW
- PROPOSED SHADOW

NOT FOR CONSTRUCTION

ISSUE	DATE	DESCRIPTION
A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
ACOUSTIC	DAY DESIGN
EVACUATION	SPS
QS	CAPITAL QP&C
TRAFFIC	STANBURY

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PROJECT

CHILDCARE CENTRE

PROJECT ADDRESS

15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME

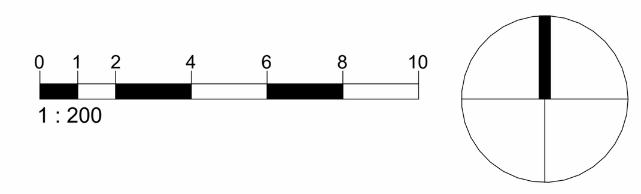
SHADOW DIAGRAMS & VIEW FROM SUN

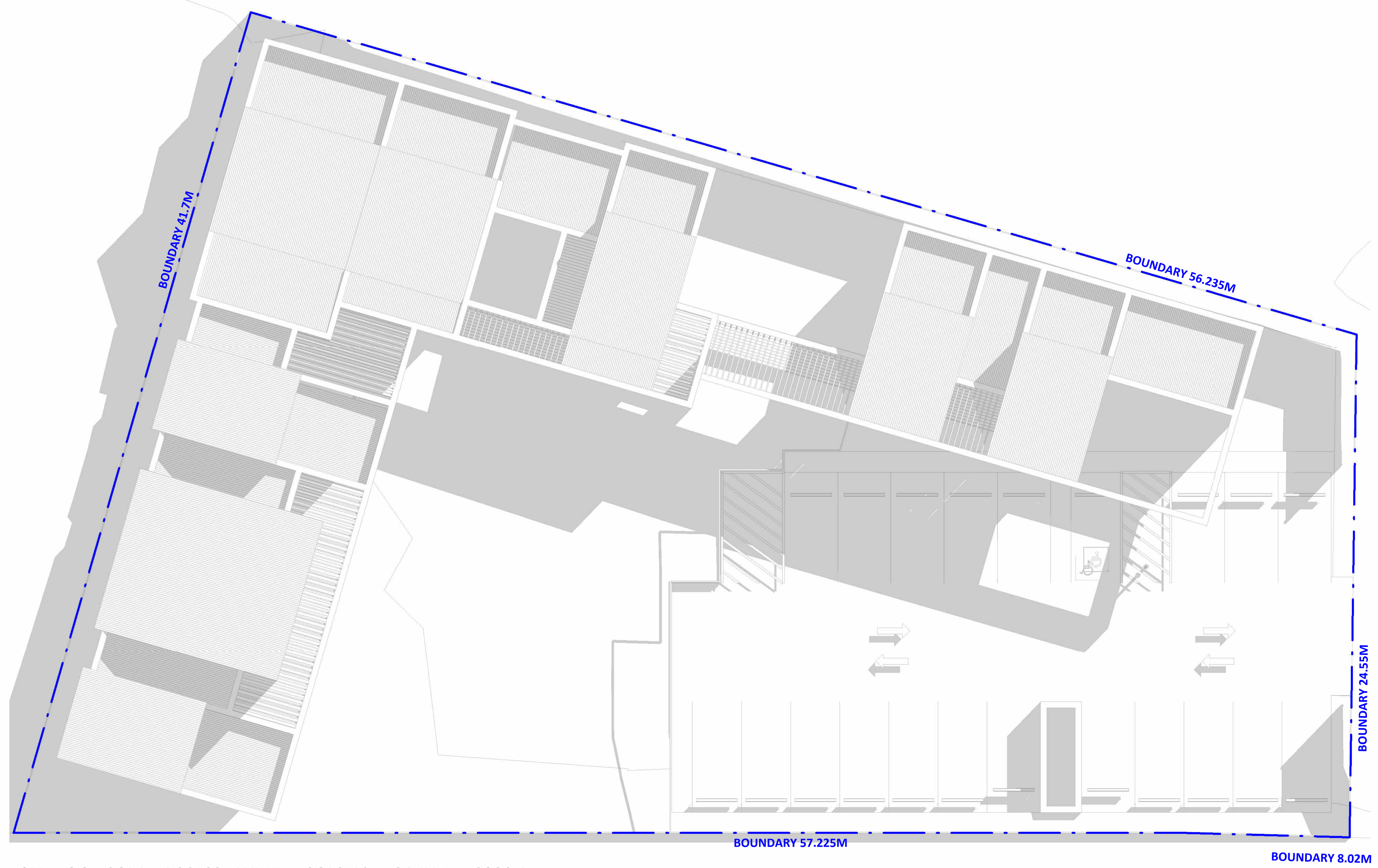
ISSUED FOR DEVELOPMENT APPLICATION

Project number	Sheet No.	Issue	Phase
24750	DA06.01	A	DA

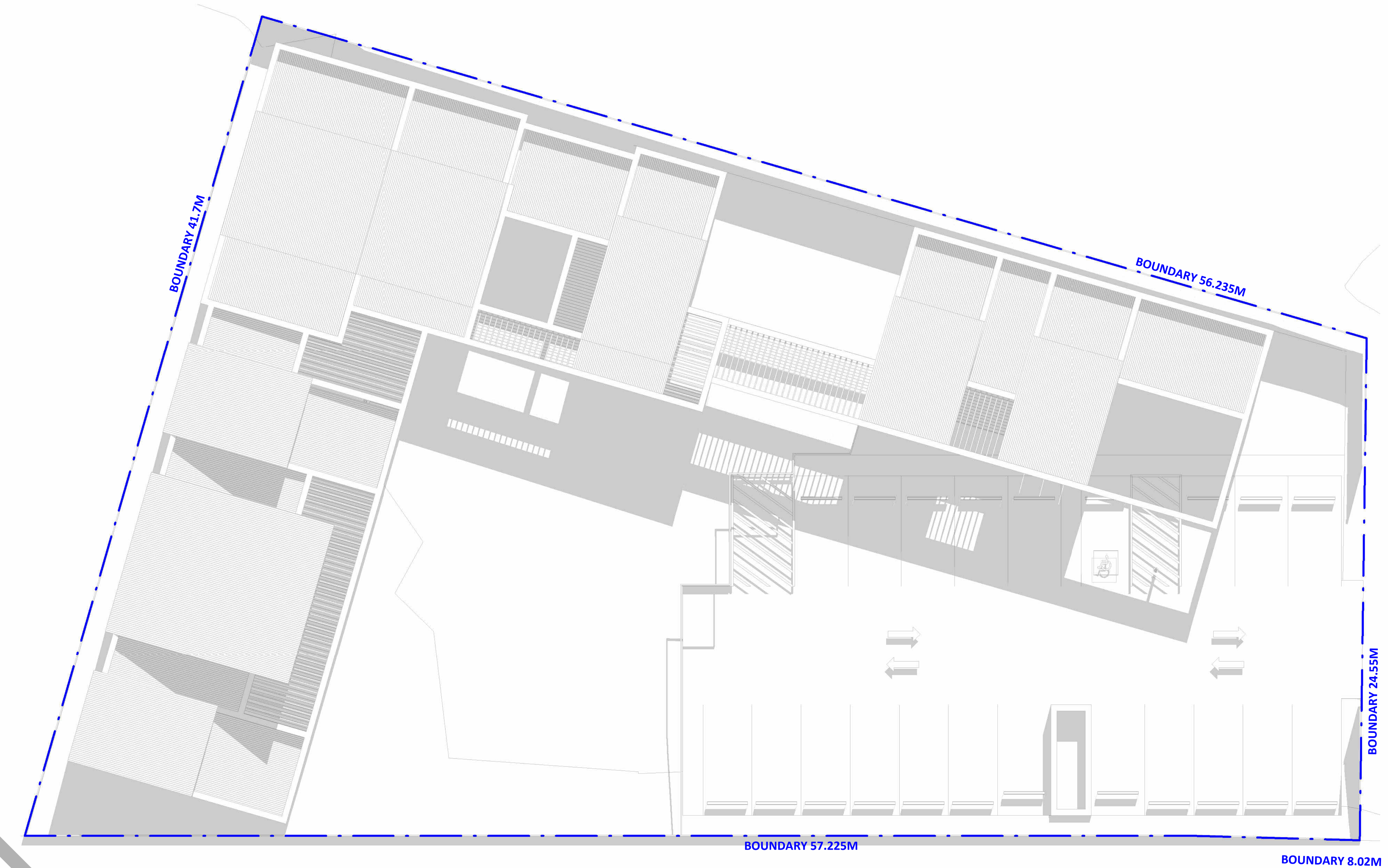
Sheet Size	Scale	L.G.A.
A1	1 : 200	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX

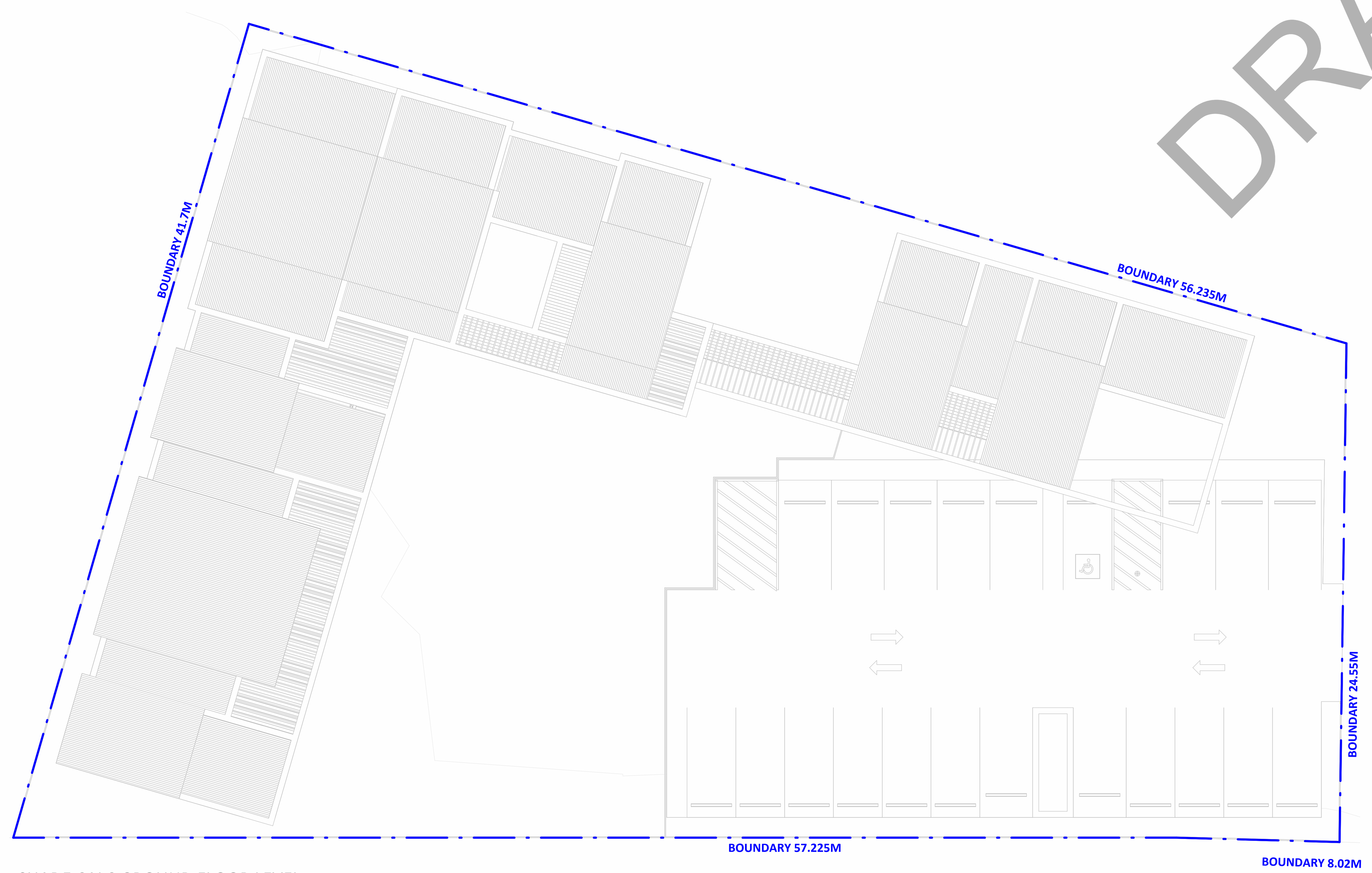




1 OUTDOOR SOLAR ACCESS - WINTER SOLSTICE - 21 JUNE - 0930 AM
1 : 200



2 OUTDOOR SOLAR ACCESS - WINTER SOLSTICE - 21 JUNE - 1130 AM
1 : 200



3 SHADE CALC GROUND FLOOR LEVEL
1 : 200

LEGEND

OUTDOOR PLAY AREA SOLAR ACCESS

COVERED OUTDOOR PLAY AREA

MIN REQ OUTDOOR PLAY AREA	=581M²
MIN REQ SOLAR TO OUTDOOR PLAY AREA	=174.3M² (30%)
WINTER SOLSTICE 11AM	=M² (%)
WINTER SOLSTICE 3PM	=M² (%)
SHADED OUTDOOR PLAY AREA	=M² (%)

NOT FOR CONSTRUCTION

A	XX.XX.XX	ISSUED FOR DEVELOPMENT APPLICATION
ISSUE	DATE	DESCRIPTION

ASSOCIATED CONSULTANTS

ACCESS	NEW CROWN
ACOUSTIC	DAY DESIGN
EVACUATION	SPS
QS	CAPITAL QP&C
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PROJECT

CHILDCARE CENTRE

PROJECT ADDRESS

15 LOANE CIRCUIT, FARLEY, NSW 2320

SHEET NAME

OUTDOOR PLAY AREA SOLAR/SHADE CALCULATIONS

ISSUED FOR DEVELOPMENT APPLICATION

Project number	Sheet No.	Issue	Phase
24750	DA06.02	A	DA

Sheet Size	Scale	L.G.A.
A1	1 : 200	MAITLAND

Drawn By	Checked By	Date
KG/KG1	BR	XX.XX.XX