



**REPORT TO
HEALTH INFRASTRUCTURE**

**ON
PRELIMINARY (STAGE 1) SITE INVESTIGATION**

**FOR
PROPOSED GUNNEDAH HOSPITAL
REDEVELOPMENT**

**AT
MARQUIS STREET, GUNNEDAH, NSW**

Date: 1 August 2022
Ref: E35091UPDrpt

JKEnvironments
www.jkenvironments.com.au

T: +61 2 9888 5000
JK Environments Pty Ltd
ABN 90 633 911 403



Report prepared by:



Mitch Delaney
Senior Associate | Environmental Scientist

Report reviewed by:



Brendan Page
Principal Associate | Environmental Scientist
CEnvP SC



For and on behalf of
JKE
PO BOX 976
NORTH RYDE BC NSW 1670

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Executive Summary

Health Infrastructure ('the client') commissioned JK Environments (JKE) to undertake a Preliminary (Stage 1) Site Investigation (PSI) for the proposed hospital redevelopment at Gunnedah Hospital, Marquis Street, Gunnedah, NSW. The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2 attached in the appendices.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed hospital redevelopment, with regards to State Environmental Planning Policy (Resilience and Hazards) 2021¹. A geotechnical investigation was undertaken in conjunction with this PSI by JK Geotechnics (JKG). The results of the geotechnical investigation will be presented in a separate report (Ref: 35091URpt). This report should be read in conjunction with the JKG report.

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

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
- Assess the soil contamination conditions via implementation of a preliminary sampling and analysis program;
- Prepare a conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed development (from a contamination viewpoint); and
- Assess whether further intrusive investigation and/or remediation is required.

The investigation included a review of historical information and sampling from eight boreholes and six testpits. The identified AEC include: fill material; use of pesticides; hazardous building materials; electrical transformer; diesel generator; and an Incinerator.

The PSI identified fill at most locations. A marginally elevated concentration of nickel was encountered above the ecological criterion in one sample and asbestos (as bonded asbestos containing material - ACM) was found in the subsurface soil in another sample. The asbestos concentration was marginally below the Site Assessment Criteria (SAC).

Based on the findings of the investigation, JKE is of the opinion that the site can be made suitable for the proposed development described in Section 1.1. A Detailed Site Investigation (DSI) will be required to establish whether remediation is necessary. Based on the preliminary data, contamination issues at the site (if found during the DSI process) would be expected to be typical of this type of site with the associated historical land use. On this basis, we consider that the site could be made suitable via relatively straight-forward remediation processes such as 'excavation/disposal' and 'cap and contain', should remediation be required.

We recommend the following:

- Undertake DSI to address the data gaps identified in Section 10.4. The extent of 'the site' for the DSI should be confirmed by the client as it is noted that not all areas of the hospital are being redeveloped. In our view, it would be reasonable to limit the DSI to broadly capture the proposed development footprint; and
- Prepare and implement an Asbestos Management Plan (AMP) for asbestos in soil.

If the DSI identifies a need for remediation, a Remediation Action Plan (RAP) will be required and the site will need to be remediated and validated to confirm site suitability.

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

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



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Abbreviations

Asbestos Fines/Fibrous Asbestos	AF/FA
Ambient Background Concentrations	ABC
Added Contaminant Limits	ACL
Asbestos Containing Material	ACM
Australian Drinking Water Guidelines	ADWG
Area of Environmental Concern	AEC
Australian Height Datum	AHD
Acid Sulfate Soil	ASS
Above-Ground Storage Tank	AST
Below Ground Level	BGL
Benzo(a)pyrene Toxicity Equivalent Factor	BaP TEQ
Bureau of Meteorology	BOM
Benzene, Toluene, Ethylbenzene, Xylene	BTEX
Cation Exchange Capacity	CEC
Contaminated Land Management	CLM
Contaminant(s) of Potential Concern	CoPC
Chain of Custody	COC
Conceptual Site Model	CSM
Development Application	DA
Dial Before You Dig	DBYD
Data Quality Indicator	DQI
Data Quality Objective	DQO
Detailed Site Investigation	DSI
Ecological Investigation Level	EIL
Ecological Screening Level	ESL
Environmental Management Plan	EMP
Excavated Natural Material	ENM
Environment Protection Authority	EPA
Environmental Site Assessment	ESA
Fibre Cement Fragment(s)	FCF
General Approval of Immobilisation	GAI
Health Investigation Level	HILs
Health Screening Level	HSL
Health Screening Level-Site Specific Assessment	HSL-SSA
International Organisation of Standardisation	ISO
JK Environments	JKE
Lab Control Spike	LCS
Light Non-Aqueous Phase Liquid	LNAPL
Map Grid of Australia	MGA
National Association of Testing Authorities	NATA
National Environmental Protection Measure	NEPM
Organochlorine Pesticides	OCP
Organophosphate Pesticides	OPP
Polycyclic Aromatic Hydrocarbons	PAH
Potential ASS	PASS
Polychlorinated Biphenyls	PCBs
Per- and Polyfluoroalkyl Substances	PFAS
Photo-ionisation Detector	PID
Protection of the Environment Operations	POEO
Practical Quantitation Limit	PQL
Quality Assurance	QA
Quality Control	QC
Remediation Action Plan	RAP
Relative Percentage Difference	RPD



Site Assessment Criteria	SAC
Sampling, Analysis and Quality Plan	SAQP
Site Audit Statement	SAS
Site Audit Report	SAR
State Environmental Planning Policy	SEPP
Site Specific Assessment	SSA
Source, Pathway, Receptor	SPR
Specific Contamination Concentration	SCC
Standard Penetration Test	SPT
Standing Water Level	SWL
Trip Blank	TB
Toxicity Characteristic Leaching Procedure	TCLP
Total Recoverable Hydrocarbons	TRH
Trip Spike	TS
Upper Confidence Limit	UCL
United States Environmental Protection Agency	USEPA
Underground Storage Tank	UST
Virgin Excavated Natural Material	VENM
Volatile Organic Compounds	VOC
World Health Organisation	WHO
Work Health and Safety	WHS
Units	
Litres	L
Metres BGL	mBGL
Metres	m
Millivolts	mV
Millilitres	ml or mL
micro Siemens per Centimetre	$\mu\text{S}/\text{cm}$
Micrograms per Litre	$\mu\text{g}/\text{L}$
Milligrams per Kilogram	mg/kg
Milligrams per Litre	mg/L
Parts Per Million	ppm
Percentage	%
Percentage weight for weight	%w/w

1 INTRODUCTION

Health Infrastructure ('the client') commissioned JK Environments (JKE) to undertake a Preliminary (Stage 1) Site Investigation (PSI) for the proposed hospital redevelopment at Gunnedah Hospital, Marquis Street, Gunnedah, NSW ('the site'). The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed hospital redevelopment, with regards to State Environmental Planning Policy (Resilience and Hazards) 2021² (formerly known as SEPP55).

A geotechnical investigation was undertaken in conjunction with this PSI by JK Geotechnics (JKG). The results of the geotechnical investigation will be presented in a separate report (Ref: 35091URrpt). This report should be read in conjunction with the JKG report.

1.1 Proposed Development Details

Based on a review of the provided information, we understand that the proposed development includes alterations and additions to the existing hospital which will be carried out in three stages: Early Works; Main Works; and Refurbishment Works. Following partial demolition required for each of the stages, the proposed alterations and additions will include:

- A new single level inpatient unit building situated over the central portion of the hospital grounds, an extension to the existing kitchen building and a new emergency access situated respectively to the south-west and to the east of the new inpatient unit building. The ground floor concrete slab will be suspended between bored piers with the floor slab either supported by sacrificial formwork or formed over a subgrade comprising engineered fill and natural ground, in which case where necessary design surface levels would need to be raised (by placing fill) or lowered (by excavation) by approximately 0.5m Below Ground Level (BGL);
- The existing ward building to the north-east of the new inpatient unit building will be reconfigured and will include works to occupy the existing undercroft space. Minor excavation works may be required to approximately 0.2mBGL to accommodate the new concrete slab;
- Additional car parking areas and access roads will be provided over the north-western, north-eastern, southern and south-eastern portions of the site. In the main, the new parking areas will involve extending existing parking areas. We have assumed excavations to a maximum depth of approximately 1mBGL will be required to achieve design surface levels; and
- Landscaping of sections of the site including but not limited to the regarding of the link between the new main entry to the inpatient unit building north-eastwards to the rear (south-eastern side) of the Rural Health Centre. The access ramp will require raising of site surface levels by a maximum of approximately 1.4m.

² State Environmental Planning Policy (Resilience and Hazards) 2021 (NSW) (referred to as SEPP Resilience and Hazards 2021)

We understand that the existing day care centre in the south-east section of the site will be demolished as part of the development and a new day care centre is not proposed.

1.2 Aims and Objectives

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

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
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- Prepare a conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed development (from a contamination viewpoint); and
- Assess whether further intrusive investigation and/or remediation is required.

1.3 Scope of Work

The investigation was undertaken generally in accordance with a JKE proposal Ref: EP56152UPD (RFQ: HI22038) and written acceptance from the client via Contact No. HI22038GU. The scope of work included the following:

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

The scope of work was undertaken with reference to the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)³, other guidelines made under or with regards to the Contaminated Land Management Act (1997)⁴ and SEPP Resilience and Hazards 2021. A list of reference documents/guidelines is included in the appendices.

³ National Environment Protection Council (NEPC), (2013). *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)*. (referred to as NEPM 2013)

⁴ Contaminated Land Management Act 1997 (NSW) (referred to as CLM Act 1997)

2 SITE INFORMATION

2.1 Site Identification

Table 2-1: Site Identification

Current Site Owner (certificate of title):	Health Administration Corporation
Site Address:	10-24 Anzac Parade, Gunnedah, NSW (site address commonly referred to as Marquis Street, Gunnedah, NSW)
Lot & Deposited Plan:	Part of Lot 3 in DP792209
Current Land Use:	Hospital and associated facilities
Proposed Land Use:	Continued hospital and associated facilities
Local Government Authority:	Gunnedah Shire Council
Current Zoning:	R2: Low Density Residential
Site Area (m²) (approx.):	31,900
RL (AHD in m) (approx.):	280
Geographical Location (decimal degrees) (approx.):	Latitude: -30.983401 Longitude: 150.251313
Site Location Plan:	Figure 1
Sample Location Plan:	Figure 2

2.2 Site Location and Regional Setting

The site is located in a predominantly residential and recreational area of Gunnedah and is bound by Alkira Nursing Home to the north, Anzac Parade to the east, Reservoir Street to the south and Marquis Street to the west.

2.3 Topography

The regional topography slopes slightly towards the north. The site topography is consistent with its surrounds and has a gentle slope towards the north at approximately 1°-2°.

2.4 Site Inspection

A walkover inspection of the site was undertaken by JKE on 2 June 2022. The inspection was limited to accessible areas of the site and immediate surrounds. An internal inspection of buildings was not undertaken

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

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

At the time of the inspection, the majority of the site was occupied by Gunnedah District Hospital and Community Health Service Centre. Site activities included general hospital use, an ambulance station, a maintenance workshop, education, a day care centre and staff accommodation.

No indicators of former site use were observed.

2.4.2 Buildings, Structures and Roads

The site was generally occupied by several buildings that were largely constructed on-grade. The buildings were used for various purposes including hospital wards, surgery, pathology, admin/recreation, staff accommodation, workshop, ambulance station, food outlet, generator/fuel storage and equipment storage. Carparks and internal driveways on site were paved with asphaltic concrete, whilst other open areas were concrete or brick paved.

A high level summary of the buildings and other built features observed during the JKE inspection is presented in the table below:

Table 2-2: Summary of Site Buildings and Other Built Features

Building/Feature location	Description
Community Health Service Centre including pathology clinic and training, located in the north-west section of the site.	Single-storey brick building with steel roof. The building was irregular shaped and appeared to have been of recent construction.
Electrical transformer located at the north-west site boundary (see Figure 2).	Constructed of metal on top of a concrete slab, with the areas immediately adjacent grassed.
Education Centre.	Single-storey brick building with steel roof.
Main hospital building located in the central section of the site and occupied for hospital services including imagery, maternity wards, birthing suite, emergency, consultation rooms, kitchen and back of house.	Single-storey brick building with steel roof. The buildings are of irregular shaped and appeared to have been subject to historical alterations and additions. Suspected asbestos containing material (ACM) in the form of fibre cement sheeting was present in the southern portion of the building with some of the fibre cement sheeting identified as ACM based on displayed caution signage.
Ambulance Station including parking shed, equipment store and office, located in the east section of the site.	Single-storey brick and steel building. Appeared to be relatively recently constructed.
Staff accommodation building located in the south-east section of the site.	Single-storey brick and terracotta tiled roofed 'L' shaped building.
Child care building located in the south-east section of the site and to the west of the staff accommodation building.	Single-storey brick and terracotta tiled roofed rectangular shaped building.

Building/Feature location	Description
Maintenance Building and adjoining incinerator located in the south section of the site (see Figure 2).	Maintenance shed comprise of a single-storey brick building with steel roof and fibre cement clad roof awnings. The incinerator was constructed of brick.
Above ground diesel electrical generator located in the south section of the site (see Figure 2).	Single-storey brick, metal roof rectangular shaped building. The diesel electrical generator was located on top of a concrete slab and beneath the metal roofed awning.

2.4.3 Boundary Conditions, Soil Stability and Erosion

The site was generally unfenced and open to street frontages. Wire mesh fencing approximately 1m high was observed along the northern boundary. No soil erosion was observed on site.

2.4.4 Presence of Drums/Chemical Storage and Waste

Minor quantities of cleaning chemicals, petroleum in jerry cans and paints were observed in the maintenance building and shed. This minor storage was not a concern from a land contamination viewpoint.

Clinical waste bins (200L) and general waste skip bins were observed in various locations across the site.

Several foam fire extinguishers were located in the generator and maintenance buildings on site. Signage on the fire extinguishers indicated that these fire extinguishers were fluorine free (i.e. did not contain Per- and Polyfluoroalkyl Substances - PFAS). A powder extinguisher was present in the community health building.

Two Liquid Petroleum Gas (LPG) Above Ground Storage Tanks (ASTs) and storage of medical gases including oxygen and nitrous oxide were observed in external areas adjacent to the hospital buildings.

2.4.5 Evidence of Cut and Fill

Minor area of exposed fill material (i.e. historically imported or disturbed soils) was observed in raised garden beds and landscaped areas on site. Parts of the site appear to have been levelled to account for the slope and accommodate the existing development.

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

Signage on the above ground diesel electrical generator located in the south section of the site indicated that the generator had the capacity to store up to approximately 2,000L of diesel within the unit. At the time of the site inspection there was no evidence of staining on the surface immediately adjacent to the generator.

Medical liquid oxygen and LPG cylinders/ASTs were also observed. These are not considered to be a potential contamination risk in the context of the scope of works for this PSI.

2.4.7 Drainage and Services

Surface water was expected to flow towards the north in sympathy with the site topography. Open grated drains were located throughout open areas of the site, mostly within the asphaltic concrete carparks. A

grassed open culvert was observed in the east section of the site. Based on the topography surface waters collected in the culvert would be expected to flow offsite towards the north.

2.4.8 Sensitive Environments

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

2.4.9 Landscaped Areas and Visible Signs of Plant Stress

Landscaped and grassed areas were observed in areas of the site not covered by hardstand. Native trees up to approximately 5m high were observed along the southern site boundary and in other landscaped areas. Small shrubs were observed adjacent to some of the hospital buildings. No obvious indicators of plant stress or dieback were observed.

2.5 Surrounding Land Use

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

- North – Alkira Nursing Home;
- East – Anzac Parade with Gunnedah Aquatic Centre and residential properties beyond;
- South – Reservoir Street with residential properties beyond; and
- West – Marquis Street with Gunnedah High School beyond.

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

2.6 Underground Services

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

3 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology

Regional geological information was reviewed for the investigation. The information was sourced from the Lotsearch⁵ report attached in the appendices. The report indicates that the site is underlain by Colluvial and residual deposits, with Werrie Basalt located approximately 45m to the east of the site.

3.2 Acid Sulfate Soil (ASS) Risk and Planning

ASS information presented in the Lotsearch report indicated that the site is located within a ASS risk area.

3.3 Hydrogeology

Hydrogeological information presented in the Lotsearch report indicated that the regional aquifer on-site and in the areas immediately surrounding the site includes porous, extensive aquifers of low to moderate productivity. There was a total of 196 registered bores within the report buffer of 2,000m. In summary:

- The nearest registered bore was located approximately 5m to the east off the site. This was utilised for monitoring purposes and status of the monitoring well was “*abandoned*”;
- The majority of the bores were registered for monitoring purposes;
- There were a number of bores registered for dewatering purposes to the north of the site;
- There were no nearby bores (i.e. within 1,580m) registered for irrigation use; and
- The drillers log information from the closest registered bores typically identified silty clay soil to depths of approximately 13mBGL, underlain by weathered basalt bedrock. Standing water levels (SWLs) in the bores ranged from 2.8mBGL to 15.25mBGL.

The information reviewed for the PSI indicates that the subsurface conditions at the site are likely to consist of relatively low permeability (residual) soils overlying shallow bedrock. The potential for viable shallow groundwater abstraction and use of shallow groundwater under these conditions is considered to be low. There is a reticulated water supply in the area and consumption of the shallow groundwater is not expected to occur and does not appear to be occurring based on the registered bore records. Use of groundwater is not proposed as part of the development.

Considering the local topography and surrounding land features, JKE anticipate groundwater to flow towards the north towards the Namoi River.

3.4 Receiving Water Bodies

Surface water bodies were not identified in the immediate vicinity of the site. The closest surface water body is the Namoi River which is located approximately 1.2km to the north of the site. The site location and regional topography indicates that excess surface water flows have the potential to enter the stormwater system which likely discharges to the Namoi River. This water body is a potential receptor.

⁵ It is noted that the area defined in the Lotsearch report captures the proposed areas of development rather than the site as a whole as defined the Figures in Appendix A

4 SITE HISTORY INFORMATION

4.1 Review of Historical Aerial Photographs

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

Table 4-1: Summary of Historical Aerial Photographs

Year	Details
1956	<p>On-site: The site appeared to primarily be occupied by a large rectangular shaped building in the central section of the site, with some interconnecting smaller building apparent. The shape/size of the main building was broadly consistent with the existing main hospital building and it is considered likely that the land use was associated with the hospital at this time. Smaller, freestanding buildings were also located in the east, south and west sections of the site.</p> <p>Off-site: The surrounding area to the west and north of the site appeared to be vacant. The surrounding area to the east and south appeared to be occupied for residential purposes.</p>
1975	<p>On-site: The site appeared generally similar to the previous aerial photograph. However, the small buildings in the west and east section appeared to have been demolished. New rectangular shaped buildings appeared to have been constructed in the north and south sections of the site and a new “L” shaped building appeared to have been constructed in the south-east section of the site.</p> <p>Off-site: The surrounds appeared similar to the previous aerial photograph. However, what appeared to be a school had been constructed to the west of the site and a what appeared to be a memorial area had been constructed to the north-east of the site.</p>
1986	The site and surrounding features appeared generally similar to the previous aerial photograph.
1997	<p>On-site: The site appeared generally similar to the previous aerial photograph. However, a new small, square-shaped building appeared to have been constructed in the north section of the site.</p> <p>Off-site: The surrounds appeared similar to the previous aerial photograph. However, an irregular shaped buildings appeared to have been constructed to the north of the site (consistent with the layout of the existing nursing home).</p>
2005	<p>On-site: The site appeared generally similar to the previous aerial photograph.</p> <p>Off-site: The surrounds appeared similar to the previous aerial photograph. However, an additional building appeared to have been constructed and linked to the irregular shaped buildings associated with the nursing home.</p>
2012	<p>On-site: The site appeared generally similar to the previous aerial photograph. However, a new irregular shaped building appeared to have been constructed in the north-west section of the site and a new square shaped building appeared to have been constructed in the east section of the site. New asphaltic concrete hardstand on grade carparking areas were apparent in the west, south and east sections of the site.</p> <p>Off-site: The surrounds appeared similar to the previous aerial photograph.</p>
2017	The site and surrounding features appeared generally similar to the previous aerial photograph.
2021	The site and surrounding features appeared generally similar to the previous aerial photograph.

4.2 SafeWork NSW Records

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

Table 4-2: Summary of SafeWork NSW Records

Date	Record Number	License Details
23 April 1991 to 12 March 2015	35/027366	Information provided related to the storage of LPG in two 7,500L ASTs and storage of medical gases including oxygen and nitrous oxide.

The search did not identify any licences to store dangerous goods including underground fuel storage tanks (USTs), ASTs or chemicals at the site that are considered to be a potential contamination risk to the receptors in the context of this PSI.

4.3 NSW EPA and Department of Defence Records

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

- Records maintained in relation to contaminated land under Section 58 of the CLM Act 1997;
- Records of sites notified in accordance with the Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)⁶;
- Licensed activities under the Protection of the Environment Operations Act (1997)⁷;
- Sites being investigated under the NSW EPA per-and polyfluoroalkyl substances (PFAS) investigation program;
- Sites being investigated by the Department of Defence for PFAS contamination; and
- Sites being managed by the Department of Defence for PFAS contamination.

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

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

Records	On-site	Off-site
Records under Section 58 of the CLM Act 1997	None	There were four properties listed in the report buffer. The closest property was located approximately 350m to the north-west and down gradient to the site. The listed properties are not considered to present an off-site source of contamination due to their distance and down gradient location to the site.
Records under the Duty to Report Contamination under	None	There were nine properties listed in the report buffer. The closest property was located approximately 320m to the north and down gradient to the site. The listed properties are not considered to present an off-site

⁶ NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997*. (referred to as Duty to Report Contamination)

⁷ Protection of the Environment Operations Act 1997 (NSW) (referred to as POEO Act 1997)

Records	On-site	Off-site
Section 60 of the CLM Act 1997		source of contamination due to their distance and down or cross-gradient location to the site.
Licences under the POEO Act 1997	The site was formerly licenced by the NSW EPA (Licence No. 7193) for activities associated with <i>"Hazardous, Industrial or Group A Waste Generation or Storage"</i> . This activity is considered unlikely to pose a contamination risk to the site or represent a source of contamination in the context of the PSI. It is assumed that this licence relates to medical waste which is typical for a hospital.	Current and historical licenses were identified for several properties within the report buffer, including railway systems activities and the application of herbicides along waterways. However, these activities are considered unlikely to pose a contamination risk to the site or represent an off-site source of contamination.
Records relating to the NSW EPA PFAS Investigation Program	None	None
Records relating to the Department of Defence PFAS management and investigation programs	None	None

4.4 Historical Business Directory and Additional Lotsearch Information

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

Table 4-4: Historical Business Directory and other Records

Records	On-site	Off-site
Historical dry cleaners, motor garages and service stations	None	There were 13 motor garages and/or service stations and two dry cleaners listed within the report buffer between 1950-1982. Due to the distance and down/cross-gradient location, these properties are not considered to represent an off-site source of contamination.
Other historical businesses that could represent potential sources of contamination	None	None

Records	On-site	Off-site
National waste management site database	None	None
National liquid fuel facilities	None	There were three service station properties listed in the report buffer. The closest property was located approximately 410m to the north-east and down gradient to the site. The listed properties are not considered to present an off-site source of contamination due to their distance and down gradient location to the site.
Mapped heritage items	None	Various heritage items were mapped in the report buffer. These are not considered to have any relevance in the context of the PSI objectives.
Mapped ecological constraints	None	Various ecological items were mapped in the report buffer. These are not considered to have any relevance in the context of the PSI objectives.
Mapped naturally occurring asbestos	None	None

4.5 Summary of Site History Information

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

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

Year(s)	On-site - Potential Land Use / Activities	Off-site - Potential Land Use / Activities
At least 1956 - current	<ul style="list-style-type: none"> Hospital grounds; Demolition of small buildings in the west and east sections of the site, sometime between approximately 1956 and 1975; and Likely earthworks including filling during construction works between approximately 1956 and 2012. 	<ul style="list-style-type: none"> Extended hospital grounds and nursing home to the north; School to the west; and Low density residential to the east and south.

4.6 Integrity of Site History Information

The majority of the site history information was obtained from government organisations as outlined in the relevant sections of this report. The veracity of the information from these sources is considered to be relatively high. A certain degree of information loss can be expected given the lack of specific land use details over time. JKE has relied upon the Lotsearch report and have not independently verified any information



contained within. However, it is noted that the Lotsearch report is generated based on databases maintained by various government agencies and is expected to be reliable.

5 CONCEPTUAL SITE MODEL

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

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

5.1 Potential Contamination Sources/AEC and CoPC

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

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

Source / AEC	CoPC
<u>Fill material</u> – The site appears to have been historically filled to achieve the existing levels. The fill may have been imported from various sources and could be contaminated.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos.
<u>Use of pesticides</u> – Pesticides may have been used beneath the buildings and/or around the site.	Heavy metals, OCPs and PCBs.
<u>Hazardous Building Material</u> – Hazardous building materials may be present in or on soil as a result of former building and demolition activities. These materials may also be present in the existing buildings/structures on site. Signage on the external fibre cement sheeting at the southern end of the main hospital building identified that the fibre cement sheeting was an ACM.	Asbestos, lead and PCBs.
<u>Electrical Transformer</u> – An Electrical transformer is located at the north-west site boundary as shown on Figure 2 attached in the appendices. There is a potential that PCB containing oils could have leaked from the associated infrastructure and impacted the soil. Although oil staining was not observed during the site inspection, there is considered to be a potential for transformer oil accidental spills/leaks within the transformer unit which could have migrated to the soils to beneath the concrete pad slab via cracks and voids in the slab.	PCBs.

Source / AEC	CoPC
<p><u>Diesel Generator</u> – An Above ground diesel generator is located in the south section of the site and as shown on Figure 2 attached in the appendices.</p> <p>Although the diesel is stored within the generator and evidence of staining was not observed during the site inspection, there is considered to be a potential for accidental spills/leaks to have occurred in this area, most likely during refuelling activities.</p>	TRHs, BTEX and PAHs.
<p><u>Incinerator</u> – An incinerator is located in the south section of the site and as shown on Figure 2 attached in the appendices. There is a potential for localised impacts from spills/leaks when loading waste into the incinerator or from removing waste ash from the incinerator which could have migrated to the soils in the vicinity, and also from atmospheric fallout from the incinerated waste settling on nearby ground surface.</p>	Heavy metals and PAHs.

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

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

Table 5-2: CSM

Potential mechanism for contamination	The potential mechanisms for contamination are most likely to include ‘top-down’ impacts and spills. There is a potential for sub-surface releases to have occurred if deep fill (or other buried industrial infrastructure) is present, although this is considered to be the least likely mechanism for contamination.
Affected media	Soil has been identified as the potentially affected medium. The potential for groundwater impacts is considered to be relatively low. However, groundwater would need to be considered in the event significant contamination was identified in soil.
Receptor identification	<p>Human receptors include site occupants/users (including adults and children), construction workers and intrusive maintenance workers. Off-site human receptors include adjacent land users, groundwater users and recreational water users within the Namoi River.</p> <p>Ecological receptors include terrestrial organisms and plants within unpaved areas (including the proposed landscaped areas), and freshwater ecology in the Namoi River.</p>
Potential exposure pathways	Potential exposure pathways relevant to the human receptors include ingestion, dermal absorption and inhalation of dust (all contaminants) and vapours (volatile TRH, naphthalene and BTEX). The potential for exposure would typically be associated with the construction and excavation works, and future use of the site. Potential exposure pathways for ecological receptors include primary/direct contact and ingestion.

	Exposure during future site use could occur via direct contact with soil in unpaved areas such as gardens, inhalation of airborne asbestos fibres during soil disturbance, or inhalation of vapours within enclosed spaces such as buildings.
Potential exposure mechanisms	<p>The following have been identified as potential exposure mechanisms for site contamination:</p> <ul style="list-style-type: none">• Vapour intrusion into the existing or proposed buildings (either from soil contamination or volatilisation of contaminants from groundwater);• Contact (dermal, ingestion or inhalation) with exposed soils in landscaped areas and/or unpaved areas; and• Migration of groundwater off-site and into nearby water bodies, including aquatic ecosystems and those being used for recreation.

6 SAMPLING, ANALYSIS AND QUALITY PLAN

6.1 Data Quality Objectives (DQO)

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

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

6.1.1 Step 1 - State the Problem

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

A waste classification is required prior to off-site disposal of excavated soil/bedrock.

The investigation was constrained by the client nominated sampling locations and testpit sampling depths of 1mBGL.

6.1.2 Step 2 - Identify the Decisions of the Study

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

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

6.1.3 Step 3 - Identify Information Inputs

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

- Site information, including site observations and site history documentation;
- Sampling of potentially affected media, including soil and fibre cement fragments (FCF) if encountered;
- Observations of sub-surface variables such as soil type, photo-ionisation detector (PID) concentrations, odours and staining;
- Laboratory analysis of soils and FCF for the CoPC identified in the CSM; and

- Field and laboratory QA/QC data.

6.1.4 Step 4 - Define the Study Boundary

The sampling will be confined to the site boundaries as shown in Figure 2 and will be limited vertically to a depth of sampling at each borehole/testpit (spatial boundary). The sampling was completed between 1-3 June 2022 (temporal boundary). The assessment of potential risk to adjacent land users has been made based on data collected within the site boundary.

Sampling was undertaken from the sampling locations nominated by the client. None of the nominated sampling locations were positioned within the existing building footprint due to access constraints.

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

6.1.5.1 Tier 1 Screening Criteria

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

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

6.1.5.2 Field and Laboratory QA/QC

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

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

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

6.1.5.3 Appropriateness of Practical Quantitation Limits (PQLs)

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

6.1.6 Step 6 – Specify Limits on Decision Errors

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

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

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

Statistical analysis will not apply to asbestos and therefore these data will be assessed based on a multiple lines of evidence and risk-based approach.

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

6.1.7 Step 7 - Optimise the Design for Obtaining Data

The most resource-effective design will be used in an optimum manner to achieve the investigation objectives and considering the constraints imposed by the client outlined in Section 6.1.1.

For this investigation, the design was optimised via consideration of the various lines of evidence used to select the media being sampled, and also by the way in which the data were collected.

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

6.2 Soil Sampling Plan and Methodology

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

Table 6-1: Soil Sampling Plan and Methodology

Aspect	Input
Sampling Density	Samples for were collected from eight boreholes and six test pits locations nominated by the client, as shown on the attached Figure 2. The sampling plan was not designed to meet the minimum sampling density for hotspot identification, as outlined in the NSW EPA Contaminated

Aspect	Input
	Sites Sampling Design Guidelines (1995) ⁸ and the Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2021) ⁹ (endorsed in NEPM 2013).
Sampling Plan	The sampling locations were placed on a judgemental sampling plan at the locations nominated by the client. The sampling locations were broadly positioned for site coverage, taking into consideration the proposed development details and areas that were not easily accessible. This sampling plan was considered suitable to make a preliminary assessment of potential risks associated with the AEC and CoPC identified in the CSM, and assess whether further investigation is warranted.
Set-out and Sampling Equipment	<p>Sampling locations were set out using a tape measure. In-situ sampling locations were checked for underground services by an external contractor prior to sampling.</p> <p>Samples were collected from borehole locations BH1 to BH8 using a drill rig equipped with spiral flight augers (150mm diameter). Soil samples were obtained from a Standard Penetration Test (SPT) split-spoon sampler or directly from the auger.</p> <p>Samples were collected from testpit locations TP1 to TP6 using an excavator. Samples were obtained from the test pit walls or directly from the bucket by hand. Where sampling occurred from the bucket, JKE collected samples from the central portion of large soil clods, or from material that was unlikely to have come into contact with the bucket.</p>
Sample Collection and Field QA/QC	<p>Soil samples were obtained between 1 and 3 June 2022 in accordance with our standard field procedures. Soil samples were collected from the fill and natural profiles based on field observations. The sample depths are shown on the logs attached in the appendices.</p> <p>Samples were placed in glass jars with plastic caps and teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags. During sampling, soil at selected depths was split into primary and duplicate samples for field QA/QC analysis. The field splitting procedure included alternately filling the sampling containers to obtain a representative split sample.</p>
Field Screening	<p>A portable Photoionisation Detector (PID) fitted with a 10.6mV lamp was used to screen the samples for the presence of volatile organic compounds (VOCs). PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases. PID calibration records are maintained on file by JKE.</p> <p>The field screening for asbestos quantification included the following:</p> <ul style="list-style-type: none"> • A representative bulk sample was collected from fill at 1m intervals within fill, or from each distinct fill profile. The quantity of material for each sample varied based on whatever return could be achieved using the auger. The bulk sample intervals are shown on the attached borehole/test pit logs; • Each sample was weighed using an electronic scale;

⁸ NSW EPA, (1995), *Contaminated Sites Sampling Design Guidelines*. (referred to as EPA Sampling Design Guidelines 1995)

⁹ Western Australian (WA) Department of Health (DoH), (2021). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. (referred to as WA DoH 2021)

Aspect	Input
	<ul style="list-style-type: none"> Each bulk sample was passed through a sieve with a 7.1mm aperture and inspected for the presence of fibre cement; The condition of fibre cement or any other suspected asbestos materials was noted on the field records; and If observed, any fragments of fibre cement in the bulk sample were collected, placed in a zip-lock bag and assigned a unique identifier. Calculations for asbestos content were undertaken based on the requirements outlined in Schedule B1 of NEPM (2013), as summarised in Section 7.1.
Decontamination and Sample Preservation	<p>Sampling personnel used disposable nitrile gloves during sampling activities. Re-usable sampling equipment was decontaminated using Decon and potable water.</p> <p>Soil samples were preserved by immediate storage in an insulated sample container with ice. On completion of the fieldwork, the samples were stored in eskys and the ice was replenished before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard chain of custody (COC) procedures.</p>

6.2.1 Laboratory Analysis

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

Table 6-2: Laboratory Details

Samples	Laboratory	Report Reference
All primary samples and field QA/QC samples including (intra-laboratory duplicate, trip blank, trip spike and field rinsate samples)	Envirolab Services Pty Ltd NSW, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	297823 and 297823-A
Inter-laboratory duplicates	Envirolab Services Pty Ltd VIC, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	31988

7 SITE ASSESSMENT CRITERIA (SAC)

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

7.1 Soil

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

7.1.1 Human Health

- Health Investigation Levels (HILs) for a 'public open space, secondary schools and footpaths' exposure scenario (HIL-C). We consider these HILs to be appropriate Tier 1 criteria as the HIL-D (commercial/industrial criteria) do not consider children who are the most sensitive receptors identified in the CSM, HIL-B (residential with limited access to soil) are not protective enough in light of the extent of unpaved areas across the site, and HIL-A (residential with accessible soils) are overly conservative for a hospital land use scenario;
- Health Screening Levels (HSLs) for a 'low-high density residential' exposure scenario (HSL-A & HSL-B). We consider these HSLs are appropriate Tier 1 criteria as HSL-C does not adequately consider the presence of buildings and HSL-D is not protective of children who are the most sensitive receptors identified in the CSM. HSLs were calculated based on conservative assumptions including a 'sand' type and a depth interval of 0m to 1m;
- HSLs for direct contact presented in the CRC Care Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document (2011)¹⁰; and
- Asbestos was assessed against the HSL-C criteria. A summary of the asbestos criteria is provided in the table below:

Table 7-1: Details for Asbestos SAC

Guideline	Applicability
Asbestos in Soil	<p>The HSL-C criteria were adopted for the assessment of asbestos in soil. The SAC adopted for asbestos were derived from the NEPM 2013 and are based on the Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2021)¹¹. The SAC include the following:</p> <ul style="list-style-type: none"> • No visible asbestos at the surface/in the top 10cm of soil; • <0.02% w/w bonded asbestos containing material (ACM) in soil; and • <0.001% w/w asbestos fines/fibrous asbestos (AF/FA) in soil. <p>Concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013):</p> $\% \text{ w/w asbestos in soil} = \frac{\% \text{ asbestos content} \times \text{bonded ACM (kg)}}{\text{Soil volume (L)} \times \text{soil density (kg/L)}}$

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

¹¹ Western Australian (WA) Department of Health (DoH), (2021). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia. (referred to as WA DoH 2021)

Guideline	Applicability
	<p>However, we are of the opinion that the actual soil volume in a 10L bucket varies considerably due to the presence of voids, particularly when assessing cohesive soils. Therefore, each bucket sample was weighed using electronic scales and the above equation was adjusted as follows (we note that the units have also converted to grams):</p> $\% \text{ w/w asbestos in soil} = \frac{\% \text{ asbestos content} \times \text{bonded ACM (g)}}{\text{Soil weight (g)}}$

7.1.2 Environment (Ecological – terrestrial ecosystems)

- Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for an 'urban residential and public open space' (URPOS) exposure scenario. These have only been applied to the top 2m of soil as outlined in NEPM (2013). The criterion for benzo(a)pyrene has been increased from the value presented in NEPM (2013) based on the Canadian Soil Quality Guidelines¹²;
- ESLs were adopted based on a 'coarse' soil type as a conservative screening; and
- EILs for selected metals were calculated based on the most conservative added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013) and published ambient background concentration (ABC) values presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)¹³. Additionally, for one representative sample, EILs for selected metals were calculated using site specific soil parameters for pH, cation exchange capacity and clay content. These data were used to select the added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013), and published ambient background concentration (ABC) presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)¹⁴. This method is considered to be adequate for the Tier 1 screening.

7.1.3 Management Limits for Petroleum Hydrocarbons

Management limits for petroleum hydrocarbons (as presented in Schedule B1 of NEPM 2013) were considered.

7.1.4 Waste Classification

Data for the waste classification assessment were assessed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (2014)¹⁵ as outlined in the following table:

Table 7-2: Waste Categories

Category	Description
General Solid Waste (non-putrescible)	<ul style="list-style-type: none"> • If Specific Contaminant Concentration (SCC) ≤ Contaminant Threshold (CT1) then Toxicity Characteristics Leaching Procedure (TCLP) not needed to classify the soil as general solid waste; and

¹² Canadian Council of Ministers of the Environment, (1999). *Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)* (referred to as the Canadian Soil Quality Guidelines)

¹³ Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4.* Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

¹⁴ Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4.* Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission.

¹⁵ NSW EPA, (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.* (referred to as Waste Classification Guidelines 2014)



Category	Description
	<ul style="list-style-type: none">• If $TCLP \leq TCLP1$ and $SCC \leq SCC1$ then treat as general solid waste.
Restricted Solid Waste (non-putrescible)	<ul style="list-style-type: none">• If $SCC \leq CT2$ then TCLP not needed to classify the soil as restricted solid waste; and• If $TCLP \leq TCLP2$ and $SCC \leq SCC2$ then treat as restricted solid waste.
Hazardous Waste	<ul style="list-style-type: none">• If $SCC > CT2$ then TCLP not needed to classify the soil as hazardous waste; and• If $TCLP > TCLP2$ and/or $SCC > SCC2$ then treat as hazardous waste.
Virgin Excavated Natural Material (VENM)	<p>Natural material (such as clay, gravel, sand, soil or rock fines) that meet the following:</p> <ul style="list-style-type: none">• That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial mining or agricultural activities;• That does not contain sulfidic ores or other waste; and• Includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

8 RESULTS

8.1 Summary of Data (QA/QC) Evaluation

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

8.2 Subsurface Conditions

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

Table 8-1: Summary of Subsurface Conditions

Profile	Description
Pavement	A concrete pavement approximately 150mm thick was encountered at the surface in borehole BH7. An asphaltic concrete pavement approximately 20mm thick was encountered within the fill at approximately 0.2mBGL in testpit TP5.
Fill	Fill was encountered at the surface and beneath the pavement in BH7, and extended to depths of between approximately 0.1mBGL (BH6) to 1.6mBGL (BH4). Testpits TP1 to TP5 were terminated in the fill at depths of between approximately 0.3mBGL (TP2) to 1.0mBGL (BH4). The fill typically comprised silty sand, sandy clay and gravelly clay with inclusions of gravel. Neither staining nor odours were observed in the fill material during the field work. A FCF (later confirmed to contain asbestos) was encountered in the fill material in test pit TP2 (0.1-0.3m).
Natural Soil	Natural silty clay and sandy clay alluvial soils were encountered beneath the fill extended to depths to the termination of the boreholes/testpits and to 4.0mBGL in borehole BH8. Neither staining nor odours were observed in the natural soils during the field work.
Bedrock	Basalt bedrock was encountered beneath the natural soils in borehole BH8 at a depth of approximately 4mBGL.
Groundwater	Groundwater was encountered in all boreholes except BH8. The groundwater levels recorded ranged from 2.4mBGL (BH2 and BH6) to 3.4mBGL (BH4, BH5 and BH7). Groundwater was not encountered in the testpits.

8.3 Field Screening

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

Table 8-2: Summary of Field Screening

Aspect	Details
PID Screening of Soil Samples for VOCs	PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices. The results ranged from 0ppm to 3.9ppm equivalent isobutylene. The sample with the highest PID results (BH1 (1.0-1.45m)) was

Aspect	Details
	analysed for TRH and BTEX. Overall, the PID readings were considered to be low and were consistent with the observations of no staining or hydrocarbon odours in the soils.
Bulk Screening for Asbestos	<p>The bulk field screening results are summarised in the attached report Table S5. The asbestos in ACM concentration of 0.0184%w/w in the fill sample TP2 (0.1-0.3m) was below the human health SAC of 0.02%w/w.</p> <p>ACM was not encountered in the remainder of the boreholes/testpits and therefore all other bulk screening results were also below the SAC.</p>

8.4 Soil Laboratory Results

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

8.4.1 Human Health and Environmental (Ecological) Assessment

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

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
Arsenic	14	<PQL	0	0	-
Cadmium	14	<PQL	0	NSL	-
Chromium (total)	14	61	0	0	-
Copper	14	38	0	0	-
Lead	14	37	0	0	-
Mercury	14	8.4	0	NSL	-
Nickel	14	90	0	1	The nickel concentration for the fill sample TP4 (0-0.1m) of 36mg/kg exceeded the calculated ecological SAC of 35mg/kg for that sample.
Zinc	14	81	0	0	-
Total PAHs	14	5.5	0	NSL	-
Benzo(a)pyrene	14	0.55	NSL	0	-
Carcinogenic PAHs (as BaP TEQ)	14	0.8	0	NSL	-
Naphthalene	15	<PQL	0	NSL	-

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
DDT+DDE+DDD	14	<PQL	0	NSL	-
DDT	14	<PQL	NSL	0	-
Aldrin and dieldrin	14	1.1	0	NSL	-
Chlordane	14	<PQL	0	NSL	-
Heptachlor	14	<PQL	0	NSL	-
Chlorpyrifos (OPP)	14	<PQL	0	NSL	-
PCBs	14	<PQL	0	NSL	-
TRH F1	15	<PQL	0	0	-
TRH F2	15	<PQL	0	0	-
TRH F3	15	170	0	0	-
TRH F4	15	110	0	0	-
Benzene	15	<PQL	0	0	-
Toluene	15	<PQL	0	0	-
Ethylbenzene	15	<PQL	0	0	-
Xylenes	15	<PQL	0	0	-
Asbestos (in soil) (%w/w)	14	<0.01% w/w	0	NA	Asbestos was not detected in the soil samples analysed at the laboratory.
Asbestos in fibre cement	1	NA	NA	NA	Asbestos was detected in the FCF that was identified in TP2 in the fill between 0.1-0.3mBGL.

Notes:

N: Total number (primary samples)

NSL: No set limit

NL: Not limiting

8.4.2 Waste Classification Assessment

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

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

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
Arsenic	14	0	0	-
Cadmium	14	0	0	-
Chromium	14	0	0	-
Copper	14	NSL	NSL	-
Lead	14	0	0	-
Mercury	14	1	0	The mercury concentration of 8.4mg/kg for the fill sample BH5 (0-0.1m) exceeded the CT1 Criterion of 4mg/kg.
Nickel	14	1	0	The nickel concentration of 90mg/kg for the fill sample BH7 (0.15-0.3m) exceeded the CT1 Criterion of 40mg/kg.
Zinc	14	NSL	NSL	-
TRH (C ₆ -C ₉)	15	0	0	-
TRH (C ₁₀ -C ₃₆)	15	0	0	-
BTEX	15	0	0	-
Total PAHs	15	0	0	-
Benzo(a)pyrene	15	0	0	-
OCPs & OPPs	15	0	0	-
PCBs	15	0	0	-
Asbestos	14	-	-	Asbestos was not detected in the soil samples analysed. Asbestos was detected in the FCF collected from the fill material in TP2 (sample ref: FCF1-TP2 (0.1-0.3m)).

N: Total number (primary samples)

NSL: No set limit



Table 8-5: Summary of Soil Laboratory Results Compared to TCLP Criteria

Analyte	N	N > TCLP Criteria	Comments
Mercury	1	0	The fill sample BH5 (0-0.1m) was analysed for TCLP mercury. The result was below the TCLP criterion.
Nickel	1	0	The fill sample BH7 (0.15-0.3m) was analysed for TCLP nickel. The result was below the TCLP criterion.

N: Total number (primary samples)

9 PRELIMINARY WASTE CLASSIFICATION ASSESSMENT

Based on the results of the preliminary waste classification assessment, and at the time of reporting, the fill material in the vicinity of TP2 is classified as **General Solid Waste (non-putrescible) containing Special Waste (asbestos)**. The remainder of the fill material may be classified as **General Solid Waste (non-putrescible)** subject to further sampling and analysis.

Based on the scope of work undertaken for this assessment there is insufficient data to confirm the natural soil and bedrock at the site meets the definition of **VENM** for off-site disposal or re-use purposes. However, considering the predominantly low contaminant concentrations in the fill, it would not be unreasonable to expect that a VENM classification will be achievable.

Further sampling and analysis are required to further assess and confirm the waste classification prior to off-site disposal of surplus fill.

10 DISCUSSION

10.1 Contamination Sources/AEC and Potential for Site Contamination

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

- Fill material;
- Use of pesticides;
- Hazardous building materials;
- Electrical transformer;
- Diesel generator; and
- Incinerator.

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

10.2 Tier 1 Risk Assessment and Review of CSM

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

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

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

10.2.1 Asbestos and Human Health Risks

The asbestos in ACM concentration in the fill profile from testpit TP2 (0.1-0.3m) was below the human health SAC. The ACM was not at the surface, therefore there is currently no apparent complete SPR linkage at this location whilst the soil remains undisturbed.

The source of asbestos could be associated with imported fill material or historical onsite building demolition activities. There is a potential for further ACM within the fill. The extent of ACM contamination potential risk and SPR-linkage to human receptors requires further assessment.

Based on the PSI results, the asbestos is considered to be bonded (non-friable) based on the definitions in NEPM 2013.

10.2.2 Heavy metals and Ecological Risks

The nickel concentration encountered in the fill soil sample TP4 (0-0.1m) was marginally above the ecological SAC. The nickel result above the ecological SAC is shown on Figure 3 attached in the appendices.

The source of nickel is considered to be associated with the historically imported fill material.

JKE consider that the risk posed by nickel to ecological receptors is negligible considering that the nickel concentration was only 1mg/kg above the SAC, the SAC for the TP4 sample was very conservative and would almost certainly increase significantly after adjusting for physiochemical properties (i.e. CEC).

10.2.3 Consideration of other CoPC and the AEC

In relation to the identified AEC and CoPC, and in review of the CSM, we note that:

- Fill was identified at most locations, confirming this as a potential source of contamination;
- The fill was found to contain bonded ACM at one location (possible from imported fill, or from hazardous building materials associated with historical building/demolition) and marginally elevated concentrations of heavy metals;
- Traces of pesticides were detected in one sample, confirming the use of pesticides as a potential source of contamination;
- Volatile hydrocarbons were not detected; and
- The potential point sources of contamination (electrical transformer, diesel generator and incinerator) were not investigated under the scope of the intrusive investigation.

10.3 Decision Statements

The decision statements are addressed below:

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

Yes, as documented in the CSM.

Are any results above the SAC?

Yes, nickel was encountered within the in the fill sample TP4 (0-0.1m) at concentrations marginally above the ecological SAC.

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

Potential risks were identified in relation to asbestos in soil, together with potential risks associated with the identified sources of contamination and CoPC. These risks require further assessment.

Is remediation required?

The PSI did not identify an immediate trigger for remediation. However, further investigation is required to address the data gaps identified in Section 10.4.

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

No. A Detailed Site Investigation (DSI) should be undertaken to address the relevant data gaps identified in Section 10.4.

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

JKE is of the opinion that the site can be made suitable for the proposed developed. A DSI will be required to establish whether remediation is necessary. Based on the preliminary data, contamination issues at the site (if found during the DSI process) would be expected to be typical of this type of site with the associated historical land use. On this basis, we consider that the site could be made suitable via relatively straight-forward remediation processes such as 'excavation/disposal' and 'cap and contain', should remediation be required.

10.4 Data Gaps

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

Table 10-1: Data Gap Assessment

Data Gap	Assessment
Soil sampling density below minimum guideline density	The PSI soil sampling at the site was limited to approximately 33% of the minimum sampling density recommended in the EPA Sampling Design Guidelines 1995 and sampling did not occur via a probabilistic sampling plan. The PSI identified asbestos (ACM) within fill at TP2. Additionally, the vertical extent of fill was not fully assessed in some of the testpits as the pits were terminated in fill. In accordance with Table 4 of the WA DoH (2021) guidelines, further assessment should be undertaken at a density to meet the "Likely" or "known" likelihoods of asbestos in soil. The above should be addressed by a DSI.
Potential for groundwater contamination	Based on the site history and the results reported, the potential for groundwater contamination to pose a risk to the receptors is considered to be relatively low. However, the potential for groundwater contamination cannot be discounted and should be assessed under the scope of the DSI.
Hazardous building materials	There is a potential for hazardous building materials in the existing buildings. JKE has been engaged by the client to undertake a hazardous building materials (HAZMAT) survey at the site. Removal of hazardous building materials must be undertaken by suitably licensed contractors and in accordance with the relevant standards.

11 CONCLUSIONS AND RECOMMENDATIONS

The investigation included a review of historical information and sampling from eight boreholes and six testpits. The AEC include:

- Fill material;
- Use of pesticides;
- Hazardous building materials;
- Electrical transformer;
- Diesel generator; and
- Incinerator.

The PSI identified fill at most locations. A marginally elevated concentration of nickel was encountered above the ecological criterion in one sample and asbestos (as bonded ACM) was found in the subsurface soil in another sample. The asbestos concentration was marginally below the SAC.

Based on the findings of the investigation, JKE is of the opinion that the site can be made suitable for the proposed development described in Section 1.1. A DSI will be required to establish whether remediation is necessary. Based on the preliminary data, contamination issues at the site (if found during the DSI process) would be expected to be typical of this type of site with the associated historical land use. On this basis, we consider that the site could be made suitable via relatively straight-forward remediation processes such as 'excavation/disposal' and 'cap and contain', should remediation be required.

We recommend the following:

- Undertake DSI to address the data gaps identified in Section 10.4. The extent of 'the site' for the DSI should be confirmed by the client as it is noted that not all areas of the hospital are being redeveloped. In our view, it would be reasonable to limit the DSI to broadly capture the proposed development footprint; and
- Prepare and implement an Asbestos Management Plan (AMP) for asbestos in soil.

If the DSI identifies a need for remediation, a Remediation Action Plan (RAP) will be required and the site will need to be remediated and validated to confirm site suitability.

At this stage, JKE consider that there is no requirement to report any site contamination to the NSW EPA under the NSW EPA Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)¹⁶, provided that the recommendations provided above are implemented.

JKE consider that the report objectives outlined in Section 1.1 have been addressed.

¹⁶ NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997* (referred to as Duty to Report Contamination)

12 LIMITATIONS

The report limitations are outlined below:

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

Important Information About This Report

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

The Report is based on a Unique Set of Project Specific Factors

This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

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

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

Changes in Subsurface Conditions

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

This Report is based on Professional Interpretations of Factual Data

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

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

Investigation Limitations

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

Misinterpretation of Site Investigations by Design Professionals

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

Logs Should not be Separated from the Investigation Report

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

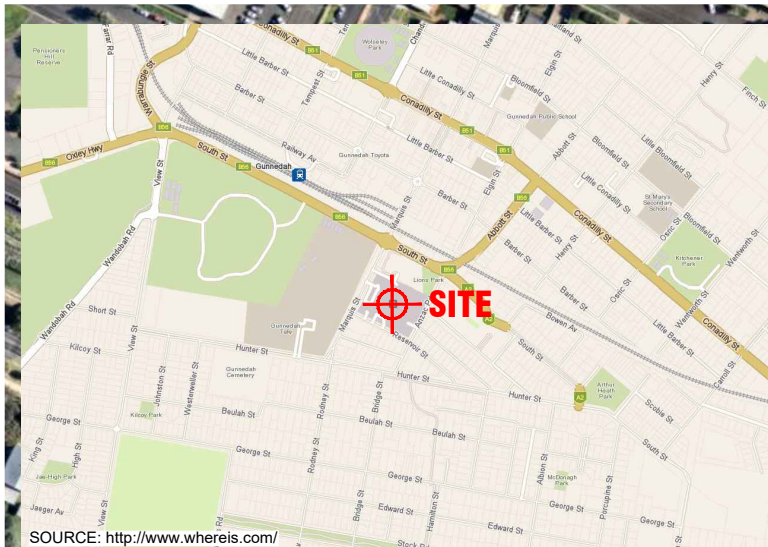
To reduce the likelihood of borehole and test pit log misinterpretation, the complete investigation should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information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

Read Responsibility Clauses Closely

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



Appendix A: Report Figures



AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

Title: SITE LOCATION PLAN	
Location: GUNNEDAH HOSPITAL, MARQUIS STREET, GUNNEDAH, NSW	
Project No: E35091UPD	Figure No: 1
JKEnvironments	



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

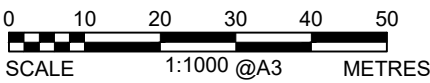
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LEGEND

- APPROXIMATE SITE BOUNDARY
- BH(Fill Depth) BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m)
- TP(Fill Depth) TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m)
- APPROXIMATE OUTLINE OF PROPOSED GROUND FLOOR LEVEL
- APPROXIMATE OUTLINE OF PROPOSED PAVEMENT AREAS

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM



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

Title: SAMPLE LOCATION PLAN	
Location: GUNNEDAH HOSPITAL, MARQUIS STREET, GUNNEDAH, NSW	
Project No: E35091UPD	Figure No: 2
JKEnvironments	



PLOT DATE: 29/07/2022 8:19:34 AM DWG FILE: K:\SIC EIS JOBS\35007\SE35091UPD GUNNEDAH\CA\DE35091UPD.DWG



LEGEND

	APPROXIMATE SITE BOUNDARY				
	BH(Fill Depth)				
	TP(Fill Depth)				
	APPROXIMATE OUTLINE OF PROPOSED GROUND FLOOR LEVEL				
	APPROXIMATE OUTLINE OF PROPOSED PAVEMENT AREAS				
<table><tr><th>SAMPLE ID</th><th>DEPTH (metres)</th></tr><tr><th>CHEMICAL</th><th>CONCENTRATION</th></tr></table>	SAMPLE ID	DEPTH (metres)	CHEMICAL	CONCENTRATION	SOIL/SURFACE SAMPLE EXCEEDANCE
SAMPLE ID	DEPTH (metres)				
CHEMICAL	CONCENTRATION				
	SOIL/SURFACE CONTAMINATION ABOVE SAC FOR ECOLOGICAL RISK				

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

0 10 20 30 40 50
SCALE 1:1000 @A3 METRES

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

Title: SAC EXCEEDANCE PLAN	
Location: GUNNEDAH HOSPITAL, MARQUIS STREET, GUNNEDAH, NSW	
Project No: E35091UPD	Figure No: 3
JKEnvironments	

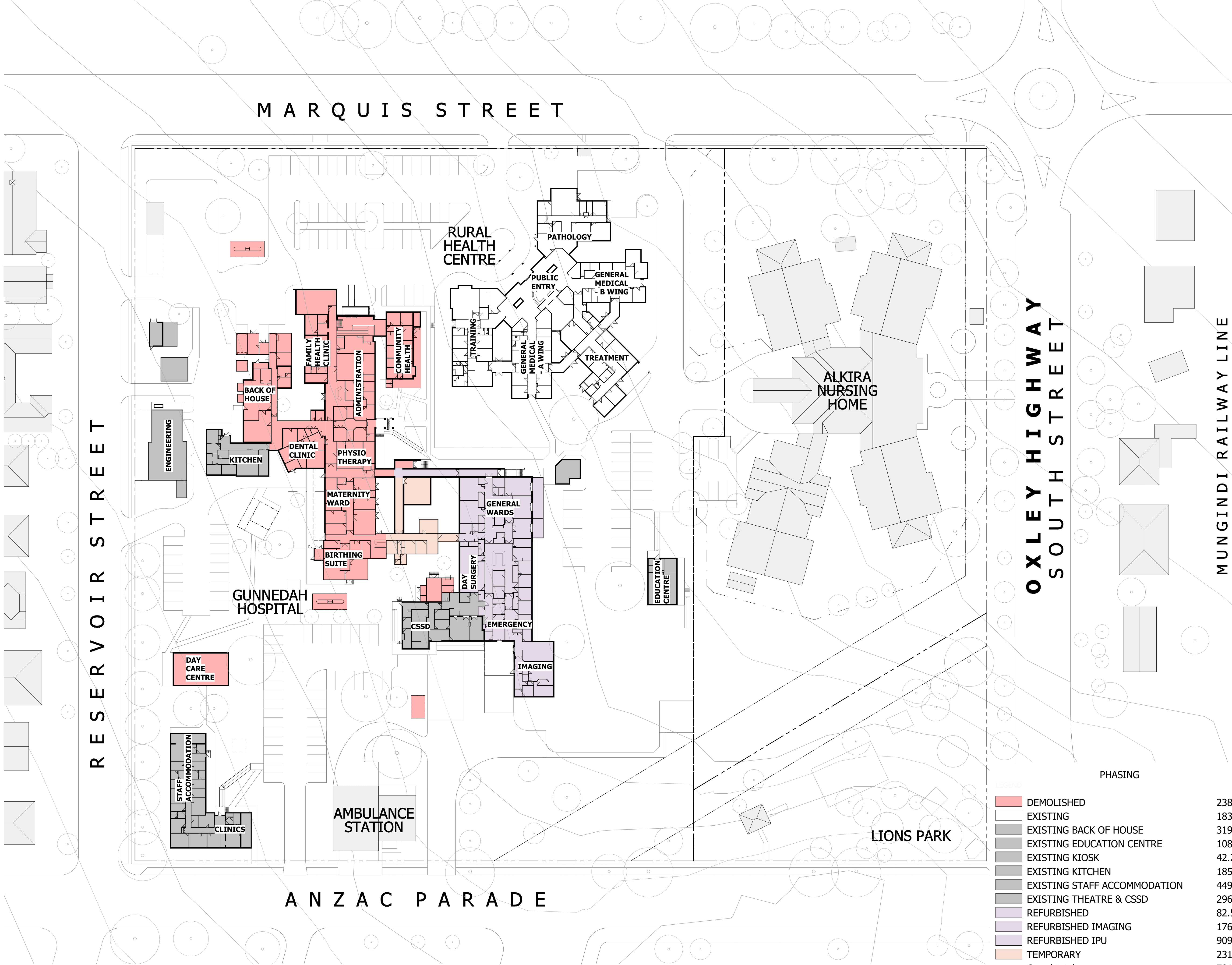




Appendix B: Site Information and Site History



Proposed Development Plans



R E S E R V O I R S T R E E T

M A R Q U I S S T R E E T

A N Z A C P A R A D E

O X L E Y H I G H W A Y
S O U T H S T R E E T

M U N G I N D I R A I L W A Y L I N E

PHASING		Area
	DEMOLISHED	2383.9 m ²
	EXISTING	1834.4 m ²
	EXISTING BACK OF HOUSE	319.4 m ²
	EXISTING EDUCATION CENTRE	108.1 m ²
	EXISTING KIOSK	42.2 m ²
	EXISTING KITCHEN	185.5 m ²
	EXISTING STAFF ACCOMMODATION	449.5 m ²
	EXISTING THEATRE & CSSD	296.0 m ²
	REFURBISHED	82.5 m ²
	REFURBISHED IMAGING	176.1 m ²
	REFURBISHED IPU	909.6 m ²
	TEMPORARY	231.4 m ²
Grand total		7018.6 m ²

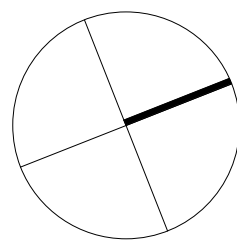
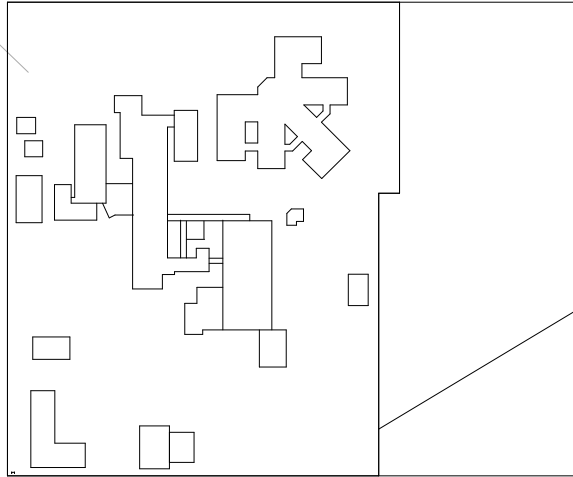
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PRELIMINARY
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A	FOR INFORMATION	06.04.2022	LS	EC
Issue	Description	Date	Chk	Auth
Architect/ Designer				
dwp				
www.dwp.com				

Client
NSW HEALTH INFRASTRUCTURE

Project
GUNNEDAH HOSPITAL
REDEVELOPMENT
Location
MARQUIS STREET, GUNNEDAH,
NSW 2380

Project Number
21-0218

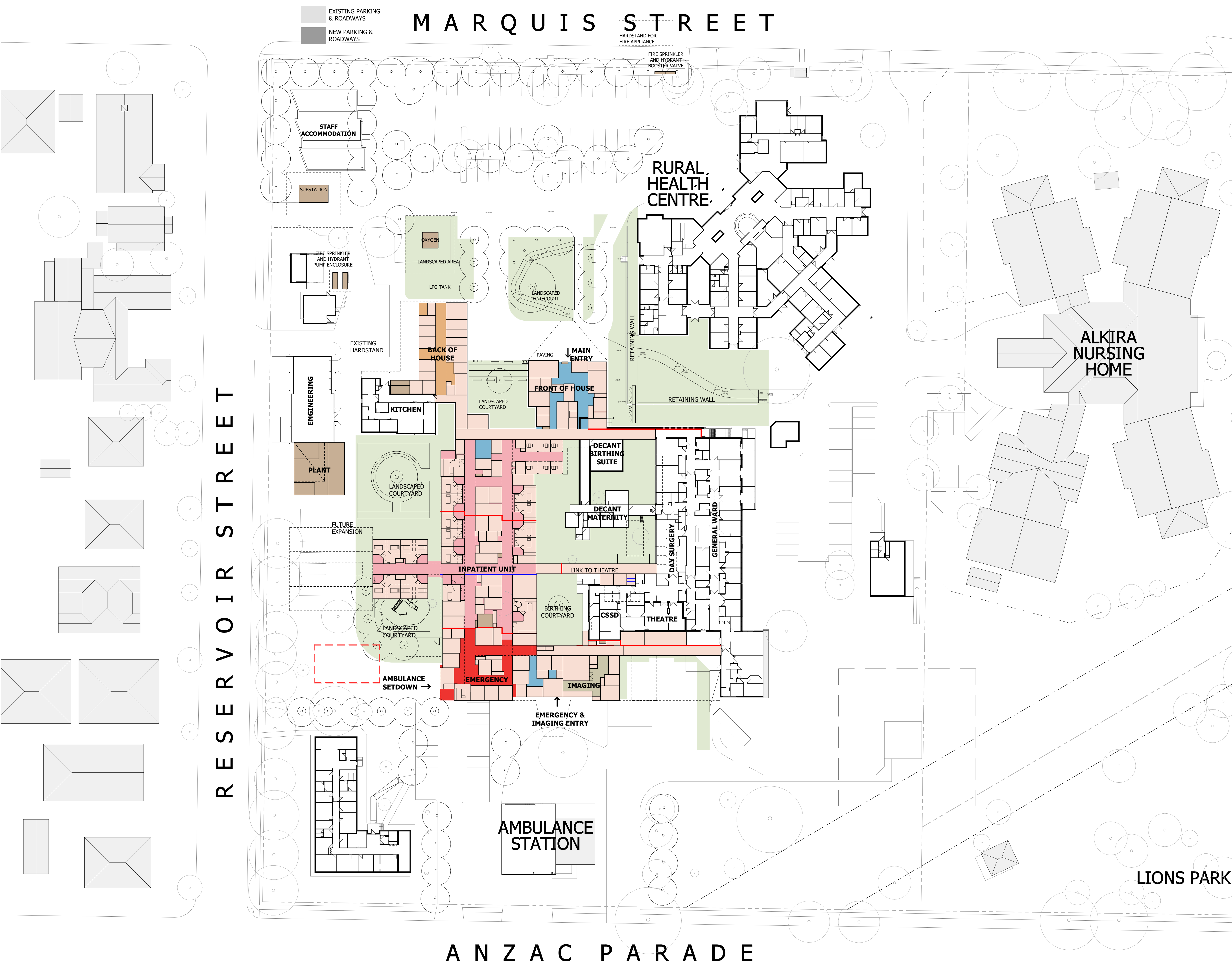
Drawing
**SITE FLOOR PLAN -
EXISTING, DEMO &
REFURBISHMENT**

Scale (A1)
1 : 500
Date Printed
6/04/2022 9:12:34 AM
Drawing Number
Issue

AA1003 **A**



File Name: B:\360\21-0218_Gunnedah Hospital Redevelopment\21-0218-AR-GUNNEDAH HOSPITAL REDEVELOPMENT-R21.dwg



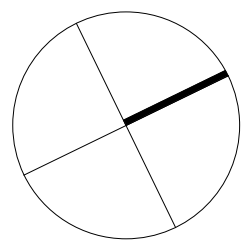
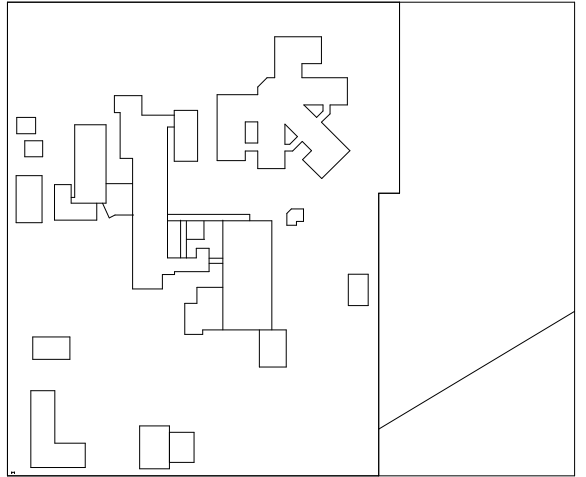
Notes

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SCHEMATIC DESIGN
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A	40% SCHEMATIC ISSUE	10.06.2022	LS	EC
Issue	Description	Date	Chk	Auth
Architect/ Designer	dwp			
www.dwp.com				

Client
NSW HEALTH INFRASTRUCTURE

Project
GUNNEDAH HOSPITAL REDEVELOPMENT
Location
MARQUIS STREET, GUNNEDAH, NSW 2380

Project Number
21-0218

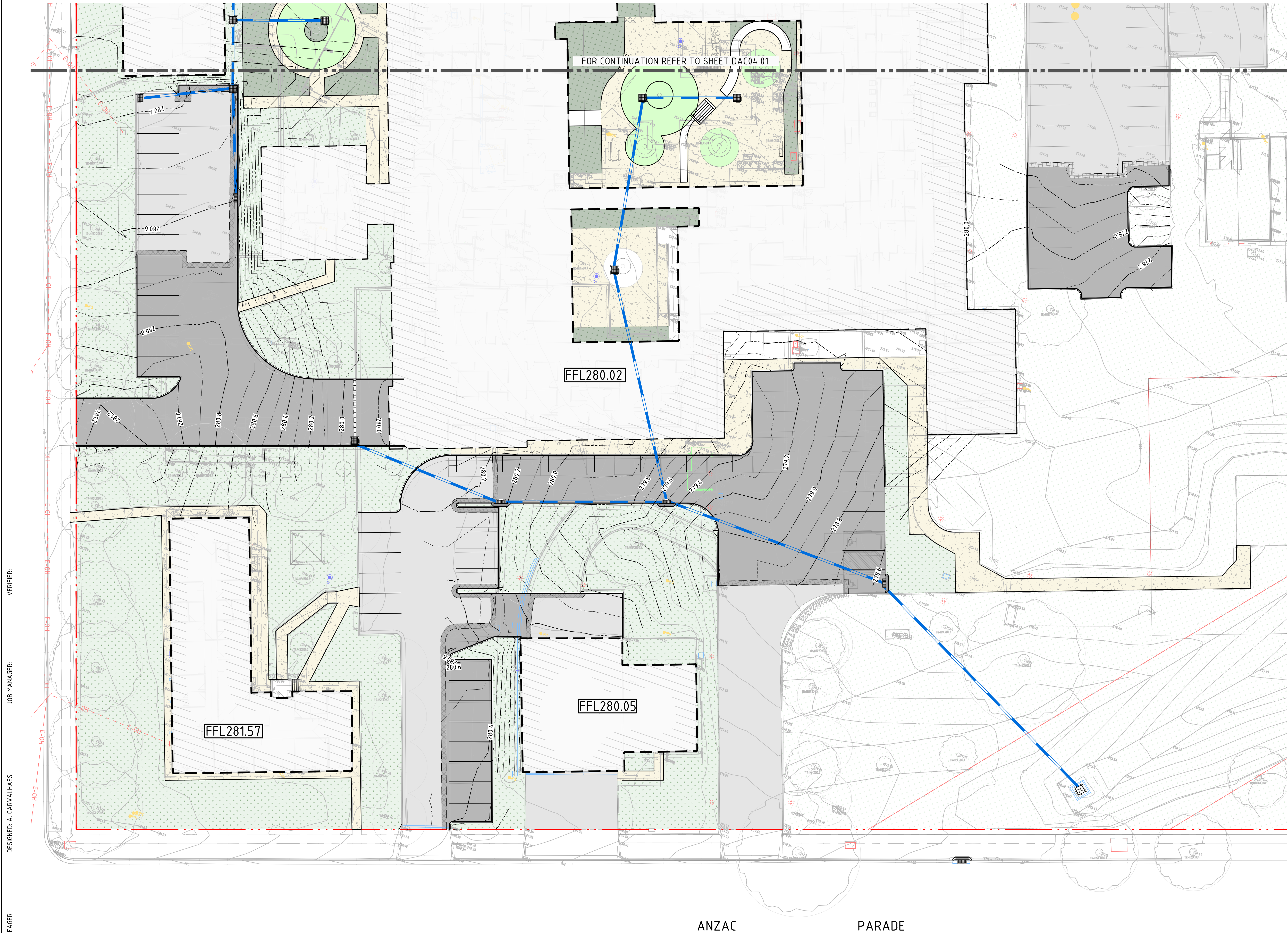
Drawing
SITE FLOOR PLAN - MAIN WORKS

Scale (A1)
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Date Printed
10/06/2022 6:05:32 PM
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AR-MW-AA1200
Issue
A



File Name: B:\2021\21-0218_Gunnedah Hospital Redevelopment\21-0218-AR-GUNNEDAH HOSPITAL REDEVELOPMENT-R21.dwg

DESIGNED: A. CARVALHAES
JOB MANAGER
DRAWN: E. EAGER
VERIFIER:



LEGEND

- SITE BOUNDARY LINE
- EASEMENT LINE
- EXISTING ELECTRICITY
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING STORMWATER
- EXISTING SEWER
- PROPOSED KERB
- SAWCUT AND PAVEMENT INFILL
- KO
KG
KR
- KERB ONLY
KERB AND GUTTER
- KERB RAMP
- RLXX.XX
- PROPOSED SPOT HEIGHT
- FFLXX.XX
- PROPOSED FINISHED FLOOR LEVEL
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- TURFED AREA - REFER TO ARCHITECT FOR DETAILS
- MASS PLANTING - REFER TO ARCHITECT FOR DETAILS
- FOOTPATH PAVING - REFER TO ARCHITECT FOR DETAILS
- XX.XX
- CONTOURS
- EXISTING CONTOURS
- STORMWATER PIPE
- EXISTING STORMWATER PIPE
- EXISTING DRAINAGE STRUCTURE
- NEW DRAINAGE STRUCTURE

- ### GENERAL NOTES:
- REFER SPECIFICATIONS NOTES FOR STORMWATER AND SITEWORKS GENERAL REQUIREMENTS.
 - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL / RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
 - CAD FILES TO BE SUPPLIED IN AUTOCAD FORMAT FOR SETOUT PURPOSES (UPON REQUEST).
 - SUBSOIL DRAINAGE TO RETAINING WALLS, KERBS AND SWALE DRAINS NOT SHOWN FOR CLARITY - REFER RELEVANT DETAILS.
 - REFER HYDRAULIC ENGINEERS / ARCHITECTS DRAWINGS FOR DOWNPIPE LOCATIONS AND SIZING.
 - PROVIDE DRAINAGE CONNECTIONS TO KERB IN ACCORDANCE WITH COUNCIL STANDARD DETAILS AND SPECIFICATION.
 - CONTRACTOR TO ALLOW TO ADJUST AND LIAISE WITH RELEVANT SERVICE AUTHORITIES IN RELATION TO EXISTING SERVICE ADJUSTMENT AND MODIFICATIONS.
 - WHEEL STOPS TO BE INSTALLED TO ALL CAR SPACES AS SHOWN AND INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS. IF WHEEL STOPS ARE NOT SHOWN, ALLOW FOR WHEEL STOPS WHERE CAR SPACES ARE FRONTING A WALL.

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR 40% SCHEMATIC DESIGN	EE		AC	09.06.22
02	ISSUED FOR 70% SCHEMATIC DESIGN	EE		AC	14.07.22

CLIENT

NSW Health Infrastructure

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT

dwp

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SCALE 1:800@A1

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NORTHROP

Sydney

Level 11 345 George Street, Sydney NSW 2000
Ph (02) 9241 4188 Fax (02) 9241 4324
Email sydney@northrop.com.au ABN 81 094 433 100

PROJECT

GUNNEDAH HOSPITAL REDEVELOPMENT

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 02

JOB NUMBER

213364

DRAWING NUMBER

DAC04.02

REVISION

02

DRAWING SHEET SIZE = A1



Lotsearch Environmental Risk and Planning Report



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 19 May 2022 15:09:29

Reference: LS032436 EP

Address: 10-24 Anzac Parade, Gunnedah, NSW 2380

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.

You should obtain independent advice before you make any decision based on the information within the report.

The detailed terms applicable to use of this report are set out at the end of this report.

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	06/04/2022	06/04/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	25/06/2019	25/06/2019	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	19/04/2022	11/04/2022	Monthly	1000m	0	0	9
Contaminated Land Records of Notice	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	0	0	4
Former Gasworks	Environment Protection Authority	02/03/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/05/2021	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	15/02/2021	13/07/2012	Annually	1000m	0	0	3
EPA PFAS Investigation Program	Environment Protection Authority	03/05/2022	14/07/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	11/05/2022	11/05/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	11/05/2022	11/05/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	11/05/2022	11/05/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	03/03/2022	03/03/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	0	0	2
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	1	1	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	0	3	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	5	21	24
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	56	69
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	18
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	2	13
Points of Interest	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	1	7	59
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	1
Major Easements	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	1
State Forest	Forestry Corporation of NSW	25/02/2021	14/02/2021	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	Annually	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	7	197

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	3	7
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	2
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	06/04/2022	18/02/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	1	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	10	10	11
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	1	4	31
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	19/08/2021	25/06/2021	Quarterly	1000m	0	0	1
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	06/04/2022	25/03/2022	Monthly	1000m	0	0	18
Bush Fire Prone Land	NSW Rural Fire Service	16/05/2022	08/12/2021	Weekly	1000m	0	0	0
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000m	0	0	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	0	0	3
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	16/05/2022	16/05/2022	Weekly	10000m	-	-	-

Site Diagram

10-24 Anzac Parade, Gunnedah, NSW 2380



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Legend

- ▬ Site Boundary
- ▬ Internal Parcel Boundaries

Total Area: 10177m²

Total Perimeter: 572m

Disclaimers:

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

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

Scale:

0 25 50
Meters

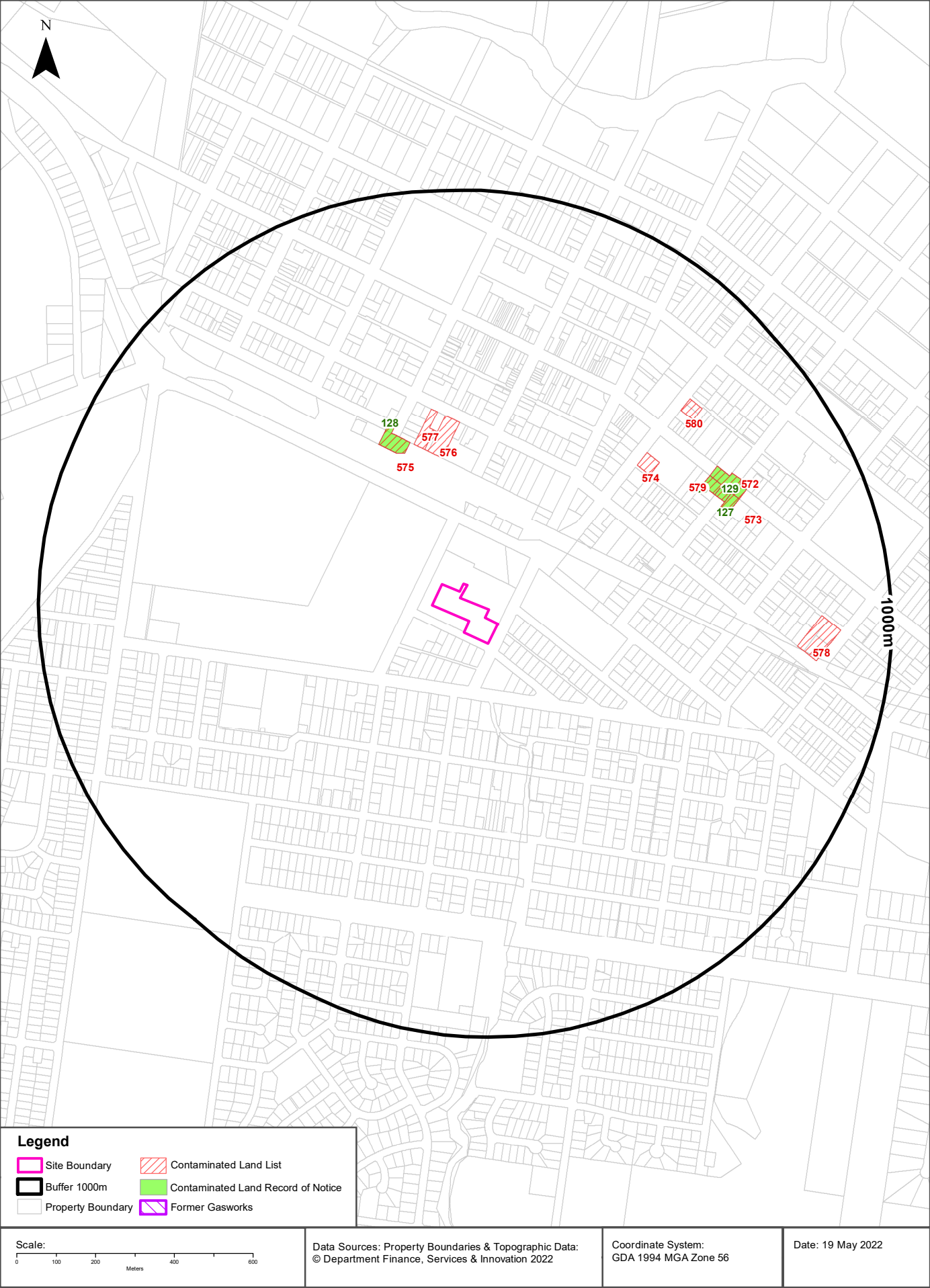
Data Sources: Aerial Imagery:
© NSW Department of Finance, Services & Innovation

Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 May 2022

Contaminated Land

10-24 Anzac Parade, Gunnedah, NSW 2380



Contaminated Land

10-24 Anzac Parade, Gunnedah, NSW 2380

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
576	Former Shell Depot Gunnedah	85-89 Barber Street	Gunnedah	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	320m	North
577	Former Telstra Line Depot	81 Barber Street	Gunnedah	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	345m	North
575	Former Caltex Depot	61 Railway Avenue	Gunnedah	Other Petroleum	Contamination formerly regulated under the CLM Act	Current EPA List	Premise Match	347m	North West
574	Ampol Australia Petroleum Pty Ltd (previously Caltex Australia)	21 Abbott Street	Gunnedah	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	525m	North East
579	Mobil Service Station	341 Conadilly Street	Gunnedah	Service Station	Contamination formerly regulated under the CLM Act	Current EPA List	Premise Match	617m	North East
573	BP Service Station	Corner Conadilly Street & Henry Street	Gunnedah	Service Station	Contamination formerly regulated under the CLM Act	Current EPA List	Premise Match	633m	North East
572	Adjacent to Service Station	Intersection of Henry Street and Conadilly Street	Gunnedah	Service Station	Contamination formerly regulated under the CLM Act	Current EPA List	Premise Match	641m	North East
580	Property NSW Site	35-37 Abbott STREET	Gunnedah	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	700m	North East
578	Mobil Gunnedah Depot	16-24 Wentworth Street	Gunnedah	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	761m	East

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

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Contaminated Land

10-24 Anzac Parade, Gunnedah, NSW 2380

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
128	Former Caltex Depot	61 Railway Avenue	Gunnedah	3 former	3288	Premise Match	347m	North West
130	Mobil Service Station	341 Conadilly Street	Gunnedah	5 former	3219	Premise Match	617m	North East
127	BP Service Station	Corner Conadilly Street & Henry Street	Gunnedah	5 former	3218	Premise Match	633m	North East
129	Adjacent to Service Station	Intersection of Henry Street and Conadilly Street	Gunnedah	6 former	3220	Premise Match	641m	North East

Contaminated Land Records of Notice Data Source: Environment Protection Authority

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Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit

<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

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

Former Gasworks Data Source: Environment Protection Authority

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Waste Management & Liquid Fuel Facilities

10-24 Anzac Parade, Gunnedah, NSW 2380



Waste Management & Liquid Fuel Facilities

10-24 Anzac Parade, Gunnedah, NSW 2380

National Waste Management Site Database

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

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

Waste Management Facilities Data Source: Geoscience Australia

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National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
4855	7-Eleven Pty Ltd	Mobil Gunnedah	16 Abbott Street	Gunnedah	Petrol Station	Operational		13/07/2012	Premise Match	408m	North East
3918	Caltex	Caltex Gunnedah	21 Abbott Street	Gunnedah	Petrol Station	Operational		25/07/2011	Premise Match	525m	North East
3917	Caltex	Woolworths Caltex Gunnedah	18-22 Tempest Street	Gunnedah	Petrol Station	Operational		25/07/2011	Premise Match	747m	North

National Liquid Fuel Facilities Data Source: Geoscience Australia

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PFAS Investigation & Management Programs

10-24 Anzac Parade, Gunnedah, NSW 2380

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

10-24 Anzac Parade, Gunnedah, NSW 2380

Defence 3 Year Regional Contamination Investigation Program

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

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

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

EPA Other Sites with Contamination Issues

10-24 Anzac Parade, Gunnedah, NSW 2380

EPA Other Sites with Contamination Issues

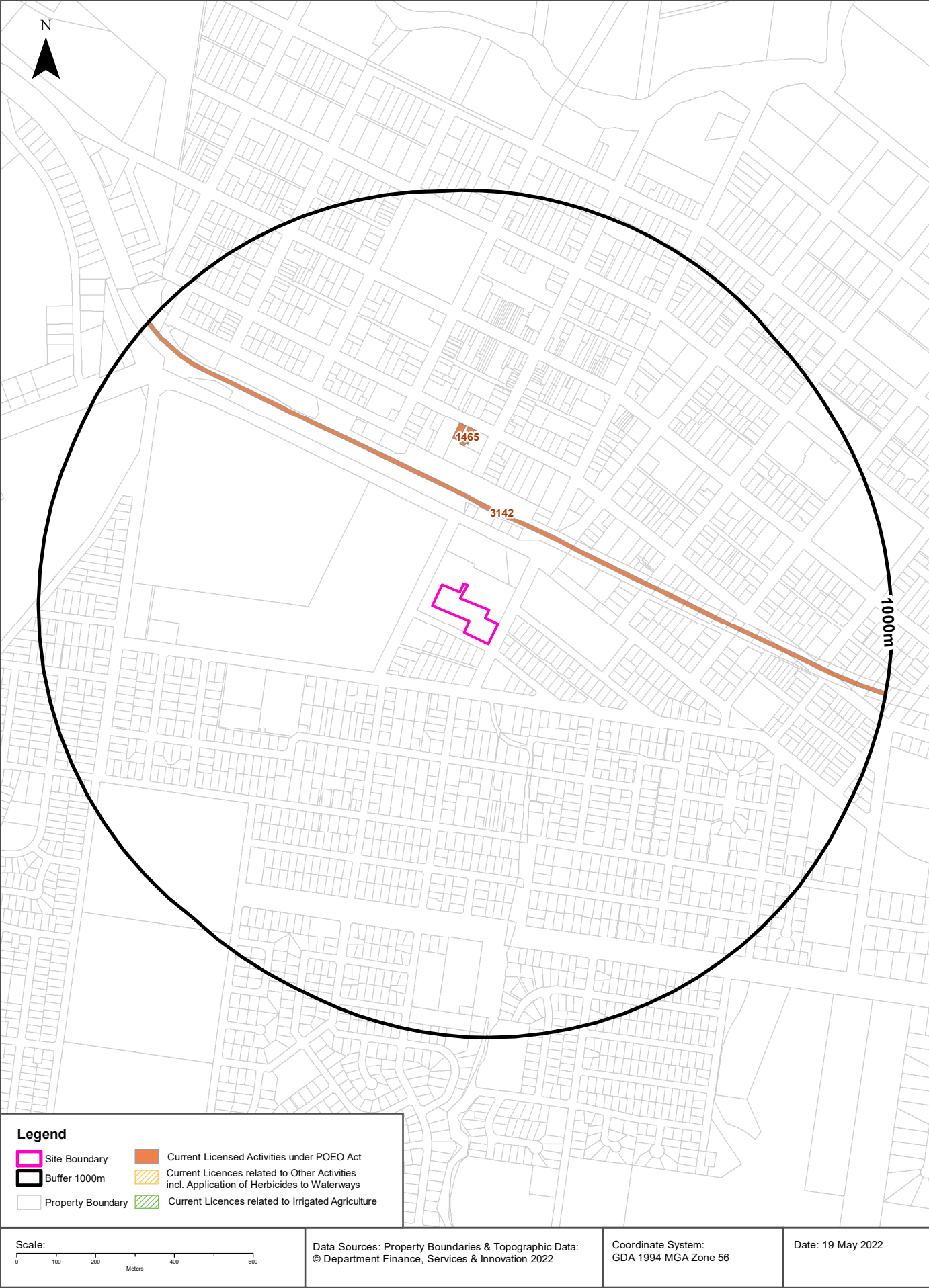
This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

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

Sites within the dataset buffer:

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

EPA Other Sites with Contamination Issues: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority



EPA Activities

10-24 Anzac Parade, Gunnedah, NSW 2380

Licensed Activities under the POEO Act 1997

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

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		AUSTRALIAN RAIL TRACK CORPORATION (ARTC) NETWORK, SYDNEY, NSW 2001		Railway systems activities	Network of Features	195m	North East
1465	NAMOI FLOUR MILLS PTY LTD	NAMOI FLOUR MILLS PTY LTD	91 - 93 BARBER ST	GUNNEDAH	General agricultural processing	Premise Match	349m	North

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

10-24 Anzac Parade, Gunnedah, NSW 2380



EPA Activities

10-24 Anzac Parade, Gunnedah, NSW 2380

Delicensed Activities still regulated by the EPA

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

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
7193	HUNTER AND NEW ENGLAND AREA HEALTH SERVICE	GUNNEDAH HOSPITAL	MARQUIS STREET	GUNNEDAH	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	0m	On-site

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

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

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

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	90m	South
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	90m	South
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	90m	South

Former Licensed Activities Data Source: Environment Protection Authority
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Historical Business Directories

10-24 Anzac Parade, Gunnedah, NSW 2380



Historical Business Directories

10-24 Anzac Parade, Gunnedah, NSW 2380

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	HOSPITALS &/OR HEALTH CENTRES	Gunnedah District Hospital, Marquis St., Gunnedah 2380	100774	1982	Premise Match	0m	On-site
	HOSPITALS & HEALTH CENTRES	Gunnedah District Hospital., Marquis St., Gunnedah 2380	655959	1970	Premise Match	0m	On-site
	GROCERS & GENERAL STOREKEEPERS	Gallen, P. H. & R. J., 16 Anzac Pde., Gunnedah	153781	1961	Premise Match	0m	On-site
	HOSPITALS & HEALTH CENTRES	Gunnedah District Hospital, Marquis St., , Gunnedah	153816	1961	Premise Match	0m	On-site
	HOSPITALS	Gunnedah District Hospital, Marquis St., Gunnedah	193415	1950	Premise Match	0m	On-site
2	MIXED BUSINESSES	Finlay, C. W. & M. E., 1 Anzac Pde., Gunnedah 2380	656091	1970	Premise Match	30m	South East
3	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC	Gunnedah Christian Community School., 3 Reservoir St	208118	1991	Premise Match	41m	South West
4	ASSOCIATIONS &/OR SOCIETIES.	Gunnedah Technical Education Committee.,	207468	1991	Premise Match	61m	North West
	SCHOOLS &/OR COLLEGES PRIVATE &/OR PUBLIC	Gunnedah High School, Marquis St., Gunnedah 2380	101016	1982	Premise Match	61m	North West
	SCHOOLS &/OR COLLEGES PRIVATE &/OR PUBLIC	Gunnedah Technical College, Hunter St., Gunnedah 2380	101021	1982	Premise Match	61m	North West
	ASSOCIATIONS &/OR SOCIETIES	Gunnedah Technical Education Committee., Gunnedah 2380	100514	1982	Premise Match	61m	North West
	SCHOOLS & COLLEGES-PRIVATE & PUBLIC	Gunnedah High School., Marquis St., Gunnedah 2380	656347	1970	Premise Match	61m	North West
	SCHOOLS & COLLEGES-TECHNICAL	Gunnedah Technical College., Hunter St., Gunnedah 2380	656354	1970	Premise Match	61m	North West
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTINGBODIES	Gunnedah Technical Education Committee., Gunnedah 2380	655544	1970	Premise Match	61m	North West
	SCHOOLS & COLLEGES-TECHNICAL	Gunnedah Technical College, Hunter St., Gunnedah	154037	1961	Premise Match	61m	North West
5	BUILDERS & BUILDING CONTRACTORS	G. M. Hughes 20 Reservoir Street, Gunnedah	193181	1950	Premise Match	67m	South East
	BUILDERS & BUILDING CONTRACTORS	Hughes, G. M., 20 Reservoir St., Gunnedah	193170	1950	Premise Match	67m	South East
6	FURNITURE-HOUSEHOLD-RETAIL	Vinall, R. E., 80 Hunter St., Gunnedah	193359	1950	Premise Match	82m	South
7	DOG &/OR CAT BREEDERS	Bush, B. H. & M. B., 7 Eighth Div. Memorial Ave., Gunnedah 2380	655750	1970	Premise Match	84m	East
8	SIGNWRITERS	Sydenham, B., 22 Reservoir St., Gunnedah 2380	656385	1970	Premise Match	87m	South East
	SIGNWRITERS	Sydenham, B., 22 Reservoir St., Gunnedah	154047	1961	Premise Match	87m	South East
9	NURSERYMEN	Chapmans Florists, 83 Hunter St., Gunnedah	153966	1961	Premise Match	146m	South
	FLORISTS-RETAIL	Chapman's Nursery, Hunter St., Gunnedah	153723	1961	Premise Match	146m	South
10	PLUMBERS, GASFITTERS & DRAINLAYERS	Walker, D., 28 Reservoir St., Gunnedah 2380	656273	1970	Premise Match	147m	South East

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Business Directory Records 1950-1991

Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
11	HOSPITAL &/OR NURSING HOMES	Gunnedah District Hospital., Marquis St	207847	1991	Road Match	30m
	HOSPITALS &/OR NURSING HOMES.	Gunnedah District Hospital., Marquis St	207797	1991	Road Match	30m
	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC	Gunnedah High School., Marquis St	208119	1991	Road Match	30m
	CLUBS &/OR SPORTING BODIES.	Gunnedah Rsl Bowling Club., Marquis St	207618	1991	Road Match	30m
	FLOUR MILLERS &/OR MERCHANTS.	Namoi Flour Mills., Marquis St	207738	1991	Road Match	30m
	ANTIQUE DEALERS	Cedar Grove Antiques, 978 Marquis St., Gunnedah 2380	100461	1982	Road Match	30m
	FLOUR MERCHANTS &/OR MILLERS	Namoi Flour Mills, Marquis St., Gunnedah 2380	100722	1982	Road Match	30m
	AGRICULTURAL CHEMICALS MFRS. &/OR IMPS. &/OR DIST	O'Keefe, F. L., Marquis St., Gunnedah 2380	100424	1982	Road Match	30m
	GOVERNMENT DEPARTMENTS	T.A.B., Marquis St., Gunnedah 2380	100743	1982	Road Match	30m
	TOTALISATOR AGENCY BRANCHES	T.A.B., Marquis St., Gunnedah 2380	101073	1982	Road Match	30m
	MOTOR PAINTERS &PANEL BEATERS	G. & D. Motor Service., Marquis St. , Gunnedah 2380	656194	1970	Road Match	30m
	MOTOR ACCESSORIES &/OR SPARE PARTS DEALERS	G. & D. Motor Service., Marquis St., Gunnedah 2380	656113	1970	Road Match	30m
	MOTOR SERVICE STATIONS- PETROL, OILS, ETC.	G. & D. Motor Service., Marquis St., Gunnedah 2380	656208	1970	Road Match	30m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTINGBODIES	Gunnedah R.S.L. Women's Bowling Club, Marquis St., Gunnedah 2380	655537	1970	Road Match	30m
	FLOUR MERCHANTS & MILLERS	Namoi Flour Mills., Marquis St., Gunnedah 2380	655858	1970	Road Match	30m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	T.A.B., Marquis St., Gunnedah 2380	655492	1970	Road Match	30m
	GOVERNMENT DEPARTMENTS	T.A.B., Marquis St., Gunnedah 2380	655910	1970	Road Match	30m
	DELICATESSENS	Chit, Syd, Marquis St., Gunnedah	153648	1961	Road Match	30m
	AERATED WATER & CORDIAL MANUFACTURERS	Cushan, J. L., Marquis St., Gunnedah	153459	1961	Road Match	30m
	BANKS	E.S. and A. Bank, Marquis St., Gunnedah	153507	1961	Road Match	30m
	ELECTRICAL SUPPLIES & APPLIANCES-RETAILERS	Geddes Radio Service, Marquis St., Gunnedah	153680	1961	Road Match	30m
	LAWN MOWER MOTOR MFRS./DIST.	Geddes Radio, Marquis St., Gunnedah	153862	1961	Road Match	30m
	REFRIGERATOR DEALERS &/OR SERVICEMEN	Geddes, John, Marquis St., Gunnedah	154019	1961	Road Match	30m
	INSURANCE AGENTS	Henry, R. M., Marquis St., Gunnedah	153842	1961	Road Match	30m
	PRODUCE MERCHANTS- GRAIN & SEED-RETAIL	Henry, R. M., Marquis St., Gunnedah	154006	1961	Road Match	30m
	PHOTOGRAPHERS	Keith, Riley Studios, Marquis St., Gunnedah	153980	1961	Road Match	30m
	MEDICAL PRACTITIONERS	Lundie, A. J., Marquis St., Gunnedah	153883	1961	Road Match	30m
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Michele, Marquis St., Gunnedah	153516	1961	Road Match	30m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
11	POULTRY & STOCK FOOD MANUFACTURERS	Nam' Flour Mills, Marquis St., Gunnedah	153995	1961	Road Match	30m
	FLOUR MERCHANTS & MILLERS	Namoi Flour Mills, Marquis St., Gunnedah	153727	1961	Road Match	30m
	BOOT & SHOE REPAIRERS	Nelson and Neate Shoe Repairs, Marquis St., Gunnedah	153522	1961	Road Match	30m
	ELECTRICAL CONTRACTORS-LICENSED	Plevey, K. W., Marquis St., Gunnedah	153674	1961	Road Match	30m
	REFRIGERATOR DEALERS &/OR SERVICEMEN	Plevey, K. W., Marquis St., Gunnedah	154024	1961	Road Match	30m
	AGRICULTURAL MACHINERY DEALERS	Snape Motors, Marquis St., Gunnedah	153474	1961	Road Match	30m
	ENGINEERS-DIESEL	Snape Motors, Marquis St., Gunnedah	153697	1961	Road Match	30m
	TAXIS & HIRE CARS	Steel, Bruce, Marquis St., Gunnedah	154115	1961	Road Match	30m
	CAKE SHOPS &/OR PASTRYCOOKS	Steele, Bruce, Marquis St., Gunnedah	153573	1961	Road Match	30m
	INSURANCE AGENTS	Turner, Arthur, Marquis St., Gunnedah	153850	1961	Road Match	30m
	LAWN MOWER MOTOR MFRS./DIST.	Turner, Arthur, Marquis St., Gunnedah	153863	1961	Road Match	30m
	MOTOR CYCLE DEALERS, REPAIRERS & ACCESSORIES	Turner, Arthur, Marquis St., Gunnedah	153922	1961	Road Match	30m
	MUSIC & MUSICAL INSTRUMENTS-RETAIL	Turner, Arthur, Marquis St., Gunnedah	153963	1961	Road Match	30m
	SPORT & TRAVEL GOODS-RETAIL	Turner, Arthur, Marquis St., Gunnedah	154066	1961	Road Match	30m
	OPTOMETRISTS & OPTICIANS	Webster, Jack & McDonald, Marquis St., Gunnedah	153970	1961	Road Match	30m
	FLOUR MILLERS	Crago, D. and C., Marquis St., Gunnedah	193325	1950	Road Match	30m
	AERATED WATER & CORDIAL MANUFACTURERS	Cushan, Estate of J. L., Marquis St., Gunnedah	193095	1950	Road Match	30m
	PLUMBERS, GASFITTERS & DRAINLAYERS	Hassan and Kensell Pty. Ltd., Marquis St., Gunnedah	193595	1950	Road Match	30m
	MOTOR GARAGES & ENGINEERS	Hassan and Kensell Pty. Ltd., Marquis St., Gunnedah	193533	1950	Road Match	30m
	FLOUR MANUFACTURERS	Namoi Flour Mills, Marquis St., Gunnedah	193324	1950	Road Match	30m
12	POULTRY & STOCK FOOD MANUFACTURERS	Namoi Flour Mills, Marquis St., Gunnedah	193600	1950	Road Match	30m
	AGRICULTURAL MACHINERY MANUFACTURERS &/OR DEALERS	Waugh and Josephson Ltd. (Caterpillar Tractors), Marquis St., Gunnedah	193106	1950	Road Match	30m
	TRACTOR REPAIR SPECIALISTS	Waugh and Josephson Pty. Ltd., Marquis St., Gunnedah	193717	1950	Road Match	30m
	CLUBS &/OR SPORTING BODIES.	Gunnedah Women'S Bowling Club Eighth Division., Memorial Av	207622	1991	Road Match	56m
	ASSOCIATIONS &/OR SOCIETIES	Gunnedah Women's Bowling Club, Eighth Division Memorial Ave., Gunnedah 2380	100515	1982	Road Match	56m
13	SANDING & POLISHING SERVICE	Clarks Sanding & Polishing Service., Eighth Division Memorial Avenue., Gunnedah 2380	655855	1970	Road Match	56m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTINGBODIES	Gunnedah Women's Bowling Club Eighth Division., Memorial Ave., Gunnedah 2380	655546	1970	Road Match	56m
	TAXI & HIRE CAR SERVICES	Imes, C. H., Eighth Division Memorial Ave., Gunnedah 2380	656463	1970	Road Match	56m
	MIXED BUSINESSES.	Cabbage Patch Vegie & Mini Mart., Hunter St	207928	1991	Road Match	113m
	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC	Gunnedah Technical College (Tafe)., Hunter St	208123	1991	Road Match	113m
	MIXED BUSINESSES	Palmer, M. L. & Co., Hunter St., Gunnedah 2380	100846	1982	Road Match	113m
	TANK SINKING & WELL BORING CONTRACTORS	Hope, A., Hunter St., Gunnedah	154104	1961	Road Match	113m
	CARRIERS & CARTAGE CONTRACTORS	Maddigan, J. C., Hunter St., Gunnedah	153587	1961	Road Match	113m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
13	EARTH MOVING CONTRACTORS	Maddigan, J. C., Hunter St., Gunnedah	153662	1961	Road Match	113m
	CLEARING CONTRACTORS	Maddigan, J. C., Hunter St., Gunnedah	153602	1961	Road Match	113m
	CONCRETE CONTRACTORS-CONSTRUCTIONAL	Spearing, M. F., Hunter St., Gunnedah	153640	1961	Road Match	113m
	DRESSMAKERS & COSTUMIERS	Trotman, Miss, Hunter St., Gunnedah	153657	1961	Road Match	113m
	DELICATESSENS	Palmer, M. L., Hunter Sts., Gunnedah	202810	1950	Road Match	113m
14	CAMPING GROUNDS & CARAVAN PARKS	Gunnedah Caravan Park & Camping Ground., South St., Gunnedah 2380	655680	1970	Road Match	131m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTINGBODIES	R.O.A, B.G.A.B. Lodge Gunnedah., 346 South St., Gunnedah 2380	655550	1970	Road Match	131m
	ELECTRICAL CONTRACTORS-LICENSED	Drury, A., South St., Gunnedah	153669	1961	Road Match	131m

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Dry Cleaners, Motor Garages & Service Stations

10-24 Anzac Parade, Gunnedah, NSW 2380



Legend		Scale: 0 90 180 270 360 Meters	Coordinate System: GDA 1994 MGA Zone 56
Site Boundary	Business directory records mapped to a specific premise		Date: 19 May 2022
Buffer 500m	Business directory records mapped to a road intersection	Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018	
Property Boundary	Business directory records mapped to a road corridor	Property Boundaries © NSW Department Finance, Services & Innovation 2022	
Business directory records mapped to a general area			

Historical Business Directories

10-24 Anzac Parade, Gunnedah, NSW 2380

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

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	East Mornington Store., 35 Eighth Division, Memorial Ave., Gunnedah 2380	656205	1970	Premise Match	364m	South East
2	MOTOR GARAGES & ENGINEERS	O'Keefe, F. L., Cnr. Marquis and Barber Sts., Gunnedah	153936	1961	Road Intersection	390m	North
3	MOTOR GARAGES & SERVICE STATIONS.	Mobil Dare-Ene Service Centre., 14 Abbott St	207990	1991	Premise Match	408m	North East
4	MOTOR GARAGES & ENGINEERS	Gascoyne, T. C., Marquis St., Gunnedah 2380	656164	1970	Premise Match	444m	North
	MOTOR GARAGES & ENGINEERS	Gascoyne, T. C., Marquis St., Gunnedah	153930	1961	Premise Match	444m	North
	MOTOR GARAGES & ENGINEERS	Gascoyne, T. C., 91 Marquis St., Gunnedah	193532	1950	Premise Match	444m	North
5	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Mock, John Ford, 90 Barber St., Gunnedah 2380	100919	1982	Premise Match	445m	North
	MOTOR GARAGES & ENGINEERS	Fossey, J. T. (Gunnedah) Pty. Ltd., 90 Barber St., Gunnedah 2380	656162	1970	Premise Match	445m	North
	MOTOR GARAGES & ENGINEERS	J.T. Fossey(Gunnedah) Pty. Ltd., 90 Barber St., Gunnedah 2380	656157	1970	Premise Match	445m	North
	MOTOR GARAGES & ENGINEERS	Fossey, J. T. (Gunnedah) Pty. Ltd., 90 Barber St., Gunnedah	153928	1961	Premise Match	445m	North
6	MOTOR GARAGES & ENGINEERS	Gale, Les & Co. Pty. Ltd., 19 Chandos St., Gunnedah 2380	656163	1970	Premise Match	464m	North
	MOTOR GARAGES & ENGINEERS	Gale, Les and Co. Pty. Ltd., Chandos St., Gunnedah	153929	1961	Premise Match	464m	North
	MOTOR GARAGES & ENGINEERS	Gale, Les, Chandos St., Gunnedah	193531	1950	Premise Match	464m	North
7	DRY CLEANERS & PRESSERS.	Chalkleys Dry Cleaners., 195 Conadilly St	207659	1991	Premise Match	468m	North
	DRY CLEANERS & PRESSERS	Chalkleys Dry Cleaners, 195 Conadilly St., Gunnedah 2380	100667	1982	Premise Match	468m	North
	DRY CLEANERS, PRESSERS & DYERS	Gunnedah Dry Cleaners., 195 Conadilly St., Gunnedah 2380	655769	1970	Premise Match	468m	North
8	MOTOR GARAGES & ENGINEERS	Whiteman Bros. Gunnedah Pty. Ltd., 95 Marquis St., Gunnedah 2380	656175	1970	Premise Match	483m	North
9	DRY CLEANERS & PRESSERS.	Gunnedah Steam Laundry Pty Ltd., 75 Little Barber St	207661	1991	Premise Match	493m	North

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

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
10	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	G. & D. Motor Service., Marquis St., Gunnedah 2380	656208	1970	Road Match	30m
	MOTOR GARAGES & ENGINEERS	Hassan and Kensell Pty. Ltd., Marquis St., Gunnedah	193533	1950	Road Match	30m
11	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Dar-Ene Service Centre, Abbott St., Gunnedah 2380	100913	1982	Road Match	265m
12	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Potter, J. & N., Henry St., Gunnedah 2380	656215	1970	Road Match	305m
13	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Gunnedah Service Station, Barber St., Gunnedah	153956	1961	Road Match	361m
	DRY CLEANERS, PRESSERS & DYERS	Gunnedah Steam Laundry, Barber St., Gunnedah	193285	1950	Road Match	361m
	MOTOR GARAGES & ENGINEERS	Masseur Bros., Barber St., Gunnedah	193536	1950	Road Match	361m
14	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS	Eveleigh, Ian, Motors, 42 Chandos St., Gunnedah 2380	100915	1982	Road Match	411m
	MOTOR GARAGES & ENGINEERS	Smyth's Autos., 42 Chandos St., Gunnedah 2380	656171	1970	Road Match	411m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Smyth's Autos., 42 Chandos St., Gunnedah 2380	656216	1970	Road Match	411m
	MOTOR GARAGES & ENGINEERS	Clegg and Tyre), 42 Chandos St., Gunnedah	153925	1961	Road Match	411m
	MOTOR GARAGES & ENGINEERS	Clegg and Tyrell, 42 Chandos St., Gunnedah	193529	1950	Road Match	411m
15	MOTOR GARAGES & ENGINEERS	Pike, R. N., Auto Repairs., 87 Little Barber St., Gunnedah 2380	656170	1970	Road Match	489m

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Aerial Imagery 2021

10-24 Anzac Parade, Gunnedah, NSW 2380



<p>Scale:</p> <p>0 30 60 90 120</p> <p>Meters</p>	<p>Data Source Aerial Imagery:</p> <p>© Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community</p>	<p>Coordinate System:</p> <p>GDA 1994 MGA Zone 56</p>	<p>Date: 19 May 2022</p>
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Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © 2022 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 May 2022
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Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 May 2022
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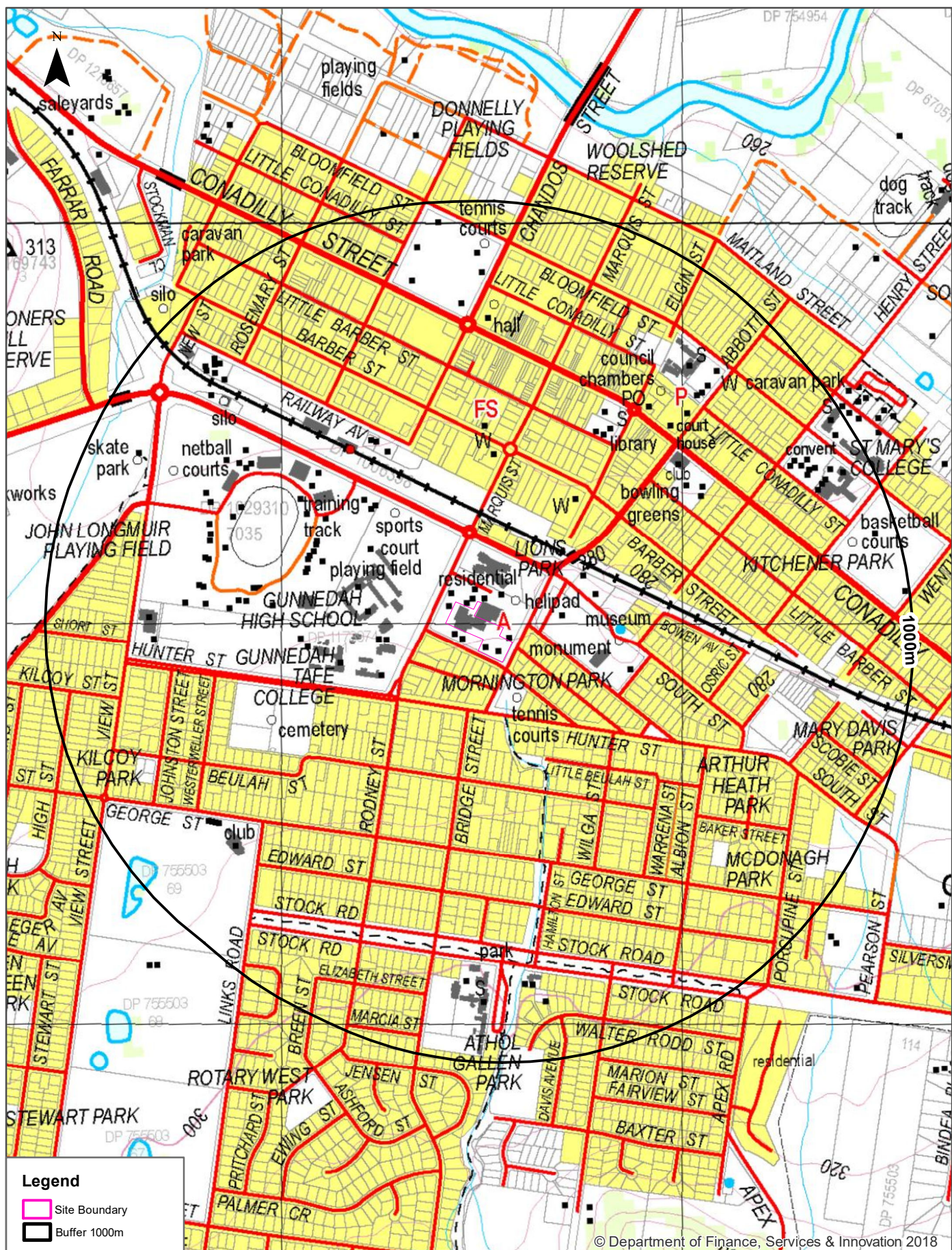
Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 May 2022
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Topographic Map 2015

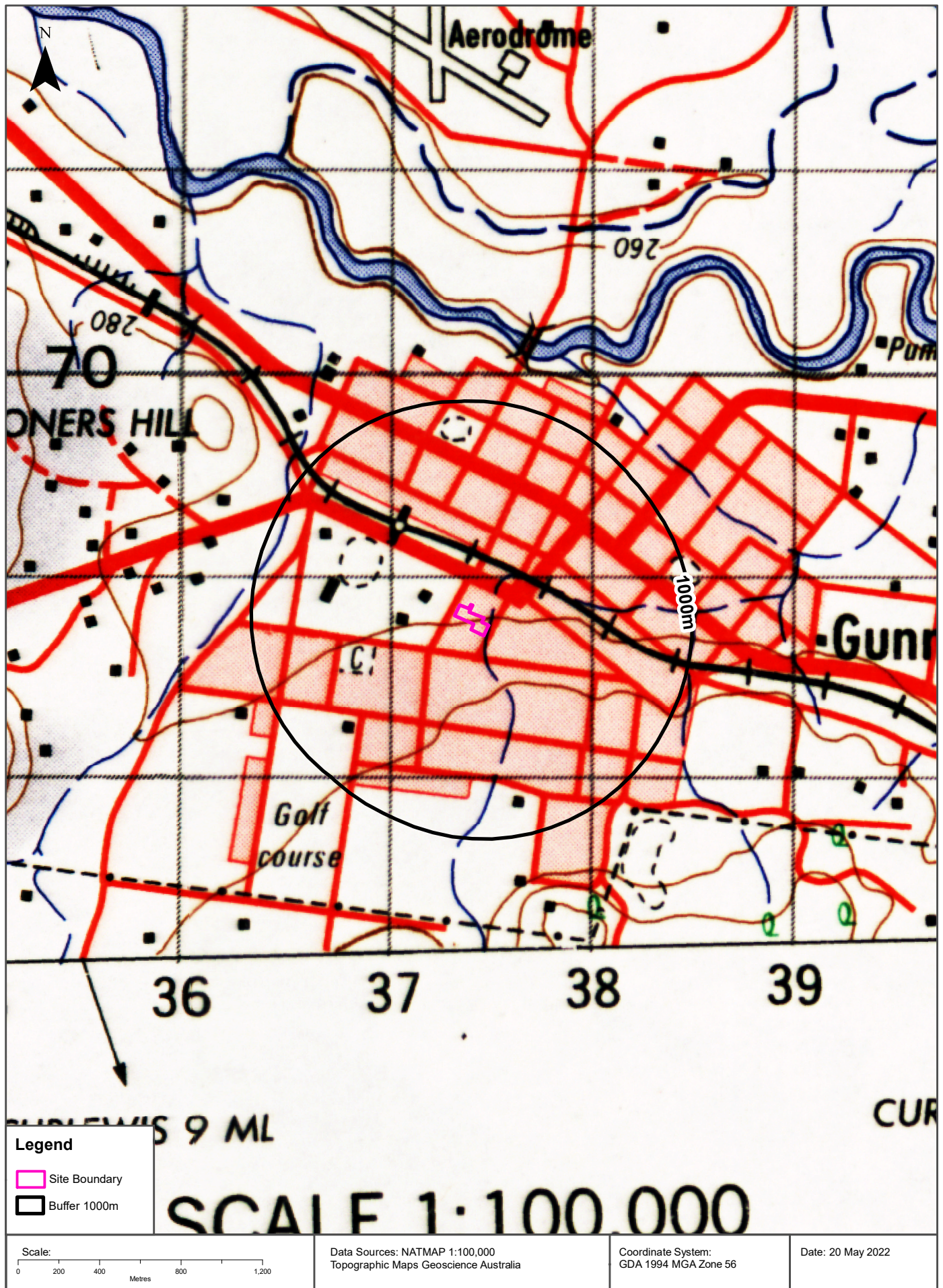
10-24 Anzac Parade, Gunnedah, NSW 2380



<p>Scale:</p>	<p>Data Sources: Topographic Map Data © NSW Land and Property Information</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 19 May 2022</p>
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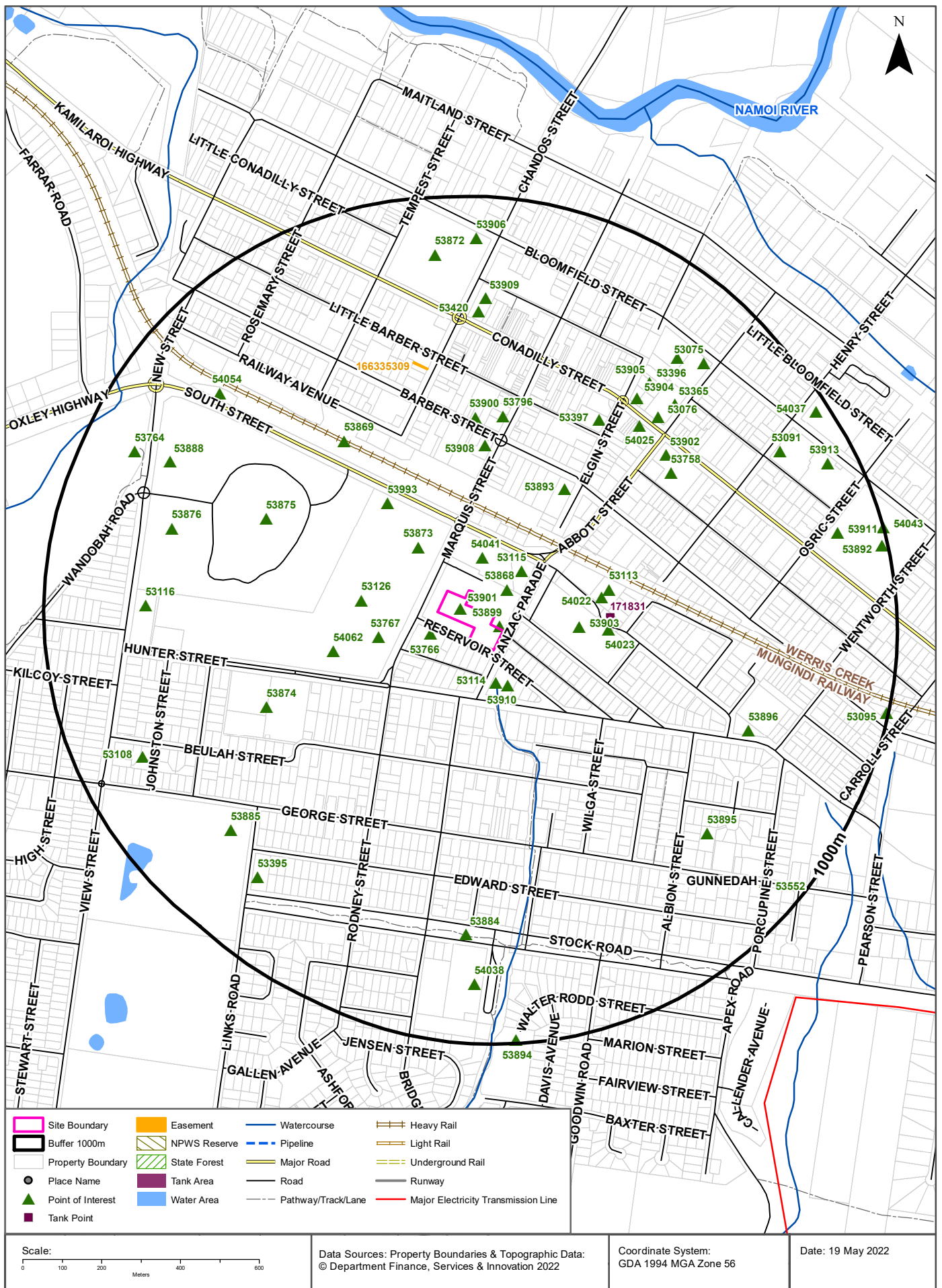
Historical Map 1969

10-24 Anzac Parade, Gunnedah, NSW 2380



Topographic Features

10-24 Anzac Parade, Gunnedah, NSW 2380



Topographic Features

10-24 Anzac Parade, Gunnedah, NSW 2380

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
53901	Integrated Health Service	GUNNEDAH DISTRICT HEALTH SERVICE	0m	On-site
53899	Ambulance Station	GUNNEDAH AMBULANCE STATION	7m	East
53766	Child Care Centre	GUNNEDAH BAPTIST PRESCHOOL	58m	West
53868	Helipad	Helipad	75m	North East
53114	Park	MORNINGTON PARK	82m	South
54041	Nursing Home	MACKELLAR CARE SERVICES LTD-ALKIRA CAMPUS	89m	North
53910	Sports Court	TENNIS COURTS	95m	South East
53873	Sports Field	PLAYING FIELD	133m	North West
53115	Park	LIONS PARK	134m	North East
53767	Child Care Centre	Child Care Centre	163m	West
53903	Swimming Pool Facility	MEMORIAL POOL	193m	East
53126	High School	GUNNEDAH HIGH SCHOOL	196m	West
54022	Museum	GUNNEDAH MUSEUM	264m	East
54023	Monument	REMEMBRANCE GROVE	267m	East
53993	Sports Court	Sports Court	269m	North West
54062	Technical College	GUNNEDAH TAFE COLLEGE	283m	West
53113	Park	ANZAC PARK	288m	East
53893	Place Of Worship	Place Of Worship	349m	North East
53908	Place Of Worship	PRESBYTERIAN CHURCH	371m	North
53900	Fire Station	GUNNEDAH FIRE STATION	440m	North
53796	Community Medical Centre	GUNNEDAH DHS COMMUNITY HEALTH CENTRE	451m	North
53869	Railway Station	GUNNEDAH RAILWAY STATION	462m	North West
53875	Showground	GUNNEDAH SHOWGROUND	495m	North West
53874	Cemetery	GUNNEDAH CEMETERY	496m	South West
53397	Primary School	CARINYA CHRISTIAN SCHOOL GUNNEDAH	541m	North East
53758	Sports Field	BOWLING GREENS	577m	North East
54025	Library	GUNNEDAH LIBRARY	598m	North East
53902	Club	GUNNEDAH SERVICES AND BOWLING CLUB	599m	North East
53904	Post Office	GUNNEDAH POST OFFICE	644m	North East
53076	Court House	GUNNEDAH COURT HOUSE	646m	North East
53896	Park	ARTHUR HEATH PARK	672m	East

Map Id	Feature Type	Label	Distance	Direction
53905	Local Government Chambers	GUNNEDAH SHIRE COUNCIL	694m	North East
53365	Police Station	GUNNEDAH POLICE STATION	699m	North East
53876	Sports Field	JOHN LONGMUIR PLAYING FIELD	707m	West
53420	Community Facility	GUNNEDAH TOWN HALL	708m	North
53895	Park	MCDONAGH PARK	713m	South East
53884	Park	Park	724m	South
53909	Tourist Information Centre	GUNNEDAH VISITOR INFORMATION CENTRE	742m	North
53116	Community Facility	GUNNEDAH PCYC	742m	West
53885	Club	GUNNEDAH GOLF CLUB	763m	South West
54054	Silo - Commercial	Silo - Commercial	765m	North West
53888	Sports Court	NETBALL COURTS	777m	North West
53396	Primary School	GUNNEDAH PUBLIC SCHOOL	788m	North East
53395	Retirement Village	GUNNEDAH HOMES FOR THE AGED YALLAMBEE	810m	South West
53075	Place Of Worship	UNITING CHURCH	824m	North East
53108	Park	KILCOY PARK	835m	South West
53091	Convent/Monastery	CONVENT	837m	North East
54038	Primary School	GUNNEDAH SOUTH PUBLIC SCHOOL	849m	South
53872	Park	WOLSELEY PARK	855m	North
53764	Sports Court	SKATE PARK	868m	North West
53911	Sports Court	BASKETBALL COURTS	884m	East
53906	Sports Court	TENNIS COURTS	894m	North
53552	Town	GUNNEDAH	906m	South East
53913	High School	ST MARY'S COLLEGE	927m	North East
54037	Primary School	ST XAVIER'S PRIMARY SCHOOL	969m	North East
53892	Park	KITCHENER PARK	986m	East
53894	Park	ATHOL GALLAN PARK	990m	South
53095	Park	MARY DAVIS PARK	994m	East
54043	Park	KITCHENER SPORTS GROUND	1000m	East

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Topographic Features

10-24 Anzac Parade, Gunnedah, NSW 2380

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks (Points)

What are the Tank Points located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
171831	Water	Operational		01/10/2011	273m	East

Tanks Data Source: © Land and Property Information (2015)

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Major Easements

What Major Easements exist within the dataset buffer?

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
166335309	Primary	Right of way	3m	564m	North

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

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Topographic Features

10-24 Anzac Parade, Gunnedah, NSW 2380

State Forest

What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)

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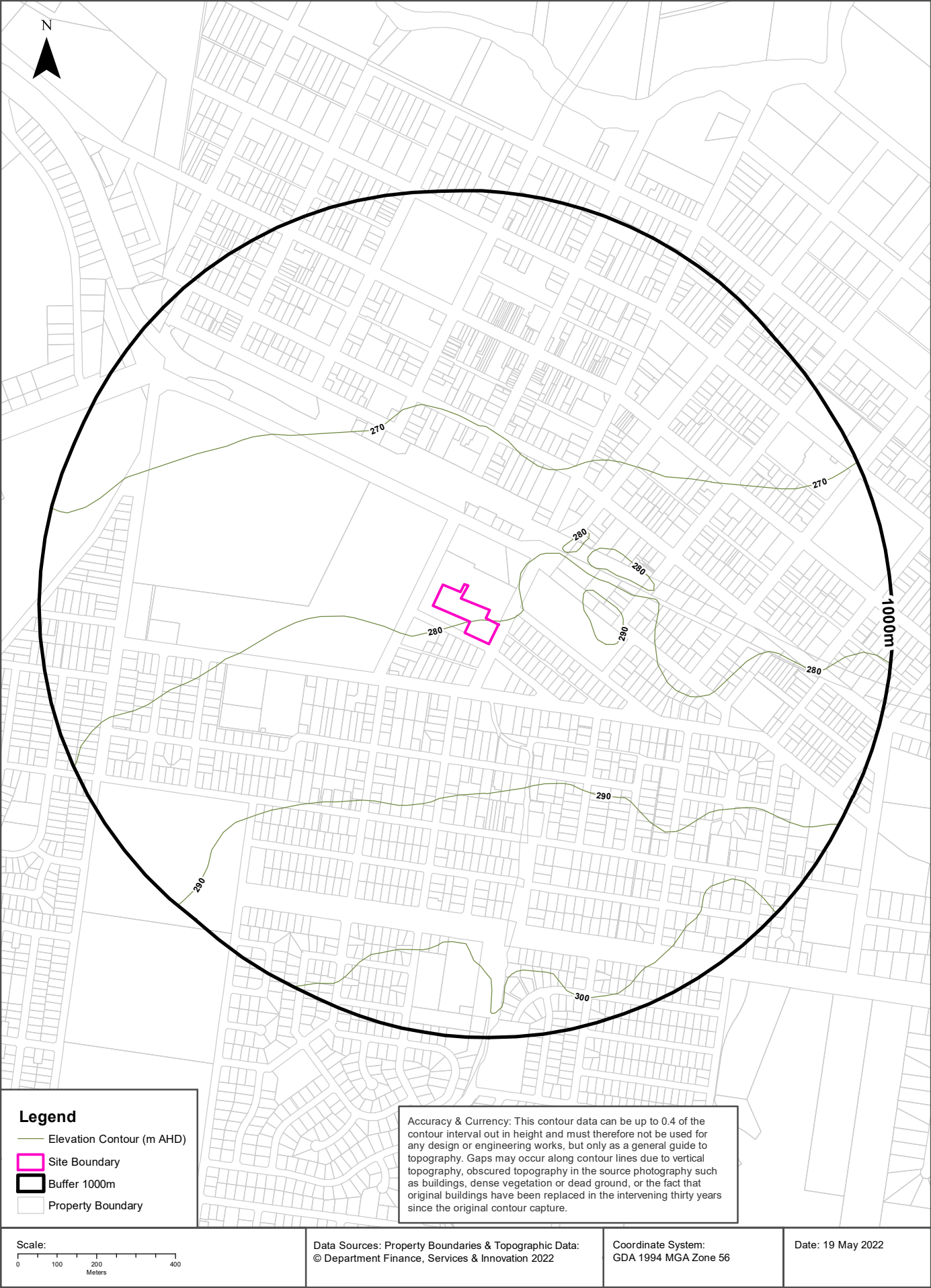
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

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

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Hydrogeology & Groundwater

10-24 Anzac Parade, Gunnedah, NSW 2380

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
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Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

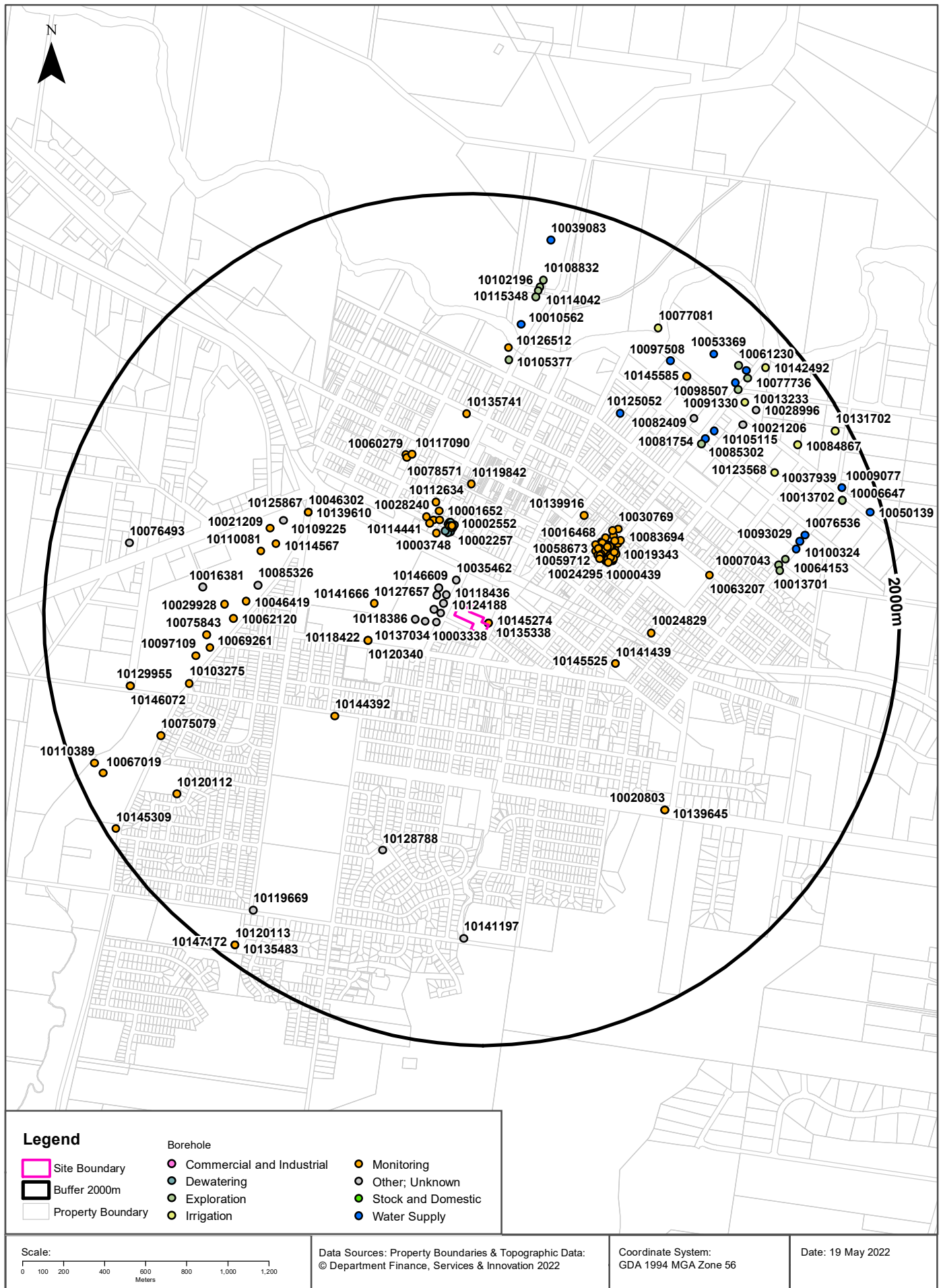
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

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

Groundwater Boreholes

10-24 Anzac Parade, Gunnedah, NSW 2380



Hydrogeology & Groundwater

10-24 Anzac Parade, Gunnedah, NSW 2380

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10135338	GW965534	Monitoring	Abandoned	02/02/2000	10.00		AHD				5m	East
10145274	GW965572	Monitoring	Unknown	06/05/2000	16.00		AHD				9m	East
10146073	GW965572	Monitoring	Unknown	06/05/2000	16.00		AHD				9m	East
10131162	GW966965	Unknown	Unknown	20/01/2005			AHD				66m	West
10124188	GW966967	Unknown	Unknown	20/01/2005			AHD				71m	North West
10118436	GW966968	Unknown	Unknown	20/01/2005			AHD				76m	North West
10003338	GW966964	Unknown	Unknown	20/01/2005			AHD				93m	West
10142933	GW966966	Unknown	Unknown	20/01/2005			AHD				102m	West
10127657	GW966969	Unknown	Unknown	20/01/2005			AHD				116m	North West
10035462	GW966970	Unknown	Unknown	20/01/2005			AHD				118m	North
10146609	GW966236	Unknown	Unknown				AHD				128m	North West
10137034	GW966963	Unknown	Unknown	20/01/2005			AHD				144m	West
10118386	GW966962	Unknown	Unknown	20/01/2005			AHD				190m	West
10011933	GW969176	Dewatering	Functioning	01/12/2008	8.50		AHD				354m	North
10003748	GW969175	Dewatering	Functioning	01/12/2008	8.60		AHD				356m	North
10084908	GW969177	Dewatering	Functioning	01/12/2008	8.50		AHD				363m	North
10004820	GW969164	Dewatering	Functioning	01/12/2008	7.90		AHD				365m	North
10068317	GW969883	Monitoring	Functional	03/11/2010	9.80		AHD			4.20	365m	North
10002257	GW969165	Dewatering	Functioning	01/12/2008	6.00		AHD			6.65	367m	North
10004677	GW969166	Dewatering	Functioning	01/12/2008	8.00		AHD				368m	North
10002939	GW969169	Dewatering	Functioning	01/12/2008	8.60		AHD			6.62	370m	North
10069968	GW969647	Monitoring	Functional	07/05/2008	10.00		AHD				374m	North
10002552	GW969170	Dewatering	Functioning	01/12/2008	8.60		AHD				376m	North
10044602	GW969648	Monitoring	Functional	07/05/2008	9.30		AHD				382m	North
10112953	GW969646	Monitoring	Functional	07/05/2008	8.50		AHD				383m	North
10116445	GW969171	Dewatering	Functioning	01/12/2008	8.50		AHD				383m	North
10028479	GW969035	Dewatering	Functioning	15/06/2009	11.00		AHD			6.50	384m	North
10091369	GW969172	Dewatering	Functioning	01/12/2008	15.00		AHD				385m	North
10003555	GW969645	Monitoring	Functional	06/05/2008	8.60		AHD				386m	North
10040111	GW969168	Dewatering	Functioning	01/12/2008	8.60		AHD			6.41	386m	North
10004619	GW969162	Dewatering	Functioning	01/12/2008	8.00		AHD			6.47	388m	North

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10141666	GW965533	Monitoring	Unknown	02/02/2000	10.00		AHD				393m	West
10026719	GW969173	Dewatering	Functioning	01/12/2008	8.50		AHD			6.15	394m	North
10034180	GW969167	Dewatering	Functioning	01/12/2008	8.60		AHD			6.24	395m	North
10001652	GW969174	Dewatering	Functioning	01/12/2008	8.50		AHD				401m	North
10069925	GW969163	Dewatering	Functioning	01/12/2008	8.00		AHD				402m	North
10114441	GW969882	Monitoring	Functional	03/11/2010	9.00		AHD			4.40	420m	North West
10050644	GW969877	Monitoring	Functional	02/11/2010	8.50		AHD			3.90	421m	North
10009465	GW969878	Monitoring	Functional	02/11/2010	8.20		AHD			3.80	429m	North
10118422	GW965571	Monitoring	Unknown	11/05/2000	30.00		AHD				439m	West
10120340	GW965571	Monitoring	Unknown	11/05/2000	30.00		AHD				439m	West
10028240	GW969879	Monitoring	Functional	03/11/2010	8.20		AHD			4.00	456m	North West
10011358	GW969881	Monitoring	Functional	03/11/2010	7.50		AHD			3.30	464m	North
10112634	GW969880	Monitoring	Functional	02/11/2010	8.80		AHD			2.80	510m	North
10119842	GW965541	Monitoring	Unknown	05/02/2000	7.00		AHD				584m	North
10116613	GW968921	Monitoring	Functional	17/07/2003	14.00	270.47	AHD			10.75	630m	North East
10058673	GW968982	Monitoring	Functional	03/03/1999	10.40		AHD				634m	North East
10059712	GW968972	Monitoring	Functional	22/10/2002	12.20		AHD			9.00	634m	North East
10025699	GW968923	Monitoring	Functional	01/09/2000	11.00		AHD			9.00	639m	North East
10047648	GW968970	Monitoring	Functional	22/01/1999	10.20		AHD				639m	North East
10051416	GW968973	Monitoring	Functional	22/10/2002	14.10		AHD			9.00	639m	North East
10040912	GW968981	Monitoring	Functional	03/03/1999	10.30		AHD				640m	North East
10053042	GW968968	Monitoring	Functional	21/01/1999	10.20		AHD				641m	North East
10116063	GW968980	Monitoring	Functional	16/05/2004	14.00		AHD				642m	North East
10037313	GW968920	Monitoring	Functional	20/07/2003	14.00	270.08	AHD			10.65	645m	North East
10141439	GW965568	Monitoring	Unknown	18/05/2000	24.00		AHD				648m	East
10145525	GW965568	Monitoring	Unknown	18/05/2000	24.00		AHD				648m	East
10036649	GW968976	Monitoring	Functional	19/07/2003	14.00		AHD			11.01	649m	North East
10098409	GW968928	Monitoring	Functional	01/09/2000	12.00		AHD			11.00	650m	North East
10113787	GW968974	Monitoring	Functional	15/07/2003	17.00		AHD			12.13	650m	North East
10000439	GW968987	Monitoring	Functional	24/03/2001	10.00		AHD			8.11	651m	North East
10024295	GW968983	Monitoring	Functional	08/10/2003	16.10		AHD			10.92	651m	North East
10037893	GW968969	Monitoring	Functional	22/01/1999	10.10		AHD				651m	North East
10065506	GW968979	Monitoring	Functional	19/04/2005	17.00		AHD				651m	North East
10013711	GW968924	Monitoring	Functional	17/07/2003	14.00	270.47	AHD			10.75	652m	North East
10105817	GW968975	Monitoring	Functional	17/07/2003	13.00		AHD			10.78	652m	North East

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10021721	GW968977	Monitoring	Functional	19/07/2003	14.00		AHD			11.92	658m	North East
10109649	GW968966	Monitoring	Functional	04/08/2006	15.50		AHD			13.50	658m	North East
10040704	GW968967	Monitoring	Functional	21/01/1999	10.20		AHD				659m	North East
10075015	GW968984	Monitoring	Functional	08/10/2003	18.00		AHD				659m	North East
10035774	GW968986	Monitoring	Functional	23/03/2001	12.00		AHD			7.79	660m	North East
10096853	GW968929	Monitoring	Functional	02/03/1999	10.30		AHD				660m	North East
10100478	GW968930	Monitoring	Functional	22/10/2002	13.50		AHD			9.00	660m	North East
10053838	GW968962	Monitoring	Functional	02/08/2006	15.50		AHD			12.00	664m	North East
10062736	GW968971	Monitoring	Functional	22/01/1999	10.20		AHD				664m	North East
10093468	GW968978	Monitoring	Functional	19/07/2003	14.00		AHD			12.58	664m	North East
10102266	GW968960	Monitoring	Functional	03/08/2006	15.50		AHD			12.00	665m	North East
10025209	GW968919	Monitoring	Functional	03/03/1999	10.30		AHD				666m	North East
10101799	GW968927	Monitoring	Functional	22/10/2002	12.70		AHD			9.00	667m	North East
10034927	GW968926	Monitoring	Functional	02/03/1999	10.40		AHD				668m	North East
10014527	GW968922	Monitoring	Functional	16/07/2003	14.50	269.49	AHD			10.95	669m	North East
10039120	GW968988	Monitoring	Functional	24/03/2001	18.00		AHD			11.87	673m	North East
10076598	GW968985	Monitoring	Functional	24/03/2001	9.25		AHD			8.06	673m	North East
10080281	GW968963	Monitoring	Functional	01/08/2006	16.50		AHD			12.00	674m	North East
10044318	GW968961	Monitoring	Functional	02/08/2006	15.50		AHD			12.50	675m	North East
10082335	GW968964	Monitoring	Functional	01/08/2006	16.80		AHD			15.25	678m	North East
10016468	GW968931	Monitoring	Functional	20/04/2005	14.00		AHD			11.20	680m	North East
10050682	GW968965	Monitoring	Functional	03/08/2006	15.50		AHD				680m	East
10087951	GW968955	Monitoring	Functional	24/03/2001	10.00		AHD			8.22	681m	North East
10099862	GW968959	Monitoring	Functional	09/10/2003	18.00		AHD				681m	North East
10075728	GW968932	Monitoring	Functional	07/09/2009	15.00		AHD			13.34	683m	North East
10104236	GW968958	Monitoring	Functional	31/08/2000	10.50		AHD			9.00	683m	North East
10036937	GW968954	Monitoring	Functional	10/10/2003	18.00		AHD				684m	North East
10017616	GW968957	Monitoring	Functional	25/03/2001	10.00		AHD			8.05	686m	North East
10089139	GW968956	Monitoring	Functional	25/03/2001	10.00		AHD			7.96	690m	North East
10022400	GW968939	Monitoring	Functional	07/11/2001	14.50		AHD				693m	North East
10059810	GW968934	Monitoring	Functional	22/10/2002	12.97		AHD			9.00	693m	North East
10115600	GW968933	Monitoring	Functional	03/03/1999	10.30		AHD				693m	North East
10059314	GW968944	Monitoring	Functional	10/05/2004	14.00		AHD				695m	North East
10139916	GW965540	Monitoring	Unknown	05/02/2000	10.00		AHD				695m	North East

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10090520	GW968935	Monitoring	Functional	20/04/2005	15.80		AHD				697m	North East
10088190	GW968940	Monitoring	Functional	14/05/2004	12.38		AHD				698m	North East
10020766	GW968951	Monitoring	Functional	09/10/2003	18.00		AHD			11.28	699m	North East
10025818	GW968942	Monitoring	Functional	16/07/2003	17.00		AHD			11.10	699m	North East
10070294	GW968941	Monitoring	Functional	14/05/2004	14.65		AHD				704m	North East
10099408	GW968943	Monitoring	Functional	14/08/2001	12.10		AHD			9.08	706m	North East
10021518	GW968949	Monitoring	Functional	10/10/2003	18.00		AHD			11.37	708m	North East
10106581	GW968953	Monitoring	Functional	09/10/2003	18.00		AHD			10.93	709m	North East
10032174	GW968938	Monitoring	Functional	06/11/2001	14.50		AHD				711m	North East
10020226	GW968952	Monitoring	Functional	14/08/2001	12.10		AHD			8.50	712m	North East
10077454	GW968950	Monitoring	Functional	09/10/2003	18.00		AHD			10.66	713m	North East
10019343	GW968946	Monitoring	Functional	01/09/2000	12.00		AHD			9.00	719m	North East
10110078	GW968945	Monitoring	Functional	07/11/2001	14.50		AHD				740m	North East
10082744	GW968948	Monitoring	Functional	13/05/2004	14.46		AHD			11.23	744m	North East
10041268	GW968936	Monitoring	Functional	06/11/2001	14.50		AHD				747m	North East
10070400	GW968937	Monitoring	Functional	07/09/2009	14.50		AHD				757m	North East
10078571	GW971104	Monitoring	Functional	14/07/2010	9.00		AHD			7.00	759m	North
10144392	GW965535	Monitoring	Unknown	02/02/2000	10.00		AHD				762m	South West
10083694	GW968947	Monitoring	Functional	13/05/2004	14.47		AHD			11.04	766m	North East
10117090	GW971106	Monitoring	Functional	14/07/2010	10.00		AHD			6.00	766m	North
10060279	GW971105	Monitoring	Functional	14/07/2010	9.00		AHD			7.00	773m	North
10030769	GW968925	Monitoring	Functional	01/09/2000	12.00		AHD			9.00	784m	North East
10024829	GW970235	Monitoring	Functional	07/12/2010	18.10		AHD				795m	East
10046302	GW965543	Monitoring	Unknown	10/02/2000	10.00		AHD				861m	North West
10125867	GW965573	Monitoring	Unknown	06/05/2000	16.00		AHD				861m	North West
10139610	GW965532	Monitoring	Unknown	10/02/2000	10.00		AHD				861m	North West
10135741	GW965542	Monitoring	Unknown	10/02/2000	8.00		AHD				928m	North
10114567	GW970245	Monitoring	Removed	25/05/2012	3.00		AHD				935m	West
10109225	GW966959	Unknown	Unknown	20/01/2005			AHD				949m	North West
10085326	GW966960	Unknown	Unknown	20/01/2005			AHD				968m	West
10021209	GW970240	Monitoring	Functional	24/05/2012	9.80		AHD				991m	North West
10110081	GW970243	Monitoring	Abandoned	24/05/2012	4.00		AHD				991m	West
10046419	GW970241	Monitoring	Functional	24/05/2012	5.50		AHD				1015m	West
10062120	GW970246	Monitoring	Removed	25/05/2012	3.00		AHD				1076m	West
10063207	GW965539	Monitoring	Abandoned	02/02/2000	10.00		AHD				1106m	East

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10029928	GW970244	Monitoring	Removed	24/05/2012	4.00		AHD				1119m	West
10128788	GW966234	Unknown	Unknown				AHD				1158m	South
10125052	GW027731	Water Supply	Removed	01/08/1966	9.40		AHD	1001-3000 ppm			1180m	North East
10069261	GW970239	Monitoring	Functional	24/05/2012	2.50		AHD				1200m	West
10105377	GW021084	Exploration	Proposed	01/09/1965	35.10		AHD				1205m	North
10075843	GW970247	Monitoring	Removed	24/05/2012	3.00		AHD				1209m	West
10020803	GW965538	Monitoring	Unknown	02/02/2000	10.00		AHD				1228m	South East
10139645	GW965566	Monitoring	Unknown	17/05/2000	24.00		AHD				1228m	South East
10016381	GW966961	Unknown	Unknown	20/01/2005			AHD				1232m	West
10126512	GW965580	Monitoring	Unknown	14/08/2002	18.00		AHD				1261m	North
10097109	GW970248	Monitoring	Removed	24/05/2012	3.00		AHD				1275m	West
10103275	GW970252	Monitoring	Removed	24/05/2012	3.00		AHD				1333m	West
10081754	GW012784	Exploration	Proposed	01/05/1939	18.30		AHD				1357m	North East
10010562	GW018479	Water Supply	Proposed	01/01/1961	20.90		AHD				1384m	North
10085302	GW018486	Water Supply	Proposed	01/05/1939	18.30		AHD				1387m	North East
10082409	GW901427	Other	Unknown	01/01/1993	12.00		AHD				1411m	North East
10007043	GW012785	Exploration	Proposed	01/05/1939	12.20		AHD				1444m	East
10013701	GW012782	Exploration	Proposed	01/05/1939	15.80		AHD				1444m	East
10105115	GW061049	Water Supply	Functioning	01/04/1985	20.70		AHD	Fair			1447m	North East
10064153	GW012786	Exploration	Proposed	01/05/1939	18.30		AHD				1483m	East
10141197	GW966235	Unknown	Unknown				AHD				1483m	South
10145585	GW965581	Monitoring	Unknown	14/08/2002	15.00		AHD				1527m	North East
10115348	GW012791	Exploration	Proposed	01/05/1939	11.30		AHD				1530m	North
10097508	GW018482	Water Supply	Proposed	01/05/1939	18.90		AHD				1531m	North East
10075079	GW970253	Monitoring	Removed	25/05/2012	3.00		AHD				1545m	West
10100324	GW018484	Water Supply	Proposed	01/05/1939	15.80		AHD				1546m	East
10114042	GW012787	Exploration	Proposed	01/05/1939	21.30		AHD				1561m	North
10093029	GW018487	Water Supply	Proposed	01/05/1939	12.20		AHD				1571m	East
10021206	GW028548	Other	Unknown	01/07/1968	19.50		AHD				1573m	North East
10123568	GW037354	Irrigation	Unknown	01/03/1973	15.20		AHD				1580m	North East
10102196	GW012789	Exploration	Proposed	01/05/1939	20.70		AHD				1582m	North
10076536	GW018488	Water Supply	Proposed	01/05/1939	18.30		AHD				1604m	East
10120112	GW965536	Monitoring	Abandoned	02/02/2000	6.00		AHD				1609m	South West
10129955	GW965567	Monitoring	Abandoned	18/05/2002	24.00		AHD				1614m	West
10146072	GW965567	Monitoring	Abandoned	18/05/2002	24.00		AHD				1614m	West
10108832	GW012790	Exploration	Proposed	01/05/1939	14.00		AHD				1618m	North

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10076493	GW024734	Unknown	Functioning	01/01/1941	32.30		AHD				1620m	West
10077081	GW901920	Irrigation	Unknown	10/12/1994	28.00		AHD		7.000	11.00	1625m	North East
10013233	GW062173	Irrigation	Functioning		8.50		AHD				1650m	North East
10091330	GW012781	Exploration	Proposed	01/05/1939	11.60		AHD				1664m	North East
10028996	GW008751	Unknown	Unknown	01/01/1961	13.40		AHD				1668m	North East
10098507	GW018481	Water Supply	Proposed	01/05/1939	14.60		AHD				1678m	North East
10053369	GW966786	Water Supply	Unknown				AHD				1695m	North East
10119669	GW966233	Unknown	Unknown	19/03/2004			AHD				1732m	South West
10077736	GW012779	Exploration	Proposed	01/05/1939	12.20		AHD				1736m	North East
10061230	GW012780	Exploration	Proposed	01/05/1939	18.90		AHD				1743m	North East
10084867	GW902040	Irrigation	Unknown	01/01/1987	25.00		AHD	Good	4.000	4.60	1744m	North East
10017791	GW018483	Water Supply	Proposed	01/05/1939	11.60		AHD				1756m	North East
10039083	GW018472	Water Supply	Proposed		61.00		AHD				1817m	North
10006647	GW012783	Exploration	Proposed	01/05/1939	16.80		AHD				1829m	East
10013702	GW018485	Water Supply	Proposed	01/05/1939	16.50		AHD				1829m	East
10142492	GW053350	Irrigation	Unknown	01/10/1981	25.00		AHD				1837m	North East
10009077	GW008750	Water Supply	Unknown	01/01/1961	13.70		AHD				1849m	East
10037939	GW018480	Water Supply	Proposed		13.40		AHD				1849m	East
10067019	GW970298	Monitoring	Removed	23/05/2012	2.00		AHD				1877m	South West
10110389	GW970299	Monitoring	Removed	23/05/2012	4.00		AHD				1895m	West
10120113	GW965570	Monitoring	Functional	10/05/2000	30.00		AHD				1921m	South West
10135483	GW965570	Monitoring	Functional	10/05/2000	30.00		AHD				1921m	South West
10147172	GW965570	Monitoring	Functional	10/05/2000	30.00		AHD				1921m	South West
10131702	GW053828	Irrigation	Decommissioned		32.00		AHD				1937m	North East
10050139	GW017092	Water Supply	Non-functional	01/09/1960	16.00		AHD	Potable			1939m	East
10145309	GW965537	Monitoring	Unknown	02/02/2000	7.00		AHD				1950m	South West

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Hydrogeology & Groundwater

10-24 Anzac Parade, Gunnedah, NSW 2380

Driller's Logs

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

NGIS Bore ID	Drillers Log	Distance	Direction
10135338	0.00m-2.00m silty/clay loam 2.00m-8.00m sily/clay 8.00m-9.00m silty/clay loam 9.00m-10.00m silty/clay	5m	East
10145274	0.00m-1.00m silty clay loam black 1.00m-2.00m clay/red with gravel 2.00m-5.00m silty clay with gravel mudstone/siltstone chips 5.00m-7.00m silty clay loam 7.00m-8.00m silty clay damp with gravel 8.00m-9.00m silty clay 9.00m-10.00m silty/sandy clay chert+qtz;weathered sandstone 10.00m-12.00m clay/sticky fine to medium gravel 12.00m-13.00m clay/with silt and sand 13.00m-13.50m basalt weathered 13.50m-16.00m basalt weathered	9m	East
10146073	0.00m-1.00m silty clay loam black 1.00m-2.00m clay/red with gravel 2.00m-5.00m silty clay with gravel mudstone/siltstone chips 5.00m-7.00m silty clay loam 7.00m-8.00m silty clay damp with gravel 8.00m-9.00m silty clay 9.00m-10.00m silty/sandy clay chert+qtz;weathered sandstone 10.00m-12.00m clay/sticky fine to medium gravel 12.00m-13.00m clay/with silt and sand 13.00m-13.50m basalt weathered 13.50m-16.00m basalt weathered	9m	East
10011933	0.00m-0.40m Fill 0.40m-5.20m Silty Clay, dark brown, medium-high plasticity 5.20m-8.50m Silty Clay, as above, red brown colour change at 5.2m	354m	North
10003748	0.00m-0.40m Fill 0.40m-4.80m Silty Clay, brown/dark brown, medium-high plasticity 4.80m-8.60m Silty Clay, as above, red brown colour change at 4.8m	356m	North
10084908	0.00m-0.40m Fill 0.40m-5.00m Silty Clay, brown/dark brown, high plasticity 5.00m-8.50m Silty Clay, red brown colour change at 5m	363m	North
10004820	0.00m-0.20m Fill, Sandy Gravel, orange brown, fine-medium grained, medium-coarse sand 0.20m-2.00m Silty Clay, dark brown, medium-high plasticity 2.00m-7.00m Clay, orange brown, medium plasticity with traces of some fine grained gravels 7.00m-8.80m Clay, Sandy Gravelly, orange brown, medium plasticity, medium-coarse sand, fine-medium gravel	365m	North
10068317	0.00m-0.20m Fill; Bitumen - roadbase with red brown clay & bituminous gravels, moist 0.20m-2.00m Clay; red brown, medium plasticity, with some fine sand & fine gravel, moist 2.00m-9.80m Clay; red brown, low to medium plasticity, with trace fine to medium sand, dry to wet (very stiff), Slight HC odour @ 4m	365m	North
10002257	0.00m-0.20m Fill, Clayey Sandy Gravel, orange brown, fine-medium, medium plasticity fines, coarse sands 0.20m-0.80m Silty Clay, dark brown/grey, high plasticity 0.80m-3.20m Clay, orange brown/red brown, high plasticity with traces of some fine gravels (Stiff) 3.20m-5.00m Clay, pale brown, high plasticity with some traces of medium-coarse sands 5.00m-6.00m Silty Clay, orange brown, high plasticity with traces of some hydrocarbon odour increasing with depth	367m	North
10004677	0.00m-0.20m Fill, Clayey Sandy Gravel, orange brown, fine-medium, medium plasticity fines, medium-coarse sands 0.20m-0.90m Silty Clay, dark brown/grey, high plasticity 0.90m-3.50m Clay, orange brown, high plasticity with traces of some fine grained gravels 3.50m-5.20m Clay, pale brown, high plasticity with traces of some medium-coarse grained sands 5.20m-8.00m Silty Clay, dark brown, high plasticity with traces of some moderate hydrocarbon odour from 6m	368m	North
10002939	0.00m-0.30m Fill, Gravelly Sand, brown/dark brown, fine-coarse, fine-medium gravels with traces of medium plasticity clay fines 0.30m-2.50m Silty Clay, brown, medium-high plasticity 2.50m-4.50m Silty Clay, as above, red brown from 2.5m 4.50m-8.60m Silty Clay, as above, brown/yellow brown from 4.5m (Strong odour)	370m	North

NGIS Bore ID	Drillers Log	Distance	Direction
10069968	0.00m-1.00m Gravel, sandy, brown, fine to coarse sand 1.00m-2.00m Sandy Clay, brown, medium plasticity, coarse sand 2.00m-7.00m Clay, brown, high palsticity, with fine to coarse sand 7.00m-10.00m Clay, grey, high plasticity, with fine to coarse sand, strong hydrocarbon odour	374m	North
10002552	0.00m-0.40m Fill, Gravelly Sand, brown, fine-coarse, fine-medium gravels 0.40m-3.00m Silty Clay, brown, high plasticity 3.00m-8.60m Silty Clay, yellow brown from 3m	376m	North
10044602	0.00m-1.00m Gravel, sandy, brown, fine to coarse gravel, fine to coarse sand 1.00m-2.00m Sandy Clay, brown, medium plasticity, coarse sand 2.00m-8.00m Silty Clay, brown, high plasticity, low liquid limit fines, trace of calcareous inclusions @ 5m, moderate HC odour @ 5.2 8.00m-11.00m Clay, grey, mottled brown, high plasticity, with fine to coarse sand & fine to medium gravel throughout	382m	North
10112953	0.00m-1.00m Gravel, sandy, brown, fine to coarse gravel, fine to coarse sand 1.00m-2.00m Sandy Clay, brown, medium plasticity, coarse sand 2.00m-4.00m Clay, brown, medium to high plasticity, with fine to medium gravel & medium to coarse sand 4.00m-9.00m Clay, brown, hgh plasticity, with fine to coarse sand, moderate to strong hydrocarbon odour	383m	North
10116445	0.00m-0.40m Fill, Gravelly Sand, brown, fine-coarse, fine-medium gravels 0.40m-4.00m Silty Clay, brown, high plasticity with traces of coarse sands & fine gravels with possible calcareous inclusions 4.00m-8.50m Silty Clay, as above, brown/yellow from 4m	383m	North
10028479	0.00m-3.00m Silty Clay, dark brown, medium-high plasticity 3.00m-9.00m Silty Clay, dark brown, high plasticity 9.00m-11.00m Gravel & Clay bands, fine-coarse gravel	384m	North
10091369	0.00m-3.00m Silty Clay, dark brown, medium-high plasticity 3.00m-6.00m Silty Clay, as above, moderate hydrocarbon odour at 3m 6.00m-7.50m Silty Clay, as above, very stiff from 6m. 7.50m-9.00m Silty Clay, as above, strong hydrocarbon odour from 7.5m & soft from 7.5-11m 9.00m-10.20m Silty Clay, as above, gravel band from 9-9.2m 10.20m-12.50m Silty Clay, as above, gravel band from 10.2-10.4m 12.50m-15.00m Silty Clay, as above, gravel band from 12.5-12.7m	385m	North
10003555	0.00m-0.80m Gravel, sandy, brown, fine to coarse gravels, fine to coarse sand 0.80m-2.00m Sandy Clay, brown, medium to high plasticity, coarse sand 2.00m-7.00m Silty Clay, brown, medium plasticity, low liquid limit fines, trace of fine gravel, calcareous inclusions @ 4m. 7.00m-8.60m Silty Clay, brown with grey mottling, high plasticity, low liquid limit fines, slightly hydrocarbon odour	386m	North
10040111	0.00m-0.30m Fill, Gravelly Sand, brown/orange brown, fine-coarse, fine-medium gravels, with traces of medium plasticity fines 0.30m-1.60m Silty Clay, brown, medium-high plasticity 1.60m-4.50m Silty Clay, as above, red brown from 1.6m 4.50m-8.60m Silty Clay, as above, brown/yellow brown from 4.5m.	386m	North
10004619	0.00m-0.10m Fill, Sandy Gravel, orange brown, fine-medium grained, medium-coarse sand 0.10m-2.20m Silty Clay, dark brown, medium-high plasticity 2.20m-7.00m Clay, orange brown, medium plasticity with traces of some fine grained gravels & a possible light fraction hydrocarbon o 7.00m-8.00m Clay, Sandy Gravelly, orange brown, medium plasticity, fine-medium grained gravel, coarse sand	388m	North
10141666	0.00m-1.00m silty/clay with sand 1.00m-2.00m silty/clay with sand brown 2.00m-3.00m silty/clay 3.00m-4.00m silty/clay gravelly 4.00m-5.00m gravelly/silty/clay 5.00m-6.00m silty/clay with gravel 6.00m-10.00m silty/clay	393m	West
10026719	0.00m-0.10m Fill, Gravel, grey, fine-medium 0.10m-0.30m Fill, Gravelly Sand, brown/red brown, fine-coarse, fine-medium 0.30m-2.00m Silty Clay, dark brown, high plasticity 2.00m-4.50m Silty Clay, as above, hard band from 2-2.5m 4.50m-8.50m Silty Clay, as above, red brown colour change at 4.5m	394m	North
10034180	0.00m-0.60m Fill, Gravelly Sand, brown/dark brown, fine-coarse, fine-medium gravels, with some medium plasticity clays 0.60m-0.80m Silty Clay, brown, high plasticity 0.80m-4.00m Silty Clay, as above, red brown tinge from 0.8m. 4.00m-8.60m Silty Clay, as above, brown/yellow at 4m with traces of fine-medium sands	395m	North
10001652	0.00m-0.20m Fill, Gravelly Sand, dark brown, fine-coarse, fine-medium gravels 0.20m-4.50m Silty Clay, brown/orange brown, medium-high plasticity 4.50m-8.50m Silty Clay, as above, red brown colour change at 4.5m	401m	North
10069925	0.00m-0.15m Fill, Sandy Gravel, orange brown, fine to medium grained, medium to coarse sand 0.10m-2.00m Silty Clay, dark brown, medium to high plasticity 2.00m-7.20m Clay, orange brown, medium plasticity with traces of some fine grained gravel 7.20m-8.80m Clay, Sandy Gravelly, orange brown, medium plasticity, coarse sand, fine-medium gravel	402m	North
10114441	0.00m-0.15m Topsoil; grass cover with red brown, moist, medium plasticity clay 0.15m-3.00m Clay; red brown, medium plasticity, dry 3.00m-6.70m Clay; red brown, medium plasticity, with minor subangular-subrounded fine gravels (ironstone), mosit, HC odour at 3.4m 6.70m-7.20m Clay; red brown, very stiff, low palsticity, moist to wet, strong HC odour at 6.7m 7.20m-9.00m Clay; red brown, medium plasticity, with some subangular fine gravel (ironstone), wet	420m	North West

NGIS Bore ID	Drillers Log	Distance	Direction
10050644	0.00m-0.20m Fill; black/brown, sandy gravel (roadbase) 0.20m-2.20m Clay; red/brown, medium plasticity, with minor fine to coarse sand & medium to coarse gravels, dry, contamination observ 2.20m-6.80m Clay; red/brown, low plasticity, with minor fine to medium subangular ironstone gravels, dry. Trace black coal gravels 6.80m-8.50m Sandy Clay; red/brown clay with some fine to coarse sand & fine ironstone gravels, moist becoming wet after 8m	421m	North
10009465	0.00m-0.20m Topsoil; dark brown clay with grass cover, moist 0.20m-3.80m Clay; red brown, medium plasticity, moist 3.80m-6.50m Clay; red brown, medium plasticity, dry with some sand & trace silt, slight HC odour at 4.8m & HC odour at 6m 6.50m-8.20m Silty Clay; red brown, very wet	429m	North
10118422	0.00m-1.00m clay silty black 1.00m-4.00m clay/yellow brown with gravel layer 4.00m-5.00m clay/with gravel layer 5.00m-10.00m silty clay red brown with gravel weathered sandstone 10.00m-12.00m sandstone lithic red brown and mudstone 12.00m-14.00m same as above with gravel 14.00m-18.00m clay/pink gravelly with white flakes 18.00m-20.00m mudstone/sandstone weathered with gravel (damp) 20.00m-24.00m clay/sticky with gravel 24.00m-27.00m as above with white flakes 27.00m-30.00m clay/with gravel	439m	West
10120340	0.00m-1.00m clay silty black 1.00m-4.00m clay/yellow brown with gravel layer 4.00m-5.00m clay/with gravel layer 5.00m-10.00m silty clay red brown with gravel weathered sandstone 10.00m-12.00m sandstone lithic red brown and mudstone 12.00m-14.00m same as above with gravel 14.00m-18.00m clay/pink gravelly with white flakes 18.00m-20.00m mudstone/sandstone weathered with gravel (damp) 20.00m-24.00m clay/sticky with gravel 24.00m-27.00m as above with white flakes 27.00m-30.00m clay/with gravel	439m	West
10028240	0.00m-0.20m Topsoil; red brown, medium plasticity moist clay, with minor fine to coarse sand 0.20m-6.50m Clay; red brown, medium to low plasticity, with trace fine to medium sand, dry 6.50m-8.50m Clay; red brown, medium to low palsticity clay with trace fine sand, moist to wet at 7.6m	456m	North West
10011358	0.00m-0.20m Topsoil; grass cover with red brown medium plasticity clay, with some fine sand & gravels, moist 0.20m-2.15m Clay; red brown, with some fine to medium sand & gravels, moist 2.15m-4.80m Clay; red brown, with trace fine sand & gravel, dry to moist 4.80m-7.50m Clay; red brown, low plasticity, with trace sand & fine gravel, moist to wet	464m	North
10112634	0.00m-0.20m Fill; Bitumen & roadbase 0.20m-3.30m Clay; red brown, stiff with minor fine grained sand, moist 3.30m-4.00m Clay; red brown, stiff, with minor subrounded gravel (basalt), dry 4.00m-4.80m Clay, Gravelly; red brown, stiff, high plasticity, with fine to coarse sand & medium gravel, dry 4.80m-7.10m Clay; red brown, medium to high plasticity (stiff), with fine to medium sand, becoming moist 7.10m-7.90m Clay; red brown, stiff, with minor fine to coarse sandy & subrounded gravels, including sandstone & small coal fragments 7.90m-9.00m Sand, Silty; light brown to yellow, fine grained, with trace fine gravel, wet	510m	North
10119842	0.00m-1.00m silty/clay 1.00m-2.00m clay/brown with sand 2.00m-3.00m clay/brown with gravel 3.00m-4.00m clay/brown with sand and gravel 4.00m-5.00m silty/clay brown 5.00m-7.00m clay/brown	584m	North
10116613	0.00m-1.00m Silty Clay, soft, moist, high plasticity, red brown 1.00m-1.10m Silty Clay, with minor Gravel, slightly moist, red brown 1.10m-2.00m Silty Clay, with minor Sand, stiff, slightly moist, red brown 2.00m-4.00m Silty Clay, stiff, slightly moist, red brown 4.00m-6.00m Sand, Silty Clayey, dense, slightly moist, brown 6.00m-8.00m Gravel, with minor Silt & Clay, dense, slightly moist, grey brown 8.00m-10.00m Sand, with minor Silt & Clay, dense, slightly moist, grey brown 10.00m-14.00m Silty Clay, with minor Gravel, stiff, moist to slightly moist, brown	630m	North East
10058673	0.00m-0.50m Fill, Gravel & Sand, orange/brown, moist, soft. 0.50m-2.00m Clay, hard, red/grey, moist, low plasticity 2.00m-10.40m Clay, brown to brown/orange, slightly moist to dry, very minor sandy clay layers & sandy gravel layers. Water at 8.1m	634m	North East
10059712	0.00m-1.00m Sand; red brown, friable, loose, no odour. 1.00m-2.50m Rock fragments, calcite/ironstone, white, hard 2.50m-6.50m Sandy Clay; red brown, slightly damp, soft, firm. 6.50m-8.00m Rock fragments, calcite/ironstone 8.00m-12.20m Sandy Clay, damp, soft, red brown	634m	North East
10025699	0.00m-1.00m Fill; Gravel & Sand, dry, brown/ligh grey. Strong HC odour 1.00m-4.50m Clay; mid brown, stiff, slightly damp. Strong HC odour 4.50m-8.00m Clay; red brown, minor Gravel, damp, firm. Strong odour. 8.00m-11.00m Clay; brown, semi plastic, pedal, stiff, slightly moist	639m	North East

NGIS Bore ID	Drillers Log	Distance	Direction
10047648	0.00m-7.80m Clay; dark red/brown, dry to slightly moist, loose, becoming dense & stiff with depth, minor gravel 7.80m-9.00m Sandy Clay; slightly moist, brown, soft to moderate, water at 9m 9.00m-10.20m Sandstone, weathered; moist, soft, brown, minor hard dense fractures	639m	North East
10051416	0.00m-1.00m Soil; red brown 1.00m-1.50m Sand; minor gravel & clay, dry 1.50m-14.10m Clay; friable, loose, tiny interbands of gravel	639m	North East
10040912	0.00m-1.00m Gravel, sandy & clay; light brown, moist, soft, possibly fill 1.00m-2.20m Clay, red, hard, slightly moist, low plasticity 2.20m-10.30m Clay & Gravel beds, Clay is brown, slightly moist to dry, hard. Gravel up to 0.1m subrounded to subangular, med-coarse.	640m	North East
10053042	0.00m-10.20m Clay; dark red-brown, dry to slightly moist, loose, minor gravel, fill to about 3m.	641m	North East
10116063	0.00m-1.00m Sand, silty with Gravel, brown, dry, ~50% sand, 20-30% gravel, 20-30% silt & clay, stiff 1.00m-3.50m Sand, silty with Gravel, brown, slightly moist, ~50% sand, 10-20% gravel, 40% silt & clay, stiff, slightly odour at 2m 3.50m-5.00m Sand, silty, yellowish brown, dry, 60% sand, 30-40% silt & clay, <10% gravel, moderately loose 5.00m-14.00m Gravel, silty with Sand, brown, 15-40% silt & clay, 30-40% sand, 40-60% gravel with cobbles, hydrocarbon odour 12-12.75m	642m	North East
10037313	0.00m-1.00m Sand, Silty Clayey, loose, dry, red brown 1.00m-2.00m Gravel, Silty Clayey, dense, dry, red brown 2.00m-4.00m Silty Clay, stiff, slightly moist, low plasticity, red brown 4.00m-6.00m Gravel, Silty Clayey, very dense, slightly moist, red brown 6.00m-10.00m Silty Clay, with minor sand & gravel, very stiff, slightly moist, zero to low plasticity, brown 10.00m-14.00m Silty Clay, with minor sand & gravel, very stiff, slightly moist to moist, moderate plasticity, brown	645m	North East
10141439	0.00m-1.00m silty clay with sand dark brown 1.00m-5.00m silty clay with sand and gravel dark brown 5.00m-6.00m silty clay brown 6.00m-7.00m silty clay brown with white flakes 7.00m-9.00m silty clay dark brown 9.00m-10.00m clay 10.00m-11.00m silty clay with interstratified layers 11.00m-13.00m silty clay with basalt fragments 13.00m-19.00m basalt/weathered 19.00m-24.00m basalt	648m	East
10145525	0.00m-1.00m silty clay with sand dark brown 1.00m-5.00m silty clay with sand and gravel dark brown 5.00m-6.00m silty clay brown 6.00m-7.00m silty clay brown with white flakes 7.00m-9.00m silty clay dark brown 9.00m-10.00m clay 10.00m-11.00m silty clay with interstratified layers 11.00m-13.00m silty clay with basalt fragments 13.00m-19.00m basalt/weathered 19.00m-24.00m basalt	648m	East
10036649	0.00m-1.50m Silty Clay with minor Sand, soft to stiff, slightly moist, red brown 1.50m-3.00m Silty Clay with minor Sand & Gravel, hard to soft, slightly moist, brown 3.00m-4.00m Gravel, Sandy with minor Silt & Clay, medium dense, slightly moist to dry, brown 4.00m-8.00m Sand, Silty Clayey, loose, slightly moist to dry, brown 8.00m-9.50m Sand, with minor Silt & Clay, very dense, dry, brown/grey 9.50m-11.00m Gravel, Sandy, very dense, dry, grey brown 11.00m-11.50m Gravel with minor Silt & Clay, loose, slightly moist, grey brown 11.50m-12.00m Sand, with minor Silt & Clay, loose, slightly moist, brown 12.00m-14.00m Gravel, Silty Clayey, loose, moist, brown	649m	North East
10098409	0.00m-1.00m Fill; Gravel & Sand, dry, loose, speckled brown light grey 1.00m-4.50m Clay, red brown, stiff, slightly damp 4.50m-8.00m Clay, red brown, minor Gravel, damp, firm 8.00m-12.00m Clay, brown, semi plastic, pedal, stiff, slightly moist	650m	North East
10113787	0.00m-2.00m Silty Clay; stiff to very stiff, dry, red brown 2.00m-7.50m Silty Clay, stiff, dry, red brown 7.50m-10.00m Silt, with minor Clay, sand & white gravel, stiff to hard, dry to slightly moist, red brown/white 10.00m-13.00m Silt, Sandy with minor clay & gravel, hard, slightly moist, red brown/white 13.00m-13.50m Silty Clay with minor Sand & Gravel, soft, moist, red brown/white 13.50m-17.00m Gravel, Silty Clayey with minor Sand, soft, very moist, red brown/pink/white	650m	North East
10000439	0.00m-0.10m Sand, with minor Gravel, loose, slightly moist, grey (Fill) 0.10m-1.50m Sandy Silty Clay with minor Gravel, very stiff, slightly moist, red brown 1.50m-3.50m Sand, Silty with minor Gravel, very dense, slightly moist, red brown 3.50m-4.80m Sand, with minor Gravel, dense, slightly moist, orange brown 4.80m-6.00m Sand, Silty with minor Clay & Gravel, hard, slightly moist brown 6.00m-7.20m Boulder, hard, brown ('Floater') 7.20m-10.00m Silt, sandy with minor Gravel, very dense, very moist to saturated, brown.	651m	North East

NGIS Bore ID	Drillers Log	Distance	Direction
10024295	0.00m-2.00m Sand, silty, reddish brown, damp, 60% fine sand, 30% silt, 10% clay, stiff 2.00m-4.00m Gravel, silty with Sand, yellowish brown, damp, 5% clay, 15% silt, 20% fine-medium sand, 60% fine-coarse gravel, dense 4.00m-9.00m Sand, silty, yellowish brown, damp, 5% clay, 15% silt, 80% fine sand, trace fine gravel, dense 9.00m-10.00m Sand, silty with Gravel, greyish orange, damp, 15% silt, 55% med-coarse sand, 30% fine gravel, med dense 10.00m-11.50m Sand, silty, yellowish brown, damp, 15% silt, 80% fine-coarse sand, 5% fine-coarse gravel, medium dense 11.50m-16.10m Granite, pale yellowish brown, moist, moderately weathered, 12-14m larg chips indicating fractured, 14-16m mod-fresh gra	651m	North East
10037893	0.00m-5.50m Clay; dark red/brown, dry to slightly moist, loose, becoming dense & stiff with depth, minor gravel. HC odour from 3m 5.50m-7.50m Clay, as above, increase in gravel content 7.50m-10.10m Clay; as above, slightly moist, HC odour. Water at 9m	651m	North East
10065506	0.00m-2.25m Silty Clay; red-brown, stiff, dry. 2.25m-2.50m Gravel, Clayey Sandy; red-brown, poorly sorted, dry. 2.50m-4.00m Silt; minor Clay present, red, stiff, dry. 4.00m-7.00m Gravel, Clayey Silty; red-brown, poorly sorted, subangular, dry. 7.00m-9.50m Silt; red-brown, some white Gravel present, HC odour & increasing with depth. 9.50m-10.00m Silt: as above; cobbles & Gravel present 10.00m-11.50m Silt, Sandy Clayey; white-grey, HC odour. 11.50m-17.00m Rock; weathered, poorly sorted, angular.	651m	North East
10013711	0.00m-1.00m Silty Clay, soft, moist, red brown 1.00m-1.10m Silty Clay, with minor Gravel, very stiff to hard, slightly moist, red brown 1.10m-2.00m Silty Clay, with minor Sand, stiff, slightly moist, red brown 2.00m-4.00m Silty Clay, stiff, slightly moist, red brown 4.00m-6.00m Silty Clayey Sand, dense, slightly moist, brown 6.00m-8.00m Gravel, with minor Silty & Clay, dense, slightly moist, grey brown 8.00m-10.00m Sand, with minor Silt & Clay, dense, slightly moist, grey brown 10.00m-14.00m Silty Clay, with minor Gravel, stiff, moist to slightly moist, brown	652m	North East
10105817	0.00m-0.50m Silty Clay; soft, moist, red brown 0.50m-1.00m Silty Clay, with minor Sand & Gravel; stiff, slightly moist, red brown 1.00m-2.00m Gravelly Silty Clay with minor Sand; medium dense, slightly moist, brown 2.00m-8.00m Gravelly Sandy Silty Clay; stiff, slightly moist, brown 8.00m-11.00m Sand, Gravelly with minor Silt & Clay; very dense, dry to slightly moist, grey brown 11.00m-13.00m Gravelly Sandy Silty Clay; hard, slightly moist, grey brown	652m	North East
10021721	0.00m-1.00m Silty Clay with minor Sand; soft to stiff, slightly moist, red brown 1.00m-4.00m Silty Clayey Gravelly Sand; loose, dry, brown 4.00m-6.00m Gravelly Sand with minor Silt & Clay; loose, dry, brown 6.00m-7.50m Sand with minor Silt & Clay; soft, dry, brown 7.50m-11.00m Gravelly Sand; very dense, dry, grey brown 11.00m-14.00m Silty Clayey Gravelly Sand; loose to very dense, slightly moist, brown to brown/grey	658m	North East
10109649	0.00m-6.25m Silty Clay; red/brown, moist, firm, alluvial origin. clay becoming stiff at 2m. 6.25m-7.75m Silty Sandy Clay; grey/reddish brown, moist, fine-coarse sand, very stiff, alluvial origin 7.75m-9.50m Sandy Gravelly Clay; grey/brown & speckled white, moist, fine-coarse sand, alluvial origin 9.50m-13.50m Gravelly Sandy Clay; grey/white/brown, moist, fine-coarse sand, fine-coarse gravel, well graded, very stiff, alluvial or 13.50m-15.50m Silty Clay; grey/brown/yellow, very moist, moderate plasticity, soft, alluvial origin, some fine-medium sand also presen	658m	North East
10040704	0.00m-10.00m Clay; dark red/brown, dry to slightly moist, stiff & dense. Gravel at 6m, Water at 9.4m 10.00m-10.20m Bedrock, saturated, strong HC odour	659m	North East
10075015	0.00m-2.20m Silt, clayey; dark red brown, 70% silt, 30% clay, dry, indurated, stiff 2.20m-3.50m Silt & Gravel; 10-15% trace angular gravel, damp 3.50m-4.50m Clayey Sandy Silt; dark yellowish orange, 60% silt, 35% clay, 5% fine sand, laminated, stiff 4.50m-7.00m Clayey Silty Sandy; yellowish brown, 60% fine sand, 25% silt, 5% clay, 10% fine gravel, naturally indurated, medium dens 7.00m-8.50m Gravel, silty with Sand; pale reddish brown, 60% fine to coarse gravel, 25% fine sand, 15% silt, indurated 8.50m-18.00m Granite; light olive, ferruginous & limonite stain, weathered.	659m	North East
10035774	0.00m-0.10m Sand, silty, loose, slightly moist, brown (Fill) 0.10m-1.00m Sandy Silty Clay, very stiff, slightly moist, red brown. 1.00m-3.50m Sandy Silty Clay with minor Gravel, very stiff, slightly moist, red brown 3.50m-4.50m Grave with minor Sand, Silt & Clay, dense, slightly moist, red brown 4.50m-8.00m Sand, fine with minor Silt & Gravel, dense, moist, brown 8.00m-12.00m Sand, silty with minor Gravel, medium dense, very moist to saturated, brown.	660m	North East
10096853	0.00m-0.20m Fill; Gravel & Clay, brown 0.20m-2.10m Clay, brown/red, ahrd, dry to slightly moist 2.10m-10.30m Clay, light brown, with Gravel layers upt o 30cm thick.	660m	North East
10100478	0.00m-2.00m Clay, red brown 2.00m-6.00m Sandy Clay, yellow brown 6.00m-7.20m Gravel, hard round, alluvial white & grey 7.20m-13.50m Clayey Sand, grey brown	660m	North East

NGIS Bore ID	Drillers Log	Distance	Direction
10053838	0.00m-5.75m Silty Clay; red/brown, moist, firm, alluvial origin 5.75m-8.75m Silty Sandy Clay; grey/red/brown, moist, fine-medium sands, very stiff, alluvial origin. Trace gravel present 8.75m-10.50m Clayey Sandy Gravel; brown with yellow staining, dry-moist, fine-coarse sands, fine-coarse gravels, well graded, alluvia 10.50m-13.00m Gravelly Sandy Clay; red/brown, moist, fine-coarse sands, fine gravels, poorly graded, alluvial origin 13.00m-14.00m Sandy Clay; red/brown speckled yellow, saturated, fine-coarse sands, alluvium 14.00m-15.50m Silty Sandy Clay; yellow/brown, moist, fine-medium sands, soft, alluvial/weathered dacite origin	664m	North East
10062736	0.00m-10.20m Clay; red/brown, dry to slightly moist, firm. Moist at 9m.	664m	North East
10093468	0.00m-0.50m Silty Clay; soft, slightly moist, red brown 0.50m-1.00m Silty Clay, with minor Gravel; soft, slightly moist, red brown 1.00m-6.50m Silty Clay with minor Gravel & Sand; soft, dry to slightly moist, red brown to brown 6.50m-7.00m Silty Clay with minor Gravel & Sand; hard, dry, grey brown 7.00m-8.50m Silty Clay with minor Gravel & Sand; soft to hard, slightly moist, brown/grey to grey brown 8.50m-14.00m Silty Clay with minor Gravel & Sand; soft to very stiff, grey brown to brown to grey	664m	North East
10102266	0.00m-5.75m Silty Clay; red/brown, dry to moist, firm, alluvial origin 5.75m-9.00m Silty Sandy Clay; grey & red/brown, moist, fine-coarse sand, very stiff, alluvial origin 9.00m-11.75m Sandy Gravelly Clay; brown with white speckling, moist, fine-coarse sand, fine-coarse gravels, well graded, very stiff, 11.75m-12.75m Sandy Clay; red/brown, moist to saturated, fine-coarse sand, very stiff, alluvial origin, some fine gravel present 12.75m-14.75m Gravelly Sandy Clay; grey/white, saturated, fine-coarse sand, fine-coarse gravels, stiff, alluvial origin 14.75m-15.50m Silty Clay; brown with white mottling, dry to moist, soft, some fine-medium sand also present	665m	North East
10025209	0.00m-0.30m Fill, gravel & sand, moist to wet 0.30m-2.20m Clay, red, slightly moist, no plasticity, minor gravel 2.20m-10.30m Sand/Gravel & Clay beds, Clay is light to dark brown, slightly moist to dry. Water at 7.9m	666m	North East
10101799	0.00m-1.50m Clay, red brown, firm-stiff, no odour, minor Fe stone fragments 1.50m-3.20m Clay, yellow brown, minor fragments 3.20m-5.50m Gravel; grey-brown, very round (Conglomerate) 5.50m-9.20m Gravel, light grey & minor Clay & Sand, no odour 9.20m-12.70m Gravel, as above, damp, HC odour	667m	North East
10034927	0.00m-1.90m Clay; red to brown, hard, slightly moist 1.90m-3.10m Clay & Gravel, light brown, slightly moist to dry. Gravel is angular & fine 3.10m-4.80m Clay; brown, slightly moist, minor Sand, stiff 4.80m-9.90m Clay, Gravelly, dry, light brown to brown, interbedded. Water at 8.5m 9.90m-10.40m Clay; moist, dark brown, slightly plastic, stiff	668m	North East
10014527	0.00m-2.00m Gravel, Silty Clayey, slightly moist, red brown 2.00m-4.00m Silty Clay, with minor Gravel, very stiff, slightly moist, red brown 4.00m-8.00m Sand, Silty Clayey, dense, slightly moist, brown 8.00m-10.00m Sand, Silty Clayey Gravelly, dense, slightly moist, brown 10.00m-11.50m Sandy Silty Clay, with minor Gravel, very stiff, slightly moist, grey brown 11.50m-12.00m Sandy Silty Clay, very stiff, moist, moderate plasticity, grey brown 12.00m-14.00m Silty Clay, Sandy gravelly, very stiff, slightly moist, grey brown 14.00m-14.50m Sandy Silty Clay, very stiff, dry, grey brown	669m	North East
10039120	0.00m-4.50m Silt, sandy, reddish brown, 60% silt, 40% fine sand, stiff, damp 4.50m-9.00m Gravel, Silty with Sand, pale reddish brown, 60% fine to coarse gravel, 25% fine sand, 15% silt, indurated, very hard dr 9.00m-18.00m Granite, light olive grey, moderately weathered, some feldspar breakdown to clay. 13-14m HC staining, greyish green	673m	North East
10076598	0.00m-0.20m Sand, with minor Gravel, loose, slightly moist, brown (Fill) 0.20m-3.50m Sandy Silty Clay with minor Gravel, stiff to very stiff, slightly moist, low palsticity, red brown to brown 3.50m-4.00m Gravel, Sandy Silty, medium dense, slightly moist, brown 4.00m-5.75m Sandy Silty Clay with minor Gravel, very stiff, slightly moist, low plasticity, brown 5.75m-6.25m Siltstone with minor Gravel, hard, slightly moist to dry, brown (Rock) 6.25m-9.00m Silt, sandy with minor Clay & Gravel, hard, slightly moist, brown. 9.00m-9.25m Siltstone, weathered, hard, slightly moist to dry, brown (Bedrock)	673m	North East
10080281	0.00m-0.75m Sandy Clay; red/brown, moist, fine sands, stiff, fill origin, some fine gravel present 0.75m-4.50m Silty Clay; red/brown, some yellow staining, moist, stiff, alluvial origin, some fine-coarse sands present 4.50m-5.50m Sandy Clay; red/brown, moist, fine-medium sand with some coarse, stiff to very stiff, alluvial origin. 5.50m-7.50m Sandy Gravelly Clay; grey/brown, moist, fine-coarse sands, fine-coarse gravels, very stiff, alluvial origin 7.50m-12.50m Sandy Gravelly Clay; grey/brown, slightly moist, fine-coarse sands, fin-coarse gravels, well graded, very stiff, alluvia 12.50m-14.50m Gravelly Sandy Clay; green/white/grey, saturated, fine-coarse sands, fine-coarse gravels, well graded, stiff, alluvial o 14.50m-16.50m Clayey Sand; dark grey/brown, moist with saturated bands, fine-coarse sands, poorly graded, stiff, alluvial origin, trac	674m	North East

NGIS Bore ID	Drillers Log	Distance	Direction
10044318	0.00m-4.00m Sandy Clay; red/brown, moist, fine-medium sand, soft to firm, fill origin. 4.00m-6.75m Sandy Gravelly Clay; black/white, moist, fine-coarse sand, fine-coarse gravels, fill origin 6.75m-8.50m Silty Sandy Clay; red/brown, moist, fine-medium sand, soft to stiff, alluvial origin 8.50m-9.75m Sandy Gravelly Clay; grey/dark grey, moist, fine-coarse gravels, stiff, alluvial origin, gravels mostly basalt 9.75m-12.75m Clay, Gravelly; green/grey speckled white, moist, fine-coarse gravels, very stiff, alluvial origin 12.75m-14.50m Sandy Clay; red/brown, moist, fine-coarse sand, very stiff, alluvial origin, some fine gravels also present 14.50m-15.50m Silt, Sandy Clayey; grey/brown speckled light yellow, dry, fine-medium sand, poorly graded, alluvial origin	675m	North East
10082335	0.00m-3.50m Gravel/Sand; grey/brown, moist, fine-coarse sands, fine-coarse gravels, well graded, tank pit backfill sand 3.50m-9.50m Sandy Clay; red/brown, slightly moist, fine-coarse sand, stiff to very stiff, alluvial origin, some fine gravel also pre 9.50m-13.00m Sandy Gravelly Clay; green/brown & speckled white, slightly moist-moist, fine-coarse sands, fine-medium gravels, stiff, 13.00m-14.00m Sandy Clay; lighth brown, very moist, soft, alluvial origin. 14.00m-15.00m Sandy Gravelly Clay; grey/brown & speckled white, moist, fine-coarse sand, fine-medium gravel, stiff to very stiff, allu 15.00m-16.50m Clayey Sand; red/brown, saturated, fine-medium sand, alluvial origin, trace fine gravel also present 16.50m-16.80m Sand; dark grey/brown, moist, fine-coarse sands, poorly graded, alluvial origin	678m	North East
10016468	0.00m-1.50m Silty Sandy CLAY; red-brown, firm, dry 1.50m-2.50m Silty SAND; red-brown, some gravel 2.50m-4.00m Silty Gravelly CLAY; yellow-brown-white, very stiff to hard 4.00m-5.00m Gravelly SILT; yellow-orange-brown, some gravel 5.00m-5.50m Silt; as above, red-purple, some rock 5.50m-6.00m Sandy Gravelly SILT; brown-red-orange, minor gravel, very dense 6.00m-6.50m Silty SAND; brown, minor gravel, dry to slightly moist 6.50m-14.00m ROCK; extremely hard at 10.5m	680m	North East
10050682	0.00m-7.50m Silty Clay; red/brown, dry, stiff, alluvial, moist at 4m. 7.50m-13.00m Gravelly Sandy Clay; grey/red/brown, moist, fine-coarse sand, fine gravel, poorly graded, very stiff, alluvial origin 13.00m-15.50m Clay; lighth grey, moist, very stiff, alluvial origin, some sand & gravel present, fine-coarse grains	680m	East
10087951	0.00m-0.20m Sand, with minor Gravel; loose, slightly moist, grey/brown 0.20m-4.80m Sandy Silty Clay, with minor Gravel, stiff to very stiff, slightly moist, red brown 4.80m-6.00m Sand, fine-coarse, with minor Gravel, lightly moist to moist, brown/white 6.00m-8.50m Silt, Sand with minor Gravel, dense, moist, brown/white 8.50m-9.00m Silt, Sandy, very dense, moist, green brown 9.00m-10.00m Clayey Sand, very dense, saturated, yellow brown	681m	North East
10099862	0.00m-1.00m Sandy Clay; red brown, fine sand, stiff, damp, trace gravel 1.00m-7.00m Silt, sandy; red brown, soft, damp 7.00m-8.00m Sand, silty with Gravel; pale red brown, fine-coarse gravel, damp 8.00m-9.00m Sand; dusky yellow, fine, dense, damp 9.00m-10.00m Clay with Sand; yellowish grey, fine sand, damp 10.00m-18.00m Granite; biotite limonitic, moist, weathered. 10-13m moderate HC odour, no staining	681m	North East
10075728	0.00m-0.30m FILL; Sandy Gravel, medium dense, dry, grey 0.30m-7.00m Silt with minor Gravel, medium-very dense, dry, red brown 7.00m-12.00m Silty Sand with minor Gravel, very dense, dry to slightly moist, red brown 12.00m-13.00m Silty Sand, very dense, slightly moist, red brown 13.00m-15.00m Silty Clay with minor Gravel, hard, moist, red brown	683m	North East
10104236	0.00m-1.00m Fill; Gravel & Sand, dry, loose, speckled brown light grey. Strong HC odour 1.00m-4.50m Clay; red brown, stiff, slightly damp. Strong HC odour. 4.50m-8.00m Clay; mid brown, minor Gravel, damp, firm. Strong odour, Odour decreasing at 6.5m 8.00m-10.50m Clay; brown, pedal, stiff, slightly moist.	683m	North East
10036937	0.00m-5.00m Clay, with Sand; red brown, fine-medium sand, stiff, damp 5.00m-6.00m Sand, Silty; pale red brown, fine-coarse sand, some clay, damp 6.00m-10.00m Gravel, with Sand; pale red, fine-coarse gravel, fine-coarse sand, high K, loose, damp 10.00m-12.00m Granite, silicified Cap; white, very hard, moderate HC odour 12.00m-18.00m Granite; moderately weathered, light olive grey, moist, 12-14m weak HC stain, 15m HC odour stops	684m	North East
10017616	0.00m-0.20m Sand, with minor Gravel, loose, slightly moist, brown (Fill) 0.20m-3.00m Sandy Silty Clay with minor Gravel; stiff to very stiff, slightly moist to moist, red brown 3.00m-5.00m Sand, Silty, fine with minor Gravel; medium dense, moist, red brown to brown 5.00m-8.00m Sand, Silty, fine; medium dense to dense, moist, brown 8.00m-9.50m Sand, Silty with minor Gravel, medium dense, moist, brown 9.50m-10.00m Clayey Sand, hard, saturated, white/grey/brown	686m	North East
10089139	0.00m-0.20m Sand, with minor Gravel, loose, slightly moist, brown 0.20m-4.80m Sandy Silty Clay with minor Gravel, stiff to very stiff, slightly moist, red brown 4.80m-5.00m Sand, Silty with minor Gravel; dense, moist, brown 5.00m-9.00m Sand, medium-coarse with minor Gravel, dense to very dense, moist, brown to brown/white 9.00m-10.00m Clayey Sand with minor Gravel, very dense, saturated, white/brown	690m	North East
10022400	0.00m-1.00m Silty Clay, with minor Gravel, very stiff, dry, red brown 1.00m-3.50m Sandy Clay, with minor Gravel, stiff, dry, yellow brown 3.50m-14.50m Sandy Clay, with minor Gravel, stiff, slightly moist, brown	693m	North East

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10059810	0.00m-1.50m Clay; red brown, firm-stiff, no odour, minor Fe stone fragments 1.50m-3.20m Clay; yellow brown, minor fragments 3.20m-5.50m Gravel; grey-brown, very round (conglomerate) 5.50m-9.20m Gravel; light grey & minor Clay & Sand, no odour 9.20m-13.30m Gravel; as above, HC odour (damp)	693m	North East
10115600	0.00m-0.40m Fill; Gravel, slightly moist, coarse, black to brown 0.40m-1.80m Clay; red/brown, slightly moist, low plasticity 1.80m-5.30m Clay, light brown, with beds of gravel, minor sand, moist to dry 5.30m-5.60m Gravel, coarse, brown, dry 5.60m-9.00m Clay, light brown, with Gravel beds, dry, minor sand. Water at 8.5m 9.00m-10.30m Clay, dark brown, moist, no gravel	693m	North East
10059314	0.00m-2.50m Clay, with Sand, reddish brown, dry to slightly moist 2.50m-5.50m Sand, Silty with Gravel, reddish brown, medium-coarse sand, silt & clay, fine-coarse gravels, dry-slightly moist 5.50m-8.50m Gravel, Silty with Sand, brown, medium sand, fine-coarse gravel, silt, slightly moist 8.50m-14.00m Bedrock, Diorite; brown, fractured & spongy	695m	North East
10139916	0.00m-1.00m clay/red with sand 1.00m-2.00m clay/gravelly grey brown 2.00m-3.00m clay/red brown weathered siltstone or mudstone 3.00m-4.00m silty/clay brown with red layers 4.00m-5.00m silty/clay 5.00m-10.00m clay/dark brown	695m	North East
10090520	0.00m-6.00m Silty CLAY; with Sand, red-brown to light brown, medium Sand & fine subangular Gravel, dry-slightly moist 6.00m-7.80m Silty GRAVEL; moderate brown, fine-coarse Sand 7.80m-15.80m BEDROCK; Diorite, moderate brown, weak to moderate HC odour	697m	North East
10088190	0.00m-5.80m Silty Clay, with Sand, reddish brown, stiff, dry to slightly moist 5.80m-7.50m Gravel, Silty with Sand, brown, fine to coarse sand, gravel with cobbles 7.50m-14.00m Bedrock, Diorite, brown, fresh	698m	North East
10020766	0.00m-5.50m Clay, with Sand; reddish brown, stiff, damp 5.50m-6.50m Sand, Silty with Gravel; red brown, fine-coarse sand, fine-coarse gravel, damp 6.50m-9.50m Gravel, with Sand & Silt; red brown, fine-coarse sand, fine-coarse gravel, dense 9.50m-18.00m Granite, light olive grey, moderately weathered, moderate KC odour. 14-18m, pale yellowish brown, moist.	699m	North East
10025818	0.00m-0.20m Fill, Gravelly Sandy, medium dense, dry, grey 0.20m-0.50m Silty Clay, with minor Gravel, very stiff, dry, red brown 0.50m-1.00m Silty Clay, hard, slightly moist, red brown 1.00m-4.00m Silty Clay, with minor Sand, hard, slightly moist, red brown 4.00m-6.00m Silty Clay, with minor Sand, hard, slightly moist, red brown 6.00m-7.20m Silty Clay, hard, dry, brown 7.20m-10.00m Silty Clay, with minor Gravel, hard, slightly moist, grey brown 10.00m-13.00m Silty Clay, hard, slightly moist, grey brown 13.00m-17.00m Gravel, Silty Clayey, very dense, moist to saturated, brown	699m	North East
10070294	0.00m-0.80m Fill; Sand & Gravel, slightly moist 0.80m-7.50m Clay, with Sand, reddish brown to light brown, stiff to very stiff, dry 7.50m-14.65m Bedrock, Diorite; yellowish brown, 12-14m fresh bedrock	704m	North East
10099408	0.00m-0.50m Gravel, Sand & Clay, very dense, slightly moist, red/brown (Fill) 0.50m-7.50m Gravelly Sandy Clay, very stiff, slightly moist, red/brown 7.50m-12.10m Sand, Silty, with minor Gravel, dense, slightly moist, grey/brown	706m	North East
10021518	0.00m-2.00m Silt, with Sand, red brown, stiff, damp 2.00m-5.50m Sand, Silty, red brown, trace sand & fine Gravel, damp. 3-3.5 very sandy 5.50m-8.00m Sand, Silty with Gravel; pale red brown, fine angular gravel, damp 8.00m-8.50m Gravel, Silty with Sand; pale red brown, fine-medium sand, fine-coarse gravel, dry 8.50m-18.00m Granite, light olive grey, biotite visible. 13-14m HC staining. 14-15m wet.	708m	North East
10106581	0.00m-3.00m Clay, red brown, stiff, damp 3.00m-6.00m Sand, Silty, brown, fine sand, loose to medium dense, damp. 5-6m increasing fine gravel. 6.00m-9.00m Sand, Silty with Gravel, medium dense, damp 9.00m-11.00m Gravel, with Sand, light olive grey, fine-coarse sand, fine-coarse assorted gravel, dense. 10m Strong HC odour & stain 11.00m-18.00m Granite, biotite visible, weathered	709m	North East
10032174	0.00m-4.50m Silty Clay, with minor Gravel, stiff, dry, red brown to orange brown 4.50m-14.50m Gravel, sandy clayey, stiff, slightly moist, brown	711m	North East
10020226	0.00m-0.20m Fill; Gravel & Sand with minor Clay, very dense, slightly moist, brown/red 0.20m-8.80m Sandy Silty Clay with minor Gravel; very stiff, slightly moist, brown/red 8.80m-9.50m Gravelly Sandy Clay; very stiff, slightly moist, brown 9.50m-12.10m Gravelly Sandy Clay; very stiff, slightly moist to saturated, greenish grey	712m	North East
10077454	0.00m-2.00m Silty Clay, red brown, stiff, damp 2.00m-4.00m Sand, Silty, light brown, loose, dry 4.00m-10.00m Sand, Silty with Gravel, pale red 10.00m-18.00m Granite, light olive grey, moist, weathered	713m	North East
10019343	0.00m-0.10m Soil/Grass 0.10m-0.20m Fill: Gravel & Sand, dry, loose, speckled brown/light grey, Strong HC odour 0.20m-4.50m Clay, brown, stiff, slightly damp. Strong HC odour 4.50m-8.00m Clay, red brown, minor Gravel, damp firm. Strong odour, decreasing with depth 8.00m-12.00m Clay, as above, increase in gravel contents, fragments of siltstone, moist.	719m	North East
10110078	0.00m-6.50m Silty Clay, with minor Gravel, very stiff, dry, red brown 6.50m-14.50m Sandy Clay, with minor Gravel, stiff, dry, yellow brown	740m	North East

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10082744	0.00m-1.00m Clay, pale reddish brown, medium-coarse sand, stiff 1.00m-3.00m Silt, light brown, dry to slightly moist, sand & fine-coarse gravel 3.00m-6.00m Sand, Silty with Gravel, brown, medium-coarse sand, fine gravel 6.00m-7.00m Gravel, Silty with Sand, brown, medium-coarse sand, fine-coarse gravel, silt & clay 7.00m-14.46m Bedrock: Diorite, fresh, minor 30-45 degree fractures, fractures moist, rock unsaturated	744m	North East
10041268	0.00m-5.00m Clay, with minor Gravel, stiff, dry, red brown 5.00m-14.50m Sandy Clay with minor Gravel, grading to weathered rock, stiff to soft, dry	747m	North East
10070400	0.00m-5.00m Silty Clay, with minor Gravel, stiff, slightly moist, red brown 5.00m-14.50m Sandy Clay, with minor Gravel, stiff, dry, yellow brown	757m	North East
10078571	0.00m-1.00m Fill 1.00m-6.00m Clay 6.00m-8.00m Clay/Gravel 8.00m-9.00m Sand, & Gravel	759m	North
10144392	0.00m-1.00m silty/clay loam 1.00m-4.00m silty/clay 4.00m-7.00m silty/clay loam 7.00m-10.00m silty/clay	762m	South West
10083694	0.00m-4.50m Clay, with Sand, reddish brown, slightly moist 4.50m-8.50m Silt, with Sand, light brown, stiff 8.50m-14.47m Bedrock Diorite, high to moderately weathered, moist	766m	North East
10117090	0.00m-1.00m Fill 1.00m-6.00m Clay 6.00m-8.00m Clay/Gravel 8.00m-10.00m Gravel, sandy	766m	North
10060279	0.00m-1.00m Fill 1.00m-6.00m Clay 6.00m-8.00m Clay/Gravel 8.00m-9.00m Sand, & Gravel	773m	North
10030769	0.00m-1.00m Fill; Gravel & Sand, dry, loose, speckled brown light grey 1.00m-4.50m Clay; red brown, stiff, slightly damp 4.50m-8.00m Clay; mid brown, minor Gravel, damp, firm 8.00m-12.00m Clay; brown, semi plastic, pedal, stiff, slightly moist	784m	North East
10024829	0.00m-0.20m Topsoil; dark brown, friable 0.20m-3.50m Clay; red-brown, soft, low plasticity, fine grained with minor quartz gravel & ~10% poorly sorted, subangular quartz san 3.50m-4.50m Sandy Clay; orange, low plasticity, friable, ~50% sand, ~5% subangular to subrounded, poorly sorted gravel, dry 4.50m-5.50m Clayey Sand; orange, dry, low plasticity, friable, >50% sand, ~5% subangular to subrounded, poorly sorted gravel 5.50m-6.50m Sandy Clay; red-brown clay, dry, fine, low plasticity with minor poorly sorted rounded-subangular gravel, basalt, quartz 6.50m-8.00m Sandy Clay; as above, dry-moist, minor black clay mottling, minor sandstone cobbles 8.00m-9.00m Sandy Clay; as above, minor fine grained silicious feldspathic gravel 9.00m-11.00m Sandy Clay; as above, darker reddish to dark brown, large cobbles (~3%), very weathered, coarse sandstone, quartz, rocks 11.00m-12.00m Sandy Clay; as above, highly weathered, silicious cobbles 12.00m-14.00m Silty Clay; dry, medium-brown, fine grained, friable, soft, with medium grained sand & minor quartz cobbles (~2-5cm) 14.00m-15.00m Silty Clay; as above, dry, less cobbles, fine grained 15.00m-16.00m Silty Clay; as above, high plasticity, highly weathered, moist 16.00m-17.00m Silty Clay; as above, wet, sticky, no cobbles 17.00m-18.10m Silt, Clayey; wet, yellow-brown, fine grained, low plasticity, sticky, floury with ~10% moderately coarse subangular san	795m	East
10046302	0.00m-1.00m gravelly/sandy clay 1.00m-2.00m sandy/clay dark brown 2.00m-3.00m silty/clay with sand 3.00m-4.00m clay/gravel/sand dark brown 4.00m-6.00m silty/clay with rhyolite chips 6.00m-7.00m clay/gravel with some quartz 7.00m-8.00m silty/clay light 8.00m-10.00m silty/clay with gravel	861m	North West
10125867	0.00m-1.00m silty clay loam dark brown 1.00m-2.00m silty clay loam dark brown with some gravel 2.00m-10.00m silty clay 10.00m-11.00m rhyolite/weathered with quartz grains about 2mm 11.00m-12.00m as above with basalt fragments 12.00m-16.00m rhyolite	861m	North West
10139610	0.00m-1.00m clay/loam/silty dark brown 1.00m-2.00m clay/silty with sand and gravel dark brown 2.00m-10.00m silty/clay	861m	North West
10135741	0.00m-1.00m clay/black 1.00m-2.00m clay/brown 2.00m-3.00m clay/black 3.00m-6.00m clay/brown 6.00m-8.00m clay	928m	North

NGIS Bore ID	Drillers Log	Distance	Direction
10114567	0.00m-0.08m Clay, black, calcite chunk 0.08m-0.30m Clay, lighter textures, lighter clay, some mottles, slightly sandy texture, red 0.30m-2.34m Clay, red orange some mottle, heavier textures, progressive decaying organic matter, black mottle colours 2.34m-2.53m Clay, slight texture changes, crumbly calcite 2.53m-2.74m Clay, heavy, mottling, red orange 2.74m-2.82m Clay, calcite chunks, crumbly 2.82m-3.00m Clay, heavy, mottling, very moist, red orange	935m	West
10021209	0.00m-0.41m Loam; dry crumbly, brown, slight creams, slightly gravel 0.41m-1.11m Loam; texture change, moist, heavy clay, red orange, slight grey colours 1.11m-3.30m Clay; grey colours increasing, moist, calcite throughout, red oranges 3.30m-3.40m Gravel, river gravel, reds oranges, clay, very moist 3.40m-9.50m Clay, moisture throughout, grey colours, heavy clay, red oranges	991m	North West
10110081	0.00m-0.30m Clay; dark brown, heavy 0.30m-0.54m Clay, lighter texture, dark brown 0.54m-1.00m Clay, red, lighter texture, colour change 1.00m-1.30m Clay, heavy, orange red, moist 1.30m-1.34m Clay, slight calcite 1.34m-1.62m Clay, moist, orange, red 1.62m-2.13m Clay, lighter, some calcite, yellow orange 2.13m-2.20m Clay, yellow orange, lighter clay 2.20m-2.26m Loam, lighter texture 2.26m-3.15m Clay, cream colours, black orange, heavy, calcite deposits 3.15m-3.30m Gravel, river gravel, colours orange yellow blacks creams 3.30m-4.00m Gravel, as above, moisture increasing	991m	West
10046419	0.00m-0.38m Clay, brown, slight red, light, dry 0.38m-1.26m Clay, texture change, heavy clay, red orange, increasing moisture, increasing orange 1.26m-2.45m Clay, heavy, crumbly, very moist, orange slight red 2.45m-5.00m Clay, mottling increasing, grey colours increasing, calcite, orange red, very moist	1015m	West
10062120	0.00m-0.10m Soil, light crumbly, brown 0.10m-0.39m Loam, increasing heaviness, brown 0.39m-0.50m Loam, light colour red brown, lighter texture, crumbly 0.50m-1.06m Loam, mottling oranges greys 1.06m-1.90m Loam, mottling orange grey black, calcite chunks, heavy textures, moist 1.90m-2.23m Clay, heavy, some moisture 2.23m-2.43m Soil, black 2.43m-2.55m Clay, heavy, mottles red orange, calcite, wet 2.55m-3.00m Clay, calcite chunks, grey colours, wet	1076m	West
10063207	0.00m-1.00m silty/clay with sand 1.00m-2.00m silty/clay brown 2.00m-6.00m sandy/clay red brown 6.00m-7.00m silty/clay with sand and gravel 7.00m-8.00m silty/clay with sand 8.00m-9.00m silty/clay 9.00m-10.00m clay	1106m	East
10029928	0.00m-0.30m Clay, red, slight orange 0.30m-0.45m Clay, heavier, wetter, red orange 0.45m-0.55m Clay, red orange, heavy 0.55m-0.61m Clay, calcite chunks, red orange, heavy 0.61m-1.20m Clay, black, heavy, very moist, slightly mottling black orange 1.20m-4.00m Clay, colour lighter, calcite chunks, very moist, grey colours increasing with depth	1119m	West
10069261	0.00m-0.30m Loam, brown orange, crumbly, clayey sandy, calcite, gravel present 0.30m-0.62m Loam, brown orange, dry crumbly, calcite present 0.62m-1.11m Sand/Gravel, reds browns 1.11m-1.39m Sandy Clay, increasing, brown orange 1.39m-1.70m Gravel, abrupt change, calcite, sandy no soil, very wet 1.70m-2.00m Clay/Sand, very wet, fine texture	1200m	West
10105377	0.00m-1.37m Topsoil Black 1.37m-3.35m Clay Silty 3.35m-5.18m Silt Clayey 5.18m-6.71m Silt Soft Sandstone 6.71m-8.84m Gravel Medium Water Bearing 8.84m-11.28m Clay Grey Silty Gravel 11.28m-23.16m Basalt Decomposed 23.16m-25.30m Basalt Weathered 25.30m-32.00m Basalt Decomposed 32.00m-33.83m Conglomerate Weathered 33.83m-34.44m Conglomerate White Weathered 34.44m-35.05m Conglomerate Hard	1205m	North
10075843	0.00m-0.30m Topsoil, loamy, black 0.30m-0.80m Clay, heavier, small calcite, red brown, slight mottling 0.80m-1.10m Clay, wetter, sandier texture, red brown, slight mottling 1.10m-1.25m Gravel, sandy texture, crumbly, cream reds, some calcite 1.25m-1.50m Clay, very wet layer, red brown 1.50m-1.55m Clay, very wet, free water, red brown 1.55m-1.90m Clay, still moist, red brown orange black mottles, water at 1.8m 1.90m-2.06m Sandy Clay, moist, brown 2.06m-2.20m Clay, brown, heavier, moist 2.20m-3.00m Clay, mottles, grey orange red, heavy, moist	1209m	West

NGIS Bore ID	Drillers Log	Distance	Direction
10020803	0.00m-1.00m silty/clay dark brown 1.00m-2.00m silty/clay dark brown with sand 2.00m-3.00m clay/brown with sand 3.00m-4.00m clay/weathered basalt 4.00m-5.00m silty/clay 5.00m-10.00m clay	1228m	South East
10139645	0.00m-1.00m soil 1.00m-2.00m clay/dark brown 2.00m-5.00m basalt/wearthered 5.00m-6.00m basalt/weathered 6.00m-8.00m basalt/yellow green weathered 8.00m-17.00m basalt/weathered 17.00m-24.00m basalt	1228m	South East
10126512	0.00m-9.00m silt/brown 9.00m-11.00m sand/gravel blue grey 11.00m-18.00m siltstone/white yellow very hard	1261m	North
10097109	0.00m-0.42m Gravel, white, large gravel, red brown, very crumbly 0.42m-0.85m Clay, texture change, heavier, red orange cream colours 0.85m-1.00m Clay, some calcite, organic matter, red orange, more crumbly 1.00m-1.03m clay, very crumbly, light texture, red orange 1.03m-1.12m Gravel, orange red 1.12m-2.05m Clay, some calcite, moist, mottling, red orange 2.05m-2.20m Clay, quite moist, red brown, slight mottling 2.20m-2.36m Clay, crumbly, not moist, red brown 2.36m-2.45m Clay, moisture, red brown, heavier 2.45m-2.55m Gravel, clay, red brown, water at 2.5m 2.55m-3.00m Clay/Gravel, red brown, moist, mottling, greys oranges	1275m	West
10103275	0.00m-0.20m Clay, red 0.20m-0.30m Clay, increased white grey mottles 0.30m-0.70m Clay, texture change: ligh clay, red, no mottles 0.70m-0.90m Clay, calcite chunks, carbonates, mottles, gley colours 0.90m-1.15m Clay, white grey red orange 1.15m-1.35m Clay, red orange 1.35m-2.00m Clay, texture change: more gravel 2.00m-2.28m Clay, red orange 2.28m-2.30m Clay, increasing mottles cream black orange, very moist 2.30m-2.41m Clay, red, heavy 2.41m-3.00m Clay, mottles increasing, lighter colours, gley colours cream orange yellow black	1333m	West
10081754	0.00m-0.91m Soil Black 0.91m-3.05m Soil Red 3.05m-5.18m Clay Sandy 5.18m-6.71m Sand Gravel 6.71m-8.53m Clay 8.53m-10.97m Clay Sandy 10.97m-12.19m Clay Gravel Water Bearing 10.97m-12.19m Gravel Water Bearing 12.19m-14.63m Clay Sandy 14.63m-15.24m Gravel Coarse 15.24m-15.85m Clay 15.85m-16.15m Clay Gravel Water Bearing 16.15m-18.29m Clay	1357m	North East
10010562	0.00m-0.61m Soil 0.61m-8.53m Clay Gravel 8.53m-10.06m Clay Grey Sandy 10.06m-14.48m Gravel Fine-medium Sand 14.48m-19.66m Clay Grey 19.66m-20.27m Clay Gravel 20.27m-20.57m Clay Gravel 20.57m-20.88m Basalt	1384m	North
10085302	0.00m-0.91m Soil Black 0.91m-3.05m Soil Red 3.05m-5.18m Clay Sandy 5.18m-6.71m Sand Gravel 6.71m-8.53m Clay 8.53m-10.97m Clay Sandy 10.97m-11.58m Gravel Clay 11.58m-12.19m Gravel Water Bearing 12.19m-14.63m Clay Sandy 14.63m-15.24m Clay Gravel 15.24m-15.85m Clay 15.85m-16.15m Clay Gravel Water Bearing 16.15m-18.29m Clay	1387m	North East
10007043	0.00m-0.91m Soil 0.91m-4.88m Soil Red 4.88m-6.71m Soil Red Sandy 6.71m-7.92m Sand Sandy Clay 7.92m-9.14m Gravel Clay 9.14m-10.97m Clay White Water Bearing 10.97m-12.19m Rock	1444m	East

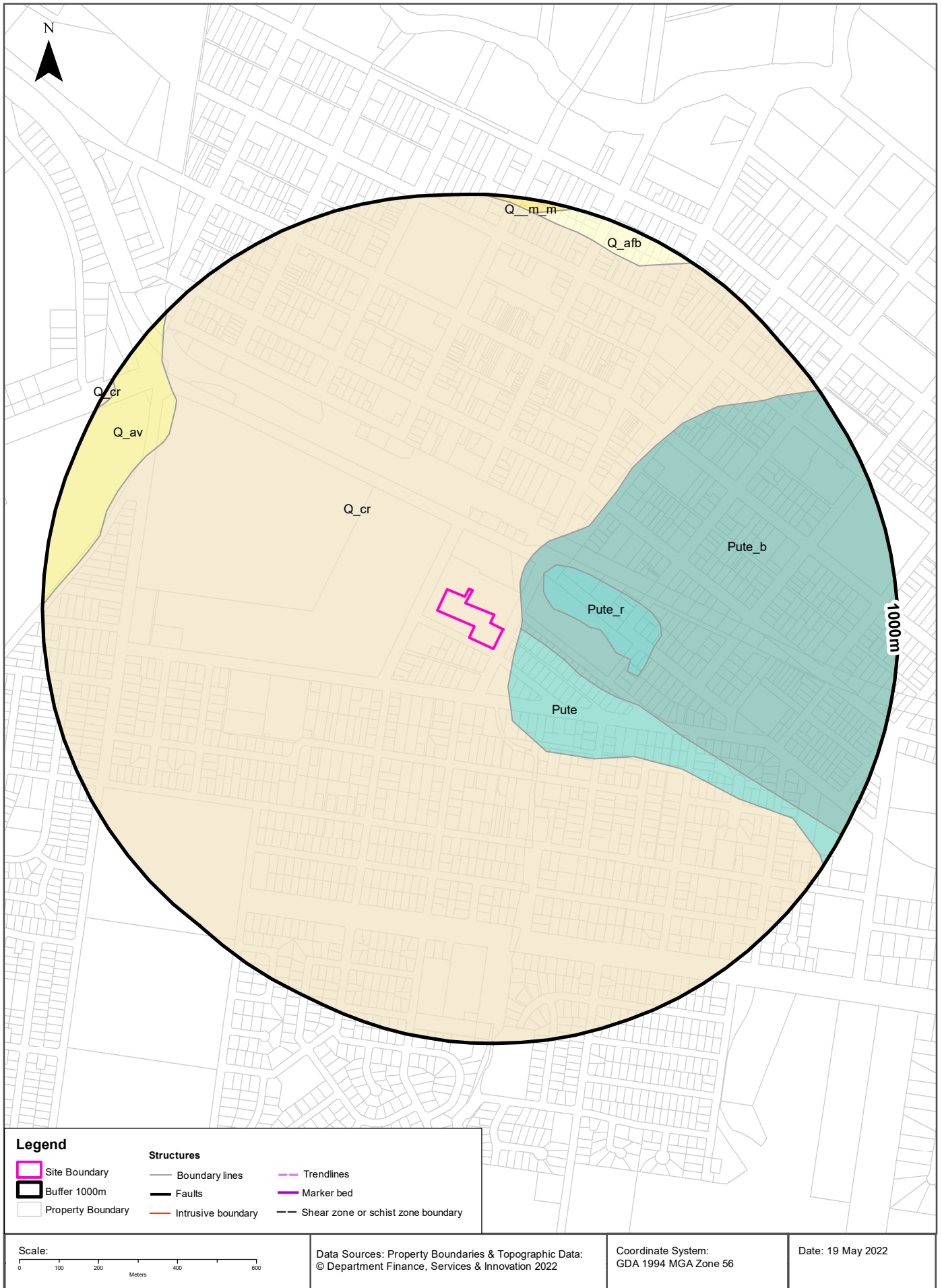
NGIS Bore ID	Drillers Log	Distance	Direction
10013701	0.00m-0.91m Soil Black 0.91m-2.44m Soil Red 2.44m-4.88m Soil Sandy 4.88m-6.71m Sand Dry 6.71m-9.75m Clay Gravel 9.75m-15.85m Clay White	1444m	East
10105115	0.00m-0.45m Topsoil 0.45m-5.10m Clay Grey 5.10m-6.40m Gravel Dry 6.40m-8.20m Silt Grey Sticky 8.20m-10.60m Clay Grey Some Pebbles/pebbly 10.60m-14.30m Gravel Sandy Water Bearing 14.30m-17.00m Clay Grey 17.00m-18.50m Gravel Sandy Water Bearing 18.50m-19.50m Clay 19.50m-20.70m Gravel Dirty Water Bearing 20.70m-20.71m Sand Conglomerated Gravel	1447m	North East
10064153	0.00m-0.91m Soil Black 0.91m-7.92m Soil Red 7.92m-9.14m Sand Water Bearing Clay 9.14m-9.45m Clay White 9.45m-12.19m Clay 12.19m-18.29m Clay White	1483m	East
10145585	0.00m-1.00m topsoil 1.00m-2.00m clay/orange 2.00m-6.00m silty/clay brown 6.00m-7.00m sand 7.00m-10.00m silty/clay brown 10.00m-13.00m sand/gravel brown fine-coarse 13.00m-14.00m clayey/sand and gravel 14.00m-15.00m clay/grey	1527m	North East
10115348	0.00m-0.91m Soil Black 0.91m-7.32m Soil Red 7.32m-9.14m Soil Wet Sandy 9.14m-11.28m Gravel Dry Clay	1530m	North
10097508	0.00m-4.88m Soil 4.88m-6.10m Clay Sandy 6.10m-6.71m Clay Gravel 6.71m-9.75m Clay Pea Gravel 9.75m-10.06m Clay Green Stones 10.06m-10.36m Stones Coarse 10.36m-11.58m Clay Gravel 11.58m-12.19m Clay 12.19m-13.72m Gravel Water Bearing 13.72m-14.94m Sand Coarse Water Bearing 14.94m-16.46m Clay Fine Sand 16.46m-16.92m Stones Water Bearing 16.92m-18.90m Clay Stones	1531m	North East
10075079	0.00m-0.36m Loam; dark brown 0.36m-0.50m Loam; texture change, light texture, light colour red brown, very crumbly 0.50m-0.95m Clay, heavy 0.95m-1.44m Clay, texture change, lighter colours, lighter texture, crumbly yellow red 1.44m-1.51m Clay, large calcite chunks, full spectrum of gley colours 1.51m-2.09m Clay, red brown, light 2.09m-2.22m Clay, calcite chunks 2.22m-2.50m Clay, gley colours 2.50m-3.00m Clay, wet layer, free water not observed	1545m	West
10100324	0.00m-0.91m Soil Black 0.91m-2.44m Soil Red 2.44m-4.88m Soil Sandy 4.88m-6.71m Sand 6.71m-10.36m Clay Gravel 10.36m-15.85m Clay White	1546m	East
10114042	0.00m-6.10m Soil Black Red Wet 6.10m-7.92m Soil Sandy Water Bearing 7.92m-10.67m Clay Gravel 10.67m-11.28m Gravel 11.28m-12.80m Gravel Clay 12.80m-16.15m Gravel Water Supply 16.15m-17.37m Clay Gravel 17.37m-17.68m Gravel Water Supply 17.68m-20.12m Clay Some Gravel 20.12m-21.34m Clay Yellow Sandy	1561m	North
10093029	0.00m-0.91m Soil 0.91m-4.88m Soil Red 4.88m-6.71m Soil Red Sandy 6.71m-7.92m Sand Sandy Clay 6.71m-7.92m Wet 7.92m-9.14m Gravel Clay 9.14m-11.89m Clay White 11.89m-12.19m Rock	1571m	East

NGIS Bore ID	Drillers Log	Distance	Direction
10021206	0.00m-0.61m Topsoil 0.61m-3.05m Clay 3.05m-4.57m Clay Silty 4.57m-10.06m Clay Gravel 10.06m-10.21m Sand Gravel 10.21m-12.50m Clay Gravel Water Bearing 12.50m-13.11m Sand Gravel Water Bearing 13.11m-16.76m Clay Dark Grey 16.76m-17.68m Clay Gravel 17.68m-18.59m Sand Gravel Water Bearing 18.59m-19.51m Clay Gravel	1573m	North East
10123568	0.00m-1.22m Clay 1.22m-7.92m Loam Sandy 7.92m-9.14m Sand 9.14m-11.89m Gravel Sandy 11.89m-13.41m Gravel Coarse Water Supply 13.41m-14.63m Sand Clay Streaks 14.63m-15.24m Sand Red	1580m	North East
10102196	0.00m-4.88m Soil Black 4.88m-6.10m Soil Red Sandy 6.10m-7.92m Gravel Sandy Clay 7.92m-9.14m Gravel Wet Sand 9.14m-10.06m Gravel Water Bearing 10.06m-11.58m Gravel Clay 11.58m-11.89m Gravel Water Bearing 11.89m-13.11m Gravel Clay 13.11m-13.87m Gravel Water Bearing 13.87m-15.85m Gravel Large 15.85m-18.29m Gravel 18.29m-18.90m Sand Fine 18.90m-20.12m Clay Gravel 20.12m-20.73m Clay Yellow	1582m	North
10076536	0.00m-0.91m Soil Black 0.91m-7.92m Soil Red 7.92m-9.14m Clay 7.92m-9.14m Sand Gravel Water Bearing 9.14m-9.45m Clay White 9.45m-12.19m Clay 12.19m-18.29m Clay White	1604m	East
10120112	0.00m-1.00m silty/clay loam 1.00m-4.00m silty/clay with sand 4.00m-6.00m silty/clay	1609m	South West
10129955	0.00m-1.00m clay/red silty sandy 1.00m-2.00m clay/red silty sandy more clay 2.00m-5.00m silty clay 5.00m-8.00m sandstone/lithic/siltstone weathered 8.00m-9.00m conglomerate/interbeds of mudstone and siltstone 9.00m-12.00m conglomerate with rock fragments size increases with depth 12.00m-13.00m mudstone/weathered 13.00m-16.00m shale/siltstone dark grey weathered 16.00m-24.00m shale	1614m	West
10146072	0.00m-1.00m clay/red silty sandy 1.00m-2.00m clay/red silty sandy more clay 2.00m-5.00m silty clay 5.00m-8.00m sandstone/lithic/siltstone weathered 8.00m-9.00m conglomerate/interbeds of mudstone and siltstone 9.00m-12.00m conglomerate with rock fragments size increases with depth 12.00m-13.00m mudstone/weathered 13.00m-16.00m shale/siltstone dark grey weathered 16.00m-24.00m shale	1614m	West
10108832	0.00m-8.84m Soil Black 8.84m-11.89m Soil Sandy 11.89m-12.19m Sand Water Bearing 12.19m-12.50m Gravel Water Bearing 12.50m-13.41m Gravel Clay 13.41m-14.02m Clay Yellow Gravel	1618m	North
10091330	0.00m-0.91m Soil Black 0.91m-4.88m Soil Red 4.88m-7.32m Clay Sandy 7.32m-11.58m Clay Stiff	1664m	North East
10098507	0.00m-0.91m Soil Black 0.91m-7.01m Soil Red 7.01m-7.62m Sand 7.62m-10.67m Clay Patchy Sand 10.67m-14.63m Clay Stiff	1678m	North East
10077736	0.00m-0.91m Topsoil 0.91m-7.01m Soil Red 7.01m-7.62m Sand Wet 7.62m-10.67m Clay Patchy Sand 10.67m-12.19m Clay Stiff	1736m	North East

NGIS Bore ID	Drillers Log	Distance	Direction
10061230	0.00m-4.88m Soil 4.88m-6.10m Clay Sandy 6.10m-6.71m Clay Gravel 6.71m-9.75m Clay Pea Gravel 9.75m-10.06m Clay Green Stones 10.06m-10.36m Stones Coarse 10.36m-11.58m Clay Gravel 11.58m-12.19m Clay 12.19m-13.72m Gravel Water Bearing 13.72m-14.94m Sand Coarse Water Bearing 14.94m-16.46m Clay Fine Sand 16.46m-17.07m Stones Water Bearing 17.07m-18.90m Clay Water Bearing Stones	1743m	North East
10017791	0.00m-0.91m Soil Black 0.91m-4.88m Soil Red 4.88m-7.32m Clay Sandy 7.32m-11.58m Clay Stiff	1756m	North East
10039083	0.00m-4.57m Topsoil 4.57m-9.60m Clay Gravel 9.60m-9.75m Gravel Coarse 9.75m-11.13m Sand Fine-medium Gravel 11.13m-11.28m Gravel Coarse 11.28m-12.19m Sand Medium-coarse Medium Gravel 12.19m-12.65m Gravel Medium-coarse 12.65m-12.80m Gravel Fine Some Sand 12.80m-13.11m Gravel Fine-medium 13.11m-13.72m Clay Orange Gravel 13.72m-15.09m Gravel Coarse 15.09m-16.15m Gravel Fine-coarse 16.15m-16.76m Sand Medium Medium Gravel 16.76m-17.53m Gravel Coarse Fine 17.53m-17.98m Sand Medium Fine Gravel 17.98m-20.42m Sand Fine-medium Gravel 20.42m-21.03m Clay Bands Medium Gravel 21.03m-21.79m Clay Fatty 21.79m-22.71m Gravel Medium-coarse Sand 22.71m-24.54m Sand Fine-medium Gravel 24.54m-60.96m Conglomerate Clay	1817m	North
10006647	0.00m-0.91m Soil Black 0.91m-3.05m Soil Red 3.05m-3.35m Soil Sandy 3.35m-6.71m Soil Sandy Stones Large 6.71m-7.01m Sand Gravel Wet 7.01m-8.84m Clay 8.84m-11.28m Gravel Coarse Water Bearing 11.28m-12.50m Gravel Clay 12.50m-16.76m Clay Sandy	1829m	East
10013702	0.00m-0.91m Soil Black 0.91m-3.05m Soil Red 3.05m-3.35m Soil Sandy 3.35m-6.71m Soil Sandy Stones Large 6.71m-7.01m Sand Gravel Wet 7.01m-8.84m Clay 8.84m-10.06m Gravel Coarse 10.06m-11.28m Gravel Water Bearing 11.28m-12.50m Gravel Clay 12.50m-16.46m Clay Sandy	1829m	East
10142492	0.00m-0.79m Topsoil 0.79m-6.00m Clay 6.00m-7.00m Gravel Water Bearing 7.00m-11.27m Clay Gravel 11.27m-17.37m Clay 17.37m-19.20m Clay Orange Gravel 19.20m-23.16m Gravel Orange Water Supply 23.16m-25.00m Clay Yellow Gravel	1837m	North East
10037939	0.00m-0.30m Soil 0.30m-2.13m Clay Yellow 2.13m-2.44m Clay Gravel 2.44m-5.49m Clay Yellow Grit 5.49m-8.84m Gravel Water Bearing Grit 8.84m-9.14m Clay 9.14m-9.45m Drift 9.45m-9.75m Clay 9.75m-10.06m Drift 10.06m-12.50m Clay Hard Grit 12.50m-12.80m Sand Pebbles/pebbly 12.80m-13.41m Clay	1849m	East
10067019	0.00m-0.50m Soil, dark brown, crumbly, slightly dry reds 0.50m-1.07m Gravel, calcite chunks, gley colours, crumbly sand 1.07m-1.17m Clay/Sand, heavy, gley colours, light grey reds 1.17m-1.60m Sandy Clay, very wet, gley colours 1.60m-1.90m Clay, heavy, less moisture, gley colours, grey orange	1877m	South West

NGIS Bore ID	Drillers Log	Distance	Direction
10110389	0.00m-0.66m Clay, black brown, dry, increasing moisture 0.66m-1.63m Clay, heavy, wet, black brown 1.63m-1.80m Gravel, red, slightly sandy, slight gley colours, orange grey, calcite present 1.80m-2.05m Clay, heavy, black brown, very wet 2.05m-2.70m Clay, red, slightly drier, slightly sandy, gley colours, grey orange 2.70m-4.00m Sandy Clay, sandy increasing gley colours, orange grey, very set sand, water at 3.5m	1895m	West
10120113	0.00m-1.00m soil 1.00m-3.00m silty clay loam weathered sandstone 3.00m-5.00m sandstone weathered with chert and claystone contains limestone 5.00m-9.00m clay/sticky light brown with gravel 9.00m-11.00m clay with gravel grey sticky (basalt chips) 11.00m-16.00m clay/yellow sticky with gravel 16.00m-20.00m clay/sticky red brown 20.00m-23.00m clay/red brown with thin layer limestone 23.00m-30.00m basalt weathered	1921m	South West
10135483	0.00m-1.00m soil 1.00m-3.00m silty clay loam weathered sandstone 3.00m-5.00m sandstone weathered with chert and claystone contains limestone 5.00m-9.00m clay/sticky light brown with gravel 9.00m-11.00m clay with gravel grey sticky (basalt chips) 11.00m-16.00m clay/yellow sticky with gravel 16.00m-20.00m clay/sticky red brown 20.00m-23.00m clay/red brown with thin layer limestone 23.00m-30.00m basalt weathered	1921m	South West
10147172	0.00m-1.00m soil 1.00m-3.00m silty clay loam weathered sandstone 3.00m-5.00m sandstone weathered with chert and claystone contains limestone 5.00m-9.00m clay/sticky light brown with gravel 9.00m-11.00m clay with gravel grey sticky (basalt chips) 11.00m-16.00m clay/yellow sticky with gravel 16.00m-20.00m clay/sticky red brown 20.00m-23.00m clay/red brown with thin layer limestone 23.00m-30.00m basalt weathered	1921m	South West
10050139	0.00m-0.67m Topsoil 0.67m-8.69m Clay Some Sand 8.69m-9.45m Gravel Coarse River Water Supply 9.45m-9.60m Gravel Some Clay Water Supply 9.60m-11.28m Gravel Fine-coarse Water Supply 11.28m-11.89m Gravel Fine Some Sand Water Supply 11.89m-12.19m Clay Water Supply 12.19m-12.80m Gravel Fine Sand Water Supply 12.80m-13.72m Sand Fine Water Supply 13.72m-15.24m Sand Fine Some Gravel Water Supply 15.24m-15.70m Gravel Coarse Sand Water Supply 15.70m-16.00m Shale	1939m	East
10145309	0.00m-1.00m silty/clay loam 1.00m-2.00m clay 2.00m-6.00m silty/clay 6.00m-7.00m silty/clay loam	1950m	South West

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



Geology

10-24 Anzac Parade, Gunnedah, NSW 2380

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Q_cr	Colluvial and residual deposits	Undifferentiated colluvial and residual deposits.	/Colluvium//Colluvial and residual deposits//	Quaternary (base) to Pleistocene (top)	Clastic sediment	0m
Pute	Werrie Basalt	Basalt, some alkaline (emplaced as a lava), tuffs, autochthonous and cataclastic sedimentary rocks, and local thin coals.	/Ungrouped Permian units//Werrie Basalt//	Sakmarian (base) to Artinskian (top)	Basalt	44m
Pute_b	Werrie Basalt - basalt	Basalt.	/Ungrouped Permian units//Werrie Basalt//Werrie Basalt - basalt/	Sakmarian (base) to Artinskian (top)	Basalt	46m
Pute_r	Werrie Basalt - rhyolite	Rhyolite.	/Ungrouped Permian units//Werrie Basalt//Werrie Basalt - rhyolite/	Sakmarian (base) to Artinskian (top)	Rhyolite	135m
Q_av	Alluvial valley deposits	Silt, clay, (fluvially deposited) lithic to quartz-lithic sand, gravel.	/Alluvium//Alluvial valley deposits//	Quaternary (base) to Now (top)	Clastic sediment	806m
Q_afb	Alluvial floodplain deposits - backplain facies	Unconsolidated dark yellow-brown clay, slightly silty with rare carbonate nodules and quartz sand; common desiccation cracks; laminated and contains rootlets.	/Alluvium//Alluvial floodplain deposits//Alluvial floodplain deposits - backplain facies/	Quaternary (base) to Now (top)	Clastic sediment	924m
Q__m_m	Marra Creek Formation - meander plain facies	Unconsolidated dark to pale grey and pale yellow-grey clayey silt.	///Marra Creek Formation//Marra Creek Formation - meander plain facies	Holocene (base) to Now (top)	Silt	967m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW

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Naturally Occurring Asbestos Potential

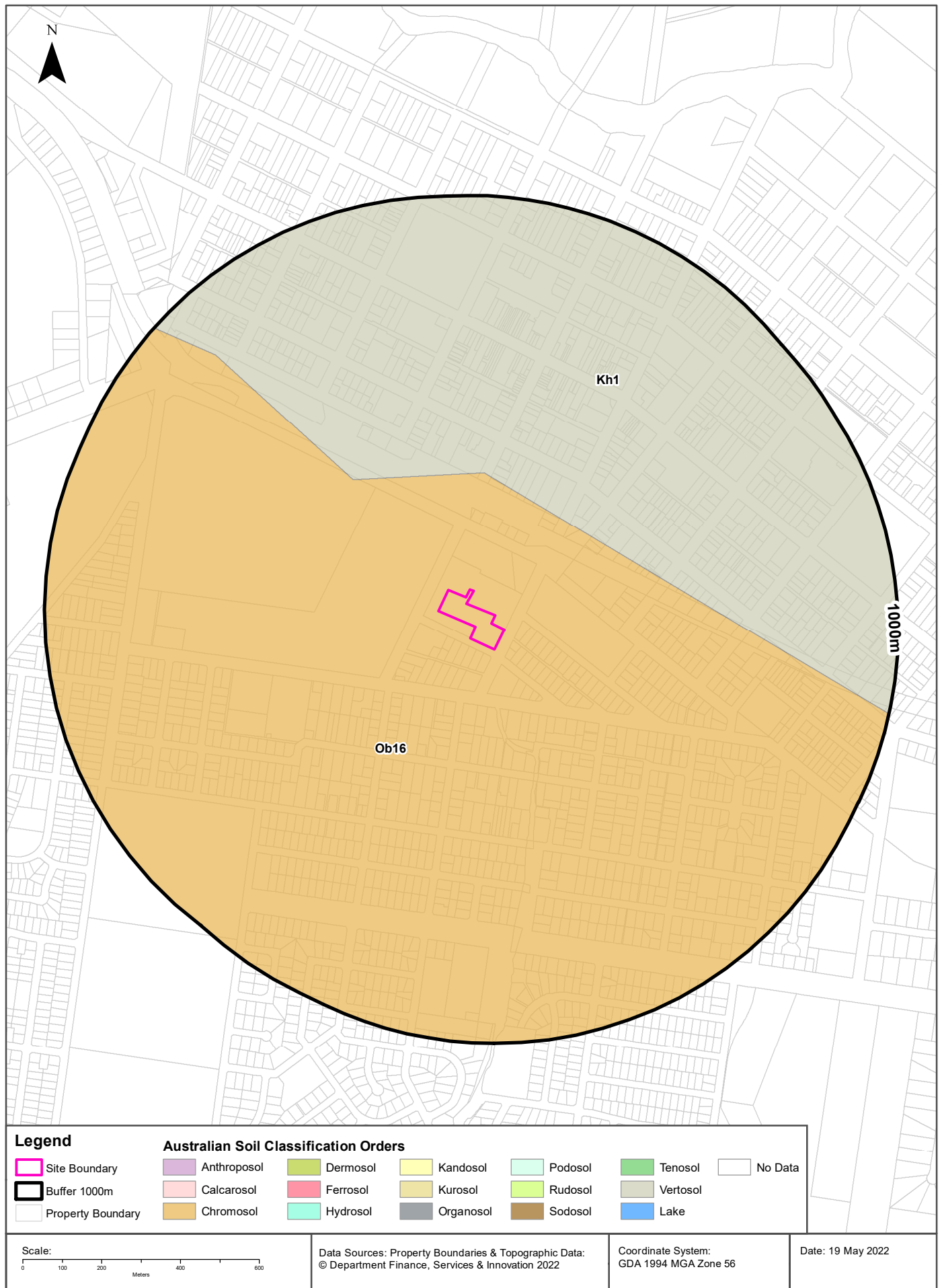
10-24 Anzac Parade, Gunnedah, NSW 2380

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

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

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



Soils

10-24 Anzac Parade, Gunnedah, NSW 2380

Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Ob16	Chromosol	Broken topography--undulating to low hilly terrain broken by steeply sloping cuesta-like ridges: chief soils of the undulating to low hilly areas are hard alkaline red soils (Dr2.23) and sometimes (Dr2.33). Associated are steep ridges with bare rock walls on their east-facing slopes, and various soils, including (Uc2.2), (Dy5.42), and (Gn2.15), usually covered with waterworn gravels on their gentler slopes. As mapped, areas of unit Kc1 are included. Data are limited.	0m	On-site
Kh1	Vertosol	Plains along major and minor functional streams: chief soils are dark cracking clays (Ug5.16) and hard alkaline dark soils (Dd1.33 and Dd1.43) often occurring together as soil complexes, and showing weak (few inches) gilgai features. There is a general similarity with unit Kh2.	271m	North East

Atlas of Australian Soils Data Source: CSIRO

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Acid Sulfate Soils

10-24 Anzac Parade, Gunnedah, NSW 2380

Environmental Planning Instrument - Acid Sulfate Soils

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

Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Atlas of Australian Acid Sulfate Soils

10-24 Anzac Parade, Gunnedah, NSW 2380



Acid Sulfate Soils

10-24 Anzac Parade, Gunnedah, NSW 2380

Atlas of Australian Acid Sulfate Soils

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

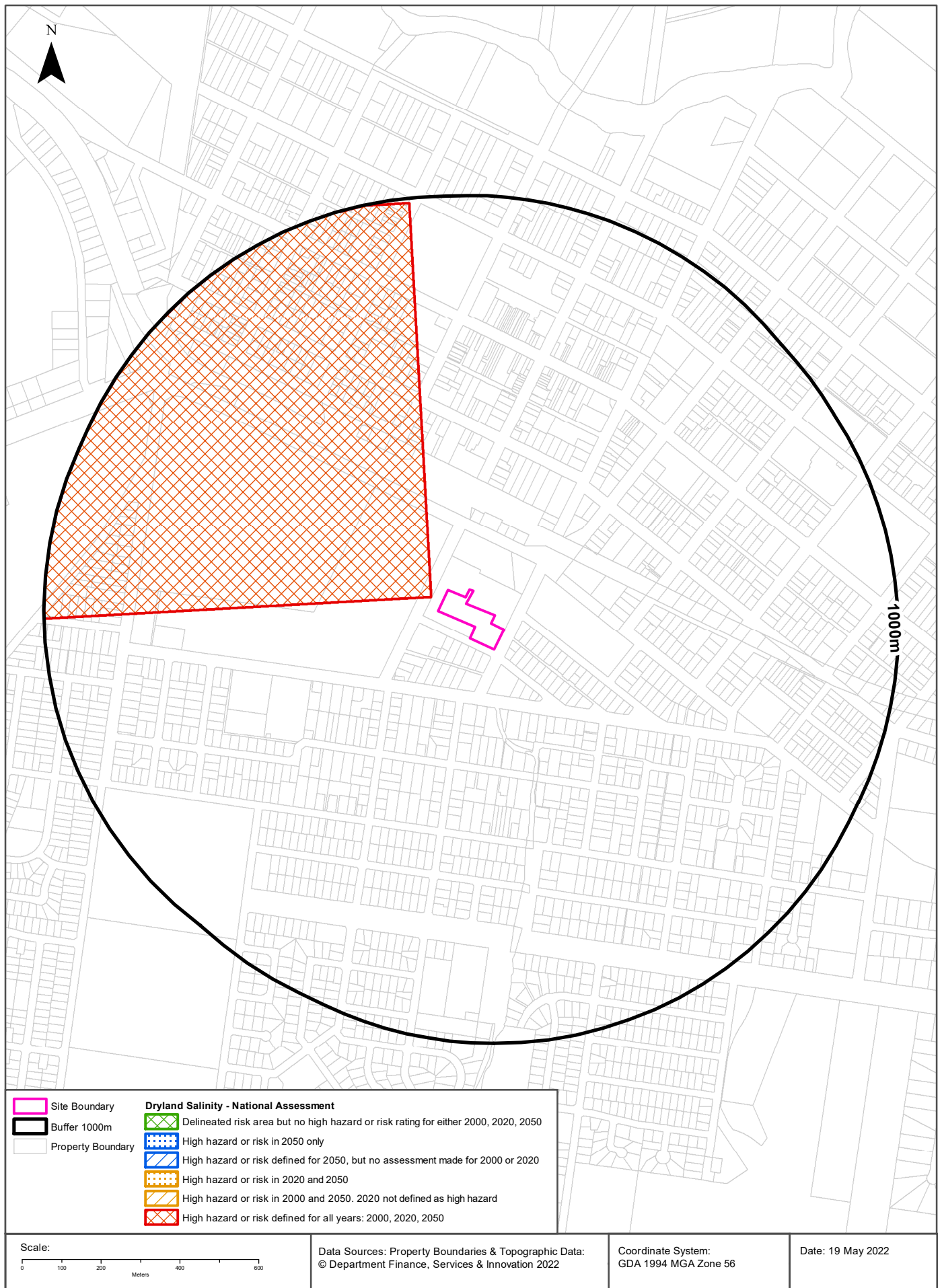
Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

10-24 Anzac Parade, Gunnedah, NSW 2380



Dryland Salinity

10-24 Anzac Parade, Gunnedah, NSW 2380

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	33m	North West

Dryland Salinity Data Source : National Land and Water Resources Audit

The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

Any persons using this information do so at their own risk.

In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

10-24 Anzac Parade, Gunnedah, NSW 2380

Mining Subsidence Districts

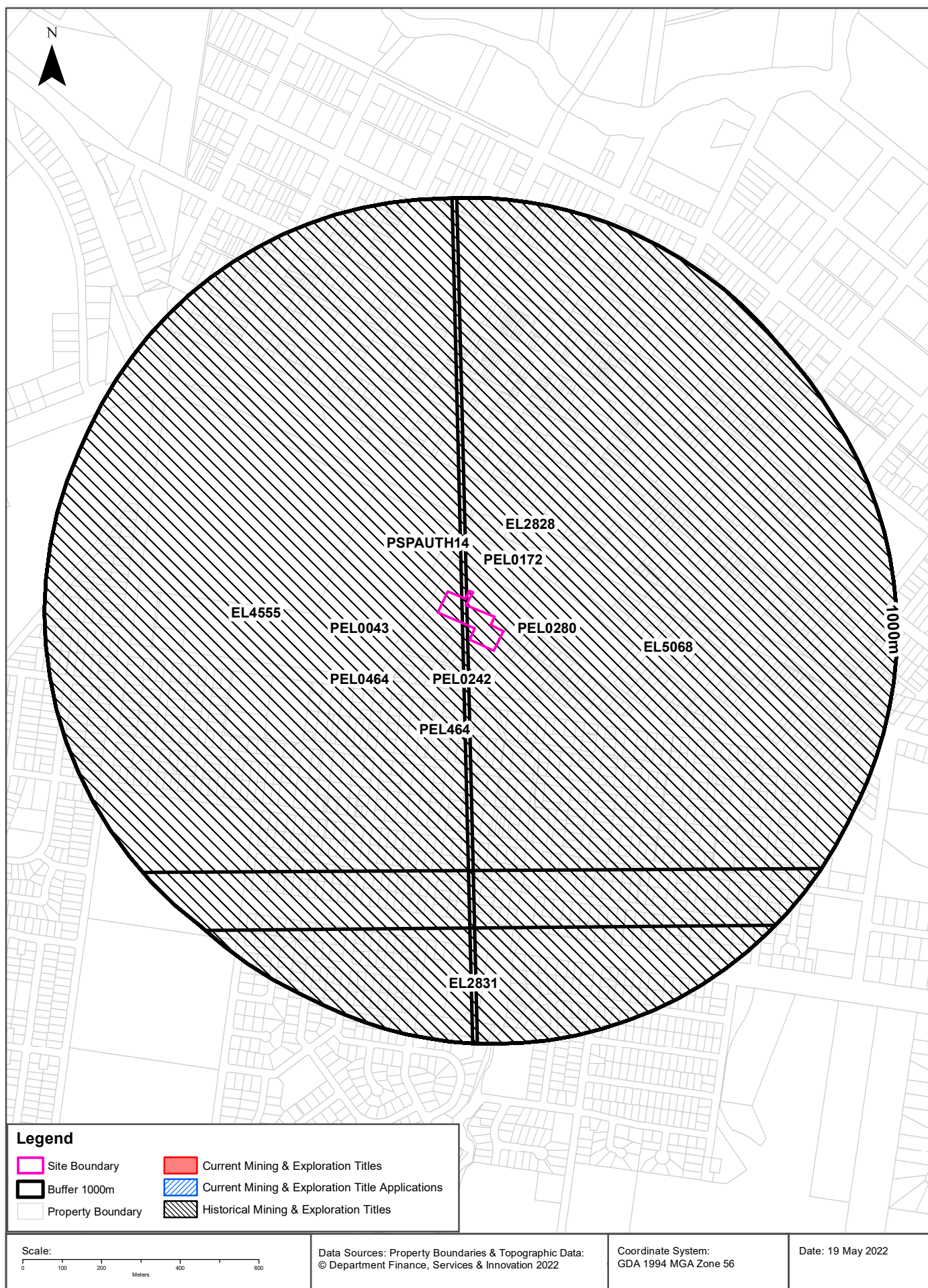
Mining Subsidence Districts within the dataset buffer:

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

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

10-24 Anzac Parade, Gunnedah, NSW 2380



Mining

10-24 Anzac Parade, Gunnedah, NSW 2380

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

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

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

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

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

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

Mining

10-24 Anzac Parade, Gunnedah, NSW 2380

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL4555	ALPHADALE PTY LIMITED	14 Jul 1993	13 Jul 1995	MINERALS	Au	0m	On-site
EL2828	CRA EXPLORATION PTY LIMITED	01 Mar 1987	01 Jul 1988	MINERALS	Au Cu Pb Zn	0m	On-site
PEL0172				PETROLEUM	Petroleum	0m	On-site
EL5068	ALPHADALE PTY LIMITED	24 Jul 1996	23 Jul 1998	MINERALS	Au Cu	0m	On-site
PEL0242	SION RESOURCES AUSTRALIA LTD	13/10/1980	12/10/1984	PETROLEUM	Petroleum	0m	On-site
PEL0280	TASMAN GAS PTY LTD, GOLDCHARGE MINING PTY LTD	15/06/1990	14/06/1992	PETROLEUM	Petroleum	0m	On-site
PEL0043	MID-EASTERN OIL NL			PETROLEUM	Petroleum	0m	On-site
PEL464	DART ENERGY (APOLLO) PTY LTD			MINERALS		0m	On-site
PEL0464	DART ENERGY (APOLLO) PTY LTD	22/10/2008	6/03/2015	PETROLEUM	Petroleum	0m	On-site
PSPAUTH14	MACQUARIE ENERGY PTY LTD	8/03/2007	7/03/2008	PETROLEUM	Petroleum	0m	On-site
EL2831	CRA EXPLORATION PTY LIMITED	01 Jun 1986	01 Jun 1988	MINERALS	Au Cu Pb Zn	704m	South

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

State Environmental Planning Policy

10-24 Anzac Parade, Gunnedah, NSW 2380

State Significant Precincts

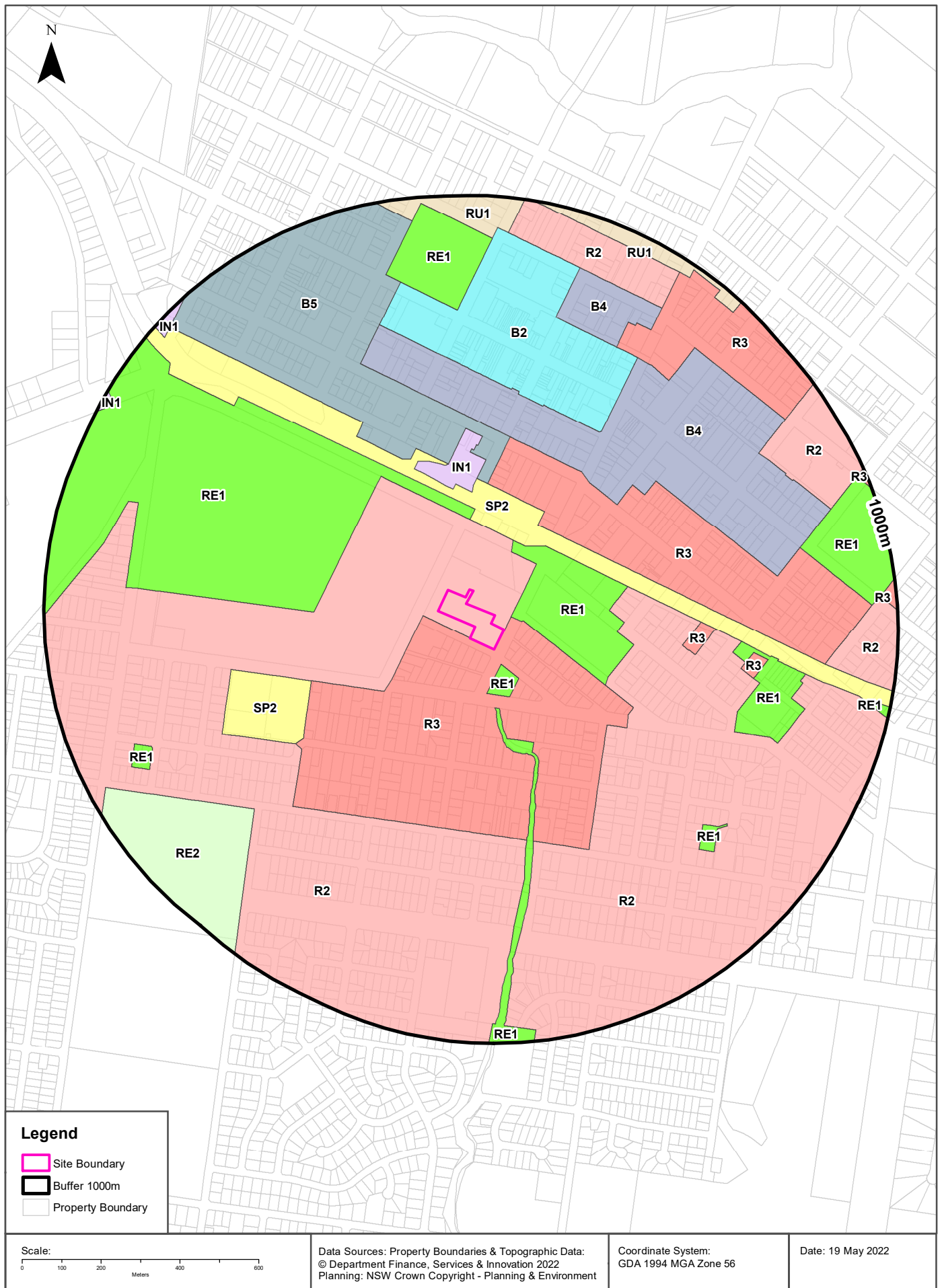
What SEPP State Significant Precincts exist within the dataset buffer?

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

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

10-24 Anzac Parade, Gunnedah, NSW 2380



Environmental Planning Instrument

10-24 Anzac Parade, Gunnedah, NSW 2380

Land Zoning

What EPI Land Zones exist within the dataset buffer?

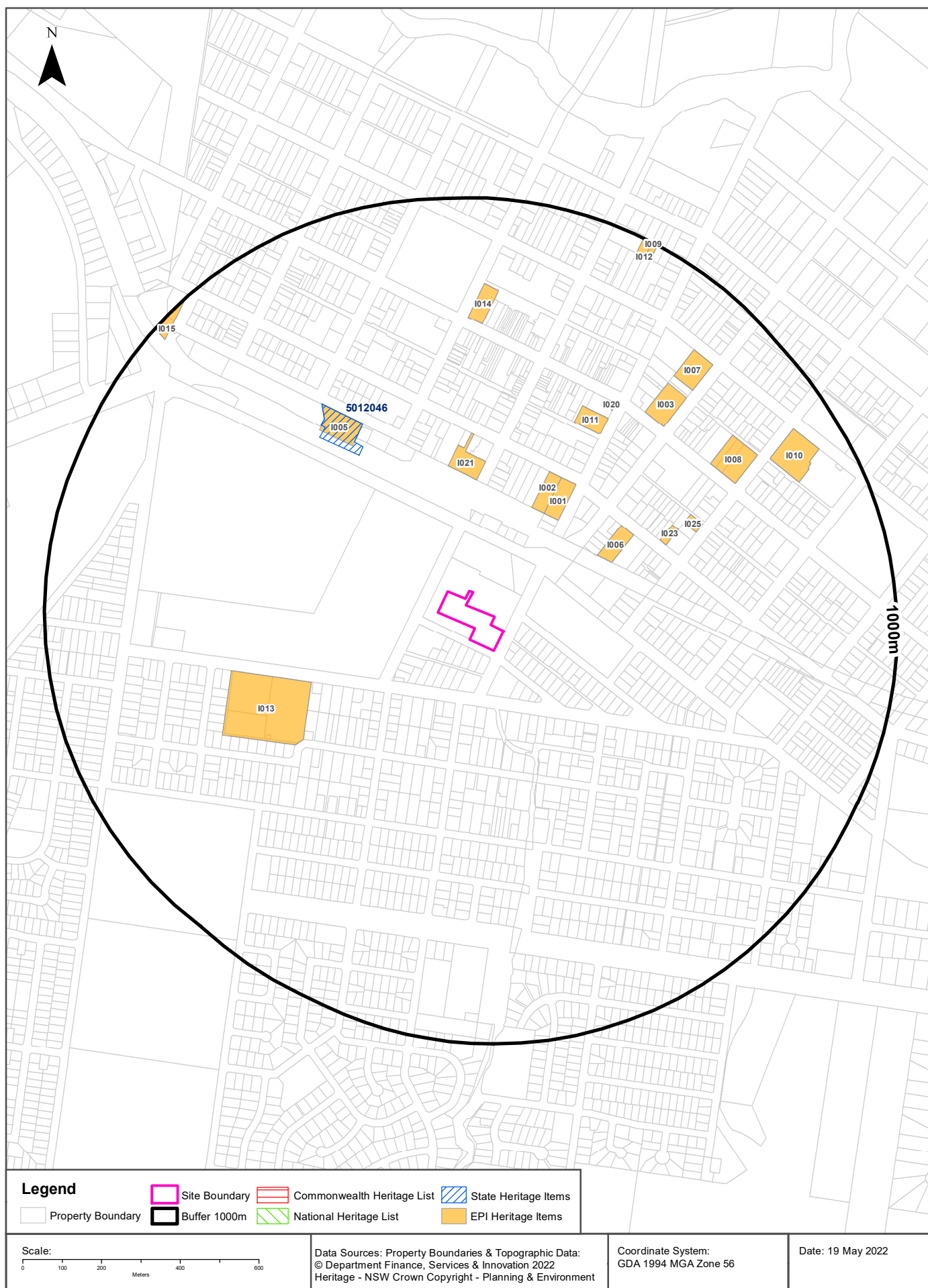
Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R2	Low Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		0m	On-site
R3	Medium Density Residential		Gunnedah Local Environmental Plan 2012	30/06/2017	30/06/2017	21/05/2021	Amendment No 10	0m	South
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		38m	East
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		40m	South East
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	30/06/2017	30/06/2017	21/05/2021	Amendment No 10	147m	South
SP2	Infrastructure	Rail Infrastructure Facilities	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		160m	North
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		179m	North West
R3	Medium Density Residential		Gunnedah Local Environmental Plan 2012	21/05/2021	21/05/2021	21/05/2021	Amendment No 11	234m	East
IN1	General Industrial		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		248m	North
B5	Business Development		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		273m	North West
SP2	Infrastructure	Cemetery	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		368m	South West
B4	Mixed Use		Gunnedah Local Environmental Plan 2012	21/05/2021	21/05/2021	21/05/2021	Amendment No 11	392m	North East
R3	Medium Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		453m	East
B2	Local Centre		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		501m	North
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		582m	East
R3	Medium Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		607m	East
RE2	Private Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		685m	South West
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		688m	South East
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		711m	North
B4	Mixed Use		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		715m	North East
R3	Medium Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		717m	North East
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		778m	East
R2	Low Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		783m	North East
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		804m	South West
R2	Low Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		817m	East
R2	Low Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		855m	North
RU1	Primary Production		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		894m	North
RE1	Public Recreation		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		943m	East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R3	Medium Density Residential		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		957m	East
IN1	General Industrial		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		963m	North West
IN1	General Industrial		Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	21/05/2021		969m	North West

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

10-24 Anzac Parade, Gunnedah, NSW 2380



Heritage

10-24 Anzac Parade, Gunnedah, NSW 2380

Commonwealth Heritage List

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

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

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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National Heritage List

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

Note. Please click on Place Id to activate a hyperlink to online website.

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

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
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State Heritage Register - Curtilages

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

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5012046	Gunnedah Railway Station Group	Werris Creek-Moree railway, Gunnedah	GUNNEDAH	02/04/1999	01160	2462	413m	North West

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

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

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I002	Carinya House	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	263m	North East
I001	Christ Church Anglican Church	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	270m	North East
I021	Namoi Flour Mills	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	283m	North

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I006	House	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	304m	North East
I013	Cemetery (Including Gates)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	368m	South West
I005	Railway Station	Item - General	State	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	443m	North West
I023	House	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	459m	North East
I011	Brick School (Formerly Primary School)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	504m	North East
I025	House	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	534m	North East
I020	Cenotaph Monument	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	582m	North East
I003	Courthouse	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	633m	North East
I008	Original Catholic Church (Brick Building)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	672m	North East
I014	Public Clock & Clock Tower	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	680m	North
I007	Original Methodist Church (Brick Building)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	751m	North East
I010	Convent of Mercy (Brick Buildings)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	805m	North East
I009	Original Convent (Brick House)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	957m	North East
I012	Two Storey Brick House (Formerly George Cohen's Residence)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	957m	North East
I015	Meggitt Ltd Flour Mill (Formerly Brunton's Flour Mill)	Item - General	Local	Gunnedah Local Environmental Plan 2012	29/06/2012	29/06/2012	29/06/2012	963m	North West

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Natural Hazards

10-24 Anzac Parade, Gunnedah, NSW 2380

Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
No records in buffer		

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

Ecological Constraints

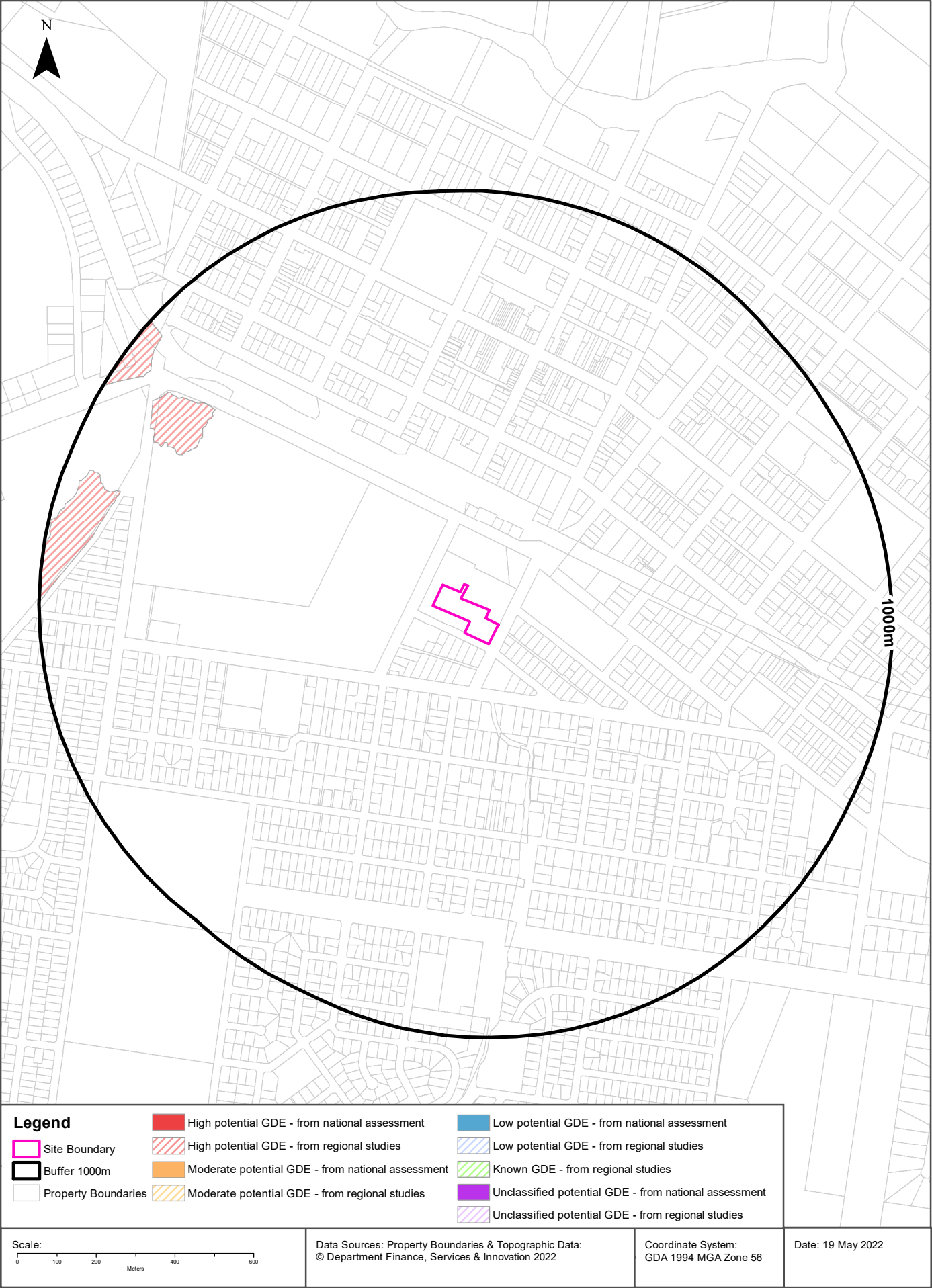
10-24 Anzac Parade, Gunnedah, NSW 2380

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

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

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



Ecological Constraints

10-24 Anzac Parade, Gunnedah, NSW 2380

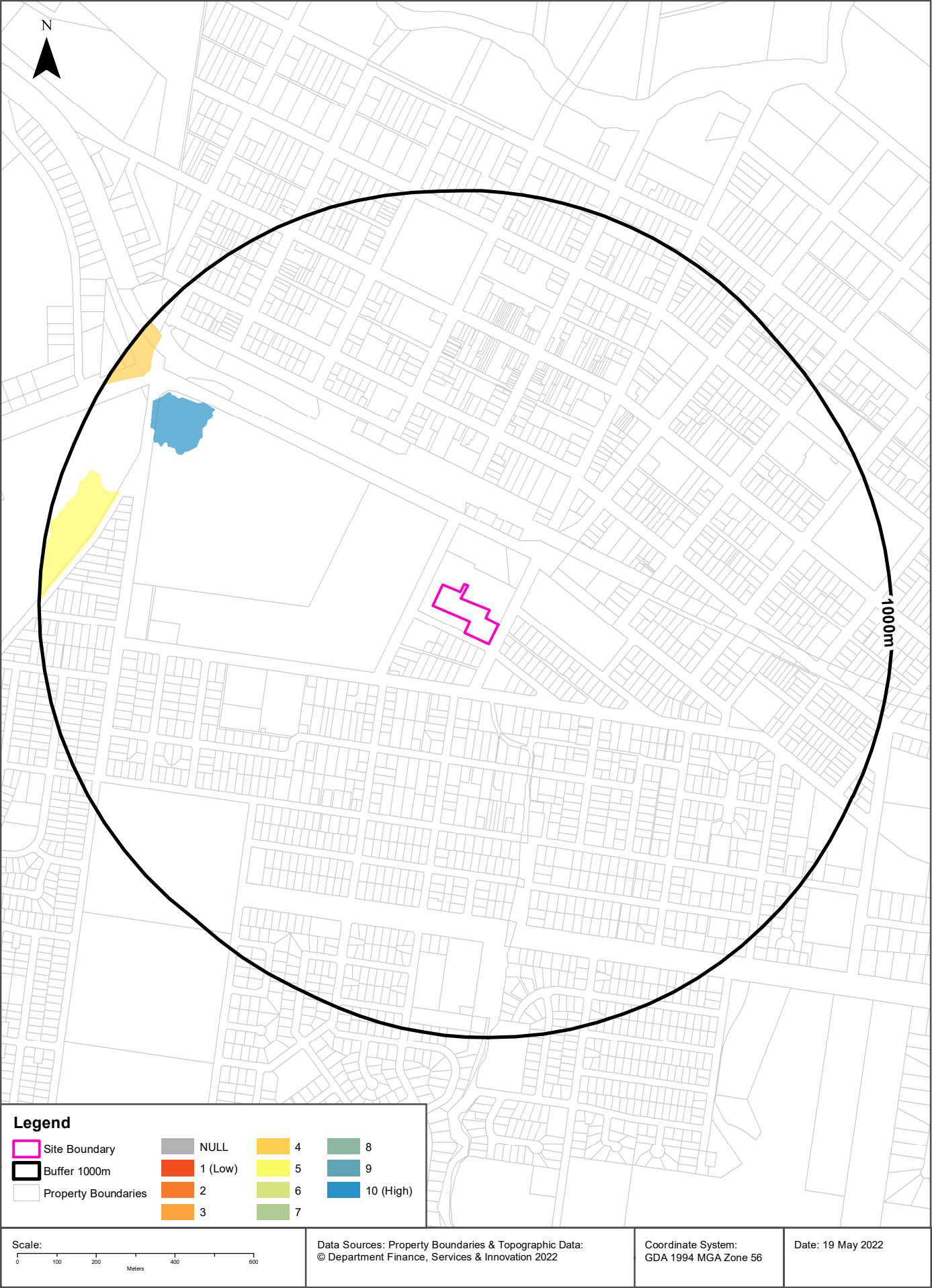
Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	High potential GDE - from regional studies	Alluvial plains, sandstone ridges and hills of basic intrusive rocks.	Vegetation		716m	North West

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

10-24 Anzac Parade, Gunnedah, NSW 2380



Ecological Constraints

10-24 Anzac Parade, Gunnedah, NSW 2380

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	10	Alluvial plains, sandstone ridges and hills of basic intrusive rocks.	Vegetation		716m	North West
Terrestrial	5	Alluvial plains, sandstone ridges and hills of basic intrusive rocks.	Vegetation		845m	West
Terrestrial	4	Alluvial plains, sandstone ridges and hills of basic intrusive rocks.	Vegetation		921m	North West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Ecological Constraints

10-24 Anzac Parade, Gunnedah, NSW 2380

NSW BioNet Atlas

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Calyptorhynchus lathamii	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Hamirostra melanosternon	Black-breasted Buzzard	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus nigrogriseus	Hoary Wattled Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Nyctophilus bifax	Eastern Long-eared Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus trougtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aprasia parapulchella	Pink-tailed Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Hoplocephalus bitorquatus	Pale-headed Snake	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Uvidicolus sphyrurus	Border Thick-tailed Gecko	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Cadellia pentastylis	Ooline	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Not Listed	Category 2	Not Listed	
Plantae	Flora	Digitaria porrecta	Finger Panic Grass	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Lepidium hyssopifolium	Aromatic Peppergrass	Endangered	Not Sensitive	Endangered	

Data does not include NSW category 1 sensitive species.

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

Location Confidences

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

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

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 6. End User must not remove any copyright notices, trade marks, digital rights management information, other embedded information, disclaimers or limitations from the Report or authorise any person to do so.
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 12. These Terms are subject to New South Wales law.



SafeWork NSW Records

LICENCE No.

VOL

35/027366



N.S.W. GOVERNMENT DEPARTMENT OF INDUSTRIAL RELATIONS

DANGEROUS GOODS BRANCH

WCA - Unclassified

Recfind File

35/027366

WorkCover Authority of NSW

Custodian Licensing Unit - OHS
Created 1/01/1975**HEALTH & SAFETY MANAGEMENT - LICENSING - Dangerous Goods Keeping**
Licence 35/027366 - Gunnedah, Marquis St**KEEPING LICENCE**

INSPECTION DISTRICT NO.

FILE SCANNED

DATE

13/2/92

BY

kew

DISK NAME

28A

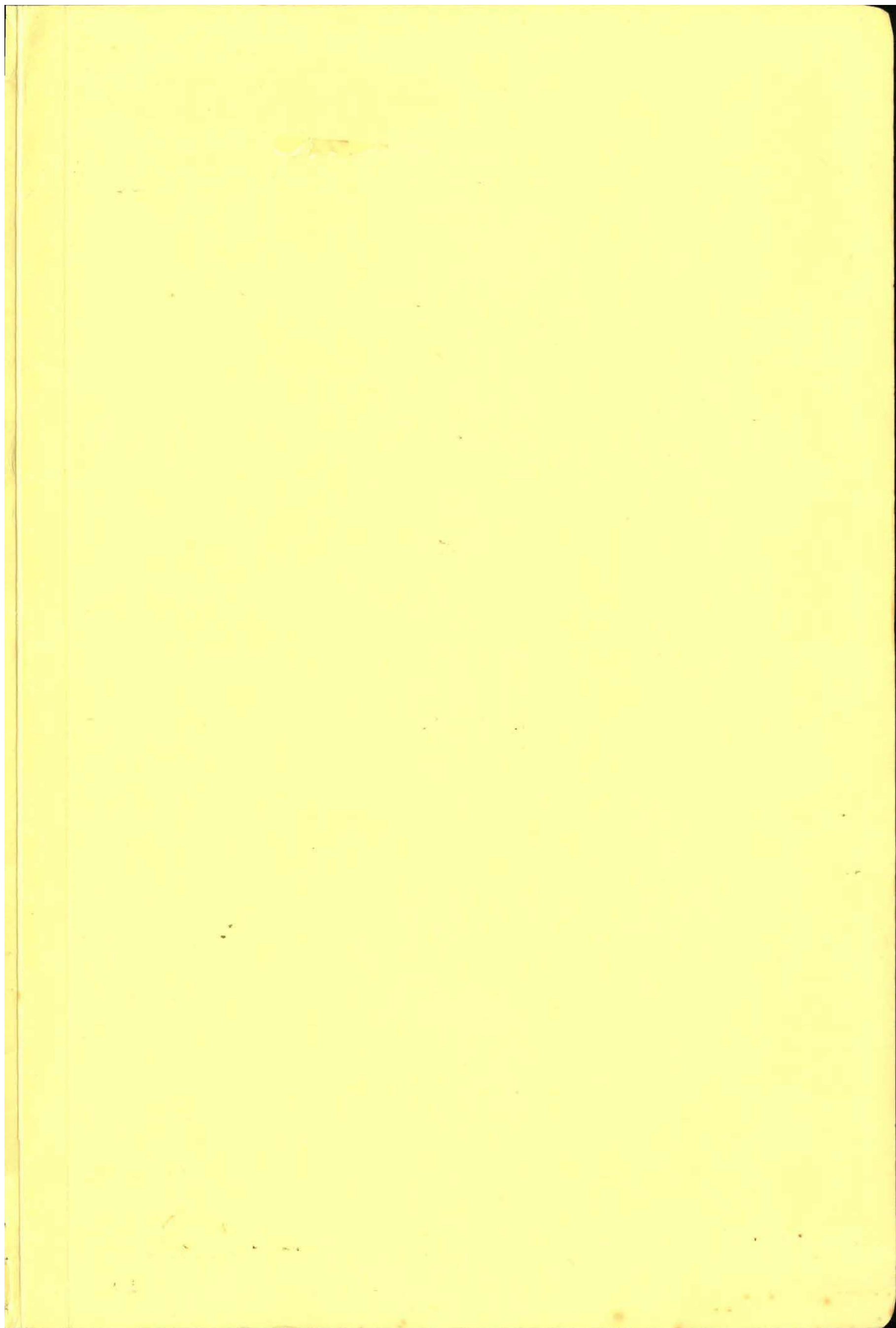


LICENCE No.

35/027366

VOL

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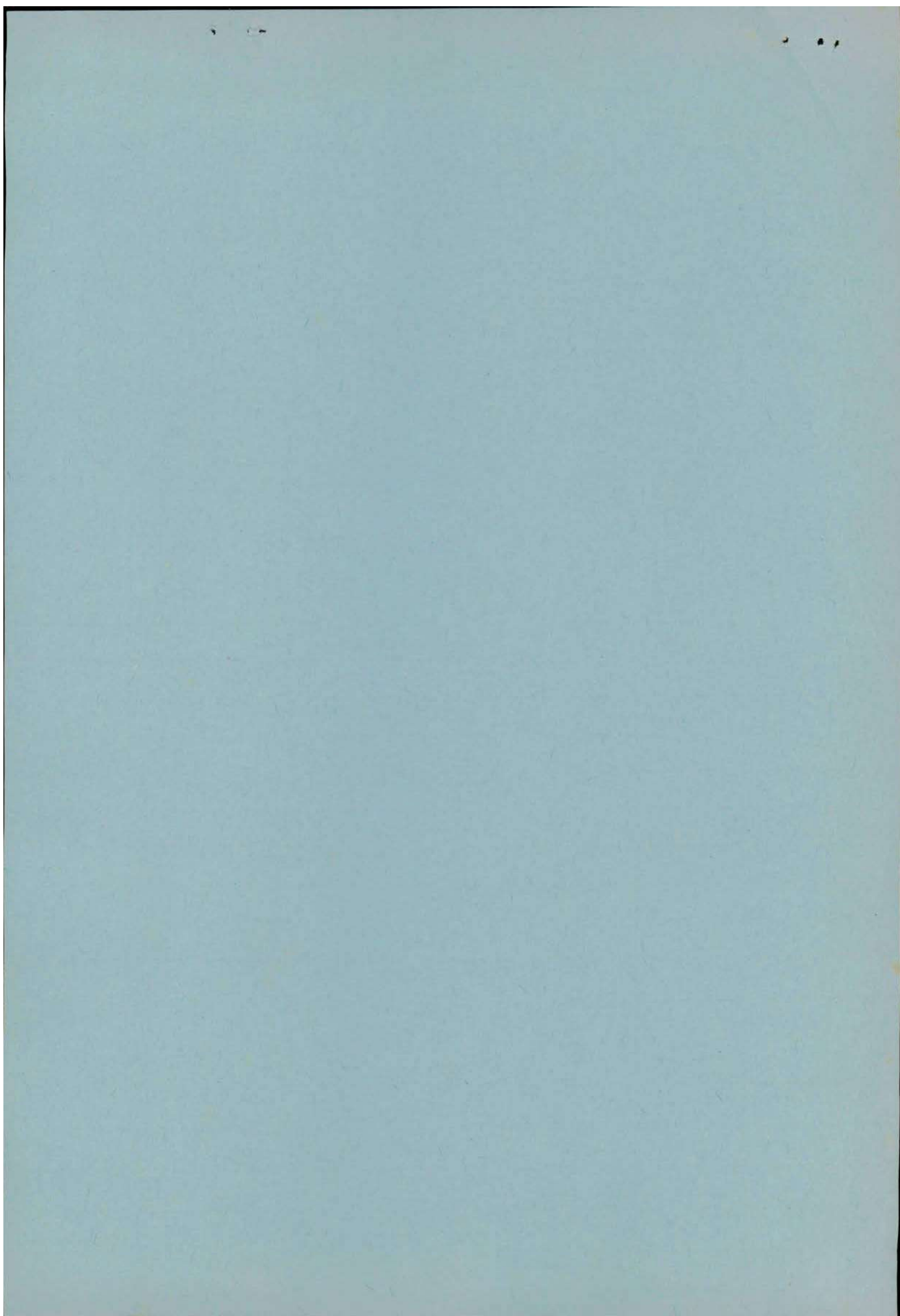


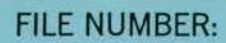
Licence No. _____

.....
Inspector of Dangerous Goods

.....
Date

[illegible]





Processing complete close in WF ☐

NOTIFICATION OF HAZARDOUS CHEMICALS CHECKLIST

INFRA #: _____

WORKFLOW #: 87394

TRIM #: _____

Acknowledgment Number (if provided): NDG or NHC 027366

New notification ☒ - Notification fee of \$100.00 received and processed Yes ☐ No ☐

Significant change ☐

Closure of record ☐

Abandonment of tank ☐

Contact details ☐

New Owner ☐

Replacement ☐ - Replacement fee of \$31.00 received and processed Yes ☐ No ☐

Notification not required (below manifest) ☐

Site Occupier: _____

Site Address: _____

h1 - 3108338513

FOLLOW-UP NOTES

DATA ENTRY (GLS)

	Yes	No	N/A
ASIC/ABN search done to confirm name	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GLS organisation fields updated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depots updated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sketch scanned (if necessary)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PROCESSING OF NOTIFICATION COMPLETED

Data entry and processing of notification form completed.

Staff members name: _____

Staff member's signature: _____

Date: _____



WorkCover

Occupational Health and Safety Act 2000 (OHS Act) –
Occupational Health and Safety Regulation 2001 (OHS Regulation)

DG – 01
June 2012

Notification of dangerous goods on premises form

This form is to be used by the occupier of a site where dangerous goods are stored and handled in quantities that, in total, exceed or are likely to exceed quantities specified in the column headed 'Manifest quantity' in schedule 5 of the OHS Regulation.

If you are taking over an existing dangerous goods site during a current notification period, do not use this form. Instead, please use the *Amendment to notification of dangerous goods on premises* (DG – 03) form (catalogue no. WC00902).

If you are notifying of the abandonment of a tank at a workplace that is underground, partially underground or fully mounded and the tank was used to store flammable gasses or flammable liquids use the *Notification of abandonment of tank* (NFTAT) form (catalogue no. WC03413).

For more information, please refer to the *Notification of dangerous goods on premises guide* (catalogue no. WC01385).

Fee

A \$100 fee is payable when submitting this form.

How to fill in this form

Please use **black** ink only and print within the boxes in BLOCK LETTERS.

Where options are provided, please mark box(es) with an **X** to indicate selection(s).

Only persons over the age of 18 years can notify on behalf of the occupier of premises where dangerous goods are stored.

'Business name' means trading name and refers to registrations made to the Office of Fair Trading.

Enquiries – 13 10 50

Privacy compliance statement

This information is collected by WorkCover NSW for the purposes of undertaking the evaluation, assessment and processing of a notification of dangerous goods on premises as required by the OHS Act.

WorkCover may also use this information for the purposes of confirming applicant details and it may also be used to establish and maintain a database and to assist the WorkCover inspectorate with their work generally. This information may also be made available to other state or territory or the commonwealth regulatory agencies including Trade and Investment NSW.

Except for the purpose of prosecution and unless such disclosure is otherwise required or permitted by law, the information will not be otherwise accessed by any third parties in a way that would identify the individual, without the consent of that individual. Applicants are able to gain access to personal information pertaining to their application that is held by WorkCover. You may also apply to WorkCover to access and correct any of your own personal information WorkCover holds if that information is inaccurate, incomplete, not relevant or out of date. Applications should be made in writing to the Privacy Contact Officer, WorkCover NSW, Gosford Office, Locked Bag 2906, Lisarow, NSW 2252.

1. APPLICATION TYPE (select only one box)

- ☒ New site \$100 fee applies.
- ☐ Further notification To be supplied every 12 months – \$100 fee applies.
- ☐ New occupier of an existing dangerous goods notifiable site (where the notification has expired) \$100 fee applies.

Please provide the following for a further notification or, if you are a new occupier of an existing dangerous goods notifiable site.

Acknowledgement number for the site (if known)

35/027366

Expiry date (DD/MM/YYYY)

/ /

or the site address

Street number/street name (include Lot or DP number if applicable)

Street name

MARQUIS STREET

Suburb

GUNNEDAH

State

NSW

Postcode

2380

2. SITE OCCUPIER'S DETAILS (person in control of the site)

Required for a new site or a new occupier of an existing dangerous goods notifiable site (where the notification period has expired). It is only required for a further notification where details have changed.

2.1 Individual occupier

Title

Family/Surname

Given name

Other names

Date of birth (DD/MM/YYYY)

/ /

Daytime contact number

Mobile number

Fax number

Email

Please go to section 2.4

2.2 Corporation occupier

Legal name

HUNTER NEW ENGLAND LOCAL HEALTH DISTRICT

Registered business (trading name)

HUNTER NEW ENGLAND LOCAL HEALTH DISTRICT - GUNNEDAH HOSPITAL

ABN

63-598-010-203

Please go to section 2.3

2.3 Contact person's details (to be completed for corporation occupiers)

Title

M R

Family/Surname

S Y M O N S

Given name

S T E W A R T

Other names

W I L L I A M

Date of birth (DD/MM/YYYY)

2 3 / 0 9 / 1 9 6 8

Daytime contact number

0 2 6 7 3 9 0 2 7 1

Mobile number

0 4 2 9 0 0 1 4 3 1

Fax number

0 2 6 7 3 9 0 1 7 2

After hours contact number

0 4 2 9 0 0 1 4 3 1

Email

s t e w a r t . s y m o n s @ h n e h e a l t h . n s w . g o v

2.4 Postal address (the address that will be used to send information to the occupier such as the acknowledgment letter and renewal reminder)

☐ Same as the site address

Street number/street name (include Lot or DP number if applicable)

P O B O X 3 6 3

Street name

Suburb

State

Postcode

G L E N I N N E S N S W 2 3 6 0

Please go to section 2.5

2.5 Emergency after hours contact person's details

☐ Same as above

Title: M R S Family/Surname: O ' B R I E N

Given name: M E L I S S A

Other names:

Date of birth (DD/MM/YYYY): / /

Daytime contact number: 0 2 6 7 4 1 8 0 0 0 Mobile number: 0 4 7 7 7 6 3 1 4 7 Fax number: 0 2 6 7 4 0 2 8 8 1

After hours contact number: 0 4 2 9 1 0 0 3 1 8

3. PREVIOUS OCCUPIER'S DETAILS (to be completed by the new occupier, if known)**Individual**

Title

Family/Surname

Given name

Other names

Corporation

Legal name

Registered business (trading name)

ABN

4. SITE DETAILS (complete for a new notification)

An A4 size sketch of the site, showing all storage facilities must be submitted with this application form and a photocopy of a street directory map or other map showing the locality of the site. The site must be marked on this map with an X. Refer to the *Notification of dangerous goods on premises guide* (catalogue no. WC01385) for more information.

☒ I have attached an A4 size sketch of the site.☒ I have attached a photocopy from a local street directory or other map showing the locality of the site. The location of the site has been marked on the map with an X.

Street number/street name (include Lot or DP number if applicable)

Street name

Suburb

State

Postcode

Nearest cross street

ANSZIC Code

Description

HOSPITAL

Is this a coal workplace or mining workplace? ☐ Yes ☒ No**5. SITE STAFFING DETAILS** (complete for a new notification or for further notifications if details have changed since the last notification)Is the site staffed? ☒ Yes. Please complete the following ☐ No. Please go to section 6.Number of staff on site 1 0 0 Hours per day 2 4 Days per week 7

6. STORAGE DETAILS (must be completed for both new notifications and further notifications)

If space is insufficient please provide details on a separate sheet of paper.

Storage facility identifier		Type of storage facility							
LPG1		A B O V E G R O U N D T A N K							
Class or division		Maximum storage capacity		Unit (L or kg or number)					
2 . 1		7 5 0 0		L					
UN number		Class or division		Typical quantity		Unit (L or kg or number)		Packing group	
1 0 7 5		2 . 1		7 5 0 0		L			
Proper shipping name									
P E T R O L E U M G A S - L I Q U I F I E D									
Product or common name									
L I Q U I D P E T R O L E U M G A S									
UN number		Class or division		Typical quantity		Unit (L or kg or number)		Packing group	
Proper shipping name									
Product or common name									
UN number		Class or division		Typical quantity		Unit (L or kg or number)		Packing group	
Proper shipping name									
Product or common name									
UN number		Class or division		Typical quantity		Unit (L or kg or number)		Packing group	
Proper shipping name									
Product or common name									

Storage facility
identifier

L P G 2

Type of storage facility

A B O V E G R O U N D T A N K

Class or division

2 . 1

Maximum storage capacity

7 5 0 0

Unit (L or kg or number)

L

UN number

1 0 7 5

Class or division

2 . 1

Typical quantity

7 5 0 0

Unit (L or kg or number)

L

Packing group

Proper shipping name

P E T R O L E U M G A S - L I Q U I F I E D

Product or common name

L I Q U I D P E T R O L E U M G A S

UN number

Class or division

Typical quantity

Unit (L or kg or number)

Packing group

Proper shipping name

Product or common name

UN number

Class or division

Typical quantity

Unit (L or kg or number)

Packing group

Proper shipping name

Product or common name

UN number

Class or division

Typical quantity

Unit (L or kg or number)

Packing group

Proper shipping name

Product or common name

7. GOODS TOO DANGEROUS TO BE TRANSPORTED (must be completed for both new notifications and further notifications)

If space is insufficient, please provide details on a separate sheet of paper.

Are there goods too dangerous to be transported stored or handled on the site?

☐ Yes. Please complete the following ☒ No. Please go to section 8.

Provide the storage facility identifier in which the dangerous goods too dangerous to transport are stored or handled.

Name as listed in the Australian Dangerous Goods code (appendix A)

Maximum quantity

Units (L or kg)

Name as listed in the Australian Dangerous Goods code (appendix A)

Maximum quantity

Units (L or kg)

Please go to section 8

8. DECLARATION (must be completed)

I, S T E W A R T S Y M O N S

(print name)

T E C H N I C A L S E R V I C E M A N A G E R H N E L H D

(print position in the corporation)

declare and understand that:

- I am 18 years of age or over
- the information provided is true and correct in every particular
- it is an offence under the WHS Regulation for a person to make a statement that the person knows to be false or misleading
- I have the authority to make this application on behalf of the occupier of the site.

Signature of person making this declaration



Date (DD/MM/YYYY)

1 2 / 0 3 / 2 0 1 5

Please go to section 9

9. PAYMENT OF FEE (the \$100 must be paid when this notification is submitted)

☐ Pay by cheque. Cheque made payable to WorkCover.

☐ Pay by money order. Money order made payable to WorkCover.

☒ Pay by credit card. Please charge \$100 to my: ☐ MasterCard ☒ Visa

A payment processing fee applies to credit card payments (Visa and MasterCard 0.40%) plus applicable GST.

Card number

Card expiry date (MM/YYYY)

Cardholder name (please print name as displayed on credit card)

H N E H E A L T H B A R R Y F R A N C I S

Cardholder signature

Date (DD/MM/YYYY)

\$
Date: 14.4.15
Rec No: EB

000018N03210 0002 18/03/15 OR CARO

8/17/16

10. CHECKLIST TO SUBMIT YOUR APPLICATION

Attached	Document
----------	----------

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | A4 size site sketch map. Refer to the <i>Notification of dangerous goods on premises guide</i> (catalogue no. WC01385). |
| <input checked="" type="checkbox"/> | Legible photocopy from a local street directory or other map showing the locality of the site. Mark the location of the site on the map with an X. |
| <input checked="" type="checkbox"/> | \$100 fee. |

11. HOW TO SUBMIT THIS FORM

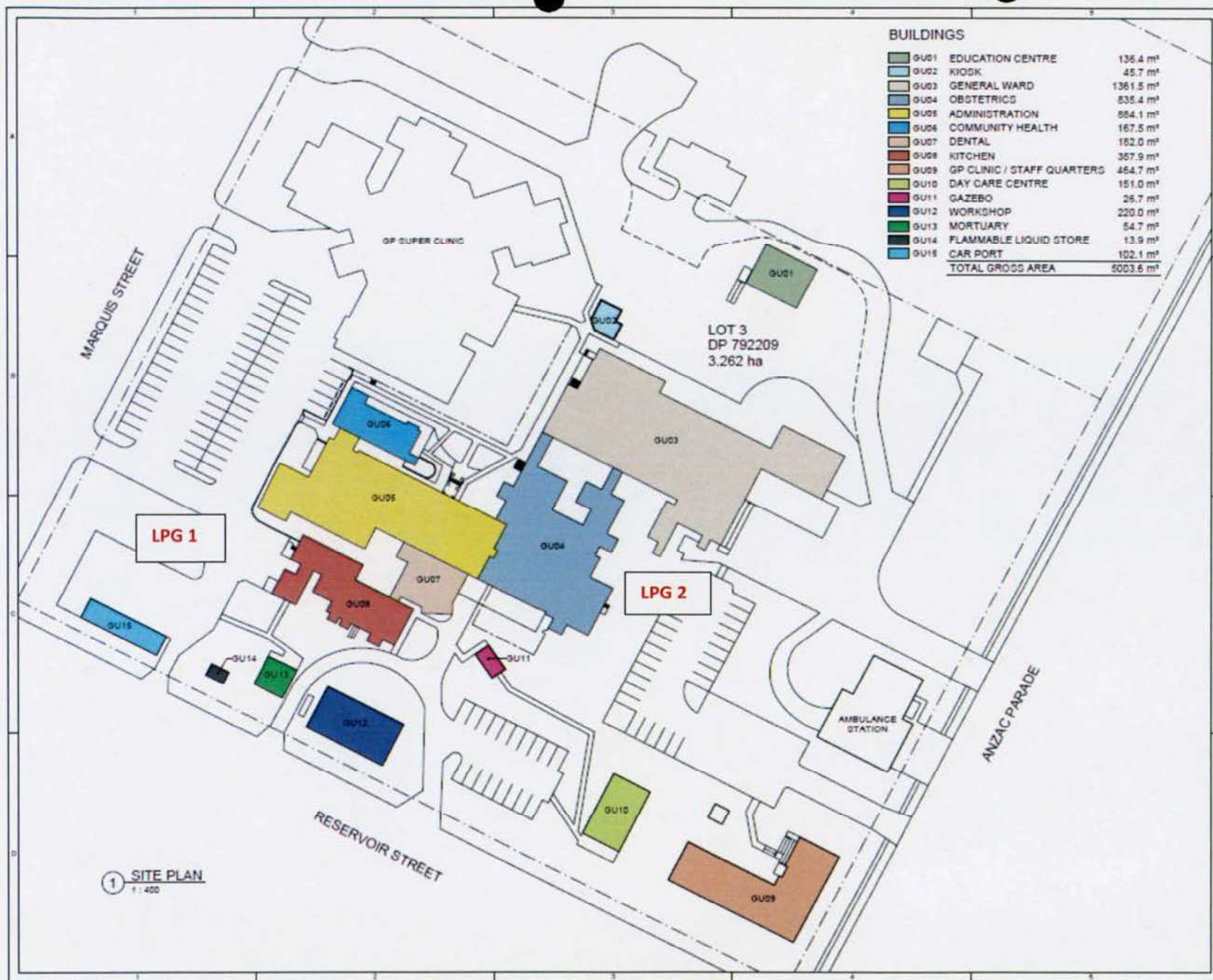
The declaration signature must be visible on any applications lodged by fax. Please fax or post or hand deliver the application to WorkCover. Do not do all three.

Fax: (02) 9287 5500

Post: Licensing Solutions, WorkCover NSW, Locked Bag 2906, Lisarow, NSW 2252.

At any WorkCover office. WorkCover office locations are listed on the WorkCover website workcover.nsw.gov.au

Note: It is a requirement of clause 361 Emergency Plans of the *Work Health and Safety Regulation 2011* that you lodge an emergency plan with Fire and Rescue NSW. For more information, please refer to the Fire and Rescue NSW website fire.nsw.gov.au



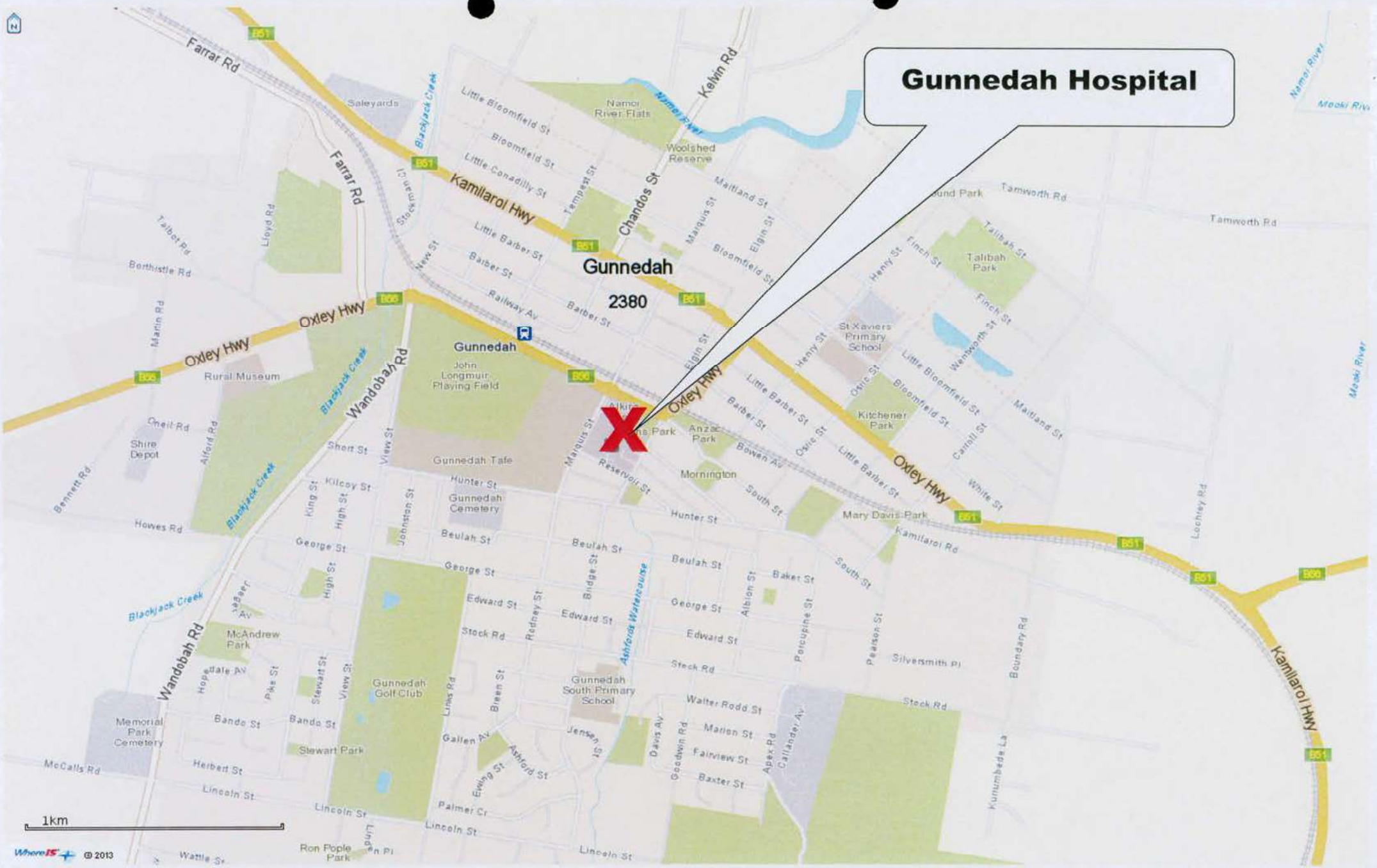
Notifiable
Dangerous
Goods Locations

LPG 1 – Above ground LPG
Tank (7500 l)

LPG 2 – Above ground LPG
Tank (7500 l)



Gunnedah Hospital



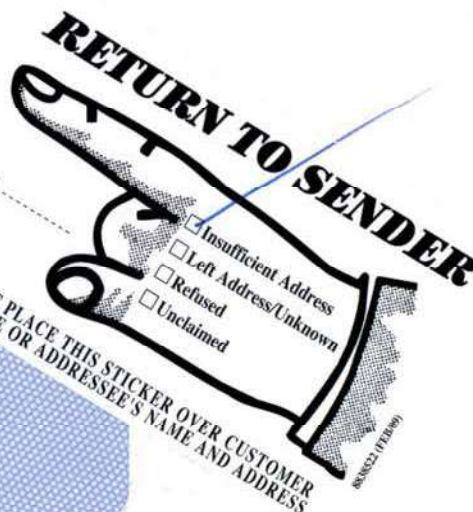
1km



WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
WorkCover Assistance Service 13 10 50
DX 731 Sydney workcover.nsw.gov.au

GND5-1

POSTAGE
PAID
AUSTRALIA



RECEIVED
GOS-MAIL CENTRE
14 JUL 2014
WORKCOVER
NEW SOUTH WALES

WF-19315



* 16 JUN 14 20:35 *
* SUIF NSW FMOOR 7084 *



WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
t 02 4321 5000 f 02 4325 4145
WorkCover Assistance Service 13 10 50
DX 731 Sydney workcover.nsw.gov.au

June 13, 2014

CONTACT: MR STEWART SYMONS
HUNTER NEW ENGLAND LOCAL HEALTH DISTRICT

Dear Sir/Madam

RE: Notification of dangerous goods on premises NDG027366
PREMISES: MARQUIS ST, GUNNEDAH, NSW 2380 AUSTRALIA

The current requirements for notification of dangerous goods on premises are set out in the *Work Health and Safety (WHS) Act 2011* and the *Occupational Health and Safety (OHS) Regulation 2001*.

Transitional arrangements will continue which means notification requirements will remain under the OHS Regulation 2001 until 31 December 2014 and annual notification requirements will remain.

Occupiers of premises on which dangerous goods are stored or handled in notifiable quantities are required to notify WorkCover NSW of the dangerous goods on those premises and also within 14 days should any changes occur to types, quantities or risk associated with the use, handling or storage of dangerous goods notified, or site occupier details change. Please note that it is an offence not to comply with these requirements. Penalties exist for non-compliance.

The manifest and placarding quantities relating to notification are published in the 'Notification of dangerous goods on premises guide' (publication catalogue number WC01385) available on WorkCover NSW's website. If you store or handle dangerous goods in notifiable quantities please complete the enclosed application form DG-01.

If after reading the guidance material, should you determine that you do **NOT** store or handle notifiable amounts of dangerous goods, please complete and sign the 'Declaration A' attached and return to WorkCover NSW.

Where the site has been sold or the lease has ended, please inform WorkCover NSW of the date you sold/vacated the premises and whether you removed the dangerous goods before leaving. Where possible, please supply the new owner's/occupier's name and contact address.

Further information on dangerous goods notification legislation requirements and advice on arrangements for transition to the new legislation is available on the Workcover website www.workcover.nsw.gov.au or by calling WorkCover on 13 10 50.

Yours faithfully

Fiona Hayman
Operations Manager
Customer Service Centre

The completed declaration (where applicable) is to be returned to:

Work Cover NSW
Dangerous Good Notification Team
Licensing Solutions
Locked Bag 2906 LISAROW NSW 2252

Or faxed to (02) 9287 5500 or email ls@workcover.nsw.gov.au

NOTE: This Declaration should only be completed if you do not store or handle a notifiable quantity of dangerous goods on the premises: NDG027366 MARQUIS ST, GUNNEDAH, NSW 2380 AUSTRALIA

DECLARATION A

To be completed where notifiable amounts of dangerous goods **are not** stored or handled.

I..... (name).....(address)

Declare that I do not store and handle dangerous goods at premises in quantities that exceed or are likely to exceed the manifest quantity in the Table to Schedule 5 of the *Occupational Health and Safety Regulation 2001*.

.....Signature

.....Date



NOTIFICATION OF DANGEROUS GOODS ON PREMISES
CHECKLIST (FDG01)

INFRA #: 56365

TRIM #:

Licence/Acknowledgment Number: NDG 027366

Site Occupier: Hunter New England Local Health District

Site Address: Marquis St
Gunnedah NSW 2380

Current Expiry Date: / /

Notification fee of \$100.00 received and processed ☐ Yes

R1-1520702708
16/9/13

FOLLOW-UP NOTES

DATA ENTRY (GLS)

	Yes	No
ASIC/ABN search done to confirm name	<input type="checkbox"/>	<input type="checkbox"/>
GLS organisation fields updated	<input type="checkbox"/>	<input type="checkbox"/>
Depots updated	<input type="checkbox"/>	<input type="checkbox"/>
Sketch scanned (if necessary)	<input type="checkbox"/>	<input type="checkbox"/>

\$ 17/9/13
Date: 17/9/13
Rec No:

EXPIRY DATE DETAILS

	Yes	No
Expiry Date Reset		
Re-notification for further 12 months	<input type="checkbox"/>	<input type="checkbox"/>
Reset date of expiry (if necessary)	<input type="checkbox"/>	<input type="checkbox"/>

Bay 513E
B2011/02295

1-2088523918

APPLICATION FINALISED

	Yes	No
Acknowledgment printed	<input type="checkbox"/>	<input type="checkbox"/>
Notification not required (below manifest)	<input type="checkbox"/>	<input type="checkbox"/>
TRIM record and hard copy file created (new sites only)	<input type="checkbox"/>	<input type="checkbox"/>
DG's mail register updated as completed	<input type="checkbox"/>	<input type="checkbox"/>

PROCESSING OF NOTIFICATION COMPLETED

Data entry and processing of notification form completed.

Staff members name: *J 16/9/13*

Staff member's signature: _____ Date: _____

Gunnedah



WorkCover

Occupational Health and Safety Act 2000 (OHS Act) –
Occupational Health and Safety Regulation 2001 (OHS Regulation)

DG – 01
June 2012

Notification of dangerous goods on premises form

This form is to be used by the occupier of a site where dangerous goods are stored and handled in quantities that, in total, exceed or are likely to exceed quantities specified in the column headed 'Manifest quantity' in schedule 5 of the OHS Regulation.

If you are taking over an existing dangerous goods site during a current notification period, do not use this form. Instead, please use the *Amendment to notification of dangerous goods on premises* (DG – 03) form (catalogue no. WC00902).

If you are notifying of the abandonment of a tank at a workplace that is underground, partially underground or fully mounded and the tank was used to store flammable gasses or flammable liquids use the *Notification of abandonment of tank* (NFTAT) form (catalogue no. WC03413).

For more information, please refer to the *Notification of dangerous goods on premises guide* (catalogue no. WC01385).

Fee

A \$100 fee is payable when submitting this form.

How to fill in this form

Please use **black** ink only and print within the boxes in BLOCK LETTERS.

Where options are provided, please mark box(es) with an ☒ to indicate selection(s).

Only persons over the age of 18 years can notify on behalf of the occupier of premises where dangerous goods are stored.

'Business name' means trading name and refers to registrations made to the Office of Fair Trading.

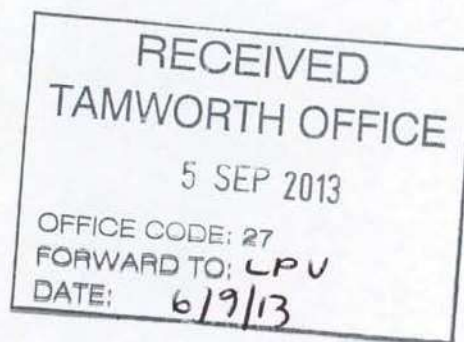
Enquiries – 13 10 50

Privacy compliance statement

This information is collected by WorkCover NSW for the purposes of undertaking the evaluation, assessment and processing of a notification of dangerous goods on premises as required by the OHS Act.

WorkCover may also use this information for the purposes of confirming applicant details and it may also be used to establish and maintain a database and to assist the WorkCover inspectorate with their work generally. This information may also be made available to other state or territory or the commonwealth regulatory agencies including Trade and Investment NSW.

Except for the purpose of prosecution and unless such disclosure is otherwise required or permitted by law, the information will not be otherwise accessed by any third parties in a way that would identify the individual, without the consent of that individual. Applicants are able to gain access to personal information pertaining to their application that is held by WorkCover. You may also apply to WorkCover to access and correct any of your own personal information WorkCover holds if that information is inaccurate, incomplete, not relevant or out of date. Applications should be made in writing to the Privacy Contact Officer, WorkCover NSW, Gosford Office, Locked Bag 2906, Lisarow, NSW 2252.



Receipt 18 # 2519
\$560-

WORK HOME
SAFE SAFE

Page 1 of 12

5/9/13



WORKCOVER
NEW SOUTH WALES

Business Assistance Unit
13 10 50

ALL
PAID
FOR

Receipt
18#2519

safe business is
good business

1. APPLICATION TYPE (select only one box)

- ☒ New site \$100 fee applies.
- ☐ Further notification To be supplied every 12 months – \$100 fee applies.
- ☐ New occupier of an existing dangerous goods notifiable site (where the notification has expired) \$100 fee applies.

Please provide the following for a further notification or, if you are a new occupier of an existing dangerous goods notifiable site.

Acknowledgement number for the site (if known)

35/ 0 2 7 3 6 6

Expiry date (DD/MM/YYYY)

/ /

or the site address

Street number/street name (include Lot or DP number if applicable)

Street name

M A R Q U I S S T R E E T

Suburb

G U N N E D A H

State

N S W

Postcode

2 3 8 0

2. SITE OCCUPIER'S DETAILS (person in control of the site)

Required for a new site or a new occupier of an existing dangerous goods notifiable site (where the notification period has expired). It is only required for a further notification where details have changed.

2.1 Individual occupier

Title

Family/Surname

Given name

Other names

Date of birth (DD/MM/YYYY)

/ /

Daytime contact number

Mobile number

Fax number

Email

Please go to section 2.4

2.2 Corporation occupier

Legal name

H U N T E R N E W E N G L A N D L O C A L H E A L T H

D I S T R I C T

Registered business (trading name)

H U N T E R N E W E N G L A N D L O C A L H E A L T H

D I S T R I C T

ABN

6 3 - 5 9 8 - 0 1 0 - 2 0 3

Please go to section 2.3

2.3 Contact person's details (to be completed for corporation occupiers)

Title	Family/Surname	
M R	S Y M O N S	
Given name		
S T E W A R T		
Other names		
W I L L I A M		
Date of birth (DD/MM/YYYY)		
2 3 / 0 9 / 1 9 6 8		
Daytime contact number	Mobile number	Fax number
0 2 6 7 3 9 0 2 7 1	0 4 2 9 0 0 1 4 3 1	0 2 6 7 3 9 0 1 7 2
After hours contact number		
0 4 2 9 0 0 1 4 3 1		
Email		
s t e w a r t . s y m o n s @ h n e h e a l t h . n s w . g o v .		

au

2.4 Postal address (the address that will be used to send information to the occupier such as the acknowledgment letter and renewal reminder)

☐ Same as the site address

Street number/street name (include Lot or DP number if applicable)

P O B O X 3 6 3

Street name

Suburb

G L E N I N N E S

State

N S W

Postcode

2 3 6 0

Please go to section 2.5

2.5 Emergency after hours contact person's details

☐ Same as above

Title	Family/Surname	
M R S	Y O U N G	
Given name		
C A R O L E		
Other names		
Date of birth (DD/MM/YYYY)		
Daytime contact number	Mobile number	Fax number
0 2 6 7 4 1 8 0 0 0	0 4 2 9 1 0 0 3 1 8	0 2 6 7 4 0 2 8 8 1
After hours contact number		
0 4 2 9 1 0 0 3 1 8		

3. PREVIOUS OCCUPIER'S DETAILS (to be completed by the new occupier, if known)**Individual**

Title

Family/Surname

Given name

Other names

Corporation

Legal name

Registered business (trading name)

ABN

4. SITE DETAILS (complete for a new notification)

An A4 size sketch of the site, showing all storage facilities must be submitted with this application form and a photocopy of a street directory map or other map showing the locality of the site. The site must be marked on this map with an X. Refer to the *Notification of dangerous goods on premises guide* (catalogue no. WC01385) for more information.

☒ I have attached an A4 size sketch of the site.☒ I have attached a photocopy from a local street directory or other map showing the locality of the site. The location of the site has been marked on the map with an X.

Street number/street name (include Lot or DP number if applicable)

Street name

Suburb

State

Postcode

Nearest cross street

ANSZIC Code

Description

HOSPITAL

Is this a coal workplace or mining workplace? ☐ Yes ☒ No**5. SITE STAFFING DETAILS** (complete for a new notification or for further notifications if details have changed since the last notification)Is the site staffed? ☒ Yes. Please complete the following ☐ No. Please go to section 6.

Number of staff on site

Hours per day

Days per week

6. STORAGE DETAILS (must be completed for both new notifications and further notifications)

If space is insufficient please provide details on a separate sheet of paper.

Storage facility identifier	Type of storage facility
LPG1	A B O V E G R O U N D T A N K
Class or division	Maximum storage capacity Unit (L or kg or number)
2 . 1	7 5 0 0 L

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
1 0 7 5	2 . 1	7 5 0 0	L	

Proper shipping name

P E T R O L E U M G A S - L I Q U I F I E D

Product or common name

L I Q U I D P E T R O L E U M G A S

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group

Proper shipping name

Product or common name

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group

Proper shipping name

Product or common name

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group

Proper shipping name

Product or common name

Storage facility identifier	Type of storage facility			
L P G 2	A B O V E G R O U N D T A N K			
Class or division	Maximum storage capacity	Unit (L or kg or number)		
2 . 1	7 5 0 0	L		
UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
1 0 7 5	2 . 1	7 5 0 0	L	

Proper shipping name	
P E T R O L E U M G A S - L I Q U I F I E D	
Product or common name	
L I Q U I D P E T R O L E U M G A S	

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
Proper shipping name				
Product or common name				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
Proper shipping name				
Product or common name				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
Proper shipping name				
Product or common name				

[illegible]

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
Proper shipping name				
Product or common name				

Storage facility identifier	Type of storage facility			
<input type="text"/>	<input type="text"/>			
Class or division	Maximum storage capacity	Unit (L or kg or number)		
<input type="text"/>	<input type="text"/>	<input type="text"/>		
UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

DG - 01

Storage facility identifier				Type of storage facility																			
<div> <div></div> <div></div> <div></div> <div></div> </div>				<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>																			
Class or division				Maximum storage capacity						Unit (L or kg or number)													
<div> <div></div> <div></div> <div></div> <div></div> </div>				<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>						<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>													
UN number				Class or division				Typical quantity								Unit (L or kg or number)				Packing group			
<div> <div></div> <div></div> <div></div> <div></div> </div>				<div> <div></div> <div></div> <div></div> <div></div> </div>				<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>								<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>				<div> <div></div> <div></div> <div></div> <div></div> </div>			

[illegible]

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

UN number	Class or division	Typical quantity	Unit (L or kg or number)	Packing group
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Proper shipping name				
<input type="text"/>				
<input type="text"/>				
Product or common name				
<input type="text"/>				
<input type="text"/>				

7. GOODS TOO DANGEROUS TO BE TRANSPORTED (must be completed for both new notifications and further notifications)

If space is insufficient, please provide details on a separate sheet of paper.

Are there goods too dangerous to be transported stored or handled on the site?

☐ Yes. Please complete the following ☒ No. Please go to section 8.

Provide the storage facility identifier in which the dangerous goods too dangerous to transport are stored or handled.

Name as listed in the Australian Dangerous Goods code (appendix A)

Maximum quantity

Units (L or kg)

Name as listed in the Australian Dangerous Goods code (appendix A)

Maximum quantity

Units (L or kg)

Please go to section 8

8. DECLARATION (must be completed)I, L I N D A C O R N E Y

(print name)

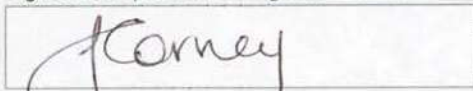
 M A N A G E R - A F M U H N E L H D

(print position in the corporation)

declare and understand that:

- I am 18 years of age or over
- the information provided is true and correct in every particular
- it is an offence under the WHS Regulation for a person to make a statement that the person knows to be false or misleading
- I have the authority to make this application on behalf of the occupier of the site.

Signature of person making this declaration



Date (DD/MM/YYYY)

 0 4 / 0 9 / 2 0 1 3

Please go to section 9

9. PAYMENT OF FEE (the \$100 must be paid when this notification is submitted)☐ Pay by cheque. Cheque made payable to WorkCover.☐ Pay by money order. Money order made payable to WorkCover.☒ Pay by credit card. Please charge \$100 to my: ☐ MasterCard ☐ Visa

A payment processing fee applies to credit card payments (Visa and MasterCard 0.40%) plus applicable GST.

Card number

 4 7 1 5 2 7 6 6 5 5 9 7 4 4 5 3

Card expiry date (MM/YYYY)

 0 5 / 2 0 1 4

Cardholder name (please print name as displayed on credit card)

 H N E H E A L T H B A R R Y F R A N C I S

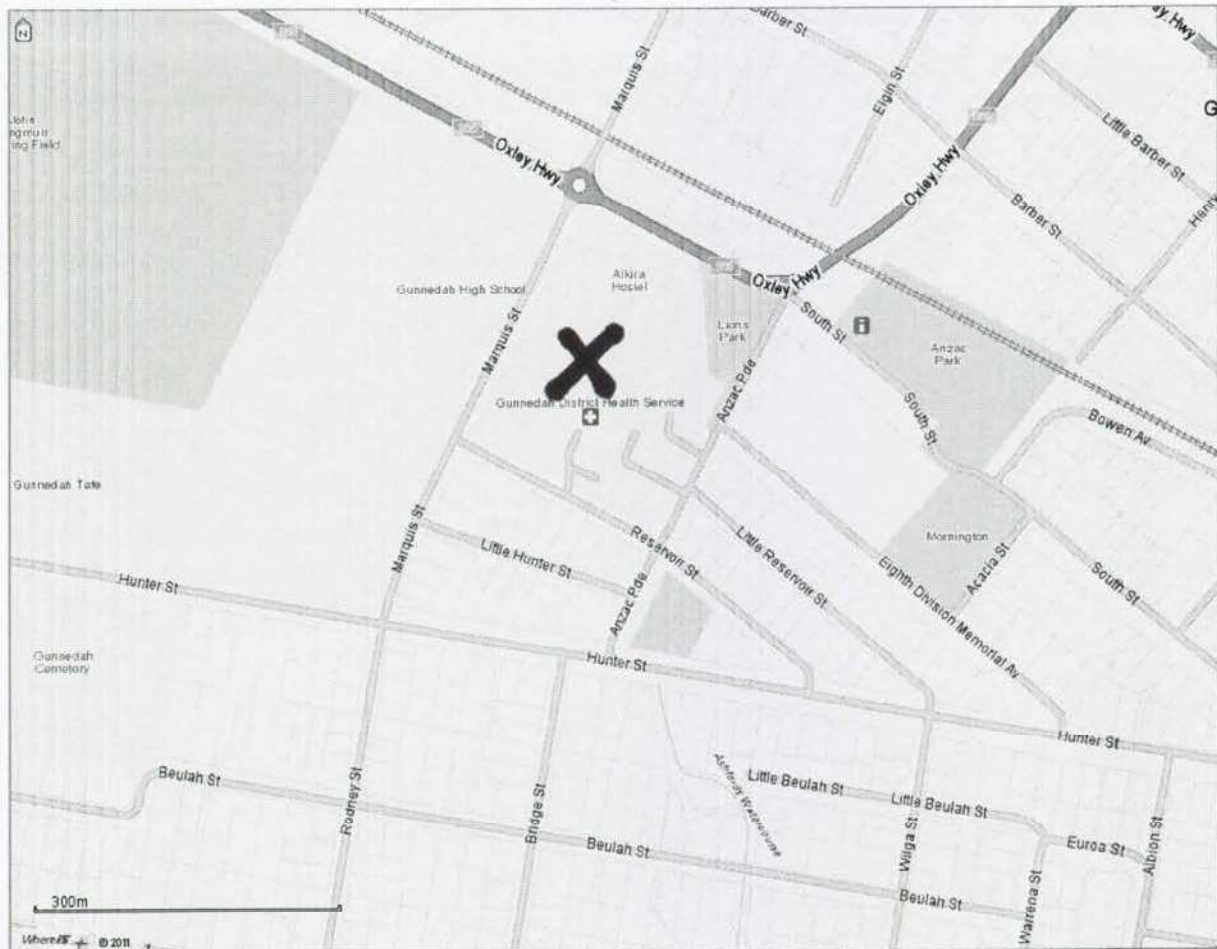
Cardholder signature



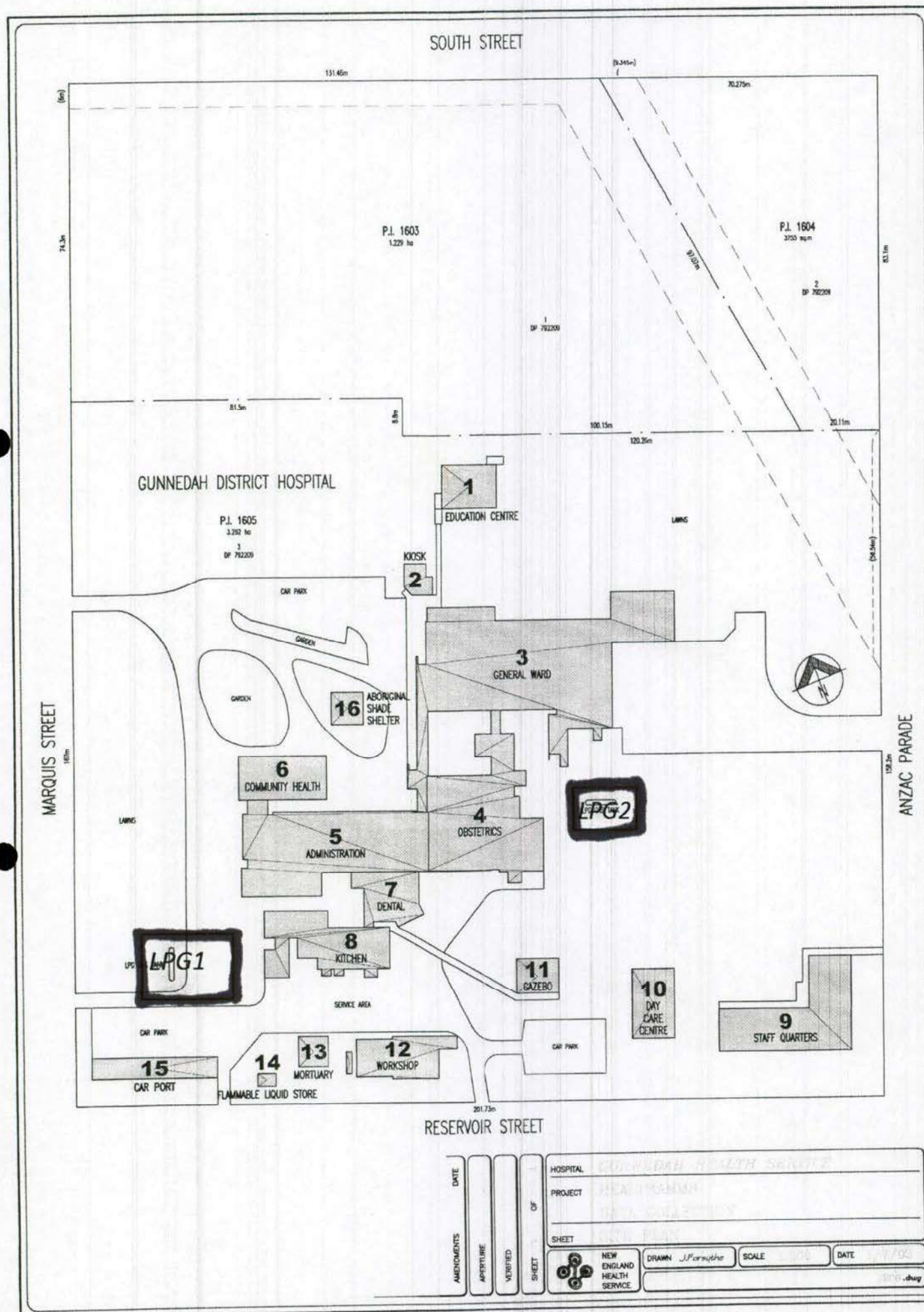
Date (DD/MM/YYYY)

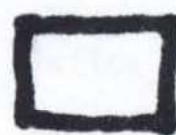
 0 5 / 0 9 / 2 0 1 3

PAID \$560 CREDIT CARD REC 18 #2519 mo



x





NOTIFICATION OF DANGEROUS GOODS ON PREMISES CHECKLIST (FDG01)

INFRA # 233327

Licence/Acknowledgment Number: 35/ 027366
Site Occupier: GUNNEDAH DISTRICT HEALTH SERVICE
Site Address: MARQUIS ST
GUNNEDAH
Current Expiry Date: 30 / 06 / 2011
Notification fee of \$100 received and processed: ☒ Yes

FOLLOW-UP NOTES

DATA ENTRY (SCID)

	Yes	No
ASIC/ABN search done to confirm name	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SCID organisation fields updated	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Depots updated	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sketch scanned	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Site mapped	<input type="checkbox"/>	<input type="checkbox"/>

EXPIRY DATE DETAILS

	Yes	No
<u>Expiry Date Reset</u>		
Re-notification for further 12 months	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>Period Of Non Notification</u>		
Old Exp Date: ___/___/___	App received date: ___/___/___	New Exp Date: ___/___/___
Reset date of expiry	<input type="checkbox"/>	<input type="checkbox"/>

APPLICATION FINALISED

	Yes	No
Acknowledgment printed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Notification not required (below manifest)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TRIM record and hard copy file created (New sites only)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DG's mail register updated as completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>

PROCESSING OF NOTIFICATION COMPLETED

Data entry and processing of notification form completed.

Staff members name: R Carr

Staff member's signature: [Signature] Date: 17/05/2011

A U S T R A L I A P O S T
GUNNEDAH

2380

WorkCover D/G-EXP Licence Appl \$100.00

Unique Reference No 2350100242805

Notif of Dangerous Goods

CAROLE

YOUNG

14 EWING STREET

GUNNEDAH NSW 2380

DOB 30121951

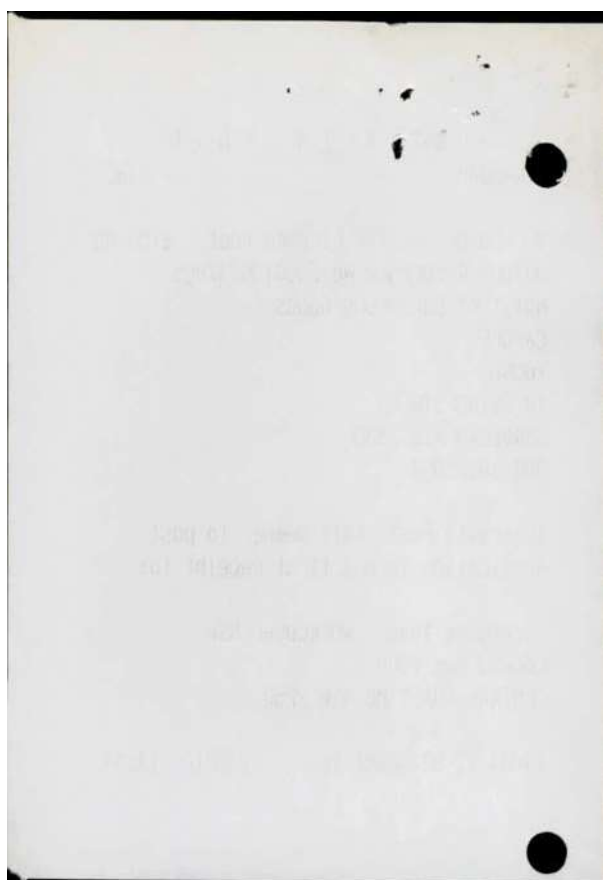
Australia Post staff member to post
Application form & first receipt to:

Licensing Team - WorkCover NSW

Locked Bag 2906

CENTRAL COAST MC NSW 2252

14/04/11 02/36681 te/h 235010 14:43





NOTIFICATION

OF DANGEROUS GOODS ON PREMISES FORM



EXPLANATORY NOTES AND FORM CHECKLIST

This form is used to notify WorkCover of dangerous goods stored on premises. This form is to be completed in conjunction with the Guide – Notification of Dangerous Goods on Premises (GDG01). Notification is a requirement of the Occupational Health and Safety Regulation 2001.

Persons who wish to handle explosives or security sensitive dangerous substances need to obtain a licence under the Explosives Regulation 2005. See the WorkCover website www.workcover.nsw.gov.au or call 13 10 50 for information about explosives licensing.

LODGMET INSTRUCTIONS

1. You must complete all sections of this form.
2. You may lodge your notification with Australia Post or with Workcover NSW at Locked Bag 2906 Lisarow NSW 2252.
3. **You must sign and date this notification by completing the declaration on the last page.**
4. Payment of the notification fee must accompany this form.

Note: No proof of identity check is required for this notification.

NOTIFICATION CHECKLIST

Please tick the appropriate box to ensure that your notification is complete and secure prior to submission to Australia Post or WorkCover

Notifier Use Only

- Notification Form (this form) Completed and Signed
- Site Sketch(s) – only A4 size is acceptable
- Photocopy from street directory or map showing locality
- Non-refundable fee \$100

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

PRIVACY COMPLIANCE STATEMENT

This information is collected by WorkCover New South Wales ('WorkCover') for the purposes of undertaking an evaluation, assessment and processing a notification of dangerous goods on premises as required by the *Occupational Health and Safety Act 2000* and the *Occupational Health and Safety Regulation 2001*.

This information may also be used by WorkCover for the purposes of confirming applicant details in the event replacement acknowledgements are applied for, and may also be used to establish and maintain a database and to assist the WorkCover inspectorate with their work generally. Information is also made available to local councils and emergency services assist with emergency response and planning.

Except for the purposes of prosecution and unless such disclosure is otherwise required by law, the information will not be accessed by any third parties in a way that would identify the individual without the consent of that individual.

You may also apply to WorkCover to access and correct any information WorkCover holds if that information is inaccurate, incomplete, not relevant or out of date. Applications should be made in writing to:

Privacy Contact Officer, WorkCover NSW Head Office Locked Bag 2906 Lisarow NSW 2252

CONTACT FOR NOTIFICATION INQUIRIES

Title: Mr / Miss / Ms / Mrs / Other (please specify) Mr Family name Southorne
Given name Todd Other names _____
Business phone 67413041 Business fax number 67402861
Business email address todd.southorne@hnehealth.nsw.gov.au

Previous Licence Number or Acknowledgement Number (if known)

35/ 0217366

Previous Occupier (if known)

Site on which dangerous goods are to be kept

Number

Street

Marquis St

Suburb/Town/Locality

Cannedah

Postcode

2380

Nearest cross Street

Reservoir St

Lot and DP if no street number

Is the site staffed? If yes state number of employees

100

Site staffing: Hours per day

24hrs

Days per week

7

Site Emergency Contact

Phone number

() 0429002763

Name

Todd Southorne

Nature of site (eg petrol station, warehouse etc)

Hospital

Nature of primary business activity

Health

ABN Number (if any)

24600642605

Website details (if any)

What is the ANSZIC code most applicable to your business? (see guide for list of codes and further information)

Code

861

Description

Hospital

Attach a site sketch(s) of the premises. Refer to the Guide GDG01 for information on the requirements for the site sketch.

Attach a legible photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X.

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
1	LPG Tank	2.1	7500L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	Liquid Petroleum Gas	2.1		LPG	ZWE	7500	L

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
2	LPG Tank	2.1	7500L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	Liquid Petroleum Gas	2.1		LPG	ZWE	7500	L

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01



*2112 18

SITE OCCUPIER INFORMATION

Name of Occupier

GUNNEDAH DISTRICT HEALTH SERVICE

ABN

24 500 842 605.

Postal Address of Occupier

P.O Box 243

Suburb/Town

GUNNEDAH

Postcode

2380

Trading Name if different

Type of business entity

Company ☐ Sole Trader ☐ Partnership ☐ Other ☒ please specify: HEALTH SERVICE

DETAILS OF PERSON MAKING NOTIFICATION

Title: Mr / Miss / Ms / Mrs / Other (please specify) Family name YOUNG

Given name CAROLE Other names LYNN

Relationship to occupier (eg director, employee etc) MANAGER

DECLARATION

I (print your name in BLOCK LETTERS) CAROLE YOUNG Phone number 0267418000
of (print your home address) 14 EWING ST GUNNEDAH Postcode 2380.

hereby declare that:

- I am 18 years of age, or over
- The information contained in this notification is true and correct in every particular
- I am authorised to complete this notification and make this declaration on behalf of the occupier
- I am aware that it is an offence under clause 356 of the *Occupational Health and Safety Regulation 2001* to provide any information or produce any documentation in a notification that I know is false or misleading in a material particular.

Signature of person making this declaration  Date 14.4.11

PAYMENT OF NOTIFICATION FEE

Enclose a cheque or money order with the notification (do not send cash), **pay over the counter** by cash, cheque or credit card, or **fill in the credit card details** below for the amount of \$100.Please charge my ☐ Bankcard ☐ MasterCard ☐ Visa

Card No: Card expiry date: / /

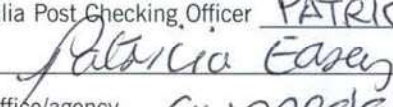
Cardholders name: Cardholders signature:

Payment details: Amount Paid: \$ Date of payment / /

OFFICE USE ONLY

Receipt Number Date / / Amount \$

Name of Australia Post Checking Officer PATRICIA EASEY

Signature  Date 14/4/11

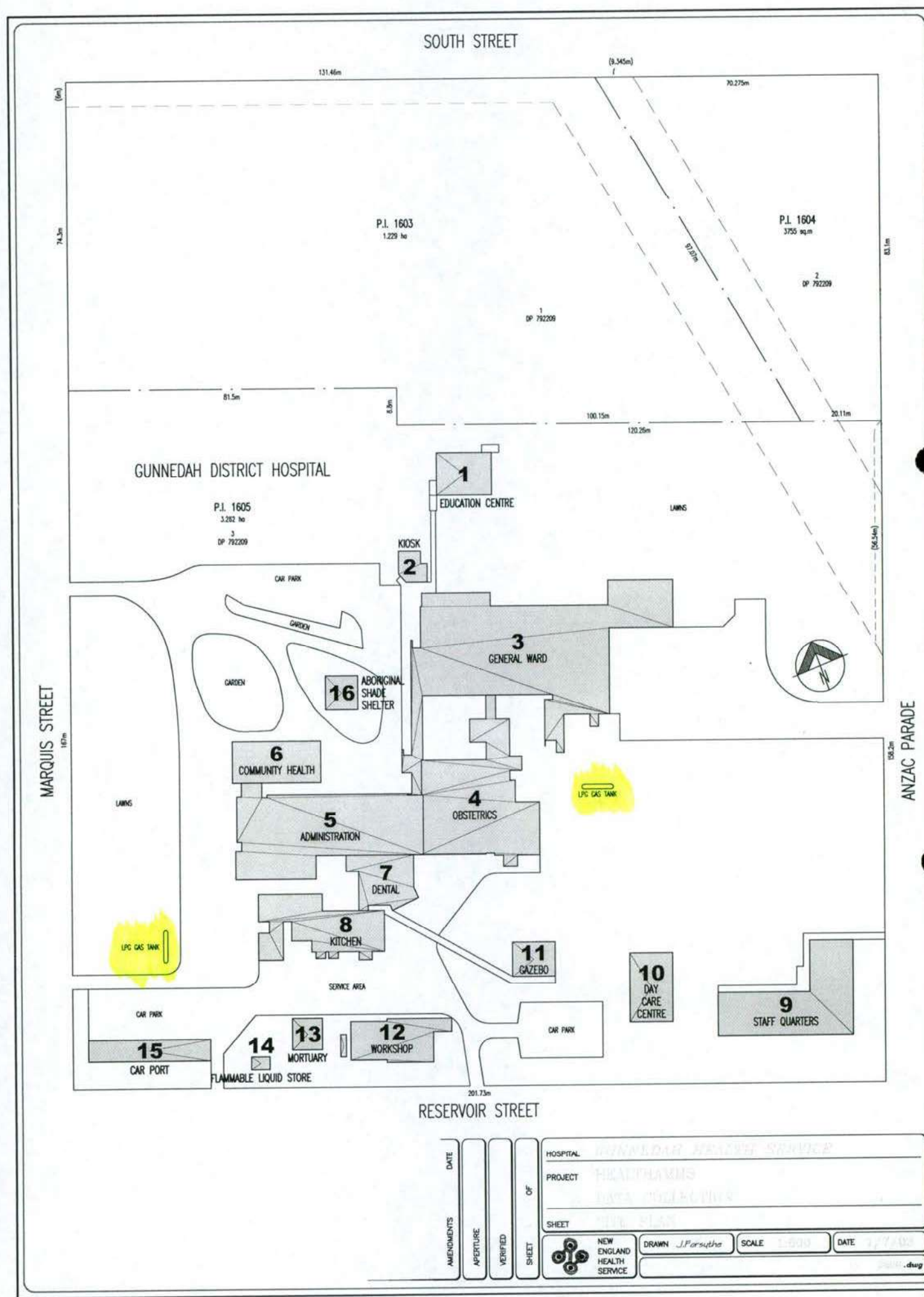
Name of Post office/agency GUNNEDAH

Australia Post Disclaimer

Australia Post is acting as an agent for WorkCover to identify you under the requirements set out by *Occupational Health and Safety Act 2000*.

Your notification will be forwarded to WorkCover.

All correspondence in respect of this notification must be addressed to WorkCover.



0010/00639.
472E

NOTIFICATION OF DANGEROUS GOODS ON PREMISES
CHECKLIST (FDG01)

INFRA # 147637

Licence/Acknowledgment Number: 35/ 027366

Site Occupier:

HUNTER NEW ENGLAND HEALTH.

Site Address:

MARQUIS STREET

GUNNEDAH

Current Expiry Date:

18 / 6 / 2009

Notification fee of \$100 received and processed:

☒ Yes

FOLLOW-UP NOTES

DATA ENTRY (SCID)

	Yes	No
ASIC/ABN search done to confirm name	<input type="checkbox"/>	<input type="checkbox"/>
SCID organisation fields updated	<input type="checkbox"/>	<input type="checkbox"/>
Depots updated	<input type="checkbox"/>	<input type="checkbox"/>
Sketch scanned	<input type="checkbox"/>	<input type="checkbox"/>
Site mapped	<input type="checkbox"/>	<input type="checkbox"/>

EXPIRY DATE DETAILS

	Yes	No
<u>Expiry Date Reset</u>		
Re-notification for further 12 months	<input type="checkbox"/>	<input type="checkbox"/>
<u>Period Of Non Notification</u>		
Old Exp Date: 18 / 6 / 09		
App received date 30 / 6 / 10		
New Exp Date: 30 / 6 / 11.		
Reset date of expiry	<input checked="" type="checkbox"/>	<input type="checkbox"/>

APPLICATION FINALISED

	Yes	No
Acknowledgment printed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Notification not required (below manifest)	<input type="checkbox"/>	<input type="checkbox"/>
TRIM record and hard copy file created (New sites only)	<input type="checkbox"/>	<input type="checkbox"/>
DG's mail register updated as completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>

PROCESSING OF NOTIFICATION COMPLETED

Data entry and processing of notification form completed.

Staff members name: *SWay*

Staff member's signature: *[Signature]* Date: *03/12/10*

A U S T R A L I A P O S T
GUNNEDAH

2380

THIS IS NOT A RECEIPT

WorkCover D/G-EXP Licence Application

Unique Reference No 2350100129143

Notif of Dangerous Goods

CAROLE YOUNG

14 EWING ST

GUNNEDAH NSW 2380

DOB 05101990

100.00

ATTACH TO THE WORKCOVER APPLICATION
FORM AND POST TO:

Licensing Team - WorkCover NSW

Locked Bag 2906

CENTRAL COAST MC NSW 2252

28/06/10 01/11269 gb/d 235010 14:49





NOTIFICATION

OF DANGEROUS GOODS ON PREMISES FORM

EXPLANATORY NOTES AND FORM CHECKLIST

This form is used to notify WorkCover of dangerous goods stored on premises. This form is to be completed in conjunction with the Guide – Notification of Dangerous Goods on Premises (GDG01). Notification is a requirement of the Occupational Health and Safety Regulation 2001.

Persons who wish to handle explosives or security sensitive dangerous substances need to obtain a licence under the Explosives Regulation 2005. See the WorkCover website www.workcover.nsw.gov.au or call 13 10 50 for information about explosives licensing.

LODGMET INSTRUCTIONS

1. You must complete all sections of this form.
2. You may lodge your notification with Australia Post or with Workcover NSW at Locked Bag 2906 Lisarow NSW 2252.
3. You must sign and date this notification by completing the declaration on the last page.
4. Payment of the notification fee must accompany this form.

Note: No proof of identity check is required for this notification.

NOTIFICATION CHECKLIST

Please tick the appropriate box to ensure that your notification is complete and secure prior to submission to Australia Post or WorkCover

- Notification Form (this form) Completed and Signed
- Site Sketch(s) – only A4 size is acceptable
- Photocopy from street directory or map showing locality
- Non-refundable fee \$100

Notifier Use Only

☒
☒
☒
☒

PRIVACY COMPLIANCE STATEMENT

This information is collected by WorkCover New South Wales ("WorkCover") for the purposes of undertaking an evaluation, assessment and processing a notification of dangerous goods on premises as required by the *Occupational Health and Safety Act 2000* and the *Occupational Health and Safety Regulation 2001*.

This information may also be used by WorkCover for the purposes of confirming applicant details in the event replacement acknowledgements are applied for, and may also be used to establish and maintain a database and to assist the WorkCover inspectorate with their work generally. Information is also made available to local councils and emergency services assist with emergency response and planning.

Except for the purposes of prosecution and unless such disclosure is otherwise required by law, the information will not be accessed by any third parties in a way that would identify the individual without the consent of that individual.

You may also apply to WorkCover to access and correct any information WorkCover holds if that information is inaccurate, incomplete, not relevant or out of date. Applications should be made in writing to:

Privacy Contact Officer, WorkCover NSW Head Office Locked Bag 2906 Lisarow NSW 2252

CONTACT FOR NOTIFICATION INQUIRIES

Title: Mr / Miss / Ms / Mrs / Other (please specify) _____ Family name SOUTHORNE
Given name TODD Other names _____
Business phone 02 6741 80141 Business fax number 674 02881
Business email address todd.southorne@mhhealth.nsw.gov.au.

Previous Licence Number or Acknowledgement Number (if known)

35/ 027366

Previous Occupier (if known)

—

Site on which dangerous goods are to be kept

Number Street

MARQUIS STREET

Suburb/Town/Locality

GUNNEDAH

Postcode

2380

Nearest cross Street

RESERVIOR STREET

Lot and DP if no street number

L2-L3 DP 792209Is the site staffed? If yes state number of employees 100Site staffing: Hours per day 24Days per week 7

Site Emergency Contact

Phone number

() 0429002768

Name

TODD SOUTHORNE

Nature of site (eg petrol station, warehouse etc)

HOSPITAL

Nature of primary business activity

HEALTH

ABN Number (if any)

24 500 842 605

Website details (if any)

What is the ANSZIC code most applicable to your business? (see guide for list of codes and further information)

Code

861

Description

HOSPITAL

Attach a site sketch(s) of the premises. Refer to the Guide GDG01 for information on the requirements for the site sketch.

Attach a legible photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X.

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
1	LPG Gas Tank	2.1	7500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
UN 1075	Liquid Petroleum Gas	2.1		LPG	2	7500	Rg L

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
2	LPG Gas Tank	2.1	7500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
UN 1075	Liquid Petroleum Gas	2.1		LPG	2	7500	Rg L

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01



*2112 18

SITE OCCUPIER INFORMATION

Name of Occupier

HUNTER NEW ENGLAND HEALTH

ABN

24 500 842 605

Postal Address of Occupier

PO BOX 243

Suburb/Town

GUNNEDAH

Postcode

2380

Trading Name if different

Type of business entity

Company ☐Sole Trader ☐Partnership ☐Other ☒

please specify:

HEALTH SERVICE.

DETAILS OF PERSON MAKING NOTIFICATION

Title: Mr / Miss / Ms / (Mrs) / Other (please specify)

Family name YOUNG

Given name CAROLE

Other names LYNN

Relationship to occupier (eg director, employee etc)

HEALTH SERVICE MANAGER.

DECLARATION

I (print your name in BLOCK LETTERS)

CAROLE YOUNG

Phone number

6741 8000

of (print your home address)

14 EWING STREET GUNNEDAH

Postcode

2380

hereby declare that:

- I am 18 years of age, or over
- The information contained in this notification is true and correct in every particular
- I am authorised to complete this notification and make this declaration on behalf of the occupier
- I am aware that it is an offence under clause 356 of the *Occupational Health and Safety Regulation 2001* to provide any information or produce any documentation in a notification that I know is false or misleading in a material particular.

Signature of person making this declaration

Date

25.6.10

PAYMENT OF NOTIFICATION FEE

Enclose a cheque or money order with the notification (do not send cash), pay over the counter by cash, cheque or credit card, or fill in the credit card details below for the amount of \$100.

Please charge my



Bankcard



MasterCard



Visa

Card No:

Card expiry date:

___/___/___

Cardholders name:

Cardholders signature:

Payment details: Amount Paid: \$

Date of payment

___/___/___

OFFICE USE ONLY

Receipt Number

01/11269

Date

28/6/10

Amount \$

100 -

Name of Australia Post Checking Officer

Gaye Brady

Signature

Date

28/6/10.

Name of Post office/agency

Gunneadah

Australia Post Disclaimer

Australia Post is acting as an agent for WorkCover to identify you under the requirements set out by *Occupational Health and Safety Act 2000*.

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SOUTH STREET

131.48m

10.15m

10.275m

P.I. 1603

P.I. 1604

2792 100m

DP 162209

DP 162209

81.5m

100.15m

150.20m

20.11m

GUNNEDAH DISTRICT HOSPITAL

P.I. 1605

3.282 m

DP 162208

KIOSK

2

EDUCATION CENTRE

1

GENERAL WARD

3

ABORIGINAL
SHADE
SHELTER

16

COMMUNITY HEALTH

6

ADMINISTRATION

5

OBSTETRICS

4

DENTAL

7

KITCHEN

8

GAZEBO

11

DAY
CARE
CENTRE

10

STAFF QUARTERS

9

CAR PORT

15

FLAMMABLE LIQUID STORE

MORTUARY

14

WORKSHOP

13

WORKSHOP

12

RESERVOIR STREET

DATE

AMENDMENTS

APPROVED

VERIFIED

SHEET

1

OF

1

HOSPITAL GUNNEDAH HEALTH SERVICE
PROJECT HEALTHAMMS
DATA COLLECTION
SHEET SITE PLAN



NEW
ENGLAND
HEALTH
SERVICE

DRAWN J. Forsythe

SCALE 1:800

DATE 1/7/03

J208.dwg

MARQUIS STREET

ANZAC PARADE

50/80308-9N

ABOVE-GROUND TANK
1500L CLASS 2.1
15m

50/80308-9N

ABOVE-GROUND TANK
1500L CLASS 2.1
15m

50/80308-9N

Site Manager

↑
↑



Dangerous Goods Notification Check Sheet

Site Address:

Marquis Street

Gunnedah

Notification Number:

35/ 027366

Current Expiry Date:

18/6/08

TYPE OF APPLICATION:

RE-NOTIFICATION

☒

FEE PAID

☒

VERIFIED

NEW

☐

AMENDMENT (NO FEE PAYABLE)

☐

ff

TRANSFER

☐

EXPLOSIVES (REFER TO HAZ ACT)

☐

NOTIFICATION CHECKLIST

YES

NO

ASIC /ABN search done to confirm name

☒☐

SCID organisation fields updated

☒☐

Manifest provided

☒☐

Depots Updated

☒☐

YES

NOT REQ

VERIFIED

Sketch provided

☒☐

Scanned

☒☐

ff

Locality map provided

☒☐

Mapped

☒☐

EXPIRY DATE RESET

YES

NO

Re-notification for additional 12 Months

☒☐

Reset due to Common Expiry Date in Use

☐☐

Common Expiry Date: ___/___/___

PERIOD OF NON NOTIFICATION

Old Exp Date: ___/___/___

Application Received Date: ___/___/___

New Exp Date: 18/6/08

(This notification was not current from date of old expiry to date of new application received)

APPLICATION FINALISED

YES

NO

LETTER SENT

Acknowledgment printed

☒☐

PROCESSED BY

Leonie

Closure (Declaration A)

☐☐☐

Notification not required (Below Manifest)

☐☐☐

More Info Required (See Notes below)

☐☐☐

Date 16/6/08

MORE INFORMATION REQUIRED/NOTES:



NOTIFICATION

OF DANGEROUS GOODS ON PREMISES FORM

EXPLANATORY NOTES AND FORM CHECKLIST

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LODGMET INSTRUCTIONS

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2. You may lodge your notification with Australia Post or with Workcover NSW at Locked Bag 2906 Lisarow NSW 2252.
3. You must sign and date this notification by completing the declaration on the last page.
4. Payment of the notification fee must accompany this form.

Note: No proof of identity check is required for this notification.



NOTIFICATION CHECKLIST

Please tick the appropriate box to ensure that your notification is complete and secure prior to submission to Australia Post or WorkCover

Notifier Use Only

- Notification Form (this form) Completed and Signed
- Site Sketch(s) – only A4 size is acceptable
- Photocopy from street directory or map showing locality
- Non-refundable fee \$100

☐
☐
☐
☐

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Privacy Contact Officer, WorkCover NSW Head Office Locked Bag 2906 Lisarow NSW 2252

CONTACT FOR NOTIFICATION INQUIRIES

Title: Mr / Miss / Ms / Mrs / Other (please specify) _____ Family name Southerne
Given name Todd Other names _____
Business phone 67413041 Business fax number _____
Business email address Todd.Southerne@hnehealth.nsw.gov.au

Previous Licence Number or Acknowledgement Number (if known)

35/ 027366

Previous Occupier (if known)

—

Site on which dangerous goods are to be kept

Number

Street

—Marquis St

Suburb/Town/Locality

Gunnedah

Postcode

2380

Nearest cross Street

Reservoir St

Lot and DP if no street number

L2 - L3 DP 792209Is the site staffed? If yes state number of employees 100Site staffing: Hours per day 24 Days per week 7

Site Emergency Contact

Phone number

Name

(0) 8429002768Todd Southerne

Nature of site (eg petrol station, warehouse etc)

Hospital

Nature of primary business activity

Health

ABN Number (if any)

29500842605

Website details (if any)

What is the ANSZIC code most applicable to your business? (see guide for list of codes and further information)

Code

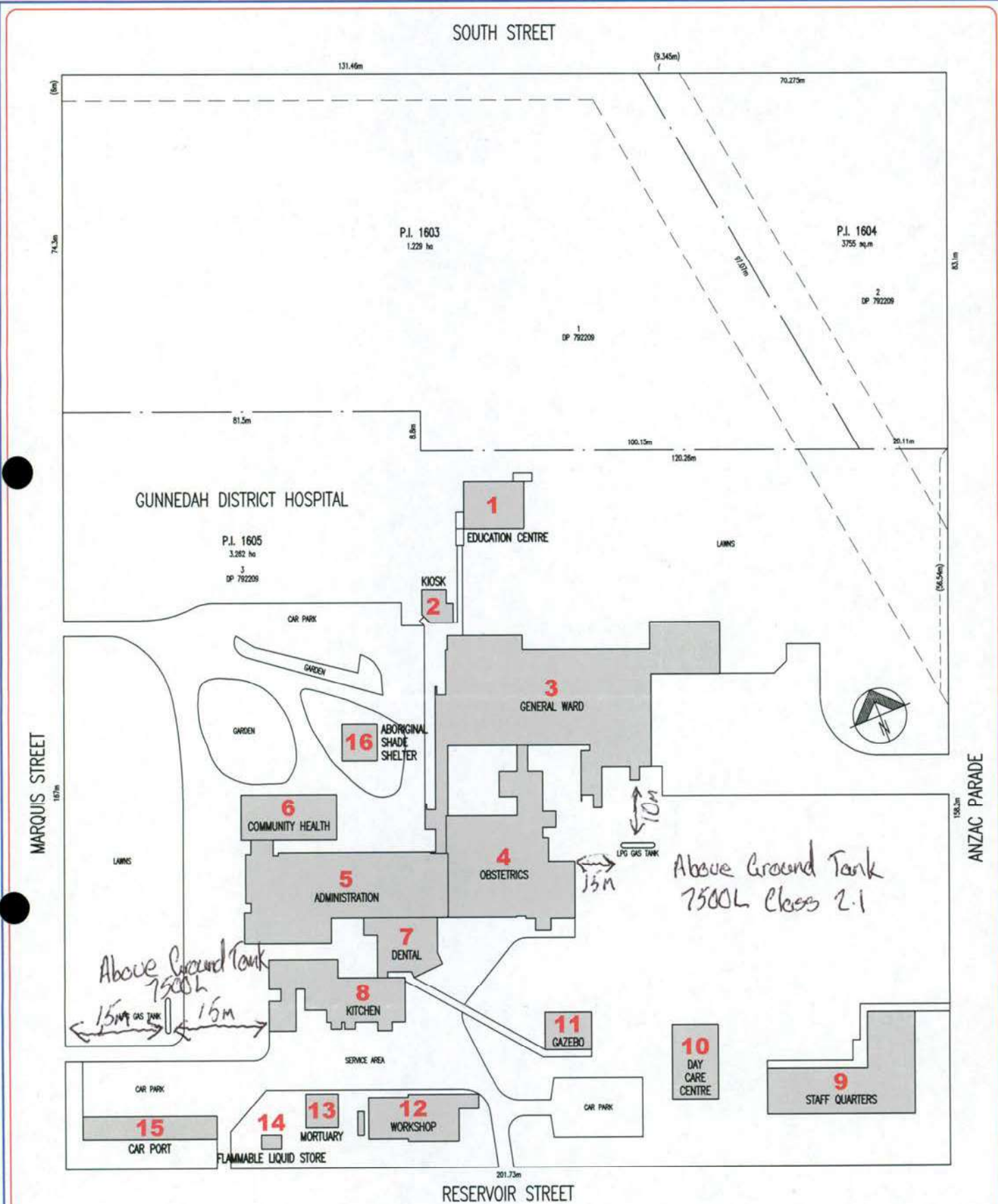
Description

861Hospital

Attach a site sketch(s) of the premises. Refer to the Guide GDG01 for information on the requirements for the site sketch.

Attach a legible photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X.

100.00
Date: 30.5.08
53701



RESERVOIR STREET

DATE	1	HOSPITAL	GUNNEDAH HEALTH SERVICE			
AMENDMENTS	OF	PROJECT	HEALTHAMMS			
APERTURE	1	SHEET	DATA COLLECTION			
VERIFIED	1	SHEET	SITE PLAN			
			NEW ENGLAND HEALTH SERVICE	DRAWN J. Forsythe	SCALE 1:800	DATE 1/7/03
						J206.dwg

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
1	Above ground tank		7500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	LPG	2.1		Liquid Petroleum Gas	2WE	7500	L

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
2	LPG Above Ground Tank		7500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	LPG	2.1		Liquid Petroleum Gas	2WE	7500	L

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01



*2112 18

SITE OCCUPIER INFORMATION

Name of Occupier

HUNTER NEW ENGLAND AREA HEALTH SERVICE

ABN

24500842605

Postal Address of Occupier

P.O BOX 243

Suburb/Town

GUNNEDAH

Postcode

2380

Trading Name if different

GUNNEDAH DISTRICT HEALTH SERVICE

Type of business entity

Company ☐ Sole Trader ☐ Partnership ☐ Other ☒ please specify: HEALTH SERVICE

DETAILS OF PERSON MAKING NOTIFICATION

Title: Mr / Miss / Ms (Mrs) Other (please specify) _____ Family name YOUNG

Given name CAROLE Other names WYNNE

Relationship to occupier (eg director, employee etc) MANAGER

DECLARATION

I (print your name in BLOCK LETTERS) CAROLE YOUNG Phone number 67418000
of (print your home address) 14 EWING ST GUNNEDAH Postcode 2380

hereby declare that:

- I am 18 years of age, or over
- The information contained in this notification is true and correct in every particular
- I am authorised to complete this notification and make this declaration on behalf of the occupier
- I am aware that it is an offence under clause 356 of the *Occupational Health and Safety Regulation 2001* to provide any information or produce any documentation in a notification that I know is false or misleading in a material particular.

Signature of person making this declaration [Signature] Date 27.5.08.

PAYMENT OF NOTIFICATION FEE

Enclose a cheque or money order with the notification (do not send cash), pay over the counter by cash, cheque or credit card, or fill in the credit card details below for the amount of \$100.

Please charge my ☐ Bankcard ☐ MasterCard ☐ Visa

Card No: _____ Card expiry date: ____/____/____

Cardholders name: _____ Cardholders signature: _____

Payment details: Amount Paid: \$ _____ Date of payment ____/____/____

OFFICE USE ONLY

Receipt Number _____ Date ____/____/____ Amount \$ _____

Name of Australia Post Checking Officer _____

Signature _____ Date _____

Name of Post office/agency _____

Australia Post Disclaimer

Australia Post is acting as an agent for WorkCover to identify you under the requirements set out by *Occupational Health and Safety Act 2000*.

Your notification will be forwarded to WorkCover.

All correspondence in respect of this notification must be addressed to WorkCover.



Dangerous Goods Notification Check Sheet

Site address:

Hunter New England Health

Margolis St

CUNNEDAH

Notification Number:

35/ 027366

TYPE OF APPLICATION:

RE-NOTIFICATION

☒

FEE PAID

☒

VERIFIED

NEW

☐

AMENDMANT (NO FEE PAYABLE)

☐

Naomi

TRANSFER

☐

EXPLOSIVES (REFER TO HAZ ACT)

☐

NOTIFICATION CHECKLIST

YES

NO

ASIC /ABN search done to confirm name

☒☐

SCID organisation fields updated

☒☐

Manifest provided

☒☐

Depots Updated

☐☒

N/A

YES

NOT REQ

VERIFIED

Sketch provided

☒☐

Scanned

☒☐

Naomi

Locality map provided

☒☐

Mapped

☐☒

EXPIRY DATE RESET

YES

NO

Re-notification for additional 12 Months

☐☒

Reset due to Common Expiry Date in Use

☐☒

Common Expiry Date: ___/___/___

PERIOD OF NON NOTIFICATION

Old Exp Date: 22/3/07

Application Received Date: 18/6/07

New Exp Date: 18/6/08

(This notification was not current from date of old expiry to date of new application received)

APPLICATION FINALISED

YES

NO

LETTER SENT

Acknowledgment printed

☒☐

PROCESSED BY
Naomi James

Closure (Declaration A)

☐☒☐

Notification not required (Below Manifest)

☐☒☐

More Info Required (See Notes below)

☐☒☐

Date 4/7/07

MORE INFORMATION REQUIRED/NOTES:

FDG01

-unrated
4/7/07
Naw

Previous Licence Number or Acknowledgement Number (if known)

Previous Occupier (if known)

Number Street

Gunnedah	2380
----------	------

Reservoir St

L2-L3 DP 792209

Site staffing: Hours per day Days per week

Phone number: () 0479002 768 Name: Todd Southorne

Hospital

Health

79500842605

Code	Description
961	Hospital

Attach a legible photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X.

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

was depot #4

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
1	Above ground Tank	2.1	7,500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	Liquid Petroleum Gas	2.1	N/A	LPG	20E	7500	L



was depot #5

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)
2	Above ground Tank	2.1	7,500 L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg
1075	LPG	2.1	N/A	LPG	20E	7500	L



Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

SOUTH STREET

P.L. 1603
1,229 sqm

P.L. 1604
3,750 sqm

GUNNEDAH DISTRICT HOSPITAL

P.L. 1605
3,262 sqm
DP 762209

1

EDUCATION CENTRE

2

KIOSK

3

GENERAL WARD

16

ABORIGINAL
SHADE
SHELTER

6

COMMUNITY HEALTH

5

ADMINISTRATION

4

OBSTETRICS

7

DENTAL

8

KITCHEN

11

GAZEBO

10

DAY
CARE
CENTRE

9

STAFF QUARTERS

15

CAR PORT

14

FLAMMABLE LIQUID STORE

13

MORTUARY

12

WORKSHOP

RESERVOIR STREET

ANZAC PARADE

MARQUIS STREET

Scanned
4/7/07
Nana

DATE

AMENDMENTS

APERTURE

VERIFIED

SHEET 1 OF 1



HOSPITAL GUNNEDAH HEALTH SERVICE

PROJECT HEALTHAMMS

DATA COLLECTION

SHEET SITE PLAN

NEW
ENGLAND
HEALTH
SERVICE

DRAWN J. Forsythe

SCALE 1:800

DATE 1/7/03

J206 dtug

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

SITE OCCUPIER INFORMATION

Name of Occupier

HUNTER NEW ENGLAND HEALTH

Postal Address of Occupier

P.O. Box 243

Suburb/Town

GUNNEDAH

Postcode

2380

Trading Name if different

GUNNEDAH DISTRICT HEALTH SERVICE

Type of business entity

Company ☐Sole Trader ☐Partnership ☐Other ☒

please specify: HEALTH SERVICE

DETAILS OF PERSON MAKING NOTIFICATION

Title: Mr / Miss / Ms / Mrs / Other (please specify)

Family name

YOUNG

Given name

CAROL

Other names

LYNN

Relationship to occupier (eg director, employee etc)

HEALTH SERVICE MANAGER

DECLARATION

I (print your name in BLOCK LETTERS)

CAROL YOUNG

Phone number

02 67418000

of (print your home address)

14 EWING ST GUNNEDAH

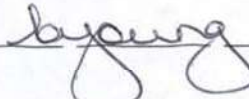
Postcode

2380

I hereby declare that:

☒ I am 18 years of age, or over☒ The information contained in this notification is true and correct in every particular☒ I am authorised to complete this notification and make this declaration on behalf of the occupier☒ I am aware that it is an offence under clause 356 of the Occupational Health and Safety Regulation 2001 to provide any information or produce any documentation in a notification that I know is false or misleading in a material particular.

Signature of person making this declaration



Date

14.6.07

PAYMENT OF NOTIFICATION FEE

Enclose a cheque or money order with the notification (do not send cash), pay over the counter by cash, cheque or credit card, or fill in the credit card details below for the amount of \$100.

Please charge my

☐ Bankcard☐ MasterCard☐ Visa

Card No:

Card expiry date:

/ /

Cardholder's name:

Cardholder's signature:

This document is a tax invoice for GST purposes once payment is effected - RETAIN A COPY of this page for taxation purposes.

WorkCover NSW

ABN 77 682 742 966

Payment details: Amount Paid: \$

Date of payment

/ /

OFFICE USE ONLY

Receipt Number

Date

Amount \$

Name of Australia Post Checking Officer

Signature

Date

Name of Post office/agency

Australia Post Disclaimer

Australia Post is acting as an agent for WorkCover to identify you under the requirements set out by Occupational Health and Safety Act 2000.

Your notification will be forwarded to WorkCover.

All correspondence in respect of this notification must be addressed to WorkCover.

Catalogue No. 896 WorkCover Publications Hotline 1300 799 003

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Payment stamp on
seperate form.
Naam 4/7/07

NOTIFICATION

OF DANGEROUS GOODS ON PREMISES FORM

EXPLANATORY NOTES AND FORM CHECKLIST

This form is used to notify WorkCover of dangerous goods stored on premises. This form is to be completed in conjunction with the Guide – Notification of Dangerous Goods on Premises (GDG01). Notification is a requirement of the Occupational Health and Safety Regulation 2001.

Persons who wish to handle explosives or security sensitive dangerous substances need to obtain a licence under the Explosives Regulation 2005. See the WorkCover website www.workcover.nsw.gov.au or call 13 10 50 for information about explosives licensing.

LODGMET INSTRUCTIONS

1. You must complete all sections of this form.
2. You may lodge your notification with Australia Post or with Workcover NSW at Locked Bag 2906 Lisarow NSW 2252.
3. You must sign and date this notification by completing the declaration on the last page.
4. Payment of the notification fee must accompany this form.

Note: No proof of identity check is required for this notification.



NOTIFICATION CHECKLIST

Please tick the appropriate box to ensure that your notification is complete and secure prior to submission to Australia Post or WorkCover

Notifier Use Only

- Notification Form (this form) Completed and Signed
- Site Sketch(s) – only A4 size is acceptable
- Photocopy from street directory or map showing locality
- Non-refundable fee \$100

☐
☐
☐
☐

PRIVACY COMPLIANCE STATEMENT

This information is collected by WorkCover New South Wales ('WorkCover') for the purposes of undertaking an evaluation, assessment and processing a notification of dangerous goods on premises as required by the *Occupational Health and Safety Act 2000* and the *Occupational Health and Safety Regulation 2001*.

This information may also be used by WorkCover for the purposes of confirming applicant details in the event replacement acknowledgements are applied for, and may also be used to establish and maintain a database and to assist the WorkCover inspectorate with their work generally. Information is also made available to local councils and emergency services assist with emergency response and planning.

Except for the purposes of prosecution and unless such disclosure is otherwise required by law, the information will not be accessed by any third parties in a way that would identify the individual without the consent of that individual.

You may also apply to WorkCover to access and correct any information WorkCover holds if that information is inaccurate, incomplete, not relevant or out of date. Applications should be made in writing to:

Privacy Contact Officer, WorkCover NSW Head Office Locked Bag 2906 Lisarow NSW 2252

CONTACT FOR NOTIFICATION INQUIRIES

Title: Mr / Miss / Ms / Mrs / Other (please specify) _____ Family name _____
Given name _____ Other names _____
Business phone _____ Business fax number _____
Business email address _____

Previous Licence Number or Acknowledgement Number (if known)

35/

Previous Occupier (if known)

\$ 100.00
Date 18-6-07
Rec No 503229

Site on which dangerous goods are to be kept

Number Street

Suburb/Town/Locality

Postcode

Nearest cross Street

Lot and DP if no street number

Is the site staffed? If yes state number of employees

Site staffing: Hours per day

Days per week

Site Emergency Contact

Phone number

Name

Nature of site (eg petrol station, warehouse etc)

Nature of primary business activity

ABN Number (if any)

Website details (if any)

What is the ANSZIC code most applicable to your business? (see guide for list of codes and further information)

Code

Description

Attach a site sketch(s) of the premises. Refer to the Guide GDG01 for information on the requirements for the site sketch.

Attach a legible photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X.

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

List the dangerous goods that will be stored and/or processed on these premises (refer to Guide GDG01). Copy this page and attach additional sheets if there is insufficient space.

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

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Depot No	Type of storage location or process	Class	Maximum Storage Capacity (L, kg)

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Code	Typical Qty	Unit eg L, kg

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01



*2112 18

SITE OCCUPIER INFORMATION

Name of Occupier _____

Postal Address of Occupier _____

Suburb/Town _____

Postcode _____

Trading Name if different _____

Type of business entity

Company ☐ Sole Trader ☐ Partnership ☐ Other ☐ please specify: _____

DETAILS OF PERSON MAKING NOTIFICATION

Title: Mr / Miss / Ms / Mrs / Other (please specify) _____ Family name _____

Given name _____ Other names _____

Relationship to occupier (eg director, employee etc) _____

DECLARATION

I (print your name in BLOCK LETTERS) _____ Phone number _____

of (print your home address) _____ Postcode _____

hereby declare that:

- I am 18 years of age, or over
- The information contained in this notification is true and correct in every particular
- I am authorised to complete this notification and make this declaration on behalf of the occupier
- I am aware that it is an offence under clause 356 of the *Occupational Health and Safety Regulation 2001* to provide any information or produce any documentation in a notification that I know is false or misleading in a material particular.

Signature of person making this declaration _____ Date _____

PAYMENT OF NOTIFICATION FEE

Enclose a cheque or money order with the notification (do not send cash), **pay over the counter** by cash, cheque or credit card, or **fill in the credit card details** below for the amount of \$100.Please charge my ☐ Bankcard ☐ MasterCard ☐ Visa

Card No: _____ Card expiry date: ____ / ____ / ____

Cardholders name: _____ Cardholders signature: _____

This document is a tax invoice for GST purposes once payment is effected – RETAIN A COPY of this page for taxation purposes.

WorkCover NSW

ABN 77 682 742 966

Payment details: Amount Paid: \$ _____ Date of payment ____ / ____ / ____

OFFICE USE ONLY

Receipt Number _____ Date ____ / ____ / ____ Amount \$ _____

Name of Australia Post Checking Officer _____

Signature _____ Date _____

Name of Post office/agency _____

Australia Post Disclaimer

Australia Post is acting as an agent for WorkCover to identify you under the requirements set out by *Occupational Health and Safety Act 2000*.

Your notification will be forwarded to WorkCover.

All correspondence in respect of this notification must be addressed to WorkCover.

Catalogue No. **896** WorkCover Publications Hotline **1300 799 003**

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Licence Number 35/027366

CLOSED FILE 2007

Occupier: GUNNEDAH DISTRICT HEALTH SERVICE

Site:

MARQUIS ST,
GUNNEDAH 2380

WorkCover. **Watching out for you.**

WorkCover NSW ABN 77 682 742 966 92-100 Donnison Street Gosford NSW 2250 Locked Bag 2906 Lisarow NSW 2252
Telephone 02 4321 5000 Facsimile 02 4325 4145 WorkCover Assistance Service 13 10 50
DX 731 Sydney Website www.workcover.nsw.gov.au

WC1216LH



Dangerous Goods Notification Check Sheet

Site address:

Marquis St
Gunnedah 2380

Notification Number:

35/027366

TYPE OF APPLICATION:

RE-NOTIFICATION

☐

FEE PAID

☐

VERIFIED

NEW

☐

AMENDMANT (NO FEE PAYABLE)

☐

TRANSFER

☐

EXPLOSIVES (REFER TO HAZ ACT)

☐

NOTIFICATION CHECKLIST

YES

NO

ASIC /ABN search done to confirm name

☐☐

SCID organisation fields updated

☐☐

Manifest provided

☐☐

Depots Updated

☐☐

YES

NOT REQ

VERIFIED

Sketch provided

☐☐

Scanned

☐☐

Locality map provided

☐☐

Mapped

☐☐

EXPIRY DATE RESET

YES

NO

Re-notification for additional 12 Months

☐☐

Reset due to Common Expiry Date in Use

☐☐

Common Expiry Date: ___/___/___

PERIOD OF NON NOTIFICATION

Old Exp Date: ___/___/___

Application Received Date: ___/___/___

New Exp Date: ___/___/___

(This notification was not current from date of old expiry to date of new application received)

APPLICATION FINALISED

YES

NO

LETTER SENT

Acknowledgment printed

☐☐

Closure (Declaration A)

☒☐☒

Notification not required (Below Manifest)

☐☐☐

More Info Required (See Notes below)

☐☐☐

PROCESSED BY

J SMITH
JSE

Date 2/4/07

MORE INFORMATION REQUIRED/NOTES:



Your completed declaration (where applicable) is to be returned to:

WorkCover NSW
Dangerous Goods Notification Team
LOCKED BAG 2906 LISAROW NSW 2252

OR FAXED TO 02 9287 5500

DECLARATION A

To be completed where notifiable amounts of Dangerous Goods **are not** stored or handled.

I CAROL YOUNG (name), of MARQUIS ST, GUNNEDAH (address)
declare that I do not store and handle Dangerous Goods at premises 35/027366,
site MARQUIS ST, GUNNEDAH 2380
in quantities that exceed or are likely to exceed the manifest quantity in the Table to Schedule 5 of
the Occupational Health and Safety Regulation 2001.

[Signature] Signature

30.3.06 Date

DECLARATION B

I (name), of (address)
declare that I only store and handle either Class 1 Dangerous Goods or Security Sensitive
Dangerous Substances, or both, at premises 35/027366,
at site MARQUIS ST, GUNNEDAH 2380
and there has been no change to the quantities stored or handled as previously notified to
WorkCover.

..... Signature

..... Date

WorkCover. **Watching out for you.**

WorkCover NSW ABN 77 682 742 966 92-100 Donnison Street Gosford NSW 2250 Locked Bag 2906 Lisarow NSW 2252
Telephone 02 4321 5000 Facsimile 02 4325 4145 WorkCover Assistance Service 13 10 50
DX 731 Sydney Website www.workcover.nsw.gov.au



NOTIFICATION

OF DANGEROUS GOODS ON PREMISES FORM

EXPLANATORY NOTES AND FORM CHECKLIST

This form is used to notify WorkCover of dangerous goods stored on premises. This form is to be completed in conjunction with the Guide – Notification of Dangerous Goods on Premises. Notification is a requirement of the Occupational Health and Safety Regulation 2001.

Persons who wish to handle explosives or security sensitive dangerous substances need to obtain a licence under the Explosives Regulation. See the WorkCover website www.workcover.nsw.gov.au or call 13 10 50 for information about explosives licensing.

LODGMET INSTRUCTIONS

1. You must complete all sections of this form.
2. You may lodge your application with Australia Post or with Workcover NSW
3. You must sign and date this application by completing the declarations on the last page
4. Payment of the prescribed fee must accompany this form.



APPLICATION CHECKLIST

Please tick the appropriate box to ensure that your application is complete and secure prior to submission to Australia Post or WorkCover

Applicant Use Only

- Application Form (this form) Completed and Signed
- Site Sketch
- Photocopy from street directory or map showing locality
- Non-refundable fee \$100

<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>

PRIVACY COMPLIANCE STATEMENT

This information is collected by WorkCover New South Wales ("WorkCover") for the purposes of undertaking an evaluation, assessment and processing a notification of dangerous goods on premises as required by the *Occupational Health and Safety Act 2001* and the *Occupational Health and Safety Regulation 2001*.

This information may also be used by WorkCover for the purposes of confirming applicant details in the event replacement acknowledgements are applied for, and may also be used to establish and maintain a database and to assist the WorkCover inspectorate with their work generally. Information is also made available to local councils and emergency services assist with emergency response and planning.

Except for the purposes of prosecution and unless such disclosure is otherwise required by law, the information will not be accessed by any third parties in a way that would identify the individual without the consent of that individual.

You may also apply to WorkCover to access and correct any information WorkCover holds if that information is inaccurate, incomplete, not relevant or out of date. Applications should be made in writing to:

Privacy Contact Officer, WorkCover NSW Head Office, Locked Bag 2906, Lisarow NSW 2252

CONTACT FOR NOTIFICATION INQUIRIES

Title: Mr / Miss / Ms / Mrs / Other (please specify) _____ Family name YOUNG
Given name CAROLE Other names LYNN
Gender Male ☐ Female ☒ (please circle) Date of birth 30/12/51 Place of birth STANMORE NSW
Postal address P.O. BOX 243
Suburb GUNNEDAH State NSW Postcode 2380
Business phone 02 67 418000 Business fax number 67402881
Business email address carole.young@hnehealth.nsw.gov.au

Previous Licence Number or Acknowledgement Number (if known)

351027366

Previous Occupier (if known)

N/A

Site on which dangerous goods are to be kept

Number

Street

MARQUIS STREET Gunnedah, NSW 2380

Nearest cross Street

RESERVOIR STREET GUNNEDAH NSW 2380

Lot and DP if no street number

2 & 3 (lots) 7900 792209.Is the site staffed? If yes state number of employees 80Site staffing: Hours per day 24 Days per week 7

Site Emergency Contact

Phone number

Name

() 064002766 Todd Southorne

Nature of site (eg petrol station, warehouse etc)

HOSPITAL

Nature of your primary business activity

HEALTH CARE - ACUTE & COMMUNITY

ABN Number (if any)

24 500842 605

Website details (if any)

What is the ANSZIC code most applicable to your business? (see guide for list of codes and further information)

Code

Description

961 Hospital

Attach a site sketch(s) of the premises. Refer to the Guide for information on the requirements for the site sketch.

Attach a photocopy page from a local Street Directory or other map showing the locality of the premises. Mark the location of the premises with an X

ATF
J. P. H. de.

NOTIFICATION OF DANGEROUS GOODS ON PREMISES FORM

FDG01

List the dangerous goods that will be stored and/or processed on these premises. Copy this page and attach additional sheets if there is insufficient space.

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M ³)
1	Roofed Store	2.2, 5.1	69,000L

decompressed
volumes

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M ³
1072	Medical Oxygen	2.2, 5.1		Medical Oxygen	2S	6x6, 4x10, 8xL	31,000L
1070	Nitros Oxide	2.2, 5.1		Nitros Oxide	2R	2x6, 4x10, 3xL	27,000L
1002	Medical Air	2.2		Medical Air	2T	2x6, 2xL	10,000L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M ³)
2	Roofed Store	2.2, 5.1	214,000L

decompressed
volumes

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M ³
1072	Medical Oxygen	2.2, 5.1		Medical Oxygen	2S	19x6	158,000L
1070	Nitros Oxide	2.2, 5.1		Nitros Oxide	2R	3x6	56,000L

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M ³)
3	Under floor	2.2	20,000L

decompressed
volumes

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M ³
1002	Medical Air	2.2		Medical Air	2T	3x6	20,000L

fridge

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M ³)
4	Tank	2.1	7500L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M ³
1075	Liquefied Petroleum Gas	2.1		LPG	2WE	7500L	

Identifier	Type of storage location or process	Class	Maximum Storage Capacity (L, kg, M ³)
5	Tank	2.1	7500L

UN Number	Proper Shipping Name	Class	PG (I, II, III)	Product or Common Name	HazChem Symbol	Typical Qty	Unit eg L, kg, M ³
1075	Liquefied Petroleum Gas	2.1		LPG	2WE	7500L	



*2112 18

OCCUPIER INFORMATION

Name of Occupier

GUNNEDAH DISTRICT HEALTH SERVICE

Postal Address of Occupier

P.O BOX 243

Suburb/Town

GUNNEDAH

Postcode

2380

Trading Name if different

Type of business entity

Company ☐

Sole Trader ☐

Partnership ☐

Other ☒

please specify: HEALTH SERVICE

DETAILS OF PERSON MAKING APPLICATION

Title: Mr / Miss / Ms / Mrs / Other (please specify) _____ Family name YOUNG

Given name CAROLE Other names LYNN

DECLARATION

I (print your name in BLOCK LETTERS) CAROLE YOUNG Phone number 02 67418000
of (print your home address) 32 STEWART ST, GUNNEDAH Postcode 2380

hereby declare that:

- I am 18 years of age, or over;
- The information contained in this application is true and correct in every particular;
- I am authorised to complete this application and make this declaration on behalf of the occupier;
- I am aware that it is an offence under section 356 of the *Occupational Health and Safety Act 2000* to provide any information or produce any documentation in an application that I know is false or misleading in a material particular.

Signature of person making this declaration  Date 6.4.06

Proof of Identity – Australia Post use only

NO PROOF OF IDENTITY CHECK IS REQUIRED FOR THIS TRANSACTION

Name of Australia Post Checking Officer _____

Signature _____ Date _____

Name of Post office/agency _____

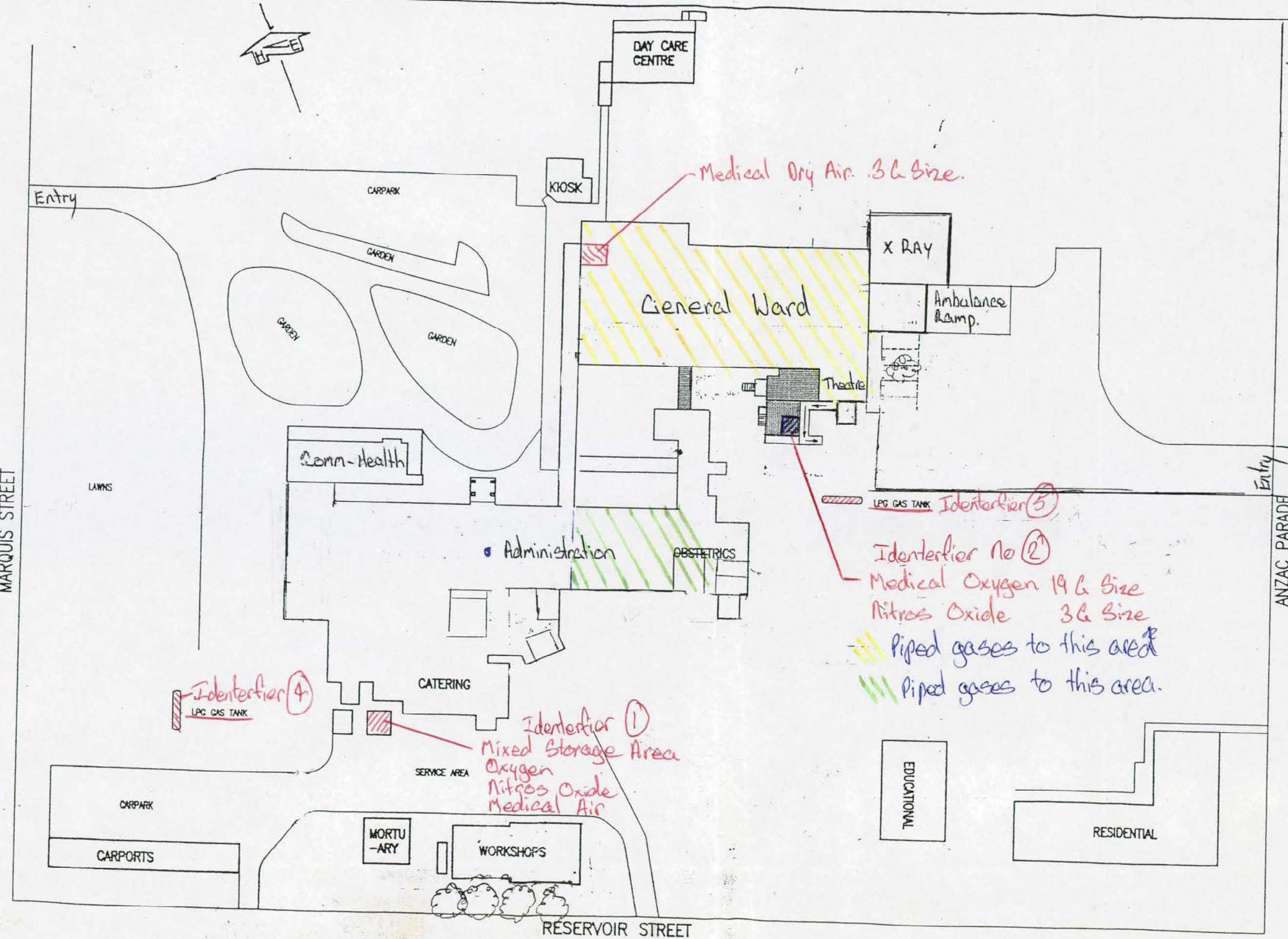
Australia Post Disclaimer

Australia Post is acting as an agent for WorkCover to identify you under the requirements set out by *Occupational Health and Safety Act 2000*.

Your application will be forwarded to WorkCover.

All correspondence in respect of this notification must be addressed to WorkCover.

MARQUIS STREET



ANZAC PARADE

HOSPITAL	GUNNEDAH DISTRICT HOSPITAL	HEALTH NEW ENGLAND
PROJECT	PROPOSED REFURBISHMENT OF TENDARRA WARD BLOCK	DESIGNED DRAWN CHECKED
SHEET	CONSTRUCTION DATA 1, SITE PLAN	DRWG NO: GNRF1S1/A
		SCALE : 600 DATE 6.9.91



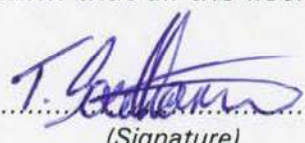
Licence No. 35/027366



APPLICATION FOR RENEWAL OF LICENCE TO KEEP DANGEROUS GOODS

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

DECLARATION: Please renew licence number 35/027366 to 23/03/2004. I
confirm that all the licence details shown below are correct (amend if necessary).


(Signature)

Todd Southorne
(Please print name)

4-3-03.
(Date signed)

for: GUNNEDAH DISTRICT HOSPITAL

THIS SIGNED DECLARATION SHOULD BE RETURNED TO:

WorkCover New South Wales
Dangerous Goods Licensing Section
LOCKED BAG 2906
LISAROW NSW 2252

Enquiries:ph (02) 43215500
fax (02) 92875500

Details of licence on 24 February 2003

Licence Number 35/027366 Expiry Date 23/03/2003

Licensee GUNNEDAH DISTRICT HOSPITAL

Postal Address: BOX 243 P O GUNNEDAH NSW 2380

Licensee Contact TODD SOUTHORNE Ph. 02 6740 2884 Fax. 02 6740 2888

Premises Licensed to Keep Dangerous Goods
GUNNEDAH DISTRICT HOSPITAL
MARQUIS ST GUNNEDAH 2380

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Major Supplier of Dangerous Goods ELGAS

Emergency Contact for this Site TODD SOUTHORNE Ph. 02 6742 4371 OR 0429 002768

Site staffing 24 HRS 7 DAYS

Details of Depots

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



35/027366

OHS LICENSING UNIT

Dangerous Goods Licensing

ph. (02) 9370 5187 fax (02) 9370 6104

e-mail: scid@workcover.nsw.gov.au

Attn: WAL CARTER
GUNNEDAH DISTRICT HOSPITAL
BOX 243 P O
GUNNEDAH NSW 2380



21 February 2002

Dear Licensee

**RE: RENEWAL OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS
PREMISES: MARQUIS ST, GUNNEDAH 2380**

Our records indicate you hold licence no. 35/027366 for storage of dangerous goods at MARQUIS ST, GUNNEDAH 2380. This licence will expire on 23/03/2002. If you still keep licensable quantities of dangerous goods at this site, the licence will need to be renewed.

You should be aware that it is an offence under Part 3, Division 1 of the Dangerous Goods Act 1975 to keep dangerous goods on unlicensed premises.

To renew the licence to 23/03/2003, please **sign, date and return** the enclosed declaration. If there are significant modifications to the depot details or extra depots need to be added to your licence please contact WorkCover New South Wales to obtain an application form DG1.

If the licence is not to be renewed, please provide WorkCover's OHS Licensing Unit with a signed statement giving the reason why the licence is no longer required *eg site sold, lease ended or storage removed*.

- ♦ Where the site has been sold or the lease ended, please inform WorkCover New South Wales, of the date you sold/vacated the premises and whether you removed the dangerous goods before leaving. Where possible, please supply the new owner's name and address.

- ♦ If the depot(s) has been removed from the site or is no longer used for storing dangerous goods, please advise the date the goods/depot(s) were removed and by whom. See *specific information in guidance notes attached/overleaf for underground tanks*.

If you have any further queries, please contact your local WorkCover office or Dangerous Goods Licensing staff ☎ (02) 9370 5187. Thank you for your assistance.

Yours faithfully

Kham Sirimanotham

Team Leader, Dangerous Goods
encs



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

Licence No. 35/027366



APPLICATION FOR RENEWAL OF LICENCE TO KEEP DANGEROUS GOODS

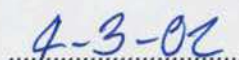
ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/027366 to 23/03/2003. I confirm that all the licence details shown below are correct (amend if necessary).


(Signature)

for: GUNNEDAH DISTRICT HOSPITAL


(Please print name)


(Date signed)

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

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

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

Details of licence on 21 February 2002

Licence Number 35/027366

Expiry Date 23/03/2002

Licensee GUNNEDAH DISTRICT HOSPITAL



Postal Address: BOX 243 P O GUNNEDAH NSW 2380

Licence Contact  Ph.  Fax. 02 67423003

Premises Licensed to Keep Dangerous Goods
GUNNEDAH DISTRICT HOSPITAL
MARQUIS ST GUNNEDAH 2380

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Major Supplier of Dangerous Goods ELGAS

Emergency Contact for this Site  Ph. 

Site staffing 24 HRS 7 DAYS

Details of Depots

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

2-2-2

1. Southern

1. Southern

1382072

1. Southern 1. Southern

1. Southern 1. Southern 1701450



302 609



WorkCover New South Wales, 400 Kent Street, Sydney 2000. Telephone 9370 5000 ALL MAIL TO G.P.O. BOX 5364 SYDNEY 2000

Licence No. 35/027366

APPLICATION FOR RENEWAL OF LICENCE TO KEEP DANGEROUS GOODS

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

DECLARATION: Please renew licence number 35/027366 to 23/03/2001. I confirm that all the licence details shown below are correct (amend if necessary).


(Signature)

Sandra Strong (HSM) 29.02.00
(Please print name)

(Date signed)

for: GUNNEDAH DISTRICT HOSPITAL

THIS SIGNED DECLARATION SHOULD BE RETURNED TO:

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

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105

Details of licence on 21 February 2000

Licence Number 35/027366 Expiry Date 23/03/2000

Licensee GUNNEDAH DISTRICT HOSPITAL

Postal Address: BOX 243 P O GUNNEDAH NSW 2380

Licensee Contact WAL CARTER Ph. 02 67420666 Fax. 02 67423003

Premises Licensed to Keep Dangerous Goods
GUNNEDAH DISTRICT HOSPITAL
MARQUIS ST GUNNEDAH 2380

Nature of Site HOSPITALS (EXCEPT PSYCHIATRIC HOSPITALS)

Major Supplier of Dangerous Goods ~~BORAL~~ ELGAS

Emergency Contact for this Site W A CARTER Ph. 02 67421754

Site staffing 24 HRS 7 DAYS

Details of Depots

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



Form DG10

TRANSFER: A Licence to Keep Dangerous Goods is issued for a specified site. If control of a site is transferred (by way of sale or lease or otherwise), the person who held the licence immediately before the transfer must notify WorkCover's Scientific Services Branch. This notification must be submitted, in writing, within 7 days after the transfer and must specify the date the transfer was effected and include the name and address of the new occupier/owner.

AMENDMENT: If there is any change to the licence details or dangerous goods storage conditions at the site, the licensee must as soon as practicable notify WorkCover's Scientific Services Branch, in writing, of the change. The licensee must also apply for an appropriate amendment of the licence if, as a result of the change, the licence details are no longer appropriate or no longer correct.

RENEWAL: The licensee contact will be forwarded an Application to Renew the Dangerous Goods Licence six to eight weeks prior to the expiry date printed on the licence. If you do not receive the renewal application, please contact WorkCover's Dangerous Goods Licensing Section ☎ (02) 9370 5187 before the licence expires.

DESCRIPTION OF DANGEROUS GOODS CLASSES

- Class 1 Explosives (including detonators).
- Class 1.4S Safety cartridges.
- Class 2.1 Flammable gases (e.g. LP Gas, acetylene).
- Class 2.2 Non-flammable, non-toxic gases (e.g. oxygen, nitrogen).
- Class 2.3 Toxic gases (e.g. chlorine, anhydrous ammonia).
- Class 3 Flammable liquids (e.g. petrol, kerosene, paint thinners, methylated spirits).
- C1 & C2 Combustible liquids (e.g. diesel fuel, heating oil, vegetable oil).*
- Class 4.1 Flammable solids (e.g. nitrocellulose, sodium metal, calcium carbide).
- Class 4.2 Substances liable to spontaneous combustion (e.g. sodium hydrosulfite).
- Class 4.3 Substances that in contact with water emit flammable gases (e.g. calcium carbide).
- Class 5.1 Oxidizing substances (e.g. dry pool chlorine, ammonium nitrate).
- Class 5.2 Organic peroxides (e.g. dibenzoyl peroxide, MEKP).
- Class 6.1 Toxic substances (e.g. sodium cyanide, some pesticides).
- Class 6.2 Infectious substances (e.g. bacteria: administered by NSW Health, EPA and WorkCover NSW).
- Class 7 Radioactive material (e.g. uranium hexafluoride: administered by the EPA).
- Class 8 Corrosive substances (e.g. hydrochloric acid, sulfuric acid, liquid pool chlorine).

SOME DANGEROUS GOODS MAY BE KEPT WITHOUT A DANGEROUS GOODS KEEPING LICENCE.

For example:

1. **Acetylene:** 60 m³ or less per premises (i.e. up to and including 8 x "G" size cylinders).
2. **Diesel fuel, Heating oil:** any amount if stored in packages (e.g. drums) OR in tanks with a capacity of 50,000 litres or less.
3. **Petrol and other dangerous goods of Class 3, Packing Group I or II:** 100 litres or less per premises when stored aboveground.
4. **Kerosene and other dangerous goods of Class 3, Packing Group III:** 1,000 litres or less per premises when stored aboveground.
5. **Class 6.1 - Toxic substances:** 10L/kg or less of Packing Group I, 100L/kg or less of Packing Group II, and 1000L/kg or less of Packing Group III.
6. **Class 8 - Corrosive substances:** 10L/kg or less of Packing Group I, 100L/kg or less of Packing Group II, and 1000L/kg or less of Packing Group III.

Please contact WorkCover's Dangerous Goods Licensing Section ☎ (02) 9370 5187, Information Centre Hotline 13 10 50, or your local WorkCover office for further information or assistance on licensing or storage of dangerous goods.

WorkCover NSW offices

Blacktown	(02) 9671 8700	Albury	(02) 6021 5911	Central Coast	(02) 4353 2373
Hurstville	(02) 9598 3366	Batemans Bay	(02) 4472 5544	Grafton	(02) 6642 0511
Lindfield	(02) 9936 3000	Blackbutt	(02) 4297 3796	Lismore	(02) 6622 0088
Liverpool	(02) 9827 8600	Dubbo	(02) 6884 2799	Narrabri	(02) 6792 4643
Parramatta	(02) 9841 8550	Goulburn	(02) 4822 1243	Newcastle	(02) 4921 2900
Sydney	(02) 9370 5027	Griffith	(02) 6964 2027	Port Macquarie	(02) 6584 1188
Metro East Region	(02) 9370 5059	Orange	(02) 6361 7070	Tamworth	(02) 6786 2490
Metro West Region	(02) 9841 8550	Wagga Wagga	(02) 6921 8766	Toronto	(02) 4959 6366
Country North Region	(02) 4921 2900	Wollongong	(02) 4222 7333	Tweed Heads	(07) 5536 3262
Country South Region	(02) 4222 7333				



8TH OCTOBER 1997
SCIENTIFIC SERVICES BRANCH
DANGEROUS GOODS LICENSING
8TH OCTOBER 1997
WORKCOVER NSW
LOCKED BAG 10
PO CLARENCE ST
SYDNEY 2000

DEAR MS McLAREN

I would like to obtain a replacement Dangerous Goods Licence for our site.

The site address is MARQUIS STREET . GUNNEDAH 2380.

The licence number is 35/027366

The reason that we require a replacement is that we are unable to locate the original licence.

Yours Faithfully,

Wal Carter

ENGINEER
GUNNEDAH HEALTH SERVICE.
MARQUIS STREET
GUNNEDAH 2380
NSW



*duplicate licence
issued & sent
17/11/97*

Reference 35/027366

DX 13067, MARKET ST. SYDNEY

SCIENTIFIC SERVICES BRANCH
Dangerous Goods Licensing
ph 9370 5192 fax 9370 6105
Saturday, 4 October 1997



Mr Wal Carter
Gunnedah District Hospital
PO Box 243
GUNNEDAH NSW 2380

Dear Mr Carter

RE: LICENCE TO KEEP DANGEROUS GOODS
SITE: MARQUIS STREET, GUNNEDAH
NO: 35/027366

I refer to your fax requesting a replacement copy of the above-mentioned licence. To allow us to process this request, please send an original, signed letter to the Dangerous Goods Licensing section of WorkCover, quoting the site address and licence number, requesting replacement and explaining the reason for replacement.

Please send this letter to:

Dangerous Goods Licensing
WorkCover NSW
Locked Bag 10
PO CLARENCE ST SYDNEY 2000

If you have any queries, please phone Dangerous Goods Licensing staff on 9370 5187.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Angela McLaren'.

Angela McLaren
A/Senior Licensing Clerk, Dangerous Goods

* * * COMMUNICATION RESULT REPORT (4.OCT.1997 16:15) * * *

TTI SCIENTIFIC SERVICES 93706105

FILE MODE	OPTION	ADDRESS (GROUP)	RESULT	PAGE
587 MEMORY TX		00267423003	OK	P. 1/1

REASON FOR ERROR

E-1) HANG UP OR LINE FAIL
E-3) NO ANSWERE-2) BUSY
E-4) NO FACSIMILE CONNECTION

FAX

Fax No: 02 674 2 3003

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Tel: (02) 9370 5000 ALL MAIL TO LOCKED BAG 10, CLARENCE STREET, SYDNEY 2000

Reference 35/027366

DX 13067, MARKET ST. SYDNEY

SCIENTIFIC SERVICES BRANCH
Dangerous Goods Licensing
ph 9370 5192 fax 9370 6105
Saturday, 4 October 1997**Mr Wal Carter**
Gunnedah District Hospital
PO Box 243
GUNNEDAH NSW 2380

Dear Mr Carter

RE: LICENCE TO KEEP DANGEROUS GOODS
SITE: MARQUIS STREET, GUNNEDAH
NO: 35/027366

I refer to your fax requesting a replacement copy of the above-mentioned licence. To allow us to process this request, please send an original, signed letter to the Dangerous Goods Licensing section of WorkCover, quoting the site address and licence number, requesting replacement and explaining the reason for replacement.

Please send this letter to:



GUNNEDAH HEALTH SERVICE

FACSIMILE TRANSMISSION

New England Health

PHONE: (067) 420 666 FAX: (067) 423 003

TO: SCIENTIFIC SERVICES BRANCH

DANGEROUS GOODS LICENSING SECTION.

WORK COVER

FROM: WAL CARTER

ENGINEER.



DATE: 4-8-97

RE: DANGEROUS GOODS LICENCE NO. 35/027366 FOR

GUNNEDAH HEALTH SERVICE, UNABLE TO LOCATE, COULD

YOU PLEASE SUPPLY ME WITH A REPLACEMENT COPY

W. L. K.

NO. OF PAGES: 1

Any enquiries regarding this Fax please contact: WAL CARTER

ENGINEER.

THIS FACSIMILE CONTAINS CONFIDENTIAL INFORMATION
INTENDED FOR THE USE OF THE ADDRESSEE ABOVE. IF YOU
HAVE RECEIVED THIS FACSIMILE IN ERROR PLEASE NOTIFY
GUNNEDAH HEALTH SERVICE IMMEDIATELY ON THE ABOVE
TELEPHONE NUMBER AND RETURN IT TO THE ABOVE ADDRESS.

Gunnedah Health Service

PO Box 243
Gunnedah NSW 2380
Tel 067 420 666
Fax 067 423 003

NEW ENGLAND HEALTH SERVICE

**** REMINDER NOTICE ****

Reference 35/027366

WORKCOVER AUTHORITY



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

GUNNEDAH DISTRICT HOSPITAL
BOX 243 P O
GUNNEDAH 2380

3 November 1994

Dear Licensee

RE: NON RENEWAL OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS

Our records indicate you previously held a licence for storage of dangerous goods in NSW. This licence has expired.

If dangerous goods are still being kept at this site the licence will need to be renewed. To renew the licence to 1995, please sign, date and return the attached declaration. If there is significant modifications to the depot details or extra depots need to be added to your licence, please include a plan stamped by an accredited consultant for these depots.

If the licence is not to be renewed, please provide the Chief Inspector of Dangerous Goods, WorkCover Authority with a signed statement giving the reason why the licence is no longer required *eg site sold, lease ended or storage removed*.

- Where the site has been sold or the lease ended, please inform the WorkCover Authority, of the date you sold/vacated the premises and whether you removed the dangerous goods before leaving. Where possible, please supply the new owner's name and address.
- If the depot has been removed from the site or is no longer used for storing dangerous goods, please advise the date the goods/depots were removed and by whom *see specific information in guidance notes for underground tanks*.

If you have any queries, please contact dangerous goods licensing staff ☎ (02) 370 5192. Thank you for your assistance.

Yours faithfully

for Senior Licensing Clerk, Dangerous Goods
encs

24 MAR 1993

DANGEROUS
GOODS

WORKCOVER AUTHORITY



LICENCE TO KEEP DANGEROUS GOODS

(Dangerous Goods Act 1975)

Application for new licence, amendment or transfer

X Expiry: 24.3.94

1. Name of applicant

GUNNEDAH DISTRICT HOSPITAL

2. Site to be licensed

No Street

MARQUIS ST

Suburb/Town

GUNNEDAH

Postcode

2380

3. Previous licence number (if known)

35 027366

4. Nature of site

ABOVE GROUND TANK (HOSPITAL) X 8141

5. Emergency contact on site:

Phone

Name

X 067 421754

X W. A. CARTER

6. Site staffing:

Hours per day

X 24

Days per week

X 7

7. Major supplier of dangerous goods

X BORAL GAS

8. If new site or significant modification

Plan stamped by:

Accredited consultant's name:

9. Number of dangerous goods depots at site

2

10. Trading name or occupier's name

GUNNEDAH DISTRICT HOSPITAL

11. Postal address of applicant

Suburb/Town

Postcode

P.O. Box 243

GUNNEDAH

2380

12. Contact for licence enquiries:

Phone

Fax

Name

067 420666

X 067 423003

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

13. Signature of applicant

DJ Drew A/CEO

Date

23rd May 1993

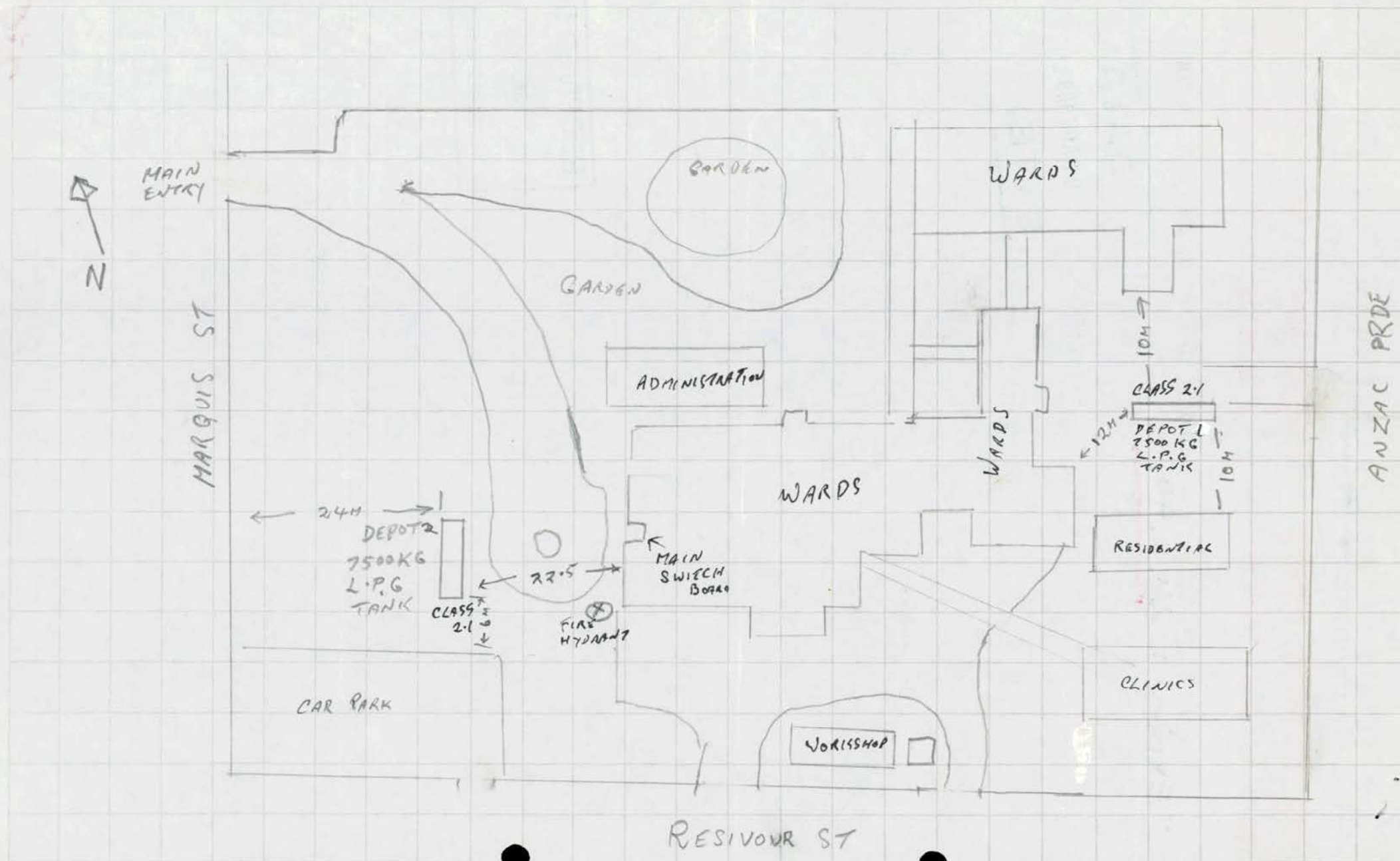
Please complete attached site sketch, depot listing and check sheet
(if required) and return to WorkCover Authority in envelope provided.

3/5 Form DG1

Site Sketch

35-027366

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



PART B

PART C

35-027366

Complete 1 section per depot

CHEMICAL STORAGE

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

Depot number	Type of depot	Class	Licensed maximum storage capacity
N01	ABOVE GROUND L.P.G. REG NO 18605341	2.1	7500 KG L ✓

UN number	Shipping name	Pkg. Class Group	EPG	Product or common name	Typical quantity	Uniteg. L, kg, m³
X1075	LPG	2.1	N/A 2A2	BORAL GAS	7500	L KG m³

Depot number	Type of depot	Class	Licensed maximum storage capacity
N02	ABOVE GROUND L.P.G. REG NO. 18605342	2.1	7500KG L ✓

UN number	Shipping name	Pkg. Class Group	EPG	Product or common name	Typical quantity	Uniteg. L, kg, m³
X1075	LPG	2.1	N/A 2A2	BORAL GAS	7500	L KG m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

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

Depot number	Type of depot	Class	Licensed maximum storage capacity

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

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

[illegible][illegible]

Plan Registration No. 220

PLANS SUBMITTED FOR APPROVAL

DETAILS OF FIRM SUBMITTING PLAN(S):

DATE: 12/4/91

NAME: GUNNEDAH DISTRICT HOSPITAL

ADDRESS: P O BOX 243

GUNNEDAH 2380

NAME CONTACT:

PHONE:

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

PLAN DETAILS:

DRAWING NO.:

NAME OF COMPANY:

ADDRESS OF LOCATION: MARQUIS ST

GUNNEDAH 2380

TOWN OR CITY:

Approved ()

Not Approved ()

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

TYPE OF INSTALLATION APPROVED:

CAPACITY:

seen by FOM

12/4/91

APPROVED BY:

DATE:

N/A

Form DGI

Department of Industrial Relations & Employment

DANGEROUS GOODS ACT, 1975

LICENCE No.

35 - 027366.4

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

(* delete whichever is not required)

FEE: \$15.00 per Depot for new licence.

\$15.00 for amendment or transfer.

March Exp.

Name of Applicant in full (see Item 1 - Explanatory notes - page 4)	GUNNEDAH DISTRICT HOSPITAL		
Trading name or occupier's name (if any)	ABOVE		
Postal Address	P.O. Box 243, GUNNEDAH	Postcode	2380
Address of the premises to be licensed. (Including Street No.)	MARQUIS ST, GUNNEDAH	Postcode	2380
Nature of premises (See Item 2 - Explanatory notes - page 4)	HOSPITAL		
Telephone number of applicant	STD Code 067/420666	Number	CONTACT: WAL CARTER

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

Depot number	Type of depot (See item 3 - Explanatory notes - page 4)	Storage capacity	Dangerous goods	C & C Office use only
			Product being stored	
1	ABOVE GROUND TANK	7.5 M ²	LPG GAS	DP 002.100 1. 100.75x2
2	" " "	"	" "	1. 100.75x2
3				
4				
5				
6	Return cheque			
7				
8				
9				
10				
11				
12				

Data Entered
23 Apr 91

Has site plan been approved by the Dangerous Goods Branch?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, no plans required. If no, please attach site plan, or provide sketch plan overleaf.
Have premises previously been licensed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If, yes, state name of previous occupier, and licence No. (if known).
Name of oil company supplying flammable liquid (if applicable).		

Signature of applicant

Date

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

FOR OFFICE USE ONLY

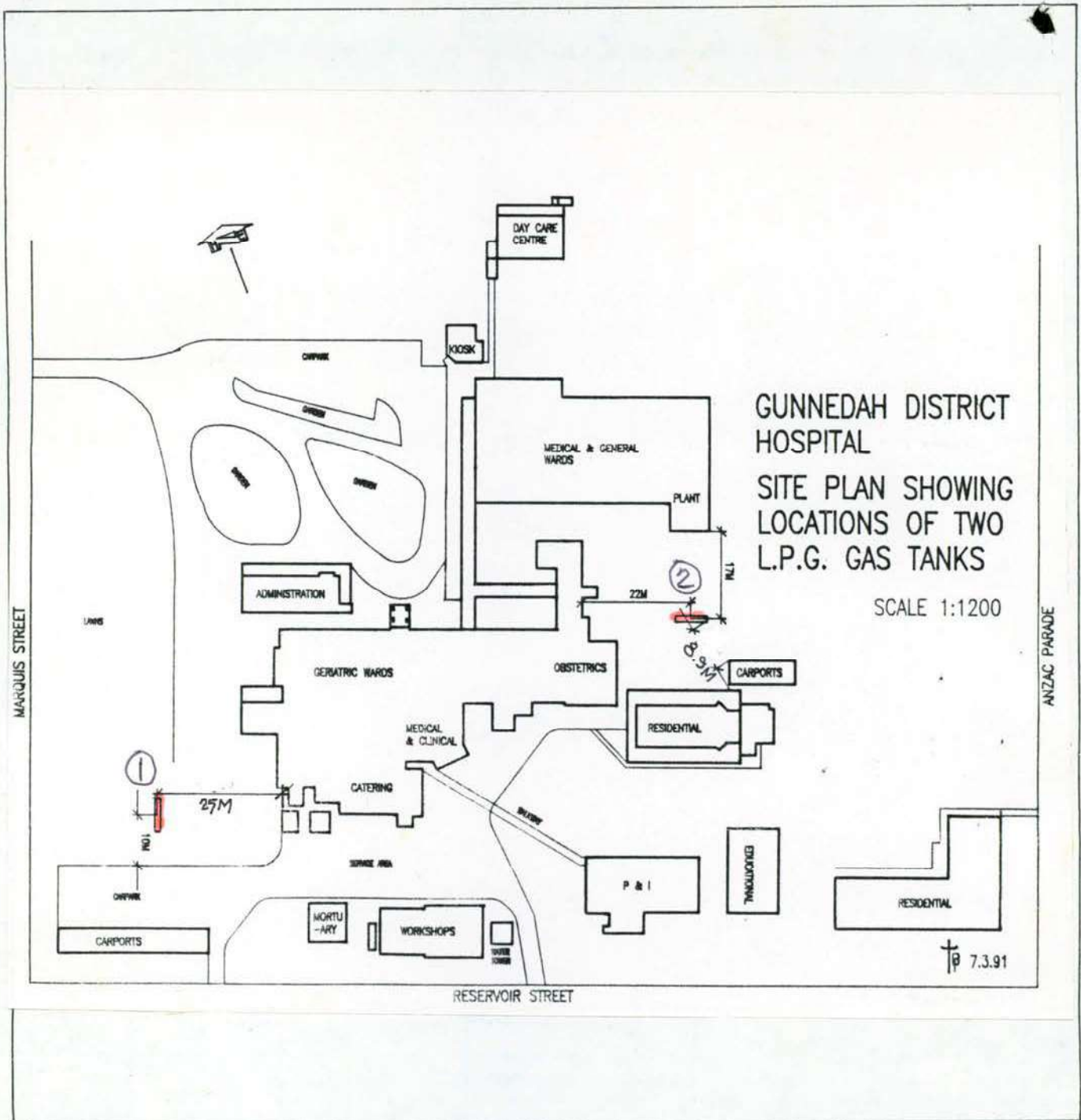
CERTIFICATE OF INSPECTION

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

Signature of Inspector

Date

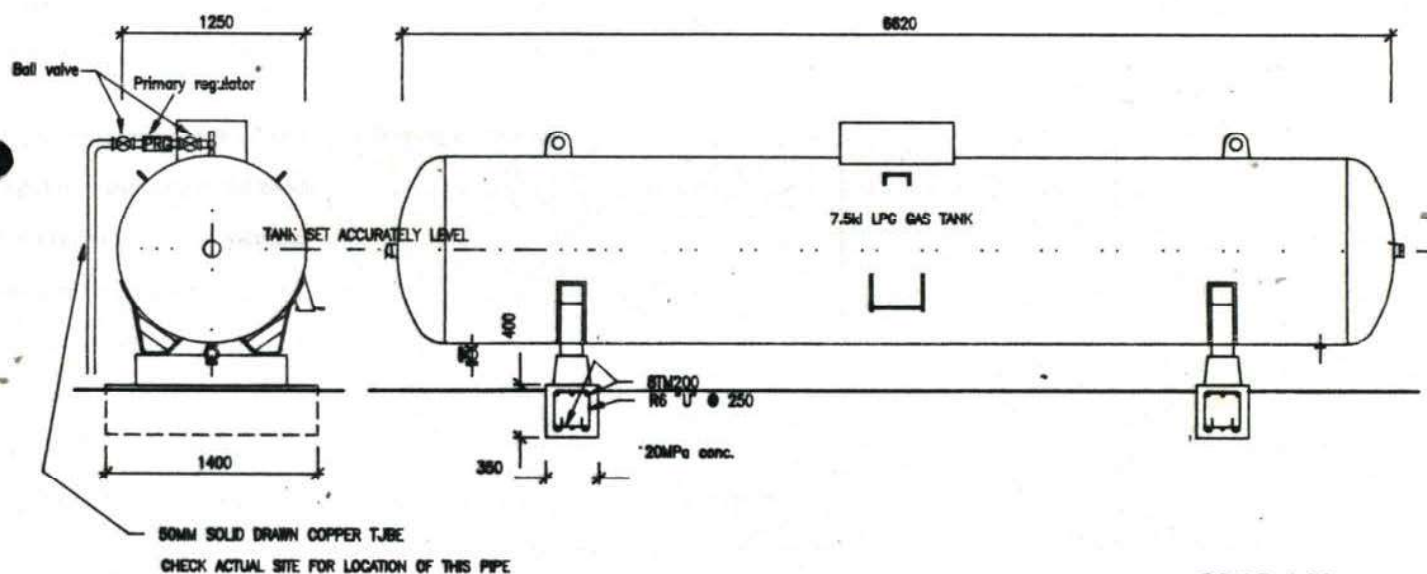
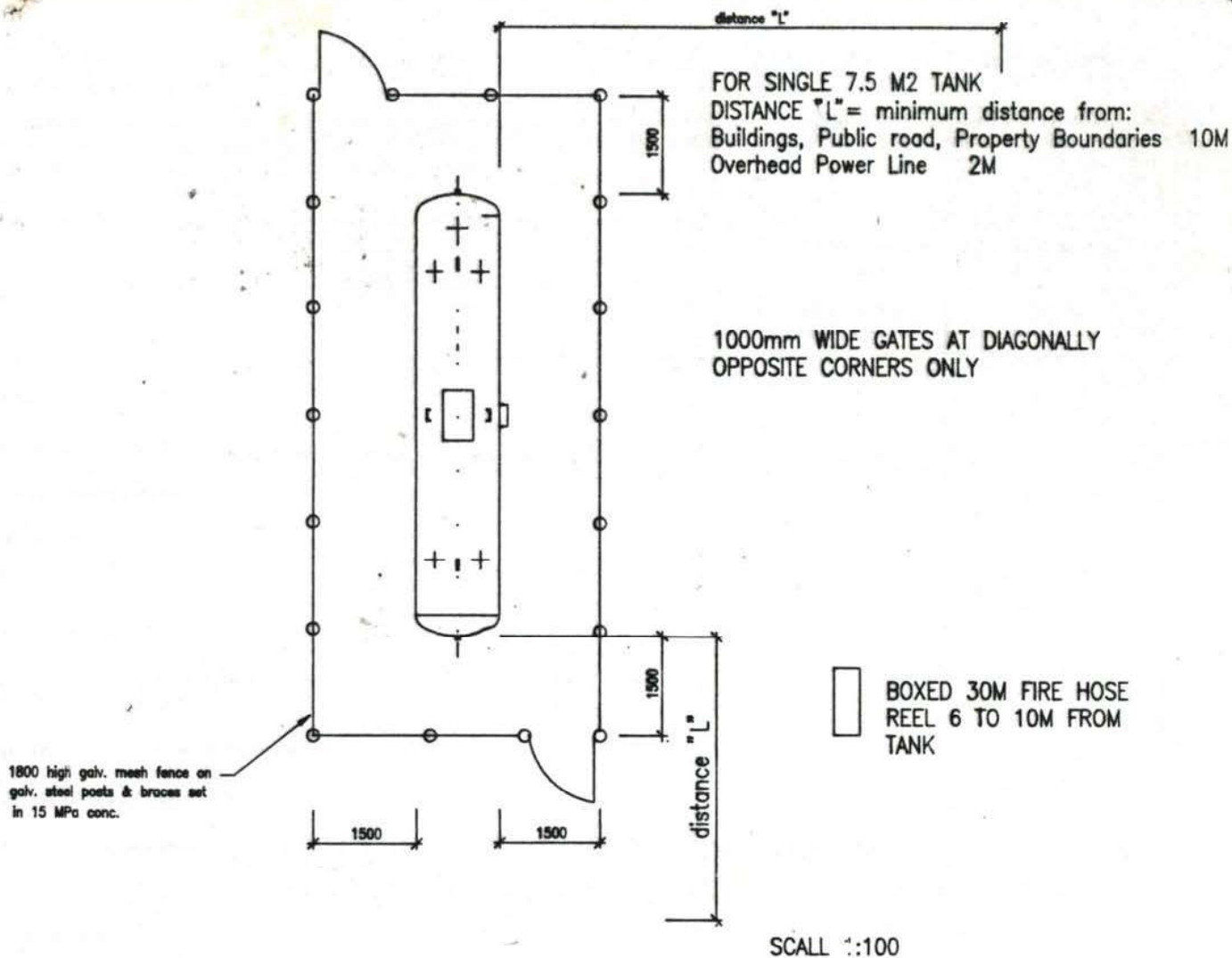
SKETCH PLAN OF SITE



Show positions of Depot(s) with: -

- (1) distances from public places and protected works;
- (2) street names;
- (3) nature and details of adjacent properties.





HOSPITAL GUNNEDAH DISTRICT HOSPITAL
PROJECT
INSTALLATION OF SINGLE 7.5 M2 LPG TANK
SHEET

DESIGNED
DRAWN
CHECKED

TP

HNE HEALTH
NEW
ENGLAND

SCALE 1:50 & 100

DATE 22.1.91

DRWG NO:

-1LPGTK7

INFORMATION TO BE PROVIDED FOR LICENSING OF EXTERNAL EXPLOSIVE MAGAZINES

1. (a) Construction of
 (i) Walls (ii) Roof (iii) Shade roof (iv) Door(s) (v) Lock(s) (vi) Lining (vii) Lightning conductor
 (b) Internal dimensions (mm)

2. Special attention is directed to the necessity for filling in accurately the distances from each of the undermentioned places, irrespective of the quantity of Explosives intended to be kept. If any of the "Protected Places or Protected Works" specified below, are not within radius of 3 kms of the Magazine, place the word NIL against such place or works.

PROTECTED PLACES or PROTECTED WORKS	Distance in metres from magazine to nearest works or place	
	Not occupied or used by applicant	Occupied or used by applicant
Public place		
Waterway used for navigation		
Reservoir (public or private)		
River or sea wall		
ridge		
Dock, wharf, pier or jetty		
Any furnace, kiln, forge or fire for manufacturing purposes or for the use of any boiler, engine, or machine		
Aboveground water main or water supply channel		
Electrical power transmission line		
Radio or television transmitter		
Shop		
Store or warehouse		
Factory		
Other building or timber yard in which any person is employed or engaged in any trade, business or profession		
Magazine or premises licensed for the keeping of explosives		
Depot for other dangerous goods		
Railway, tramway or aerodrome		
Any dwelling house		
Any church, chapel, college, school or theatre		
Hospital		
Government or public building		
Any other building or structure in or about which persons are usually present or from time to time assemble		

KEEPING LICENCE EXPLANATORY NOTES

FORM DG1

1. Name of applicant in full: Full name(s) including given name(s) or holding company name (if any) must be supplied.
2. Nature of premises: State whether premises are a dwelling, service station, fuel storage depot, general store, farm, mine site, etc.
3. Type of depot: Describe depot as "aboveground tank", "underground tank", "magazine", "roofless package store", "roofed package store", "cylinder store" (or where not more than two LPG decanting cylinders of each of a capacity not exceeding 50 kg are kept) "decanting cylinders". For safety cartridges describe as "in original packages".
4. If space is insufficient for depot particulars, attach a separate list, showing the type of each depot (as per 3 above), and indicating contents and capacities of each in litres, kilograms etc.
5. For each magazine, supply additional information as per page 3.
6. A site plan of the premises showing the position(s) of the depot(s) with distances from protected works and public places is to be attached.

Dangerous Goods have been divided into classes and an explanation of these classes is shown hereunder. Certain classes may be kept without a licence, provided the quantity of each does not exceed the amount specified below.

Licences are issued on a yearly basis and may not be transferred without the approval of the Chief Inspector of Dangerous Goods.

The SIGNED form, together with the appropriate fee, is to be forwarded to The Accountant, Department of Industrial Relations, P.O. Box 847, Darlinghurst, 2010.

If transfer of a licence is required, this will be expedited if the new occupier can be handed the current pink licence to be forwarded to this Department with any change of details noted and transfer fee of \$15 included.

EXPLANATION OF DANGEROUS GOODS CLASSES

- 1.1 Blasting explosives (including detonators).
- 1.4 Fireworks and/or safety cartridges.
- 2.1 Flammable gases (e.g. L.P.G. or acetylene).
- 2.2 } Poison and/or cryogenic gases (e.g. ammonia, chlorine, liquid
- 2.3 } oxygen).
- 3.1 } Flammable Liquids (e.g. any or all of, petrol, kerosene,
- 3.2 } methylated spirits, solvents).
- 3.3 Combustible liquids (e.g. distillate, diesel fuel, heating oil).
- 4 Flammable solids (e.g. nitro cellulose).
- 5 Oxidising substances (e.g. Pool chlorine).

EXEMPTIONS FROM LICENCE

1. *L.P.G.*: Two 50kg L.P.G. decanting cylinders or less on a premises HAVING OTHER LICENSED DEPOTS.
2. *Acetylene*: Storage of 60 cu.m or less of acetylene per premises (i.e. up to and including 8 x "G" class cylinders, the most common size of acetylene cylinder).
3. *Distillate, Diesel Fuel, Heating Oil*: Storage of 50,000 litres or less of distillate, diesel fuel and heating oil per tank.
4. *Petrol*: Storage of 100 litres or less of petrol per premises.
5. *Kerosene*: Storage of 1,000 litres or less of kerosene per premises, when stored aboveground.

FOR FURTHER ENQUIRIES PLEASE RING

(02) 287 6237
6239

Licence will be issued within four (4) weeks of receipt within Department of correct fee and completed application.
FAILURE TO ANSWER ALL QUESTIONS WILL RESULT IN A DELAY IN THE ISSUE OF YOUR LICENCE.



DEPARTMENT OF LABOUR
VICTORIA

Chief Inspector of Boilers and Pressure Vessels
Nauru House, 80 Collins Street, Melbourne, Vic. 3000
Phone 655 6444

CERTIFICATE OF TEST

This is to certify that an Inspector has checked the materials and supervised the construction and testing of the Boiler/Pressure Vessel described hereunder:—

Manufacturer of
Boiler/Pressure
Vessel

RHEEM G.P.E.

BUNNETT ST.,

SUNSHINE, VIC. 3020

Description/Type

7.5 HL. L.P.G. VESSEL

Test Pressure

2630

kPa

Date

14-12-90

STAMPING

90-00411	
W.P. 1750	

NOTE: Boilers and Pressure Vessels for use in Victoria must be registered with the Chief Inspector of Boilers and Pressure Vessels by the owner.

CERTIFIED CORRECT

Ken Noel

Inspector of Boilers
and Pressure Vessels

[Signature]
Signature of Manufacturer
or Agent

14-12-90
Date

T.S.B. 81

4218(F4)



GAS PLANT & EQUIPMENT

POSTAL ADDRESS: P.O. BOX 227, SUNSHINE, VICTORIA, 3020, AUSTRALIA.

TELEPHONE: 311 7411

TELEX: AA 39704

INCORPORATED IN VICTORIA

MANUFACTURER'S DATA REPORT — PRESSURE VESSELS

Manufactured by RHEEM - GASPLANT & EQUIPMENT

Manufactured for

REGISTRATION No. : 90-00411

RHEEM SERIAL No. : V10865

Type7.5KL.(W.C.)..L.P.G..STORAGE..VESSEL.....

Design Pressure1,750.kPa..... Design Temperature :55°C.....

Corrosion Allowance :NIL..... Internal Cubic Capacity7.48M³.....

Code and Classification to which Vessel has been designed :AS1210..CLASS..2A.....

Design Approval : Drawing No76010/2..... Approval NoV1226-78.....

SHELL : Dia ...1,220... Length5840... Thickness ..12... Material ..AS1548-7-460....

No. of Strakes2... Radiography : ..SPOT..... Eff. of Joint :85%.

ENDS : Type :...ELLIPSOIDAL.... Direction of Pressure :CONCAVE.....

Thickness10... Material ..AS1548-7-460.. AttachmentWELDED.....

OPENINGS : (ATTACHED BY WELDING)

SERVICE	No.	SIZE	LOCATION	TYPE
MULTI VALVE	1	3/4" NPT	TOP-SHELL	PAD
CONTENTS GAUGE	1	42MM I.D.	" "	"
FILLER VALVE	1	1 1/4" NPT	" "	"
TOP DRAIN	1	1 1/4" NPT	" "	"
SPARE	1	3/4" NPT	" "	"
INSPECTION OPENING	2	2" NPT	CENTRE-ENDS	3,000 lb.COUPLING
DRAIN	1	1 1/4" NPT	UNDER-SHELL	" "
LIQUID OUTLET	1	2" NPT	" "	" "
PUMP BYPASS	1	2" NPT	" "	" "
VAPOUR RETURN	1	3/4" NPT	" "	" "
RELIEF VALVE	2	1 1/4" NPT	TOP-SHELL	" "

WELDING OPERATORS CERTIFICATION No. :

7473	7439	1222	7746

HYDROSTATIC TEST PRESSURE :2,630.kPa..... STRESS RELIEF CHART No.:

MATERIAL TEST CERTIFICATE No.: ..R889682/RH92583/C4872/C4872/C33.....

WELD TEST CERTIFICATE No: V190-3384..... ULTRASONIC ~~REPORT~~ REPORT No.: V190-488(32)

REMARKS :

I certify the above data to be correct and that this Pressure Vessel satisfies the requirements of the Regulations under the Victorian Boilers and Pressure Vessels Act

Date ..14...-12-90..

.......... (P. JONES)

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Appendix C: Laboratory Results Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

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

Table Specific Explanations:

HIL Tables:

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

EIL/ESL Table:

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

Waste Classification and TCLP Table:

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

QA/QC Table:

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

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-C: 'Public open space; secondary schools; and footpaths'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	ASBESTOS FIBRES	
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos			
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC)			300	90	300	17000	600	80	1200	30000	300	3	10	340	400	10	70	400	10	250	1	Detected/Not Detected	
Sample Reference	Sample Depth	Sample Description																					
BH1	0-0.1	Fill: Silty Clay	<4	<0.4	25	25	22	<0.1	29	78	<0.05	<0.5	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
BH1 (lab duplicate)	0-0.1	Fill: Silty Clay	<4	<0.4	23	20	20	<0.1	26	66	<0.05	<0.5	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	
BH2	0-0.1	Fill: Sandy Clay	<4	<0.4	24	13	10	<0.1	23	34	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
BH3	0-0.1	Fill: Sandy Clay	<4	<0.4	28	25	37	0.1	33	80	5.5	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
BH4	0-0.1	Fill: Silty Sand	<4	<0.4	22	18	29	<0.1	28	57	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
BH5	0-0.1	Fill: Silty Sand	<4	<0.4	30	20	19	8.4	31	44	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
BH6	0-0.1	Fill: Silty Sand	<4	<0.4	32	20	29	0.3	30	50	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
BH7	0.15-0.3	Fill: Sandy Gravel	<4	<0.4	56	38	5	<0.1	90	45	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
BH8	0-0.1	Fill: Sandy Clay	<4	<0.4	27	19	11	<0.1	32	38	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
TP1	0-0.1	Fill: Silty Clay	<4	<0.4	25	19	11	<0.1	24	74	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
TP2	0-0.1	Fill: Gravelly Clay	<4	<0.4	27	31	35	0.1	32	71	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	
TP2 (lab duplicate)	0-0.1	Fill: Gravelly Clay	<4	<0.4	28	32	35	0.2	35	75	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	
TP3	0-0.1	Fill: Gravelly Clay	<4	<0.4	30	23	12	<0.1	33	44	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
TP4	0-0.1	Fill: Sandy Clay	<4	<0.4	31	22	14	0.3	36	44	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
TP5	0-0.1	Fill: Gravelly Clay	<4	<0.4	25	20	20	0.2	29	51	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected	
TP6	0-0.1	Fill: Gravelly Clay	<4	<0.4	61	16	11	<0.1	19	48	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	
SDUP1	-	Fill: Silty Clay	<4	<0.4	28	25	22	<0.1	35	81	<0.05	<0.5	<0.1	<0.1	<0.1	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	NA	
SDUP2	-	Fill: Gravelly Clay	<4	<0.4	23	18	11	<0.1	22	69	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	
FCF1-TP2	0.1-0.3	Fibre Cement Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected	
Total Number of Samples			18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	13	
Maximum Value			<PQL	<PQL	61	38	37	8.4	90	81	5.5	0.8	<PQL	<PQL	<PQL	1.2	<PQL	<PQL	<PQL	<PQL	<PQL	Detected	

Concentration above the SAC
Asbestos Detected
Concentration above the PQL

VALUE

Detected

Bold

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

					C ₆ -C ₁₀ (F1)	>C ₁₀ -C ₁₆ (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Napthalene	Field PID Measurement	
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm	
NEPM 2013 HSL Land Use Category					HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL								
Sample Reference	Sample Depth	Sample Description	Depth Category	Soil Category									
BH1	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
BH1 (lab duplicate)	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
	1.0-1.45	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.9	
BH2	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
BH3	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
BH4	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
BH5	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
BH6	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
BH7	0.15-0.3	Fill: Sandy Gravel	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
BH8	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1	
TP1	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1	
TP2	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
TP2 (lab duplicate)	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
TP4	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
TP5	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
TP6	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
SDUP1	-	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
SDUP2	-	Fill: Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0	
Total Number of Samples					19	19	19	19	19	19	19	19	
Maximum Value					<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	
Concentration above the SAC					VALUE								
Concentration above the PQL					Bold								
The guideline corresponding to the concentration above the SAC is highlighted in grey in the Site Assessment Criteria Table below													

HSL SOIL ASSESSMENT CRITERIA												
Sample Reference	Sample Depth	Sample Description	Depth Category	Soil Category	C ₆ -C ₁₀ (F1)	>C ₁₀ -C ₁₆ (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	
BH1	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH1 (lab duplicate)	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH1	1.0-1.45	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH2	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH3	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH4	0-0.1	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH5	0-0.1	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH6	0-0.1	Fill: Silty Sand	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH7	0.15-0.3	Fill: Sandy Gravel	0m to <1m	Sand	45	110	0.5	160	55	40	3	
BH8	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
TP1	0-0.1	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
TP2	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
TP2 (lab duplicate)	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
TP3	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
TP4	0-0.1	Fill: Sandy Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
TP5	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
TP6	0-0.1	Fill: Gravelly Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
SDUP1	-	Fill: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	
SDUP2	-	Fill: Gravelly Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3	

TABLE S3

SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS

All data in mg/kg unless stated otherwise

			C ₆ -C ₁₀ (F1) plus BTEX	>C ₁₀ -C ₁₆ (F2) plus naphthalene	>C ₁₆ -C ₃₄ (F3)	>C ₃₄ -C ₄₀ (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE			
Sample Reference	Sample Depth	Soil Texture				
BH1	0-0.1	Coarse	<25	<50	100	<100
BH1 (lab replicate)	0-0.1	Coarse	<25	<50	130	<100
BH1	1.0-1.45	Coarse	<25	<50	<100	<100
BH2	0-0.1	Coarse	<25	<50	<100	<100
BH3	0-0.1	Coarse	<25	<50	100	<100
BH4	0-0.1	Coarse	<25	<50	<100	<100
BH5	0-0.1	Coarse	<25	<50	<100	<100
BH6	0-0.1	Coarse	<25	<50	<100	<100
BH7	0.15-0.3	Coarse	<25	<50	<100	<100
BH8	0-0.1	Coarse	<25	<50	<100	<100
TP1	0-0.1	Coarse	<25	<50	140	<100
TP2	0-0.1	Coarse	<25	<50	<100	<100
TP2 (lab replicate)	0-0.1	Coarse	<25	<50	<100	<100
TP3	0-0.1	Coarse	<25	<50	<100	<100
TP4	0-0.1	Coarse	<25	<50	<100	<100
TP5	0-0.1	Coarse	<25	<50	<100	<100
TP6	0-0.1	Coarse	<25	<50	<100	<100
SDUP1	-	Coarse	<25	<50	100	110
SDUP2	-	Coarse	<25	<50	170	<100
Total Number of Samples			19	19	19	19
Maximum Value			<PQL	<PQL	170	110
Concentration above the SAC			VALUE			
Concentration above the PQL			Bold			

MANAGEMENT LIMIT ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Soil Texture	C ₆ -C ₁₀ (F1) plus BTEX	>C ₁₀ -C ₁₆ (F2) plus naphthalene	>C ₁₆ -C ₃₄ (F3)	>C ₃₄ -C ₄₀ (F4)
BH1	0-0.1	Coarse	700	1000	2500	10000
BH1 (lab replicate)	0-0.1	Coarse	700	1000	2500	10000
BH1	1.0-1.45	Coarse	700	1000	2500	10000
BH2	0-0.1	Coarse	700	1000	2500	10000
BH3	0-0.1	Coarse	700	1000	2500	10000
BH4	0-0.1	Coarse	700	1000	2500	10000
BH5	0-0.1	Coarse	700	1000	2500	10000
BH6	0-0.1	Coarse	700	1000	2500	10000
BH7	0.15-0.3	Coarse	700	1000	2500	10000
BH8	0-0.1	Coarse	700	1000	2500	10000
TP1	0-0.1	Coarse	700	1000	2500	10000
TP2	0-0.1	Coarse	700	1000	2500	10000
TP2 (lab replicate)	0-0.1	Coarse	700	1000	2500	10000
TP3	0-0.1	Coarse	700	1000	2500	10000
TP4	0-0.1	Coarse	700	1000	2500	10000
TP5	0-0.1	Coarse	700	1000	2500	10000
TP6	0-0.1	Coarse	700	1000	2500	10000
SDUP1	-	Coarse	700	1000	2500	10000
SDUP2	-	Coarse	700	1000	2500	10000

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

Analyte		C ₆ -C ₁₀	>C ₁₀ -C ₁₆	>C ₁₆ -C ₃₄	>C ₃₄ -C ₄₀	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		5,100	3,800	5,300	7,400	120	18,000	5,300	15,000	1,900	
Site Use		RECREATIONAL - DIRECT SOIL CONTACT									
Sample Reference	Sample Depth										
BH1	0-0.1	<25	<50	100	<100	<0.2	<0.5	<1	<1	<1	0
BH1 (lab duplicate)	0-0.1	<25	<50	130	<100	<0.2	<0.5	<1	<1	<1	0
BH1	1.0-1.45	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	3.9
BH2	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH3	0-0.1	<25	<50	100	<100	<0.2	<0.5	<1	<1	<1	0
BH4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH5	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH6	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH7	0.15-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
BH8	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0.1
TP1	0-0.1	<25	<50	140	<100	<0.2	<0.5	<1	<1	<1	0.1
TP2	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
TP2 (lab duplicate)	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
TP3	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
TP4	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
TP5	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
TP6	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	0
SDUP1	-	<25	<50	100	110	<0.2	<0.5	<1	<1	<1	0
SDUP2	-	<25	<50	170	<100	<0.2	<0.5	<1	<1	<1	0
Total Number of Samples		19	19	19	19	19	19	19	19	19	19
Maximum Value		<PQL	<PQL	170	110	<PQL	<PQL	<PQL	<PQL	<PQL	NA
Concentration above the SAC		VALUE									
Concentration above the PQL		Bold									

TABLE S5 ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS HSL-C:Public open space; secondary schools; and footpaths																										
FIELD DATA															LABORATORY DATA											
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample reference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %w/w	FA and AF Estimation %w/w
SAC		No			0.02			0.001			0.001			0.020.001												
1/06/2022	BH1	0-0.1	No	10	10,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH1	0-0.1	630.91	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	BH1	0.1-0.6	NA	10	10,650	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	BH2	0-0.1	No	10	10,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH2	0-0.1	691.17	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	BH2	0.1-0.8	NA	NA	4,180	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	BH3	0-0.1	No	10	10,070	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH3	0-0.1	642.9	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	BH3	0.1-0.8	NA	NA	4,750	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/06/2022	BH4	0-0.1	No	10	10,690	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH4	0-0.1	749.46	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
2/06/2022	BH4	0.1-1.0	NA	NA	NA	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/06/2022	BH4	1.0-1.6	NA	NA	4,070	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/06/2022	BH5	0-0.1	No	NA	9,870	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH5	0-0.1	702.75	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
2/06/2022	BH5	0.1-0.8	NA	NA	2,020	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2/06/2022	BH6	0-0.1	No	10	11,020	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH6	0-0.1	544.19	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
3/06/2022	BH7	0.15-0.3	NA	NA	2,770	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH7	0.15-0.3	831.26	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
3/06/2022	BH7	0.3-0.7	NA	NA	9,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/06/2022	BH8	0-0.1	No	10	10,850	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	BH8	0-0.1	744.64	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
3/06/2022	BH8	0.1-0.9	NA	NA	8,630	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP1	0-0.1	No	10	10,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	TP1	0-0.1	616.78	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	TP1	0.1-0.2	NA	10	10,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP1	0.2-0.6	NA	10	10,910	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP1	0.6-1.0	NA	10	10,710	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP2	0-0.1	No	10	11,710	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP2	0.1-0.3	NA	10	10,050	12.3	1.8465	0.0184	No ACM <7mm observed	--	--	No FA observed	--	--	297823	TP2	0.1-0.3	745.43	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	TP3	0-0.1	No	10	11,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	TP3	0-0.1	709.63	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	TP3	0.1-0.2m	NA	10	11,110	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP3	0.2-1.0	NA	10	10,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP4	0-0.1	No	10	10,410	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	TP4	0-0.1	673.26	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	TP4	0.1-0.7	NA	10	10,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP5	0-0.1	No	10	10,190	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	TP5	0-0.1	795.56	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected			<0.01	<0.001
1/06/2022	TP5	0.25-0.5	NA	10	11,030	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP5	0.5-0.9	NA	10	10,010	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP6	0-0.1	No	10	10,760	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	297823	TP6	0-0.1	40	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	NA	NA	NA	NA
1/06/2022	TP6	0.1-0.3	NA	10	10,570	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1/06/2022	TP6	0.3-0.5	NA	10	10,450	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Concentration above the SAC																										
VALUE																										

TABLE S6 SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs All data in mg/kg unless stated otherwise																							
Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																			
				pH	CEC (cmolc/kg)	Clay Content (% clay)	AGED HEAVY METALS-EILs						EILs		ESLs								
							Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C ₆ -C ₁₀ (F1)	>C ₁₀ -C ₁₆ (F2)	>C ₁₆ -C ₃₄ (F3)	>C ₃₄ -C ₄₀ (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	8	18	104	5	77	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	Sample Depth	Sample Description	Soil Texture																				
BH1	0-0.1	Fill: Silty Clay	Coarse	NA	NA	NA	<4	25	25	22	29	78	<1	<0.1	<25	<50	100	<100	<0.2	<0.5	<1	<1	<0.05
BH1 (lab duplicate)	0-0.1	Fill: Silty Clay	Coarse	NA	NA	NA	<4	23	20	20	26	66	<1	<0.1	<25	<50	130	<100	<0.2	<0.5	<1	<1	<0.05
BH1	1.0-1.45	Silty Clay	Coarse	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	NA
BH2	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	<4	24	13	10	23	34	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	<4	28	25	37	33	80	<1	<0.1	<25	<50	100	<100	<0.2	<0.5	<1	<1	0.55
BH4	0-0.1	Fill: Silty Sand	Coarse	NA	NA	NA	<4	22	18	29	28	57	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH5	0-0.1	Fill: Silty Sand	Coarse	NA	NA	NA	<4	30	20	19	31	44	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0-0.1	Fill: Silty Sand	Coarse	NA	NA	NA	<4	32	20	29	30	50	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7	0.15-0.3	Fill: Sandy Gravel	Coarse	8.6	18	10	<4	56	38	5	90	45	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH8	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	<4	27	19	11	32	38	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP1	0-0.1	Fill: Silty Clay	Coarse	NA	NA	NA	<4	25	19	11	24	74	<1	<0.1	<25	<50	140	<100	<0.2	<0.5	<1	<1	<0.05
TP2	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	<4	27	31	35	32	71	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP2 (lab duplicate)	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	<4	28	32	35	35	75	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP3	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	<4	30	23	12	33	44	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP4	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	<4	31	22	14	36	44	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP5	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	<4	25	20	20	29	51	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
TP6	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	<4	61	16	11	19	48	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP1	-	Fill: Silty Clay	Coarse	NA	NA	NA	<4	28	25	22	35	81	<1	<0.1	<25	<50	100	110	<0.2	<0.5	<1	<1	<0.05
SDUP2	-	Fill: Gravelly Clay	Coarse	NA	NA	NA	<4	23	18	11	22	69	<1	<0.1	<25	<50	170	<100	<0.2	<0.5	<1	<1	<0.05
Total Number of Samples				1	1	1	18	18	18	18	18	18	19	18	19	19	19	19	19	19	19	19	18
Maximum Value				8.6	18	10	<PQL	61	38	37	90	81	<PQL	<PQL	<PQL	<PQL	170	110	<PQL	<PQL	<PQL	<PQL	0.55
Concentration above the SAC				VALUE																			
Concentration above the PQL				Bold																			
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below																							

EIL AND ESL ASSESSMENT CRITERIA																							
Sample Reference	Sample Depth	Sample Description	Soil Texture	pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C ₆ -C ₁₀ (F1)	>C ₁₀ -C ₁₆ (F2)	>C ₁₆ -C ₃₄ (F3)	>C ₃₄ -C ₄₀ (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
BH1	0-0.1	Fill: Silty Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH1 (lab duplicate)	0-0.1	Fill: Silty Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH1	1.0-1.45	Silty Clay	Coarse	NA	NA	NA	--	--	--	--	--	--	170	--	180	120	300	2800	50	85	70	105	--
BH2	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH3	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH4	0-0.1	Fill: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH5	0-0.1	Fill: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH6	0-0.1	Fill: Silty Sand	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
BH7	0.15-0.3	Fill: Sandy Gravel	Coarse	8.6	18	10	100	410	230	1200	280	780	170	180	180	120	300	2800	50	85	70	105	20
BH8	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
TP1	0-0.1	Fill: Silty Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
TP2	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
TP2 (lab duplicate)	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
TP3	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
TP4	0-0.1	Fill: Sandy Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
TP5	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
TP6	0-0.1	Fill: Gravelly Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
SDUP1	-	Fill: Silty Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20
SDUP2	-	Fill: Gravelly Clay	Coarse	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	300	2800	50	85	70	105	20

TABLE S7																											
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES																											
All data in mg/kg unless stated otherwise																											
			HEAVY METALS							PAHs		OC/OP PESTICIDES				Total PCBs	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES	
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful		Total Scheduled	C ₆ -C ₉	C ₁₀ -C ₁₄	C ₁₅ -C ₂₈	C ₂₉ -C ₃₆	Total C ₁₀ -C ₃₆	Benzene	Toluene	Ethyl benzene		Total Xylenes
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100	
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	50	50	650	NSL		10,000	10	288	600	1,000	-	
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	50	50	650	NSL		10,000	18	518	1,080	1,800	-	
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	50	50	2600	NSL		40,000	40	1,152	2,400	4,000	-	
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	50	50	2600	NSL		40,000	72	2,073	4,320	7,200	-	
Sample Reference	Sample Depth	Sample Description																									
BH1	0-0.1	Fill: Silty Clay	<4	<0.4	25	25	22	<0.1	29	78	<0.05	<0.05	<0.1	<0.1	<0.1	1.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH1 (lab duplicate)	0-0.1	Fill: Silty Clay	<4	<0.4	23	20	20	<0.1	26	66	<0.05	<0.05	<0.1	<0.1	<0.1	1.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
	1.0-1.45	Silty Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH2	0-0.1	Fill: Sandy Clay	<4	<0.4	24	13	10	<0.1	23	34	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH3	0-0.1	Fill: Sandy Clay	<4	<0.4	28	25	37	0.1	33	80	5.5	0.55	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH4	0-0.1	Fill: Silty Sand	<4	<0.4	22	18	29	<0.1	28	57	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH5	0-0.1	Fill: Silty Sand	<4	<0.4	30	20	19	8.4	31	44	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH6	0-0.1	Fill: Silty Sand	<4	<0.4	32	20	29	0.3	30	50	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH7	0.15-0.3	Fill: Sandy Gravel	<4	<0.4	56	38	5	<0.1	90	45	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH8		Fill: Sandy Clay	<4	<0.4	27	19	11	<0.1	32	38	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP1	0-0.1	Fill: Silty Clay	<4	<0.4	25	19	11	<0.1	24	74	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	120	120	<0.2	<0.5	<1	<1	Not Detected
TP2	0-0.1	Fill: Gravelly Clay	<4	<0.4	27	31	35	0.1	32	71	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP2 (lab duplicate)	0-0.1	Fill: Gravelly Clay	<4	<0.4	28	32	35	0.2	35	75	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
TP3	0-0.1	Fill: Gravelly Clay	<4	<0.4	30	23	12	<0.1	33	44	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP4	0-0.1	Fill: Sandy Clay	<4	<0.4	31	22	14	0.3	36	44	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP5	0-0.1	Fill: Gravelly Clay	<4	<0.4	25	20	20	0.2	29	51	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
TP6	0-0.1	Fill: Gravelly Clay	<4	<0.4	61	16	11	<0.1	19	48	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP1	-	Fill: Silty Clay	<4	<0.4	28	25	22	<0.1	35	81	<0.05	<0.05	<0.1	<0.1	<0.1	1.2	<0.1	<25	<50	<100	130	130	<0.2	<0.5	<1	<1	NA
SDUP2	-	Fill: Gravelly Clay	<4	<0.4	23	18	11	<0.1	22	69	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	190	190	<0.2	<0.5	<1	<1	NA
FCF1-TP2	0.1-0.3	Fibre Cement Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
Total Number of Samples			18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	19	19	19	19	19	19	19	19	19	13
Maximum Value			<PQL	<PQL	61	38	37	8.4	90	81	5.5	0.55	<PQL	<PQL	<PQL	1.2	<PQL	<PQL	<PQL	190	190	<PQL	<PQL	<PQL	<PQL	<PQL	Not Detected
Concentration above the CT1			VALUE																								
Concentration above SCC1			VALUE																								
Concentration above the SCC2			VALUE																								
Concentration above PQL			Bold																								



TABLE S8
SOIL LABORATORY TCLP RESULTS
 All data in mg/L unless stated otherwise

			Mercury	Nickel
PQL - Envirolab Services			0.01	0.02
TCLP1 - General Solid Waste			0.2	2
TCLP2 - Restricted Solid Waste			0.8	8
TCLP3 - Hazardous Waste			>0.8	>8
Sample Reference	Sample Depth	Sample Description		
BH5	0-0.1	Fill: Silty Sand	<0.0005	NA
BH7	0.15-0.3	Fill: Sandy Gravel	NA	0.1
Total Number of samples			1	1
Maximum Value			<PQL	0.1
General Solid Waste			VALUE	
Restricted Solid Waste			VALUE	
Hazardous Waste			VALUE	
Concentration above PQL			Bold	

[illegible]



Appendix D: Borehole and Test pit Logs

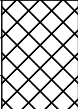

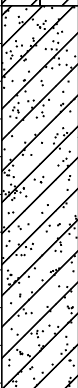
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BOREHOLE LOG



Borehole No.
1

1/2

<div>Client: HEALTH INFRASTRUCTURE</div> <div>Project: PROPOSED ALTERATIONS AND ADDITIONS</div> <div>Location: MARQUIS STREET, GUNNEDAH, NSW</div>												
<div>Job No.: 35091UR</div> <div>Date: 1/6/22</div> <div>Plant Type: -</div>			<div>Method: SPIRAL AUGER</div> <div>Logged/Checked by: R.G.S./P.R.</div>					<div>R.L. Surface: ≈ 280.55m</div> <div>Datum: AHD</div>				
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB DS									
<div>ON COMPLET- ION</div>					0			FILL: Silty clay, low plasticity, dark brown, with fine to medium grained sand and fine grained gravel, top 100mm root affected.	w>PL			<div>SCREEN: 10.7kg 0-0.1m NO FCF</div> <div>SCREEN: 10.65kg 0.1-0.6m NO FCF</div> <div>ALLUVIAL</div>
					1		CL-CI	Silty CLAY: low to medium plasticity, brown, with fine to medium grained sand.	w>PL	VSt	240	
				N = 5 3,3,2								
					2			as above, but becoming red brown.				
				N = 17 5,7,10						Hd	410	
					3							
				N = 28 10,13,15	4		CL-CI	Sandy CLAY: low to medium plasticity. brown, with fine to medium grained sub-rounded gravel, fine to medium grained sand.	w<PL		500	
					5							
				N = 28 11,12,16							>600	
					6							
					7							

BOREHOLE LOG



Borehole No.
1
2/2

Client: HEALTH INFRASTRUCTURE Project: PROPOSED ALTERATIONS AND ADDITIONS Location: MARQUIS STREET, GUNNEDAH, NSW												
Job No.: 35091UR Date: 1/6/22 Plant Type: -			Method: SPIRAL AUGER Logged/Checked by: R.G.S./P.R.				R.L. Surface: ≈ 280.55m Datum: AHD					
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	US	DB									
				N = 33 10,14,19	8		CL-CI	Sandy CLAY: low to medium plasticity. brown, with fine to medium grained sub-rounded gravel, fine to medium grained sand.	w<PL	Hd		
			N = 41 13,18,23	9								
			N = 41 15,19,22	10								
				11								
					12			END OF BOREHOLE AT 10.45m				
					13							
					14							

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BOREHOLE LOG



Borehole No.
2

1/2

Client: HEALTH INFRASTRUCTURE													
Project: PROPOSED ALTERATIONS AND ADDITIONS													
Location: MARQUIS STREET, GUNNEDAH, NSW													
Job No.: 35091UR			Method: SPIRAL AUGER				R.L. Surface: ≈ 280.1m						
Date: 1/6/22			Datum: AHD										
Plant Type: -			Logged/Checked by: R.G.S./P.R.										
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks	
	ES	US0	DB										
<div>ON COMPLET- ION</div>					0			FILL: Sandy clay, low plasticity, dark brown, fine to medium grained sand, with fine to medium grained gravel, top 100mm root affected	w>PL			SCREEN: 10.0kg 0-0.1m NO FCF	
					1		CI	Silty CLAY: medium plasticity, brown, with fine to medium grained sand.		VSt	260	SCREEN: 4.18kg 0.1-0.8m NO FCF ALLUVIAL	
				N = 10 3,4,6	2								
				N = 7 3,3,4	3							300	
				N > 25 8,10, 15/60mm REFUSAL	4			as above, but with fine to medium grained gravel and layers of coarse grained gravel.	w<PL	(Hd)			NO SPT SAMPLE RECOVERY
				N = 38 17,17,21	5								NO SPT SAMPLE RECOVERY
				6									
				7									

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BOREHOLE LOG



Borehole No.
2


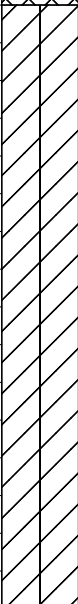
2/2

Client: HEALTH INFRASTRUCTURE												
Project: PROPOSED ALTERATIONS AND ADDITIONS												
Location: MARQUIS STREET, GUNNEDAH, NSW												
Job No.: 35091UR				Method: SPIRAL AUGER				R.L. Surface: ≈ 280.1m				
Date: 1/6/22								Datum: AHD				
Plant Type: -				Logged/Checked by: R.G.S./P.R.								
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	U50	DB									
				N = 36 22,18,18		CI	Sandy CLAY: medium plasticity, brown, with fine to coarse grained sub-rounded gravel.	w<PL	Hd			NO SPT SAMPLE RECOVERY
				N > 32 17,22, 10/20mm								NO SPT SAMPLE RECOVERY
				REFUSAL								
					9		END OF BOREHOLE AT 8.85m					
					10							
					11							
					12							
					13							
					14							

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BOREHOLE LOG

Borehole No.
3
1/1

Client: HEALTH INFRASTRUCTURE													
Project: PROPOSED ALTERATIONS AND ADDITIONS													
Location: MARQUIS STREET, GUNNEDAH, NSW													
Job No.: 35091UR			Method: SPIRAL AUGER					R.L. Surface: ≈ 278.9m					
Date: 1/6/22								Datum: AHD					
Plant Type: -			Logged/Checked by: R.G.S./P.R.										
Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	USO	DB	DS									
<div>ON COMPLET- ION</div>						0			FILL: Sandy clay, medium plasticity, dark brown, fine to medium grained sand, with fine to medium grained gravel, top 100mm root affected.	w>PL			SCREEN: 10.07kg 0-0.1m NO FCF
						1		CI	Silty CLAY: medium plasticity, brown, with fine to medium grained sand.		VSt	210	SCREEN: 4.75kg 0.1-0.8m NO FCF ALLUVIAL
					N = 9 2,4,5								
						2							
					N = 14 5,6,8							350	
						3							
					4						Hd	450	NO SPT SAMPLE RECOVERY
						5							
									as above, but with fine to medium grained sub- rounded gravel.			>600	
						6			END OF BOREHOLE AT 6.0m				
						7							

BOREHOLE LOG



Borehole No.
4
1/2

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: MARQUIS STREET, GUNNEDAH, NSW

Job No.: 35091UR **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 280.3m
Date: 2/6/22 **Datum:** AHD
Plant Type: - **Logged/Checked by:** R.G.S./P.R.

Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/Weathering	Strength/Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	USO	DB									
ON COMPLETION					0			FILL: Silty sand, fine to medium grained, brown and grey, with fine to coarse grained gravel, top 100mm root affected.	M			SCREEN: 10.69kg 0-0.1m NO FCF APPEARS POORLY COMPACTED
					1			as above, but with clay nodules.	D			SCREEN: NOT ENOUGH RETURN 0.1-1.0m NO FCF SCREEN: 4.07kg 1.0-1.6m NO FCF ALLUVIAL
				N = 4 2,2,2			CI	Silty CLAY: medium plasticity, brown, with fine to medium grained sand.	w>PL	VSt		
				N = 13 4,6,7							250	
				N = 23 7,10,13				as above, but with fine to medium grained sub-rounded gravel.	w<PL	Hd	550	
				N = 31 11,13,18			CL-CI	Sandy CLAY: low to medium plasticity, brown and orange brown, with fine to coarse grained sub-rounded gravel.				

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BOREHOLE LOG



Borehole No.
4

2/2

Client: HEALTH INFRASTRUCTURE												
Project: PROPOSED ALTERATIONS AND ADDITIONS												
Location: MARQUIS STREET, GUNNEDAH, NSW												
Job No.: 35091UR			Method: SPIRAL AUGER				R.L. Surface: ≈ 280.3m					
Date: 2/6/22			Datum: AHD									
Plant Type: -			Logged/Checked by: R.G.S./P.R.									
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	USO	DB									
				N = 41 9,18,23				Sandy CLAY: low to medium plasticity, brown and orange brown, with fine to coarse grained sub- rounded gravel. END OF BOREHOLE AT 7.45m	w<PL	Hd	>600	
					8							
					9							
					10							
					11							
					12							
					13							
					14							

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BOREHOLE LOG

Borehole No.
5
1/2

Client: HEALTH INFRASTRUCTURE													
Project: PROPOSED ALTERATIONS AND ADDITIONS													
Location: MARQUIS STREET, GUNNEDAH, NSW													
Job No.: 35091UR				Method: SPIRAL AUGER				R.L. Surface: ≈ 278.6m					
Date: 2/6/22								Datum: AHD					
Plant Type: -				Logged/Checked by: R.G.S./P.R.									
Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	USO	DB	DS									
<div>ON COMPLET- ION</div>						0			FILL: Silty sand, fine to medium grained, brown, with fine to coarse grained gravel.	M			SCREEN: 9.87kg 0-0.1m NO FCF
					N = 5 1,2,3	1		CI	Sandy CLAY: medium plasticity, brown, fine to medium grained sand, with fine to medium grained sand lenses.	w>PL	St	110	SCREEN: 2.02kg 0.1-0.8m NO FCF
					N = 13 5,6,7	2							
					N = 29 7,13,16	3					VSt	220	
					N = 27 10,12,15	4			as above, but with fine to coarse grained sub- rounded gravel.	w<PL	Hd	520	
						5							>600
					6								
					7								

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BOREHOLE LOG



Borehole No.
5

2/2

Client:

HEALTH INFRASTRUCTURE

Project:

PROPOSED ALTERATIONS AND ADDITIONS

Location:

MARQUIS STREET, GUNNEDAH, NSW

Job No.:

35091UR

Method:

SPIRAL AUGER

R.L. Surface:

≈ 278.6m

Date:

2/6/22

Datum:

AHD

Plant Type:

-

Logged/Checked by:

R.G.S./P.R.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	US	DB	DS									
					N = 29 9,13,16				Sandy CLAY: medium plasticity, brown, fine to medium grained sand, with fine to medium grained sand lenses and fine to coarse grained sub rounded gravel. END OF BOREHOLE AT 7.45m	w<PL	Hd	580	
						8							
						9							
						10							
						11							
						12							
						13							
						14							

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BOREHOLE LOG



Borehole No.
6

1/2

Client: HEALTH INFRASTRUCTURE												
Project: PROPOSED ALTERATIONS AND ADDITIONS												
Location: MARQUIS STREET, GUNNEDAH, NSW												
Job No.: 35091UR			Method: SPIRAL AUGER				R.L. Surface: ≈ 278.1m					
Date: 2/6/22			Datum: AHD									
Plant Type: -			Logged/Checked by: R.G.S./P.R.									
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	USO	DB									
<div>ON COMPLET- ION</div>					0		CI	FILL: Silty sand, fine to medium grained, dark brown, with fine to coarse grained gravel and roots. Silty CLAY: medium plasticity, brown, with fine to medium grained sand and fine to medium grained sand lenses.	M w>PL	St		SCREEN: 11.02kg 0-0.1m NO FCF ALLUVIAL
					1						150	
					2							
					3					VSt	220	
					4		CI	Sandy CLAY: medium plasticity, brown and orange brown, fine to medium grained sand, with fine to coarse grained sub-rounded gravel.		Hd	450	
					5							550
				6								
				7								

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BOREHOLE LOG



Borehole No.
6

2/2

Client: HEALTH INFRASTRUCTURE												
Project: PROPOSED ALTERATIONS AND ADDITIONS												
Location: MARQUIS STREET, GUNNEDAH, NSW												
Job No.: 35091UR			Method: SPIRAL AUGER				R.L. Surface: ≈ 278.1m					
Date: 2/6/22			Datum: AHD									
Plant Type: -			Logged/Checked by: R.G.S./P.R.									
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	USO	DB									
				N = 35 10,17,18				Sandy CLAY: medium plasticity, brown and orange brown, fine to medium grained sand, with fine to coarse grained sub-rounded gravel. END OF BOREHOLE AT 7.45m	w>PL	Hd	550	
					8							
					9							
					10							
					11							
					12							
					13							
					14							

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BOREHOLE LOG

Borehole No.
7
1/2

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: MARQUIS STREET, GUNNEDAH, NSW

Job No.: 35091UR **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 279.7m
Date: 3/6/22 **Datum:** AHD
Plant Type: - **Logged/Checked by:** R.G.S./P.R.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	US	DB	DS									
ON COMPLETION						0			CONCRETE: 150mm.t				100mm TOP COVER
									FILL: Sandy gravel, fine to medium grained, grey, fine to coarse grained sand.	M			SCREEN: 2.77kg
										M			0.15-0.3m
									FILL: Clayey sand, fine to coarse grained, brown, with fine to medium grained gravel.				SCREEN: 9.50kg
										w>PL	St		0.3-0.7m
									Sandy CLAY: medium plasticity, brown, fine to medium grained sand, with fine to medium grained sand lenses			110	NO FCF
					N = 4 2,2,2	1							ALLUVIAL
						2							
						3					VSt	280	
					N = 14 4,6,8								
						4			as above, but with fine to coarse grained sub-rounded gravel.		Hd	500	
					N = 27 7,11,16								
						5						550	
						6							
					N = 33 11,14,19								
						7							

BOREHOLE LOG



Borehole No.
7
2/2

Client: HEALTH INFRASTRUCTURE Project: PROPOSED ALTERATIONS AND ADDITIONS Location: MARQUIS STREET, GUNNEDAH, NSW												
Job No.: 35091UR			Method: SPIRAL AUGER			R.L. Surface: ≈ 279.7m						
Date: 3/6/22			Datum: AHD									
Plant Type: -			Logged/Checked by: R.G.S./P.R.									
Groundwater Record	SAMPLES			Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	US	DB									
				N = 35 9,17,18			CI	Sandy CLAY: medium plasticity, brown, fine to medium grained sand, with fine to medium grained sand lenses and fine to coarse grained sub rounded gravel. END OF BOREHOLE AT 7.45m	w>PL	Hd		NO SPT SAMPLE RECOVERY
					8							
					9							
					10							
					11							
					12							
					13							
					14							

BOREHOLE LOG



Borehole No.
8
1/1

Client: HEALTH INFRASTRUCTURE
Project: PROPOSED ALTERATIONS AND ADDITIONS
Location: MARQUIS STREET, GUNNEDAH, NSW

Job No.: 35091UR **Method:** SPIRAL AUGER **R.L. Surface:** ≈ 277.8m
Date: 3/6/22 **Datum:** AHD
Plant Type: - **Logged/Checked by:** R.G.S./P.R.

Groundwater Record	SAMPLES				Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	ES	US	DB	DS									
DRY ON COMPLETION						0			FILL: Sandy clay, low plasticity, dark brown, with fine to coarse grained gravel, top 100mm root affected.	w<PL			SCREEN: 10.85kg 0-0.1m NO FCF
						1		CI	Sandy CLAY: medium plasticity, brown, fine to medium grained sand.	w<PL	VSt	300	SCREEN: 8.63kg 0.1-0.9m NO FCF
					N = 14 9,7,7	2							
					N = 32 10,14,18	3			Sandy CLAY: medium plasticity, brown and orange brown, fine to medium grained sand, with fine to coarse grained sub-rounded gravel.		Hd	>600	
					N = SPT 30/140mm REFUSAL	4		-	Extremely Weathered basalt: clayey GRAVEL, fine to coarse grained, grey and brown, iron staining. END OF BOREHOLE AT 4.15m	XW	Hd		WERRIE BASALT 'TC' BIT REFUSAL
						5							
						6							
						7							

ENVIRONMENTAL LOGS EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the environmental report in regard to classification methods, field procedures and certain matters relating to the logging of soil and rock. Not all notes are necessarily relevant to all reports.

Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies include gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 'Geotechnical Site Investigations'. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geoenvironmental practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) are referred to as 'laminite'.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the

structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of limited reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock cuttings. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be assessed from the cuttings, together with some information from “feel” and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term ‘mud’ encompasses a range of products ranging from bentonite to polymers. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is

described in Australian Standard 1289.6.3.1–2004 (R2016) ‘*Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)*’.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the ‘N’ value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as

N = 13
4, 6, 7

- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as

N > 30
15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

A modification to the SPT is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as ‘N_c’ on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

The borehole or test pit logs presented herein are an interpretation of the subsurface conditions, and their reliability will depend to some extent on the frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will enable the most reliable assessment, but is not always practicable or possible to justify on economic grounds. In any case, the boreholes or test pits represent only a very small sample of the total subsurface conditions.

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than ‘straight line’ variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

Where groundwater levels are measured in boreholes, there are several potential problems:

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it is left open.
- A localised perched water table may lead to an erroneous indication of the true water table.
- Water table levels will vary from time to time with seasons or recent weather changes and may not be the same at the time of construction.
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must be washed out of the hole or 'reverted' chemically if reliable water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after the groundwater level has stabilised at intervals ranging from several days to perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (eg. bricks, steel, etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably assess the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse environmental characteristics or behaviour. If the volume and nature of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classification and rock strengths indicated on the environmental logs unless noted in the report.

SYMBOL LEGENDS

SOIL



FILL



TOPSOIL



CLAY (CL, CI, CH)



SILT (ML, MH)



SAND (SP, SW)



GRAVEL (GP, GW)



SANDY CLAY (CL, CI, CH)



SILTY CLAY (CL, CI, CH)



CLAYEY SAND (SC)



SILTY SAND (SM)



GRAVELLY CLAY (CL, CI, CH)



CLAYEY GRAVEL (GC)



SANDY SILT (ML, MH)



PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK



CONGLOMERATE



SANDSTONE



SHALE/MUDSTONE



SILTSTONE



CLAYSTONE



COAL



LAMINITE



LIMESTONE



PHYLLITE, SCHIST



TUFF



GRANITE, GABBRO



DOLERITE, DIORITE



BASALT, ANDESITE



QUARTZITE

OTHER MATERIALS



BRICKS OR PAVERS



CONCRETE



ASPHALTIC CONCRETE



CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification	
Coarse grained soil (more than 60% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm)	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $C_u > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_u = \frac{D_{60}}{D_{10}} \quad \text{and} \quad C_c = \frac{(D_{30})^2}{D_{10} D_{60}}$$

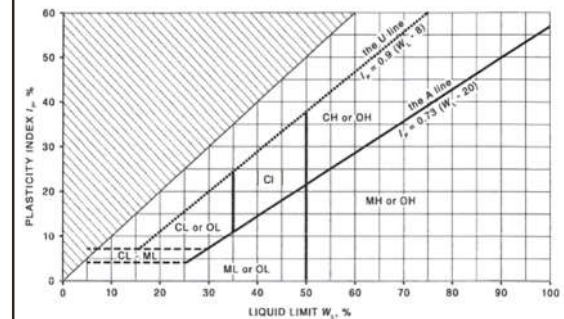
Where D_{10} , D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

- For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.
- Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.
- Clay soils with liquid limits $> 35\%$ and $\leq 50\%$ may be classified as being of medium plasticity.
- The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
fine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	—	—	—	—

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour





LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record		Standing water level. Time delay following completion of drilling/excavation may be shown.
		Extent of borehole/test pit collapse shortly after drilling/excavation.
		Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N _c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25 PID = 100	Vane shear reading in kPa of undrained shear strength. Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils)	w > PL	Moisture content estimated to be greater than plastic limit.
	w ≈ PL	Moisture content estimated to be approximately equal to plastic limit.
	w < PL	Moisture content estimated to be less than plastic limit.
	w ≈ LL	Moisture content estimated to be near liquid limit.
	w > LL	Moisture content estimated to be wet of liquid limit.
(Coarse Grained Soils)	D	DRY – runs freely through fingers.
	M	MOIST – does not run freely but no free water visible on soil surface.
	W	WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS	VERY SOFT – unconfined compressive strength ≤ 25kPa.
	S	SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa.
	F	FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa.
	St	STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa.
	VSt	VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa.
	Hd	HARD – unconfined compressive strength > 400kPa.
	Fr	FRIABLE – strength not attainable, soil crumbles.
	()	Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.
Density Index/ Relative Density (Cohesionless Soils)	VL	VERY LOOSE
	L	LOOSE
	MD	MEDIUM DENSE
	D	DENSE
	VD	VERY DENSE
	()	Bracketed symbol indicates estimated density based on ease of drilling or other assessment.
Hand Penetrometer Readings	300	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.
	250	



Log Column	Symbol	Definition
Remarks	'V' bit 'TC' bit T_{60} Soil Origin	Hardened steel 'V' shaped bit. Twin pronged tungsten carbide bit. Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers. The geological origin of the soil can generally be described as: RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock. EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock. ALLUVIAL – soil deposited by creeks and rivers. ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents. MARINE – soil deposited in a marine environment. AEOLIAN – soil carried and deposited by wind. COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits. LITTORAL – beach deposited soil.

Classification of Material Weathering

Term		Abbreviation		Definition
Residual Soil		RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: 'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'. There is some change in rock strength.

Rock Material Strength Classification

Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Guide to Strength	
			Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.



Appendix E: Laboratory Report(s) & COC Documents

CERTIFICATE OF ANALYSIS 297823

Client Details

Client	JK Environments
Attention	Mitchell Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E35091UPD, Gunnedah</u>
Number of Samples	54 Soil, 1 Material, 1 Water
Date samples received	14/06/2022
Date completed instructions received	10/06/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	21/06/2022
Date of Issue	21/06/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Wonnie Condos, Nyovan Moonean
 Authorised by Asbestos Approved Signatory: Matt Mansfield

Results Approved By

Dragana Tomas, Senior Chemist
 Josh Williams, Organics and LC Supervisor
 Kyle Gavril, Senior Chemist
 Loren Bardwell, Development Chemist
 Matt Mansfield, QHSE manager
 Steven Luong, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil

Our Reference		297823-1	297823-3	297823-5	297823-8	297823-12
Your Reference	UNITS	BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	1.0-1.45	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	18/06/2022	18/06/2022	18/06/2022	18/06/2022	18/06/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	101	101	102	104

vTRH(C6-C10)/BTEXN in Soil

Our Reference		297823-16	297823-20	297823-23	297823-27	297823-31
Your Reference	UNITS	BH5	BH6	BH7	BH8	TP1
Depth		0-0.1	0-0.1	0.15-0.3	0-0.1	0-0.1
Date Sampled		02/06/2022	02/06/2022	03/06/2022	03/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	18/06/2022	18/06/2022	18/06/2022	18/06/2022	18/06/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	104	100	101	108	87

vTRH(C6-C10)/BTEXN in Soil

Our Reference		297823-34	297823-36	297823-39	297823-42	297823-45
Your Reference	UNITS	TP2	TP3	TP4	TP5	TP6
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	18/06/2022	18/06/2022	18/06/2022	18/06/2022	18/06/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	90	109	104	90	107

vTRH(C6-C10)/BTEXN in Soil

Our Reference		297823-49	297823-54	297823-55
Your Reference	UNITS	SDUP1	TB-S1	TS-S1
Depth		-	-	-
Date Sampled		01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	[NA]
Date analysed	-	18/06/2022	18/06/2022	[NA]
TRH C ₆ - C ₉	mg/kg	<25	[NA]	[NA]
TRH C ₆ - C ₁₀	mg/kg	<25	[NA]	[NA]
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	[NA]	[NA]
Benzene	mg/kg	<0.2	<0.2	89%
Toluene	mg/kg	<0.5	<0.5	96%
Ethylbenzene	mg/kg	<1	<1	100%
m+p-xylene	mg/kg	<2	<2	98%
o-Xylene	mg/kg	<1	<1	100%
Naphthalene	mg/kg	<1	<1	[NT]
Total +ve Xylenes	mg/kg	<1	<1	[NT]
Surrogate aaa-Trifluorotoluene	%	104	94	107

svTRH (C10-C40) in Soil

Our Reference		297823-1	297823-3	297823-5	297823-8	297823-12
Your Reference	UNITS	BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	1.0-1.45	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	18/06/2022	18/06/2022	18/06/2022	18/06/2022	18/06/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	100	<100	<100	100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	100	<50	<50	100	<50
Surrogate o-Terphenyl	%	91	85	85	87	86

svTRH (C10-C40) in Soil

Our Reference		297823-16	297823-20	297823-23	297823-27	297823-31
Your Reference	UNITS	BH5	BH6	BH7	BH8	TP1
Depth		0-0.1	0-0.1	0.15-0.3	0-0.1	0-0.1
Date Sampled		02/06/2022	02/06/2022	03/06/2022	03/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	18/06/2022	18/06/2022	18/06/2022	18/06/2022	18/06/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	120
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	120
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	140
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	140
Surrogate o-Terphenyl	%	85	87	83	85	93

svTRH (C10-C40) in Soil

Our Reference		297823-34	297823-36	297823-39	297823-42	297823-45
Your Reference	UNITS	TP2	TP3	TP4	TP5	TP6
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	18/06/2022	18/06/2022	18/06/2022	18/06/2022	18/06/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	88	83	80	84	82

svTRH (C10-C40) in Soil

Our Reference		297823-49
Your Reference	UNITS	SDUP1
Depth		-
Date Sampled		01/06/2022
Type of sample		Soil
Date extracted	-	15/06/2022
Date analysed	-	18/06/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100
TRH C ₂₉ - C ₃₆	mg/kg	130
Total +ve TRH (C10-C36)	mg/kg	130
TRH >C ₁₀ -C ₁₆	mg/kg	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50
TRH >C ₁₆ -C ₃₄	mg/kg	100
TRH >C ₃₄ -C ₄₀	mg/kg	110
Total +ve TRH (>C10-C40)	mg/kg	210
Surrogate o-Terphenyl	%	90

PAHs in Soil						
Our Reference		297823-1	297823-5	297823-8	297823-12	297823-16
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	02/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	1.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.6	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.55	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	5.5	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Surrogate <i>p</i> -Terphenyl-d14	%	116	109	105	98	110

PAHs in Soil						
Our Reference		297823-20	297823-23	297823-27	297823-31	297823-34
Your Reference	UNITS	BH6	BH7	BH8	TP1	TP2
Depth		0-0.1	0.15-0.3	0-0.1	0-0.1	0-0.1
Date Sampled		02/06/2022	03/06/2022	03/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	17/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	113	110	106	108	108

PAHs in Soil						
Our Reference		297823-36	297823-39	297823-42	297823-45	297823-49
Your Reference	UNITS	TP3	TP4	TP5	TP6	SDUP1
Depth		0-0.1	0-0.1	0-0.1	0-0.1	-
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	102	102	99	99	111

Organochlorine Pesticides in soil						
Our Reference		297823-1	297823-5	297823-8	297823-12	297823-16
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	02/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	1.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	100	95	92	100

Organochlorine Pesticides in soil						
Our Reference		297823-20	297823-23	297823-27	297823-31	297823-34
Your Reference	UNITS	BH6	BH7	BH8	TP1	TP2
Depth		0-0.1	0.15-0.3	0-0.1	0-0.1	0-0.1
Date Sampled		02/06/2022	03/06/2022	03/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	17/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	103	102	99	100	97

Organochlorine Pesticides in soil						
Our Reference		297823-36	297823-39	297823-42	297823-45	297823-49
Your Reference	UNITS	TP3	TP4	TP5	TP6	SDUP1
Depth		0-0.1	0-0.1	0-0.1	0-0.1	-
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	1.2
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	95	92	90	103

Organophosphorus Pesticides in Soil						
Our Reference		297823-1	297823-5	297823-8	297823-12	297823-16
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	02/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	100	95	92	100

Organophosphorus Pesticides in Soil						
Our Reference		297823-20	297823-23	297823-27	297823-31	297823-34
Your Reference	UNITS	BH6	BH7	BH8	TP1	TP2
Depth		0-0.1	0.15-0.3	0-0.1	0-0.1	0-0.1
Date Sampled		02/06/2022	03/06/2022	03/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	17/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	103	102	99	100	97

Organophosphorus Pesticides in Soil

Our Reference		297823-36	297823-39	297823-42	297823-45	297823-49
Your Reference	UNITS	TP3	TP4	TP5	TP6	SDUP1
Depth		0-0.1	0-0.1	0-0.1	0-0.1	-
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	95	92	90	103

PCBs in Soil						
Our Reference	UNITS	297823-1	297823-5	297823-8	297823-12	297823-16
Your Reference		BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	02/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	100	95	92	100

PCBs in Soil						
Our Reference	UNITS	297823-20	297823-23	297823-27	297823-31	297823-34
Your Reference		BH6	BH7	BH8	TP1	TP2
Depth		0-0.1	0.15-0.3	0-0.1	0-0.1	0-0.1
Date Sampled		02/06/2022	03/06/2022	03/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	17/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	103	102	99	100	97

PCBs in Soil						
Our Reference		297823-36	297823-39	297823-42	297823-45	297823-49
Your Reference	UNITS	TP3	TP4	TP5	TP6	SDUP1
Depth		0-0.1	0-0.1	0-0.1	0-0.1	-
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	17/06/2022	17/06/2022	17/06/2022	17/06/2022	17/06/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	95	95	92	90	103

Acid Extractable metals in soil

Our Reference		297823-1	297823-5	297823-8	297823-12	297823-16
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	02/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	25	24	28	22	30
Copper	mg/kg	25	13	25	18	20
Lead	mg/kg	22	10	37	29	19
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	8.4
Nickel	mg/kg	29	23	33	28	31
Zinc	mg/kg	78	34	80	57	44

Acid Extractable metals in soil

Our Reference		297823-20	297823-23	297823-27	297823-31	297823-34
Your Reference	UNITS	BH6	BH7	BH8	TP1	TP2
Depth		0-0.1	0.15-0.3	0-0.1	0-0.1	0-0.1
Date Sampled		02/06/2022	03/06/2022	03/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	32	56	27	25	27
Copper	mg/kg	20	38	19	19	31
Lead	mg/kg	29	5	11	11	35
Mercury	mg/kg	0.3	<0.1	<0.1	<0.1	0.1
Nickel	mg/kg	30	90	32	24	32
Zinc	mg/kg	50	45	38	74	71

Acid Extractable metals in soil						
Our Reference		297823-36	297823-39	297823-42	297823-45	297823-49
Your Reference	UNITS	TP3	TP4	TP5	TP6	SDUP1
Depth		0-0.1	0-0.1	0-0.1	0-0.1	-
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	30	31	25	61	28
Copper	mg/kg	23	22	20	16	25
Lead	mg/kg	12	14	20	11	22
Mercury	mg/kg	<0.1	0.3	0.2	<0.1	<0.1
Nickel	mg/kg	33	36	29	19	35
Zinc	mg/kg	44	44	51	48	81

Moisture						
Our Reference	UNITS	297823-1	297823-3	297823-5	297823-8	297823-12
Your Reference		BH1	BH1	BH2	BH3	BH4
Depth		0-0.1	1.0-1.45	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Moisture	%	19	15	11	16	12

Moisture						
Our Reference	UNITS	297823-16	297823-20	297823-23	297823-27	297823-31
Your Reference		BH5	BH6	BH7	BH8	TP1
Depth		0-0.1	0-0.1	0.15-0.3	0-0.1	0-0.1
Date Sampled		02/06/2022	02/06/2022	03/06/2022	03/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Moisture	%	19	18	20	15	20

Moisture						
Our Reference	UNITS	297823-34	297823-36	297823-39	297823-42	297823-45
Your Reference		TP2	TP3	TP4	TP5	TP6
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/06/2022	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Date analysed	-	16/06/2022	16/06/2022	16/06/2022	16/06/2022	16/06/2022
Moisture	%	19	19	20	16	11

Moisture		
Our Reference	UNITS	297823-49
Your Reference		SDUP1
Depth		-
Date Sampled		01/06/2022
Type of sample		Soil
Date prepared	-	15/06/2022
Date analysed	-	16/06/2022
Moisture	%	19

Asbestos ID - soils NEPM - ASB-001

Our Reference		297823-1	297823-5	297823-8	297823-12	297823-16
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.1	0-0.1	0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022	02/06/2022	02/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Sample mass tested	g	630.91	691.17	642.9	749.46	702.75
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—	—	—
FA and AF Estimation*	g	—	—	—	—	—
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001

Our Reference		297823-20	297823-23	297823-27	297823-31	297823-35
Your Reference	UNITS	BH6	BH7	BH8	TP1	TP2
Depth		0-0.1	0.15-0.3	0-0.1	0-0.1	0.1-0.3
Date Sampled		02/06/2022	03/06/2022	03/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Sample mass tested	g	544.19	831.26	744.64	616.78	745.43
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—	—	—
FA and AF Estimation*	g	—	—	—	—	—
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001

Our Reference		297823-36	297823-39	297823-42
Your Reference	UNITS	TP3	TP4	TP5
Depth		0-0.1	0-0.1	0-0.1
Date Sampled		01/06/2022	01/06/2022	01/06/2022
Type of sample		Soil	Soil	Soil
Date analysed	-	21/06/2022	21/06/2022	21/06/2022
Sample mass tested	g	709.63	673.26	795.56
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—
FA and AF Estimation*	g	—	—	—
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01
FA and AF Estimation* ^{#2}	%(w/w)	<0.001	<0.001	<0.001

Asbestos ID - soils		
Our Reference		297823-45
Your Reference	UNITS	TP6
Depth		0-0.1
Date Sampled		01/06/2022
Type of sample		Soil
Date analysed	-	20/06/2022
Sample mass tested	g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Asbestos ID - materials		
Our Reference	UNITS	297823-53
Your Reference		FCF1-TP2
Depth		0.1-0.3
Date Sampled		01/06/2022
Type of sample		Material
Date analysed	-	15/06/2022
Mass / Dimension of Sample	-	40x40x4mm
Sample Description	-	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected
		Amosite asbestos detected
Trace Analysis	-	[NT]

BTEX in Water		
Our Reference		297823-56
Your Reference	UNITS	FR-S1-SPT
Depth		-
Date Sampled		03/06/2022
Type of sample		Water
Date extracted	-	16/06/2022
Date analysed	-	17/06/2022
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Surrogate Dibromofluoromethane	%	97
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	101

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	<p>Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004.</p> <p>Results reported denoted with * are outside our scope of NATA accreditation.</p> <p>NOTE #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF)</p> <p>NOTE #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.</p> <p>Estimation = Estimated asbestos weight</p> <p>Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.</p>
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.</p> <p>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.</p>
Org-020	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.</p> <p>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.</p> <p>Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).</p>
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.

Method ID	Methodology Summary
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	297823-5
Date extracted	-			15/06/2022	1	15/06/2022	15/06/2022		15/06/2022	15/06/2022
Date analysed	-			18/06/2022	1	18/06/2022	18/06/2022		18/06/2022	18/06/2022
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	99	97
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	99	97
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	113	108
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	104	101
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	94	92
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	93	91
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	114	112
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	114	1	94	97	3	111	105

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	34	15/06/2022	15/06/2022		[NT]	[NT]
Date analysed	-			[NT]	34	18/06/2022	18/06/2022		[NT]	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	[NT]	34	<25	<25	0	[NT]	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	[NT]	34	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	34	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	34	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	34	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	34	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	34	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	34	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	34	90	97	7	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	297823-5
Date extracted	-			15/06/2022	1	15/06/2022	15/06/2022		15/06/2022	15/06/2022
Date analysed	-			18/06/2022	1	18/06/2022	18/06/2022		18/06/2022	18/06/2022
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	<50	<50	0	129	129
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	<100	<100	0	97	98
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	<100	<100	0	100	98
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	<50	<50	0	129	129
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	100	130	26	97	98
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	<100	<100	0	100	98
Surrogate o-Terphenyl	%		Org-020	84	1	91	90	1	128	129

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	34	15/06/2022	15/06/2022		[NT]	[NT]
Date analysed	-			[NT]	34	18/06/2022	18/06/2022		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	34	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	34	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	34	<100	<100	0	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	34	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	34	<100	<100	0	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	34	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	34	88	88	0	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	297823-5
Date extracted	-			15/06/2022	1	15/06/2022	15/06/2022		15/06/2022	15/06/2022
Date analysed	-			17/06/2022	1	17/06/2022	17/06/2022		17/06/2022	17/06/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	113	113
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	111	111
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	114
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	120
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	123	120
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	129	129
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	95
Benzo(b,j,k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	112	116
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	108	1	116	112	4	139	140

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	34	15/06/2022	15/06/2022		[NT]	[NT]
Date analysed	-			[NT]	34	17/06/2022	17/06/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j,k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	34	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	34	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	34	108	109	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	297823-5
Date extracted	-			15/06/2022	1	15/06/2022	15/06/2022		15/06/2022	15/06/2022
Date analysed	-			17/06/2022	1	17/06/2022	17/06/2022		17/06/2022	17/06/2022
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	108
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	121	114
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	111
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	116	120
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	111
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	117	117
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	1.1	1.1	0	122	120
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	107	114
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	114
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	99
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	99	1	106	100	6	130	136

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	34	15/06/2022	15/06/2022		[NT]	[NT]
Date analysed	-			[NT]	34	17/06/2022	17/06/2022		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	34	97	101	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	297823-5
Date extracted	-			15/06/2022	1	15/06/2022	15/06/2022		15/06/2022	15/06/2022
Date analysed	-			17/06/2022	1	17/06/2022	17/06/2022		17/06/2022	17/06/2022
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	95
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	107
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	107	113
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	103
Chlorpyrifos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	122
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	105
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	111	121
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	99	1	106	100	6	130	136

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	34	15/06/2022	15/06/2022		[NT]	[NT]
Date analysed	-			[NT]	34	17/06/2022	17/06/2022		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	34	97	101	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	297823-5
Date extracted	-			15/06/2022	1	15/06/2022	15/06/2022		15/06/2022	15/06/2022
Date analysed	-			17/06/2022	1	17/06/2022	17/06/2022		17/06/2022	17/06/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	114	100
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	99	1	106	100	6	130	136

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	34	15/06/2022	15/06/2022		[NT]	[NT]
Date analysed	-			[NT]	34	17/06/2022	17/06/2022		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	34	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	34	97	101	4	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-13	297823-5
Date prepared	-			15/06/2022	1	15/06/2022	15/06/2022		15/06/2022	15/06/2022
Date analysed	-			16/06/2022	1	16/06/2022	16/06/2022		16/06/2022	16/06/2022
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	100	83
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	100	82
Chromium	mg/kg	1	Metals-020	<1	1	25	23	8	103	97
Copper	mg/kg	1	Metals-020	<1	1	25	20	22	101	105
Lead	mg/kg	1	Metals-020	<1	1	22	20	10	100	84
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	115	117
Nickel	mg/kg	1	Metals-020	<1	1	29	26	11	101	91
Zinc	mg/kg	1	Metals-020	<1	1	78	66	17	106	88

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	34	15/06/2022	15/06/2022		[NT]	[NT]
Date analysed	-			[NT]	34	16/06/2022	16/06/2022		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	34	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	34	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	34	27	28	4	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	34	31	32	3	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	34	35	35	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	34	0.1	0.2	67	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	34	32	35	9	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	34	71	75	5	[NT]	[NT]

QUALITY CONTROL: BTEX in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			16/06/2022	[NT]	[NT]	[NT]	[NT]	16/06/2022	[NT]
Date analysed	-			17/06/2022	[NT]	[NT]	[NT]	[NT]	17/06/2022	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	118	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Surrogate Dibromofluoromethane	%		Org-023	96	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-BFB	%		Org-023	104	[NT]	[NT]	[NT]	[NT]	99	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.

Note: Samples 297823-45 was sub-sampled from jar provided by the client.

Asbestos-ID in soil: NEPM

This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Mitchell Delaney

Sample Login Details

Your reference	E35091UPD, Gunnedah
Envirolab Reference	297823
Date Sample Received	14/06/2022
Date Instructions Received	10/06/2022
Date Results Expected to be Reported	20/06/2022

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	54 Soil, 1 Material, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:

Sample ID	VTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - soils	Asbestos ID - materials	BTEX in Water	On Hold
BH1-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
BH1-0.2-0.5												✓
BH1-1.0-1.45	✓	✓										
BH1-2.0-2.2												✓
BH2-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
BH2-0.5-0.7												✓
BH2-1.0-1.4												✓
BH3-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
BH3-0.5-0.8												✓
BH3-1.0-1.4												✓
BH3-2.5-2.8												✓
BH4-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
BH4-0.5-0.7												✓
BH4-1.0-1.2												✓
BH4-2.5-2.8												✓
BH5-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
BH5-0.5-0.7												✓
BH5-1.0-1.2												✓
BH5-2.5-2.7												✓
BH6-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
BH6-0.2-0.5												✓
BH6-1.0-1.2												✓
BH7-0.15-0.3	✓	✓	✓	✓	✓	✓	✓	✓				
BH7-0.5-0.7												✓
BH7-1.0-1.2												✓
BH7-2.5-2.7												✓
BH8-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
BH8-0.5-0.7												✓
BH8-1.0-1.2												✓
BH8-2.5-2.7												✓
TP1-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
TP1-0.1-0.2												✓

Sample ID	VTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metals in soil	Asbestos ID - soils NEPM - ASB-001	Asbestos ID - soils	Asbestos ID - materials	BTEX in Water	On Hold
TP1-0.5-0.7												✓
TP2-0-0.1	✓	✓	✓	✓	✓	✓	✓					
TP2-0.1-0.3								✓				
TP3-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
TP3-0.1-0.2												✓
TP3-0.5-0.7												✓
TP4-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
TP4-0.2-0.5												✓
TP4-0.7-1.0												✓
TP5-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓				
TP5-0.3-0.5												✓
TP5-0.7-0.9												✓
TP6-0-0.1	✓	✓	✓	✓	✓	✓	✓		✓			
TP6-0.1-0.3												✓
TP6-0.5-0.7												✓
TP6-0.8-1.0												✓
SDUP1	✓	✓	✓	✓	✓	✓	✓					
SDUP3												✓
SDUP4												✓
SDUP5												✓
FCF1-TP2-0.1-0.3										✓		
TB-S1	✓											
TS-S1	✓											
FR-S1-SPT											✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.


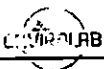
Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.


COC 10/6 16:49

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen							JKE Job Number: IE35091UPD Date Results Required: STANDARD Page: 1 of 3							FROM:  JK Environments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitch Delaney mdelaney@jkenvironments.com.au						
Location: Gunnedah							Sample Preserved in Esky on Ice													
Sampler: HW							Tests Required													
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3a	Combo 6	Asbestos (500ml)	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos					
1/06/2022	1	BH1	0-0.1	G, A	0	F: Silty Clay			X	X										
1/06/2022	2	BH1	0.2-0.5	G, A	0	F: Silty Clay														
1/06/2022	3	BH1	1.0-1.45	G, A	3.9	Silty Clay							X							
1/06/2022	4	BH1	2.0-2.2	G, A	0	Silty Clay														
1/06/2022	5	BH2	0-0.1	G, A	0	F: Sandy Clay			X	X										
1/06/2022	6	BH2	0.5-0.7	G, A	0	F: Sandy Clay														
1/06/2022	7	BH2	1.0-1.4	G, A	0.2	Silty Clay														
1/06/2022	8	BH3	0-0.1	G, A	0	F: Sandy Clay			X	X										
1/06/2022	9	BH3	0.5-0.8	G, A	0.1	F: Sandy Clay														
1/06/2022	10	BH3	1.0-1.4	G, A	0.2	Silty Clay														
1/06/2022	11	BH3	2.5-2.8	G, A	1.1	Silty Clay														
2/06/2022	12	BH4	0-0.1	G, A	0	F: Silty Sand			X	X										
2/06/2022	13	BH4	0.5-0.7	G, A	0	F: Silty Sand														
2/06/2022	14	BH4	1.0-1.2	G, A	0	F: Silty Sand														
2/06/2022	15	BH4	2.5-2.8	G, A	0.3	Silty Clay														
2/06/2022	16	BH5	0-0.1	G, A	0	F: Silty Sand			X	X										
2/06/2022	17	BH5	0.5-0.7	G, A	0.2	F: Silty Sand														
2/06/2022	18	BH5	1.0-1.2	G, A	0	Sandy Clay														
2/06/2022	19	BH5	2.5-2.7	G, A	0	Sandy Clay														
2/06/2022	20	BH6	0-0.1	G, A	0	F: Silty Sand			X	X										
2/06/2022	21	BH6	0.2-0.5	G, A	0.1	Silty Clay														
2/06/2022	22	BH6	1.0-1.2	G, A	0	Silty Clay														
3/06/2022	23	BH7	0.15-0.3	G, A	0	F: Sandy Gravel			X	X										
3/06/2022	24	BH7	0.5-0.7	G, A	0.2	F: Clayey Sand														
3/06/2022	25	BH7	1.0-1.2	G, A	0.1	Sandy Clay														
Remarks (comments/detection limits required): Please weigh Fibre Cement Fragments							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag													
Relinquished By: MD 							Date: 10.6.22 Envirolab Service 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200							Time: 1600 Received By: AP ds SYD Date: 10-6-22						

Job No: 297823
 Date Received: 10-6-22
 Time Received: 1600
 Received by: AP
 Temp: Cool/Ambient
 Cooling: Ice/Icepack
 Security: Intact/Broken/None


SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E35091UPD Date Results Required: STANDARD Page: 2 of 3	FROM:  JKE Environments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitch Delaney mdelaney@ikenvironments.com.au
---	---	---

Location: Gunnedah							Sample Preserved in Esky on Ice											
Sampler: HW							Tests Required											
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3a	Combo 6	Asbestos (500ml)	8 Metals	PAHs	TRI/BTEX	BTEX	Asbestos			
3/06/2022	26	BH7	2.5-2.7	G, A	0.1	Sandy Clay												
3/06/2022	27	BH8	0-0.1	G, A	0.1	F: Sandy Clay			X	X								
3/06/2022	28	BH8	0.5-0.7	G, A	0	F: Sandy Clay												
3/06/2022	29	BH8	1.0-1.2	G, A	0	Sandy Clay												
3/06/2022	30	BH8	2.5-2.7	G, A	0.1	Sandy Clay												
1/06/2022	31	TP1	0-0.1	G, A	0	F: Silty Clay			X	X								
1/06/2022	32	TP1	0.1-0.2	G, A	0	F: Silty Clay												
1/06/2022	33	TP1	0.5-0.7	G, A	0	F: Gravelly Clay												
1/06/2022	34	TP2	0-0.1	G, A	0	F: Gravelly Clay			X									
1/06/2022	35	TP2	0.1-0.3	G, A	0	F: Gravelly Clay				X								
1/06/2022	36	TP3	0-0.1	G, A	0	F: Gravelly Clay			X	X								
1/06/2022	37	TP3	0.1-0.2	G, A	0	F: Sand												
1/06/2022	38	TP3	0.5-0.7	G, A	0	F: Gravelly Clay												
1/06/2022	39	TP4	0-0.1	G, A	0	F: Sandy Clay			X	X								
1/06/2022	40	TP4	0.2-0.5	G, A	0	F: Gravelly Clay												
1/06/2022	41	TP4	0.7-1.0	G, A	0	Sandy Clay												
1/06/2022	42	TP5	0-0.1	G, A	0	F: Gravelly Clay			X	X								
1/06/2022	43	TP5	0.3-0.5	G, A	0	F: Clayey Gravel												
1/06/2022	44	TP5	0.7-0.9	G, A	0	F: Gravelly Clay												
1/06/2022	45	TP6	0-0.1	G, A	0	F: Gravelly Clay			X	X								
1/06/2022	46	TP6	0.1-0.3	G, A	0	F: Gravelly Clay												
1/06/2022	47	TP6	0.5-0.7	G, A	0	F: Gravelly Clay												
1/06/2022	48	TP6	0.8-1.0	G, A	0	Sandy Clay												
1/06/2022	49	SDUP1	-	G	NA	Soil			X									
1/06/2022	50	SDUP2	-	G	NA	Soil			X									
Remarks (comments/detection limits required): Please weigh Fibre Cement Fragments							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag											
Relinquished By: MD					Date: 10.6.22		Time:			Received By: AP			Date:					

297823

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen		JKE Job E35091UPD Number: Date Results STANDARD Required: Page: 3 of 3		FROM:  JK Environments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitch Delaney mdelaney@jkenvironments.com.au	
---	--	---	--	--	--

Location: Gunnedah							Sample Preserved in Esky on Ice												
Sampler: HW							Tests Required												
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3a	Combo 6	Asbestos (500ml)	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos				
1/06/2022	50	SDUP3	-	G	NA	Soil													
2/06/2022	51	SDUP4	-	G	NA	Soil													
3/06/2022	52	SDUP5	-	G	NA	Soil													
1/06/2022	53	FCF1-TP2	0.1-0.3	A	NA	FCF										X			
1/06/2022	54	TB-S1	-	G	NA	Soil blank									X				
1/06/2022	55	TS-S1	-	V	NA	Soil spike									X				
3/06/2022	56	FR-S1-SPT	-	V	NA	Water									X				
AP EXTS	57	BH 4	1.0-1.2	CM															
	58	BH 4	2.5-2.7	CM															
	59	BH 4	0.5-0.7	CM															
	60	TP 4	0.2-0.3	CM															
	61	TP 5	0.1-0.2	CM															
	62	TP 2	0.2-0.3	CM															
Remarks (comments/detection limits required): Please weigh Fibre Cement Fragments							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag												
Relinquished By: MD					Date: 10.6.22		Time:		Received By: AP				Date:						

297823

CERTIFICATE OF ANALYSIS 297823-A

Client Details

Client	JK Environments
Attention	Mitchell Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E35091UPD, Gunnedah</u>
Number of Samples	additional analysis
Date samples received	14/06/2022
Date completed instructions received	23/06/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	30/06/2022
Date of Issue	30/06/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Diego Bigolin, Inorganics Supervisor
 Giovanni Agosti, Group Technical Manager
 Hannah Nguyen, Metals Supervisor
 Jenny He, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Misc Inorg - Soil		
Our Reference		297823-A-23
Your Reference	UNITS	BH7
Depth		0.15-0.3
Date Sampled		03/06/2022
Type of sample		Soil
Date prepared	-	30/06/2022
Date analysed	-	30/06/2022
pH 1:5 soil:water	pH Units	8.6

CEC		
Our Reference		297823-A-23
Your Reference	UNITS	BH7
Depth		0.15-0.3
Date Sampled		03/06/2022
Type of sample		Soil
Date prepared	-	30/06/2022
Date analysed	-	30/06/2022
Exchangeable Ca	meq/100g	11
Exchangeable K	meq/100g	0.4
Exchangeable Mg	meq/100g	6.5
Exchangeable Na	meq/100g	0.3
Cation Exchange Capacity	meq/100g	18

Clay 50-120g		
Our Reference		297823-A-23
Your Reference	UNITS	BH7
Depth		0.15-0.3
Date Sampled		03/06/2022
Type of sample		Soil
Date prepared	-	28/06/2022
Date analysed	-	29/06/2022
Clay in soils <2µm	% (w/w)	10

Metals from Leaching Fluid pH 2.9 or 5			
Our Reference		297823-A-16	297823-A-23
Your Reference	UNITS	BH5	BH7
Depth		0-0.1	0.15-0.3
Date Sampled		02/06/2022	03/06/2022
Type of sample		Soil	Soil
Date extracted	-	30/06/2022	30/06/2022
Date analysed	-	30/06/2022	30/06/2022
pH of soil for fluid# determ.	pH units	8.5	8.6
pH of soil TCLP (after HCl)	pH units	1.7	1.7
Extraction fluid used		1	1
pH of final Leachate	pH units	5.2	5.0
Mercury	mg/L	<0.0005	[NA]
Nickel	mg/L	[NA]	0.1

Method ID	Methodology Summary
AS1289.3.6.3	Particle Size Distribution using in house method INORG-107 by way of sieving and/or hydrometer sedimentation testing. Clay fraction at <2µm reported.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	<p>Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311.</p> <p>Please note that the mass used may be scaled down from default based on sample mass available.</p> <p>Samples are stored at 2-6oC before and after leachate preparation.</p>
Metals-020	Determination of various metals by ICP-AES following buffer determination as per USEPA 1311 and hence AS 4439.3. Extraction Fluid 1 refers to the pH 5.0 buffer and Extraction Fluid 2 is the pH 2.9 buffer.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS following buffer determination as per USEPA 1311 and hence AS 4439.3. Extraction Fluid 1 refers to the pH 5.0 buffer and Extraction Fluid 2 is the pH 2.9 buffer.

Client Reference: E35091UPD, Gunnedah

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			30/06/2022	[NT]	[NT]	[NT]	[NT]	30/06/2022	[NT]
Date analysed	-			30/06/2022	[NT]	[NT]	[NT]	[NT]	30/06/2022	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	100	[NT]

Client Reference: E35091UPD, Gunnedah

QUALITY CONTROL: CEC					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	297823-A-23
Date prepared	-			30/06/2022	[NT]	[NT]	[NT]	[NT]	30/06/2022	30/06/2022
Date analysed	-			30/06/2022	[NT]	[NT]	[NT]	[NT]	30/06/2022	30/06/2022
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	127	#
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	129	117
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	126	#
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	115	#

Client Reference: E35091UPD, Gunnedah

QUALITY CONTROL: Metals from Leaching Fluid pH 2.9 or 5						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			30/06/2022	[NT]	[NT]	[NT]	[NT]	30/06/2022	[NT]
Date analysed	-			30/06/2022	[NT]	[NT]	[NT]	[NT]	30/06/2022	[NT]
Mercury	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	101	[NT]
Nickel	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	94	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

CEC - # High spike recovery was obtained for this sample. The sample was re-digested and re-spiked and the low recovery was confirmed. This is due to matrix interferences. However, an acceptable recovery was obtained for the LCS.

MISC_INORG_DRY:pH:Sample was out of the recommended holding time for this analysis.

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Mitchell Delaney

Sample Login Details

Your reference	E35091UPD, Gunnedah
Envirolab Reference	297823-A
Date Sample Received	14/06/2022
Date Instructions Received	23/06/2022
Date Results Expected to be Reported	30/06/2022

Sample Condition

Samples received in appropriate condition for analysis	Holding time exceedance
No. of Samples Provided	additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Please contact the laboratory within 24 hours if you wish to cancel the aforementioned testing. Otherwise testing will proceed as per the COC and hence invoiced accordingly.

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



EnviroLab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	Misc Inorg - Soil	CEC	Clay 50-120g	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Mercury	Nickel	On Hold
BH1-0-0.1										✓
BH1-0.2-0.5										✓
BH1-1.0-1.45										✓
BH1-2.0-2.2										✓
BH2-0-0.1										✓
BH2-0.5-0.7										✓
BH2-1.0-1.4										✓
BH3-0-0.1										✓
BH3-0.5-0.8										✓
BH3-1.0-1.4										✓
BH3-2.5-2.8										✓
BH4-0-0.1										✓
BH4-0.5-0.7										✓
BH4-1.0-1.2										✓
BH4-2.5-2.8										✓
BH5-0-0.1				✓	✓	✓	✓	✓		
BH5-0.5-0.7										✓
BH5-1.0-1.2										✓
BH5-2.5-2.7										✓
BH6-0-0.1										✓
BH6-0.2-0.5										✓
BH6-1.0-1.2										✓
BH7-0.15-0.3	✓	✓	✓	✓	✓	✓	✓		✓	
BH7-0.5-0.7										✓
BH7-1.0-1.2										✓
BH7-2.5-2.7										✓
BH8-0-0.1										✓
BH8-0.5-0.7										✓
BH8-1.0-1.2										✓
BH8-2.5-2.7										✓
TP1-0-0.1										✓
TP1-0.1-0.2										✓



Sample ID	Misc Inorg - Soil	CEC	Clay 50-120g	pH of soil for fluid#determ.	pH of soil TCLP (after HCl)	Extraction fluid used	pH of final Leachate	Mercury	Nickel	On Hold
TP1-0.5-0.7										✓
TP2-0-0.1										✓
TP2-0.1-0.3										✓
TP3-0-0.1										✓
TP3-0.1-0.2										✓
TP3-0.5-0.7										✓
TP4-0-0.1										✓
TP4-0.2-0.5										✓
TP4-0.7-1.0										✓
TP5-0-0.1										✓
TP5-0.3-0.5										✓
TP5-0.7-0.9										✓
TP6-0-0.1										✓
TP6-0.1-0.3										✓
TP6-0.5-0.7										✓
TP6-0.8-1.0										✓
SDUP1										✓
SDUP3										✓
SDUP4										✓
SDUP5										✓
FCF1-TP2-0.1-0.3										✓
TB-S1										✓
TS-S1										✓
FR-S1-SPT										✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Ming To

From: Mitchell Delaney <MDelaney@jkenvironments.com.au>
Sent: Thursday, 23 June 2022 11:34 AM
To: Samplereceipt
Subject: FW: Results for Registration 297823 E35091UPD, Gunnedah

Ref: 297823-A
TA7: Standard.
Due: 30/06/2022
M7

Categories: Additional

CAUTION: This email originated from outside of the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is authentic and safe.

FYI.

Regards
Mitchell Delaney
Senior Associate | Environmental Scientist



T: +617 3709 9799
D: 0405 140 181
E: MDelaney@jkenvironments.com.au
www.jkgeotechnics.com.au

Brisbane Office
Level 22, 69 Ann Street
BRISBANE QLD 4000
Sunshine Coast Office
8 Innovation Parkway
BIRTINYA QLD 4575

JKEnvironments

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From: Mitchell Delaney
Sent: Thursday, 23 June 2022 11:33 AM
To: 'Greta Petzold' <GPetzold@envirolab.com.au>
Subject: RE: Results for Registration 297823 E35091UPD, Gunnedah

Hi All,

Can I please schedule the additional analysis as per below:

23	BH7 (0.15-0.3m)	pH, CEC and Clay content
16	BH5 (0-0.1m)	TCLP Mercury
23	BH7 (0.15-0.3m)	TCLP Nickel

Many thanks,

From: Greta Petzold <GPetzold@envirolab.com.au>
Sent: Tuesday, 21 June 2022 2:17 PM
To: Mitchell Delaney <MDelaney@jkenvironments.com.au>
Subject: Results for Registration 297823 E35091UPD, Gunnedah

Please refer to attached for:
a copy of the Certificate of Analysis

CERTIFICATE OF ANALYSIS 31988

Client Details

Client	JK Environments
Attention	Mitch Delaney
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E35091UPD</u>
Number of Samples	1 SOIL
Date samples received	16/06/2022
Date completed instructions received	16/06/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	22/06/2022
Date of Issue	21/06/2022
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Results Approved By

Chris De Luca, Operations Manager

Authorised By



Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		31988-1
Your Reference	UNITS	SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date extracted	-	17/06/2022
Date analysed	-	18/06/2022
vTRH C ₆ - C ₉	mg/kg	<25
vTRH C ₆ - C ₁₀	mg/kg	<25
TRH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total BTEX	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	94

TRH Soil C10-C40 NEPM		
Our Reference		31988-1
Your Reference	UNITS	SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date extracted	-	17/06/2022
Date analysed	-	18/06/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100
TRH C ₂₉ - C ₃₆	mg/kg	190
Total +ve TRH (C10-C36)	mg/kg	190
TRH >C ₁₀ -C ₁₆	mg/kg	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50
TRH >C ₁₆ -C ₃₄	mg/kg	170
TRH >C ₃₄ -C ₄₀	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	170
Surrogate o-Terphenyl	%	92

PAHs in Soil		
Our Reference		31988-1
Your Reference	UNITS	SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date extracted	-	17/06/2022
Date analysed	-	18/06/2022
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	96

OCP in Soil		
Our Reference		31988-1
Your Reference	UNITS	SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date extracted	-	17/06/2022
Date analysed	-	18/06/2022
alpha-BHC	mg/kg	<0.1
Hexachlorobenzene	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve reported Aldrin + Dieldrin	mg/kg	<0.1
Total +ve reported DDT+DDD+DDE	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	70

OP in Soil		
Our Reference		31988-1
Your Reference	UNITS	SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date extracted	-	17/06/2022
Date analysed	-	18/06/2022
Azinphos-methyl	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyrifos	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorovos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	70

PCBs in Soil		
Our Reference		31988-1
Your Reference	UNITS	SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date extracted	-	17/06/2022
Date analysed	-	18/06/2022
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-fluorobiphenyl	%	88

Acid Extractable metals in soil		
Our Reference		31988-1
Your Reference	UNITS	SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date digested	-	18/06/2022
Date analysed	-	18/06/2022
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	23
Copper	mg/kg	18
Lead	mg/kg	11
Mercury	mg/kg	<0.1
Nickel	mg/kg	22
Zinc	mg/kg	69

Moisture		
Our Reference	UNITS	31988-1
Your Reference		SDUP2
Date Sampled		01/06/2022
Type of sample		SOIL
Date prepared	-	17/06/2022
Date analysed	-	18/06/2022
Moisture	%	18

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105°C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Org-020	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.</p> <p>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.</p> <p>Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).</p>
Org-021/022	<p>Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD or GC-MS.</p> <p>Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.</p>
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-022	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.</p> <p>Note, For OCs the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.</p>

Method ID	Methodology Summary
Org-022	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.</p> <p>For soil results:-</p> <ol style="list-style-type: none"> 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. <p>Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.</p>
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	<p>Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.</p> <p>Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.</p>

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			17/06/2022	[NT]	[NT]	[NT]	[NT]	17/06/2022	[NT]
Date analysed	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
vTRH C ₆ - C ₉	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	100	[NT]
vTRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	99	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	99	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	103	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	101	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			17/06/2022	[NT]	[NT]	[NT]	[NT]	17/06/2022	[NT]
Date analysed	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	87	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
Surrogate o-Terphenyl	%		Org-020	87	[NT]	[NT]	[NT]	[NT]	79	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			17/06/2022	[NT]	[NT]	[NT]	[NT]	17/06/2022	[NT]
Date analysed	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
Naphthalene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Acenaphthylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Fluorene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Phenanthrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	116	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d ₁₄	%		Org-022	108	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: OCP in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			17/06/2022	[NT]	[NT]	[NT]	[NT]	17/06/2022	[NT]
Date analysed	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
alpha-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
gamma-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
delta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
alpha-chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Dieldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Methoxychlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022	94	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: OP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			17/06/2022	[NT]	[NT]	[NT]	[NT]	17/06/2022	[NT]
Date analysed	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
Azinphos-methyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Diazinon	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Dichlorovos	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	128	[NT]
Fenitrothion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Malathion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022	94	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			17/06/2022	[NT]	[NT]	[NT]	[NT]	17/06/2022	[NT]
Date analysed	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
Aroclor 1016	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Aroclor 1260	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-fluorobiphenyl	%		Org-022	106	[NT]	[NT]	[NT]	[NT]	116	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
Date analysed	-			18/06/2022	[NT]	[NT]	[NT]	[NT]	18/06/2022	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	98	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	100	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Samples received in good order: No, Holding time exceedance

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Mitch Delaney

Sample Login Details

Your reference	E35091UPD
Envirolab Reference	31988
Date Sample Received	16/06/2022
Date Instructions Received	16/06/2022
Date Results Expected to be Reported	22/06/2022

Sample Condition

Samples received in appropriate condition for analysis	No, Holding time exceedance
No. of Samples Provided	1 SOIL
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	4.9
Cooling Method	IcePACK
Sampling Date Provided	YES

Comments

Organics and moisture out of holding time.

Please contact the laboratory within 24 hours if you wish to cancel the aforementioned testing. Otherwise testing will proceed as per the COC and hence invoiced accordingly.

Please direct any queries to:

Pamela Adams

Phone: 03 9763 2500

Fax: 03 9763 2633

Email: padams@envirolab.com.au

Chris De Luca

Phone: 03 9763 2500

Fax: 03 9763 2633

Email: cdeluca@envirolab.com.au

Analysis Underway, details on the following page:



Envirolab Services Pty Ltd

ABN 37 112 535 645 - 002

25 Research Drive Croydon South VIC 3136

ph 03 9763 2500 fax 03 9763 2633

melbourne@envirolab.com.au

www.envirolab.com.au

Sample ID	VTRH(C6-C10)/BTEXN in Soil	TRH Soil C10-C40 NEPM	PAHs in Soil	OCP in Soil	OP in Soil	PCBs in Soil	Acid Extractable metals in soil
SDUP2	✓	✓	✓	✓	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**


Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E35091UPD Date Results Required: STANDARD Page: 2 of 3	FROM:  JK Environments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitch Delaney mdelaney@jkenvironments.com.au
---	---	--

Location: Gunnedah							Sample Preserved in Esky on Ice												
Sampler: HW							Tests Required												
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3a	Combo 6	Asbestos (500ml)	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos				
3/06/2022	26	BH7	2.5-2.7	G, A	0.1	Sandy Clay													
3/06/2022	27	BH8	0-0.1	G, A	0.1	F: Sandy Clay			X	X									
3/06/2022	28	BH8	0.5-0.7	G, A	0	F: Sandy Clay													
3/06/2022	29	BH8	1.0-1.2	G, A	0	Sandy Clay													
3/06/2022	30	BH8	2.5-2.7	G, A	0.1	Sandy Clay													
1/06/2022	31	TP1	0-0.1	G, A	0	F: Silty Clay			X	X									
1/06/2022	32	TP1	0.1-0.2	G, A	0	F: Silty Clay													
1/06/2022	33	TP1	0.5-0.7	G, A	0	F: Gravelly Clay													
1/06/2022	34	TP2	0-0.1	G, A	0	F: Gravelly Clay			X										
1/06/2022	35	TP2	0.1-0.3	G, A	0	F: Gravelly Clay				X									
1/06/2022	36	TP3	0-0.1	G, A	0	F: Gravelly Clay			X	X									
1/06/2022	37	TP3	0.1-0.2	G, A	0	F: Sand													
1/06/2022	38	TP3	0.5-0.7	G, A	0	F: Gravelly Clay													
1/06/2022	39	TP4	0-0.1	G, A	0	F: Sandy Clay			X	X									
1/06/2022	40	TP4	0.2-0.5	G, A	0	F: Gravelly Clay													
1/06/2022	41	TP4	0.7-1.0	G, A	0	Sandy Clay													
1/06/2022	42	TP5	0-0.1	G, A	0	F: Gravelly Clay			X	X									
1/06/2022	43	TP5	0.3-0.5	G, A	0	F: Clayey Gravel													
1/06/2022	44	TP5	0.7-0.9	G, A	0	F: Gravelly Clay													
1/06/2022	45	TP6	0-0.1	G, A	0	F: Gravelly Clay			X	X									
1/06/2022	46	TP6	0.1-0.3	G, A	0	F: Gravelly Clay													
1/06/2022	47	TP6	0.5-0.7	G, A	0	F: Gravelly Clay													
1/06/2022	48	TP6	0.8-1.0	G, A	0	Sandy Clay													
1/06/2022	49	SDUP1		G	NA	Soil			X										
1/06/2022	50	SDUP2		G	NA	Soil			X										
Remarks (comments/detection limits required): Please weigh Fibre Cement Fragments							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag												
Relinquished By: MD					Date: 10.6.22		Time:		Received By: AP			Date:							

Relinquished by EIS Sydney

Chasman 15/06/22 1200



ENVIROLAB

Envirolab Services
 25 Research Drive
 Croydon South VIC 3136
 Ph: (03) 9763 2500

297823

Job No: 31988

Date Received: 16/6/22

Time Received: 2.40pm

Received By: W


Temp: Cool/Ambient

Cooling: Ice pack

Security: Intact/Broken/None

49°C

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E35091UPD Date Results Required: STANDARD Page: 3 of 3	FROM:  JK Environments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitch Delaney mdelaney@jkenvironments.com.au
---	---	--



Location: Gunnedah							Sample Preserved in Esky on Ice																
Sampler: HW							Tests Required																
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3a	Combo 6	Asbestos (500ml)	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos								
1/06/2022	50	SDUP3	-	G	NA	Soil																	
2/06/2022	51	SDUP4	-	G	NA	Soil																	
3/06/2022	52	SDUP5	-	G	NA	Soil																	
1/06/2022	53	FCF1-TP2	0.1-0.3	A	NA	FCF										X							
1/06/2022	54	TB-S1	-	G	NA	Soil blank									X								
1/06/2022	55	TS-S1	-	V	NA	Soil spike									X								
3/06/2022	56	FR-S1-SPT	-	V	NA	Water									X								
AP Status	57	BH 4	1.2-1.2	CM																			
	58	BH 4	2.5-2.7	CM																			
	59	BH 4	0.5-0.7	CM																			
	60	TP 4	0.2-0.3	CM																			
	61	TP 5	0.1-0.2	CM																			
	62	TP 2	0.2-0.3	CM																			
Remarks (comments/detection limits required): Please weigh Fibre Cement Fragments							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag																
Relinquished By: MD							Date: 10.6.22							Received By: AP							Date:		

Relinquished by ELS
 Sydney (Asbestos)
 15/06/22 1200

297823

COC 10/6 16:49

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen		JKE Job E35091UPD Number: Date Results STANDARD Required: Page: 1 of 3		FROM:  JK Environments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Mitch Delaney mdelaney@jkenvironments.com.au											
Location: Gunnedah		Sample Preserved in Esky on Ice													
Sampler: HW		Tests Required													
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3a	Combo 6	Asbestos (500ml)	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos
1/06/2022	1	BH1	0-0.1	G, A	0	F: Silty Clay			X	X					
1/06/2022	2	BH1	0.2-0.5	G, A	0	F: Silty Clay									
1/06/2022	3	BH1	1.0-1.45	G, A	3.9	Silty Clay							X		
1/06/2022	4	BH1	2.0-2.2	G, A	0	Silty Clay									
1/06/2022	5	BH2	0-0.1	G, A	0	F: Sandy Clay			X	X					
1/06/2022	6	BH2	0.5-0.7	G, A	0	F: Sandy Clay									
1/06/2022	7	BH2	1.0-1.4	G, A	0.2	Silty Clay									
1/06/2022	8	BH3	0-0.1	G, A	0	F: Sandy Clay			X	X					
1/06/2022	9	BH3	0.5-0.8	G, A	0.1	F: Sandy Clay									
1/06/2022	10	BH3	1.0-1.4	G, A	0.2	Silty Clay									
1/06/2022	11	BH3	2.5-2.8	G, A	1.1	Silty Clay									
2/06/2022	12	BH4	0-0.1	G, A	0	F: Silty Sand			X	X					
2/06/2022	13	BH4	0.5-0.7	G, A	0	F: Silty Sand									
2/06/2022	14	BH4	1.0-1.2	G, A	0	F: Silty Sand									
2/06/2022	15	BH4	2.5-2.8	G, A	0.3	Silty Clay									
2/06/2022	16	BH5	0-0.1	G, A	0	F: Silty Sand			X	X					
2/06/2022	17	BH5	0.5-0.7	G, A	0.2	F: Silty Sand									
2/06/2022	18	BH5	1.0-1.2	G, A	0	Sandy Clay									
2/06/2022	19	BH5	2.5-2.7	G, A	0	Sandy Clay									
2/06/2022	20	BH6	0-0.1	G, A	0	F: Silty Sand			X	X					
2/06/2022	21	BH6	0.2-0.5	G, A	0.1	Silty Clay									
2/06/2022	22	BH6	1.0-1.2	G, A	0	Silty Clay									
3/06/2022	23	BH7	0.15-0.3	G, A	0	F: Sandy Gravel			X	X					
3/06/2022	24	BH7	0.5-0.7	G, A	0.2	F: Clayey Sand									
3/06/2022	25	BH7	1.0-1.2	G, A	0.1	Sandy Clay									
Remarks (comments/detection limits required): Please weigh Fibre Cement Fragments							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag								
Relinquished By: MD 				Date: 10.6.22 Envirolab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200			Time: 1500		Received By: AP ds SMD			Date: 10-6-22			

Job No:

297823

Date Received: 10-6-22

Time Received: 1500

Received by: AP

Temp: 20.0 Ambient

Cooling: Ice/icepack

Security: Intact/Broken/None

relinquished
by ELS Sydney

crossman 15/6/22

1200



Appendix F: Report Explanatory Notes



QA/QC Definitions

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994)¹⁷ methods and those described in *Environmental Sampling and Analysis, A Practical Guide*, (1991)¹⁸. The NEPM (2013) is consistent with these documents.

A. Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection Limit for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations: *“The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit”* (Keith, 1991).

B. Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD).

C. Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured (i.e. the proximity of an averaged result to the true value, where all random errors have been statistically removed). The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes. Accuracy is typically reported as percent recovery.

D. Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handling and analysis protocols and use of proper chain-of-custody and documentation procedures.

E. Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms;
- Sample receipt form;
- All sample results reported;
- All blank data reported;

¹⁷ US EPA, (1994). *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*. (US EPA SW-846)

¹⁸ Keith., H, (1991). *Environmental Sampling and Analysis, A Practical Guide*

- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

F. Comparability

Comparability is the evaluation of the similarity of conditions (e.g. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

G. Blanks

The purpose of laboratory and field blanks is to check for artefacts and interferences that may arise during sampling, transport and analysis.

H. Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{(\text{Spike Sample Result} - \text{Sample Result}) \times 100}{\text{Concentration of Spike Added}}$$

I. Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

J. Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{(D1 - D2) \times 100}{\{(D1 + D2)/2\}}$$



Appendix G: Data (QA/QC) Evaluation



Data (QA/QC) Evaluation

A. INTRODUCTION

This Data (QA/QC) Evaluation forms part of the validation process for the DQOs documented in Section 6.1 of this report. Checks were made to assess the data in terms of precision, accuracy, representativeness, comparability and completeness. These 'PARCC' parameters are referred to collectively as DQIs and are defined in the Report Explanatory Notes attached in the report appendices.

1. Field and Laboratory Considerations

The quality of the analytical data produced for this project has been considered in relation to the following:

- Sample collection, storage, transport and analysis;
- Laboratory PQLs;
- Field QA/QC results; and
- Laboratory QA/QC results.

2. Field QA/QC Samples and Analysis

A summary of the field QA/QC samples collected and analysed for this investigation is provided in the following table:

Sample Type	Sample Identification	Frequency (of Sample Type)	Analysis Performed
Intra-laboratory duplicate (soil)	SDUP1 (primary sample BH1 0-0.1m)	Approximately 7% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Inter-laboratory duplicate (soil)	SDUP2 (primary sample TP2 0-0.1m)	Approximately 7% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Trip spike (soil)	TS-S1 (1/6/22)	One for the investigation to demonstrate adequacy of preservation, storage and transport methods	BTEX
Filed blank (soil)	TB-S1 (1/6/22)	One for the investigation to demonstrate adequacy of storage and transport methods	BTEX
Rinsate (soil SPT)	FR-S1-SPT (3/6/22)	One for the investigation to demonstrate adequacy of decontamination methods	BTEX

The results for the field QA/QC samples are detailed in the laboratory summary tables (Table S9) attached to the investigation report and are discussed in the subsequent sections of this Data (QA/QC) Evaluation report.

3. Data Assessment Criteria

JKE adopted the following criteria for assessing the field and laboratory QA/QC analytical results:

Field Duplicates

Acceptable targets for precision of field duplicates in this report will be 30% or less, consistent with NEPM (2013). RPD failures will be considered qualitatively on a case-by-case basis taking into account factors such as the concentrations used to calculate the RPD (i.e. RPD exceedance where concentrations are close to the PQL are typically not as significant as those where concentrations are reported at least five or 10 times the PQL), sample type, collection methods and the specific analyte where the RPD exceedance was reported.

Field/Trip Blanks and Rinsates

Acceptable targets for field blank and rinsate samples in this report will be less than the PQL for organic analytes.

Trip Spikes

Acceptable targets for trip spike samples in this report will be 70% to 130%.

Laboratory QA/QC

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

A summary of the acceptable limits adopted by the primary laboratory (Envirolab) is provided below:

RPDs

- Results that are <5 times the PQL, any RPD is acceptable; and
- Results >5 times the PQL, RPDs between 0-50% are acceptable.

Laboratory Control Samples (LCS) and Matrix Spikes

- 70-130% recovery acceptable for metals and inorganics;
- 60-140% recovery acceptable for organics; and
- 10-140% recovery acceptable for VOCs.

Surrogate Spikes

- 60-140% recovery acceptable for general organics; and
- 10-140% recovery acceptable for VOCs.

Method Blanks

- All results less than PQL.

B. DATA EVALUATION

1. Sample Collection, Storage, Transport and Analysis

Samples were collected by trained field staff in accordance. Field sampling procedures were designed to be consistent with relevant guidelines, including NEPM (2013) and other guidelines made under the CLM Act 1997.

Appropriate sample preservation, handling and storage procedures were adopted. Laboratory analysis was undertaken within specified holding times in accordance with Schedule B(3) of NEPM (2013) and the laboratory NATA accredited methodologies.

JKE note that the temperature on receipt of soil samples was reported to be up to 10°C. JKE understand that the temperature is measured at the laboratory using an infrared temperature probe by scanning the outside of the sample container (i.e. one sample jar/container at the time of registering the samples). This procedure is not considered to be robust as there is a potential for the outside of the jar to warm to ambient temperature, or at least to increase from that of the internal contents, relatively quickly. On this basis, JKE is of the opinion that the temperatures reported on the Sample Receipts are unlikely to be reliable or representative of the overall batch. This is further supported by the trip spike recovery results (discussed further below) which reported adequate recovery in the range of 89% to 100%.

Whilst it could be argued that 11% loss of volatiles may have led to these contaminants being under-reported (i.e. the lower end of the trip spike recovery was 89%), it is noted that all BTEX results and volatile TRHs (F1 and F2) were below the PQLs and even a nominal 11% increase of TRH/BTEX concentrations in these samples would not result in exceedance of the SAC.

EnviroLab noted that the asbestos results were reported to be consistent with the recommendations in NEPM (2013), however this level of reporting is outside the scope of their NATA accreditation. In the absence of other available analytical methods for asbestos, this was found to be acceptable for the purpose of this investigation.

Review of the project data also indicated that:

- COC documentation was adequately maintained;
- Sample receipt advice documentation was provided for all sample batches;
- All analytical results were reported; and
- Consistent units were used to report the analysis results.

2. Laboratory PQLs

Appropriate PQLs were adopted for the analysis and all PQLs were below the SAC.

3. Field QA/QC Sample Results

Field Duplicates

The results indicated that field precision was acceptable. RPD non-conformances were reported for some analytes as discussed below:

- An elevated RPD was reported for TRH >C34-C40 in SDUP1/BH1 (0-0.1m);

- An elevated RPD was reported for TRH >C16-C34 in SDUP2/TP2 (0-0.1m); and
- Elevated RPDs were reported for copper, lead, mercury and nickel in SDUP2/TP2 (0-0.1m).

Values outside the acceptable limits have been attributed to results close to the PQL, or sample heterogeneity and the difficulties associated with obtaining homogenous duplicate samples of heterogeneous matrices. As both the primary and duplicate sample results were less than the SAC, the exceedances are not considered to have had an adverse impact on the data set as a whole.

Trip Blanks

During the investigation, one soil trip blank was placed in the esky during sampling and transported back to the laboratory. The results were all less than the PQLs, therefore cross contamination between samples that may have significance for data validity did not occur.

Rinsates

All results were below the PQL. This indicated that cross-contamination artefacts associated with sampling equipment were not present and the potential for cross-contamination to have occurred was low.

Trip Spikes

The results ranged from 89% to 100% and indicated that field preservation methods were appropriate.

4. Laboratory QA/QC

The analytical methods implemented by the laboratory were performed in accordance with their NATA accreditation and were consistent with Schedule B(3) of NEPM (2013). The frequency of data reported for the laboratory QA/QC (i.e. duplicates, spikes, blanks, LCS) was considered to be acceptable for the purpose of this investigation.

A review of the laboratory QA/QC data identified the following minor non-conformances:

- Lab report No 297823: A 500ml sample was not supplied for asbestos analysis for the sample 297823 (TP6 0-0.1m). Therefore, a 40g sample was collected from the glass sampling jar and analysed for asbestos.
- Lab report No 297823-A:
 - CEC – high spike recovery was obtained for the sample BH7 (0.15-0.3m). The sample was re-digested and re-spiked and the low recovery was confirmed. The lab indicated that this was due to matrix interference and that acceptable recovery was obtained for the LCS; and
 - pH – the sample BH7 (0.15-0.3m) was outside of the recommended holding time for pH analysis.

JKE is of the opinion that the laboratory QA non-conformances were minor and were not considered to adversely impact the overall accuracy or precision of the dataset. All laboratory duplicate and triplicate results were assessed against the SAC.



C. DATA QUALITY SUMMARY

JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

Non-conformances were reported for some field QA/QC samples and laboratory QA/QC analysis. These non-conformances were considered to be sporadic and minor, and were not considered to be indicative of systematic sampling or analytical errors. On this basis, these non-conformances are not considered to materially impact the report findings.



Appendix H: Guidelines and Reference Documents



Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). Acid Sulfate Soils Manual

Australian and New Zealand Environment Conservation Council (ANZECC), (2000). Australian and New Zealand Guidelines for Fresh and Marine Water Quality

Canadian Council of Ministers of the Environment, (1999). Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)

CRC Care, (2011). Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document

Contaminated Land Management Act 1997 (NSW)

Department of Land and Water Conservation, (1997). 1:25,000 Acid Sulfate Soil Risk Map Series

Managing Land Contamination, Planning Guidelines SEPP55 – Remediation of Land (1998)

National Health and Medical Research Council (NHMRC), (2021). National Water Quality Management Strategy, Australian Drinking Water Guidelines 2011

NSW Department of Environment and Conservation, (2007). Guidelines for the Assessment and Management of Groundwater Contamination

NSW EPA, (1995). Contaminated Sites Sampling Design Guidelines

NSW EPA, (2014). Waste Classification Guidelines - Part 1: Classifying Waste

NSW EPA, (2015). Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997

NSW EPA, (2017). Guidelines for the NSW Site Auditor Scheme, 3rd Edition

NSW EPA, (2020). Consultants Reporting on Contaminated Land, Contaminated Land Guidelines

National Environment Protection Council (NEPC), (2013). National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)

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

Protection of the Environment Operations Act 1997 (NSW)

State Environmental Planning Policy (Resilience and Hazards) 2021 (NSW)

World Health Organisation (WHO), (2008). Petroleum Products in Drinking-water, Background document for the development of WHO Guidelines for Drinking Water Quality

Western Australia Department of Health, (2021). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia