CONSULTING EARTH SCIENTISTS

DETAILED SITE INVESTIGATION

56-58 BEANE STREET GOSFORD

PREPARED FOR ROOT PARTNERSHIPS PTY LTD

CES DOCUMENT REFERENCE: CES181201-RPS-AB

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EXECUTIVE SUMMARY

Consulting Earth Scientists Pty Ltd (CES) was commissioned by Root Partnerships Pty Ltd (the Client) to carry out a Detailed Site Investigation (DSI) at a site situated at 56-58 Beane Street, Gosford NSW. The DSI was required for due diligence and design purposes for potential redevelopment of the Site by the construction of a 7 to 8 storey residential building with a single level basement carpark.

The site is legally described as Lots 31 and 32 Section 4 in Deposited Plan (DP) 1591. The site location is presented as Figure 1, with a general site layout plan presented as Figure 2.

This detailed site investigation has been prepared to assist with the identification of potential areas of environmental concern arising from the sites historical use, and to identify any potential contamination which may have occurred at the site, and to assess the suitability of the site, with respect to contamination, for the proposed residential land use.

To complete the DSI, CES carried out the following scope of works:

- Desk top review of pertinent information relating to the site:
- Completion of a site walkover across the accessible areas of the site by a Senior CES Environmental Engineer to assess and identify present and past recognised environmental conditions (potential contaminating activities or substances), current landforms and site conditions, offsite land uses and to assist with the development of a Conceptual Site Model;
- Completion of an intrusive soil investigation and sampling programme which comprised:
- Preparation of a preliminary conceptual site model (CSM) in accordance with the *National Environmental Protection Measures (Assessment of Site Contamination) Measure 1999 – Schedule B2* (NEPC), 2013); and
- Preparation of this Detailed Site Investigation Report prepared in general accordance with the *Guidelines for Consultants Reporting on Contaminated Sites* (NSW Office of Environment and Heritage (OEH), 2011) which presents the information collected as part

of the desktop assessment, site walk over, soil sampling programme and presents a site specific CSM, and makes outline recommendations with respect to further investigation, remediation or contamination management as required.

The desk top assessment of the site history indicated that the site had the potential to have been impacted through historic filling associated with previous development, and construction and demolition works associated with the previous residential development. Historical title information indicating that previous ownership of the site included a blacksmith and a sawmiller are considered to represent the professions of the previous owners, rather than being representative of the historical activities undertaken at the site, due to the historical aerial photograph review which did not identify commercial/industrial activities at the site.

The site walkover assessment did not identify any evidence of contamination or contaminating activities being undertaken at the site. The site was being utilised as a car park at the time of the fieldwork. During the site walkover a small (80x50 mm) fragment of bonded ACM was observed on the site surface near the centre of the southern site boundary, adjacent to Beane Street. Laboratory analysis confirmed the presence of Chrysotile asbestos fibres contained within a fibre cement matrix.

Field screening and laboratory analysis of samples collected during the intrusive investigation did not detect any evidence of significant contamination, or contaminants in excess of the conservative Tier 1 human health and ecological risk screening criteria, therefore soil and fill underlying the site are considered to be a low risk to human health and the environment.

Based on the investigation results there is a low risk that the site has been contaminated based on current or historic land use, and the site is likely to be suitable for the proposed high-density residential land use.

DETAILED SITE INVESTIGATION

56-58 BEANE STREET GOSFORD

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

ACM	Asbestos Containing Material
AHD	Australian Height Datum
ASS	Acid Sulfate Soil
BTEX	Benzene, Toluene, Ethylbenzene and Total Xylenes
CES	Consulting Earth Scientists Pty Ltd
CLM	Contaminated Land Management
CoPC	Contaminants of Potential Concern
DECCW	Department of Environment and Climate Change and Water
DLWC	Department of Land and Water Conservation
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
km	Kilometre
LGA	Local Government Area
LPI	Land and Property Information Division
LEP	Local Environmental Plan
m	Metre
mbgl	metres Below Ground Level
MPS	Munmorah Power Station
NEPM	National Environment Protection Measure
NSW	New South Wales
OCP	Organochlorine Pesticide
PAH	Polycyclic Aromatic Hydrocarbon
PSI	Preliminary Site Investigation
PSP	Project Safety Plan
TRH	Total Recoverable Hydrocarbons
UST	Underground Storage Tank
VOC	Volatile Organic Compounds

1 INTRODUCTION

Consulting Earth Scientists Pty Ltd (CES) was commissioned by Root Partnerships Pty Ltd (the Client) to carry out a Detailed Site Investigation (DSI) at a site situated at 56-58 Beane Street, Gosford NSW. The DSI was required for due diligence purposes and design purposes for potential redevelopment of the Site by the construction of a 7 to 8 storey residential building with a single level basement carpark.

The site is legally described as Lots 31 and 32 Section 4 in Deposited Plan (DP) 1591. The site location is presented as Figure 1, with a general site layout plan presented as Figure 2.

This DSI has been prepared to assist with the identification of potential areas of environmental concern arising from the sites historical use, and to identify any potential contamination which may have occurred at the site, and to assess the suitability of the site, with respect to contamination, for the proposed high density residential land use.

This report has been prepared in general accordance with the applicable legislation and guidelines including but not limited to:

- *Guidelines for Consultants Reporting on Contaminated Sites* (NSW Office of Environment and Heritage (OEH), 2011);
- *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM International E1527-13, 2014);
- *National Environmental Protection Measures (Assessment of Site Contamination) Measure 1999 – Schedule B2* (NEPC), 2013); and
- *Contaminated Land Risk Assessment, A Guide to Good Practice* (CIRIA, Document C552, 2001).

2 SCOPE OF WORK

To complete the DSI, CES carried out the following scope of works:

- Desk top review, which included a review of the following information:
    - Historical aerial photographs;
    - Topography maps;
    - Site geology and soil maps;
    - Acid Sulfate Soils Risk Maps;
    - Hydrology;
    - Hydrogeological information;
    - Site zoning;
    - Water NSW groundwater bore database;
    - SafeWorks NSW Hazardous Goods Storage Database;
    - Historical Title information;
    - Site plans, including construction drawings and site layout plans; and
    - Contaminated land records and environment protection licence (EPL) database.
- Completion of a site walkover across the accessible areas of the site by a Senior CES Environmental Engineer to assess and identify present and past recognised environmental conditions (potential contaminating activities or substances), current landforms and site conditions, offsite land uses and to assist with the development of a Conceptual Site Model;
- Completion of an intrusive soil investigation and sampling programme which comprised:
    - Preparation of a project specific Project Safety Plan (PSP), sufficient for both the environmental and geotechnical drilling scopes.
    - Review of Dial Before You Dig (DBYD) services plans.
    - Drilling of six (6) boreholes using solid flight auger/standard penetration test drilling methods.
    - Logging of boreholes by an Geo-Environmental Engineer to record detailed observation of soil characteristics. Soils were visually screened during drilling for asbestos and collected soil samples were screened using a photoionization detector (PID) to qualitatively assess for volatile organic compounds. Field screening was carried out to assess for the presence or absence of acid sulfate soils.

- Selection of soil samples based on field screening and assessment and submission of selected samples to a NATA accredited laboratory for a wide range analytical suite.

- Preparation of a preliminary conceptual site model (CSM) in accordance with the *National Environmental Protection Measures (Assessment of Site Contamination) Measure 1999 – Schedule B2* (NEPC), 2013); and

- Preparation of this Detailed Site Investigation Report prepared in general accordance with the *Guidelines for Consultants Reporting on Contaminated Sites* (NSW Office of Environment and Heritage (OEH), 2011) which presents the information collected as part of the desktop assessment, site walk over, soil sampling programme and presents a site specific CSM, and makes outline recommendations with respect to further investigation, remediation or contamination management as required.

3 SITE INFORMATION

Information presented in this section is summarised from readily available information sources and the Lotsearch environmental database search site report, which is presented as Appendix A.

3.1 *SITE IDENTIFICATION*

The site is located at 56-58 Beane Street, Gosford, NSW, within the Central Coast Council Local Government Area (LGA) and comprises two lots, identified as Lots 31 and 32 Section 4 in Deposited Plan (DP) 1591. The site covers an area of approximately 0.12 hectares and is rectangular in shape. The geographical extent of the site is presented in Table 1 and presented in Figure 1:

Table 1: Geographical extent of the site (GDA 1994 MGA 56)

Corner/point of site	**Eastings**	**Northings**
Southeast corner of site	346117	6300822
Northeast corner of site	346163	6300814
Southwest corner of site	346113	6300795
Northwest corner of site	346119	6300787
Centre of site	346138	6300805

3.2 *SITE DESCRIPTION*

The site is rectangular in shape and gently slopes to the northwest (<3% slope). The site is vacant and is currently used as a commuter car park for the nearby Gosford train station. The site surface was observed to have shallow surface depressions where stormwater had ponded during rainfall on the second day of fieldwork (19 December 2018).

3.3 *SURROUNDING LAND USE*

The site is situated in an area of mixed residential and commercial land use, with the nearest residential site located adjacent to the site to the north.

The site immediate surrounding land use is presented in Table 2:

Table 2: Surrounding Land Use

Orientation	Description
North	High density residential. Closest residential receptor
West	Commercial/industrial premises. (Sports medical centre)
South	Beane Street and a commercial/industrial premise. (Dental practice)
East	Gertrude Street and low density residential.

3.4 *SENSITIVE RECEPTORS*

Sensitive receptors are presented in Table 3:

Table 3: Sensitive Receptors Onsite and Nearby

Sensitive Receptor	Receptor Type	Orientation and Distance from Site
Future Site Workers (Construction) Occupational Health	Human Health	0 m
Future Site Occupiers Residential	Human Health – High Density Residential	0 m
Current/Future Nearby Site Occupiers (offsite) Residential, Commercial/Industrial	Human Health – Low/High Density Residential, Commercial/Industrial	0 m
Narara Creek Recreational, Ecological	Human Health – Recreational; Ecological – Freshwater ecosystem	1,200 m north-west

3.5 *CURRENT AND PROPOSED SITE USE*

The site is currently vacant and used for car parking.

CES understands that the site is proposed to be developed with the construction of a 7 to 8 storey residential building with a single level basement carpark. No development plans were provided by the Client.

3.6 *SITE ZONING*

The site is zoned as R1 – General Residential in the State Environmental Planning Policy (Gosford City Centre) 2018.

3.7 *GROUNDWATER BORE SEARCH*

A total of fifty registered groundwater bores are located within 2 km of the site, with seven located within 1 km of the site the closest groundwater bore located 553 m north west of the site. Of the fifty bores, thirty four are listed as monitoring bores and have not been considered further. Of the remaining 16 bores, three are listed as test bores, eight as recreation, irrigation or stock bores, one as general use. Four bores are listed as town water supply bores, the closest of which is located 942 m north of the site. Further details on the bores are presented in Table 4:

Table 4: Nearby Groundwater Bores – Registered within 2 km of the site

Borehole ID	Authorised Purpose	Date Completed	Depth (m)	SWL (m)	Distance from site	Direction
GW100 343	Test Bore	15/3/1993	73.00	5.50	553m	North West
GW053790	Industrial	1/1/1980	42.70		639m	West
GW105399	Recreation (groundwater)	14/8/2003	48.50	6.60	847m	North West
GW201179	Monitoring Bore	12/3/2007	16.20	3.05	920m	North West
GW201677	Town Water Supply	28/6/2006	205.00	7.00	942m	North
GW201679	Irrigation, Recreation - Low Security	20/9/2004	102.00		958m	South West
GW201893	Recreation (groundwater)	8/8/2004	78.00		969m	South West
GW201689	Monitoring Bore	22/11/2007	62.00	3.60	1020m	North West

GW065029	Industrial, Recreation (groundwater)	22/12/1989	62.00		1031m	North West
GW072796	Recreation (groundwater), Test Bore	21/1/1995	90.00	9.00	1121m	West
GW107812	Monitoring Bore	2/11/2004	5.00	2.53	1219m	North
GW201054	Monitoring Bore	26/10/2007	10.50	1.50	1224m	North
GW201688	Test Bore, Town Water Supply	16/4/2005	160.00		1348m	North
GW201888	Monitoring Bore	16/2/2006	42.00		1352m	North
GW201889	Monitoring Bore	22/2/2006	150.00	4.00	1363m	North
GW201886	Monitoring Bore	8/3/2006	46.00	4.00	1366m	North
GW201885	Monitoring Bore	28/9/2005	60.00		1415m	North
GW201678	Town Water Supply	15/1/2006	165.00	4.00	1438m	North
GW201056	Monitoring Bore	5/12/2011	15.20	1.10	1449m	North
GW201180	Monitoring Bore	12/2/2006	42.00		1483m	North
GW200840	Test Bore	24/5/2010	8.00	3.00	1512m	South West
GW200838	Test Bore	12/5/2010	7.50	3.00	1512m	South West
GW200839	Test Bore	12/5/2010	7.50	3.00	1512m	South West
GW201894	Monitoring Bore	2/2/2006	144.00	2.50	1529m	North
GW201895	Monitoring Bore	2/2/2006	24.00	2.50	1531m	North
GW202285	Test Bore, Town Water Supply	11/3/2005	125.50		1614m	North
GW104667	Test Bore	3/1/2003	42.50	"12.6	1641m	West
GW201220	Monitoring Bore	24/3/2006	156.00	0"	1643m	North
GW201887	Monitoring Bore	31/3/2006	42.00	0.00	1660m	North

GW201162	Monitoring Bore, Test Bore	11/3/2005	125.50		1675m	North
GW201191	Monitoring Bore	26/10/2007	10.50		1678m	North
GW014431	Stock	1/3/1960	24.30	1.50	1754m	North West
GW202234	Monitoring Bore	7/3/2006	5.10		1768m	West
GW042838	Domestic, Irrigation, Stock	1/8/1975	29.00	1.50	1795m	North West
GW100229	Recreation (groundwater)	24/1/1993	39.00		1814m	West
GW100174	Test Bore	4/11/1992	60.00		1825m	West
GW107069	Monitoring Bore	11/10/2004	4.00		1847m	West
GW107070	Monitoring Bore	11/10/2004	5.00	1.52	1862m	West
GW107072	Monitoring Bore	11/10/2004	2.50	1.48	1897m	West
GW107071	Monitoring Bore	11/10/2004	5.00	1.22	1897m	West
GW202604	Monitoring Bore	17/10/2011	4.00	1.24	1913m	South
GW202 603	Monitoring Bore	17/10/2011	4.00		1924m	South
GW202233	Monitoring Bore	7/3/2006	5.20		1938m	West
GW107073	Monitoring Bore	12/10/2004	4.20	1.00	1939m	West
GW202602	Monitoring Bore	17/10/2011	4.00	1.12	1947m	South
GW202601	Monitoring Bore	17/10/2011	4.00		1962m	South
GW201097	Monitoring Bore	15/4/2011	6.00		1975m	South
GW202600	Monitoring Bore	17/10/2011	4.00	2.20	1987m	South
GW201095	Monitoring Bore	13/4/2011	9.00		1988m	South East
GW202607	Monitoring Bore	5/7/2012	8.20	2.70	1995m	South East

3.8 *SENSITIVE LOCAL ENVIRONMENTS*

Underground Petroleum Storage System (UPSS) environmentally sensitive zones represent areas that are likely to be vulnerable to contamination from leaking UPSS, due to geological or groundwater properties. A review of the Department of Environment, Climate Change and Water (NSW) UPSS Regulation – Sensitive Zones Map (2010) (Gosford City Council) shows that the site is located within an UPSS environmentally sensitive zone.

UPSS environmentally sensitive zones have been identified by the NSW EPA through a risk-based approach to protecting sensitive environmental receptors. They represent a conservative assessment of areas that are likely to be vulnerable to contamination from leaking UPSS (due to geology or groundwater properties), or in close proximity to vulnerable environmental receptors (such as national parks and anything that is likely to be adversely affected by contaminated groundwater, e.g. groundwater bores, rivers, lakes, etc.).

3.9 *GEOLOGY*

A review of the Gosford Lake Macquarie Sheet 9131/9231 1:100000 geological map indicates that the site is underlain by Mid -Triassic Interbedded Laminite shale and quartz to lithic quartz sandstone, minor red claystone of the Narrabeen Group.

The 1:250000 geological map from the NSW Department of Industry, Resources & Energy (presented in the Lotsearch report) indicates that the site is underlain by Quaternary undifferentiated alluvial deposits; sand silt, clay and gravel; some residual and colluvial deposits, including some channel, levee, lacustrine , floodplain and swamp deposits.

3.10 *SOILS*

A review of the Gosford Lake Macquarie Sheet 9131/9231 1:100000 soil landscape map indicates that the site is underlain by erosional landscapes of the Erina group.

3.11 *ACID SULFATE SOILS*

With reference to the Gosford Acid Sulphate Soils Risk Map (Department of Natural Resources (CJ Murphy, 1997, Edition 2, 1:25,000), the site is situated in an area of no known occurrence of acid sulfate soils: "*Acid sulfate soils are not known or expected to occur in these environments"*

With respect to the State Environmental Planning Policy (Gosford City Centre) 2018 the site is situated on Class 5 land, which indicates that an Acid Sulfate Soils Management Plan is required for:

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

It is noted that no Class 1, 2, 3, or 4 land is located within 500 m of the site, and as such Acid Sulfate Soils are not considered further.

3.12 *HYDROGEOLOGY*

A review of the Hydrogeology Map of Australia, Commonwealth of Australia (Geoscience Australia) indicates that the site is likely to be underlain by porous, extensive aquifers of low to moderate productivity.

3.13 *HYDROLOGY*

Based on site observations, stormwater is likely to flow to the northwest. A stormwater drain is located at the western site boundary, running north/south, parallel to the site boundary, as shown on the DBYD plan presented as Appendix B. The closest downgradient water body was identified to be Nagara Creek.

3.14 *TOPOGRAPHY*

The topography of the site is generally flat, gently slopes to the northwest (<3% slope). The site is situated between 20 to 24 m AHD.

3.15 *METEOROLOGY*

The site is located approximately 25 km south west of the former Commonwealth Bureau of Meteorology Norah Head Lighthouse weather station. The following climatic information was obtained from this data source, based on data recorded from 1971 to 2005:

- Mean monthly rainfall was variable throughout the year, with rainfall being highest during February (142.0 mm) and lowest during August (70.7 mm);
- Highest mean temperatures (recorded at 3 pm) occur during the months of December to March (mean maximum 22.9 to 23.8 degrees Celsius); and
- Cooler temperatures (recorded at 9 am) occur during the months of June to August (mean temperature 12.4 to 13.8 degrees Celsius).

The Commonwealth Bureau of Meteorology Norah Head automatic weather station is located 0.1 km from the former Commonwealth Bureau of Meteorology's Norah Head Lighthouse weather station and presents more recent climate data. The following climatic information was obtained from this data source, based on data recorded from 1989 to 2017:

- Mean monthly rainfall is variable throughout the year, with rainfall being highest during June (146.7 mm) and lowest during October (55.0 mm);
- Highest mean temperatures (recorded at 3 pm) occur during the months of November to March (mean maximum 23.7 to 26.0 degrees Celsius); and
- Cooler temperatures (recorded at 9 am) occur during the months of June to August (mean temperature 12.8 to 14.5 degrees Celsius).

No evapotranspiration data is available for the former Commonwealth Bureau of Meteorology Norah Head Lighthouse weather station or Commonwealth Bureau of Meteorology Norah Head automatic weather station, or any other nearby weather station.

4 SITE HISTORY

A summary of the site history information is presented below.

4.1 *TITLE RECORDS*

A summary of historical site ownership determined from the title records is presented in Table 5. Historic Title information is presented as Appendix C.

Table 5: Historical Title Information

(Lot 31 Section 4 DP 1591)	
1988 – todate	New South Wales Land and Housing Corporation (previously The Housing Commission of New South Wales)
	(Lot 31 Section 4 DP 1591 – CTVol 10433 Fol 102)
1966 – 1988	The Housing Commission of New South Wales
	(Lots 27 to 32 Section 4 DP 1591 – Area 3 Roods 16 Perches – CTVol 5364 Fol 105)
1943 – 1966	Robert Gosford Kirkness, sawmiller
1943 – 1943	Arthur Leonard Crick, carpenter
	(Lots 26 to 32 Section 4 DP 1591 and other land – Area 3 Acres 1 Rood 8 ½ Perches – CTVol 2200 Fol 128)
1911 – 1943	James Kibble, blacksmith
(Lot 32 Section 4 DP 1591)	
1988 – todate	New South Wales Land and Housing Corporation *(previously The Housing Commission of New South Wales)*
	(Lot 32 Section 4 DP 1591 – CTVol 10433 Fol 103)
1966 – 1988	The Housing Commission of New South Wales
	(Lots 27 to 32 Section 4 DP 1591 – Area 3 Roods 16 Perches – CTVol 5364 Fol 105)

1943 – 1966	Robert Gosford Kirkness, sawmiller
1943 – 1943	Arthur Leonard Crick, carpenter
	(Lots 26 to 32 Section 4 DP 1591 and other land – Area 3 Acres 1 Rood 8 ½ Perches – CTVol 2200 Fol 128)
1911 – 1943	James Kibble, blacksmith

The ownership of the site by a blacksmith, carpenter and a sawmiller presents the risk that industrial processes may have been previously undertaken at the site, which have the potential to impact the site and pose a risk to human health and the environment.

4.2 *REVIEW OF HISTORICAL AERIAL PHOTOGRAPHS*

A review of the historical aerial photographs available for site is presented as Table 6. The table includes an assessment of the site and the surrounding land for each historical aerial photograph. The aim of the review of is to identify potential sources of contamination other than those present at the time of the site walkover.

Table 6: Historical Aerial Photograph Review

Year	Description
1954	The site consists of a single structure, which appears likely to be a residential dwelling. The remained of the site is undeveloped. The surrounding land use appears to be low density residential, with the exception of the site located adjacent to the northern boundary of the site, which appears to consist of a large commercial/industrial structure. Beane Street and Gertrude Street are located adjacent to the southern and eastern site boundaries respectively.
1965	The site and its surrounds appear unchanged from the 1954 photograph.
1976	The site appears to have been redeveloped since the 1965 photograph. The site now contains a single structure (possibly high density residential) which occupies the central area of the site, including the previously undeveloped area of the site. The site surrounds appear unchanged, with the exception of the adjacent site to the north, which previously contained a commercial/industrial structure, which is now vacant, and a commercial/industrial structure has been constructed to the south of the site, on previously undeveloped land.
1982	The site and its surrounds appear unchanged from the 1976 photograph.

Year	Description
1984	The site and its surrounds appear unchanged from the 1982 photograph.
1991	The site and its surrounds appear unchanged from the 1984 photograph, with the exception of the adjacent site to the north (previously vacant), which no contains a single structure which occupies the majority of the site (possibly high density residential)
2007	The site and its surrounds remain unchanged from the 1991 photograph, with the exception of a residential development to the east of the site (previously residential), and a commercial industrial development and car park to the west of the site.
2010	The site is now vacant, with the single structure which was previously located on the site demolished. The site surrounds are unchanged from the 2007 photograph.
2018	The site and its surrounds appear unchanged from the 2010 photograph.

Based on the review of historic aerial photographs there is a potential for the site to have been impacted by previous developments, most likely due to the potential of historic filling and demolition of structures with the potential to contain hazardous building materials. It is unlikely that the site was subject to significant industrial processes based on the aerial photographs.

4.3 *DANGEROUS GOOD STORAGE*

To be confirmed.

CES is waiting for a response from SafeWork NSW. On receipt of the information, this report will be updated.

4.4 *NSW CONTAMINATED SITE REGISTER*

The site is not listed on the NSW EPA Contaminated Sites Register.

No sites within a 150 m buffer of the site are listed on the NSW EPA Contaminated Sites Register.

4.5 *NSW PFAS INVESTIGATION PROGRAMME*

The site is not listed on the NSW EPA PFAS Investigation Programme.

No sites within a 150 m buffer of the site are listed on the NSW EPA PFAS Investigation Programme.

5 PRELIMINARY CONCEPTUAL MODEL

5.1 *POTENTIAL SOURCES OF CONTAMINATION*

From a review of the available information relating to the site and surrounding area, there is a potential for the site to have been impacted by the previous activities at the site:

- The site may have been subject to filling for the purposes of previous developments;
- Previous structures at the site which have been demolished may have contained hazardous building materials, with the potential to impact near surface soils; and
- The site may have been subject to industrial processes due to the ownership information provided in the historic title information, however, based on the aerial photograph review it appears that the title information relates to the occupation of the site owners, rather than the processes undertaken at the site and the risks are considered to be low, and is therefore not considered further.

Onsite:

- Fill material of unknown origin; and
- Hazardous building materials in near surface soils.

Surrounding:

The surrounding land use in the immediate vicinity (in particular to the north) of the site is residential, with some light commercial use. As such, there is a low risk of off-site contamination adversely impacting the soil or groundwater underlying the subject site or the suitability of the site for the proposed future use.

5.2 *CONTAMINANTS OF POTENTIAL CONCERN (COPC)*

Contaminants of Potential Concern (CoPC) associated with the site are:

<u>Fill Materials of unknown origin:</u>

The COPCs for fill materials that may be encountered onsite are presented below based on a broad range of potential contaminants.

- Petroleum Hydrocarbons (analysed as TRH);
- Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAHs);

- Organochlorine Pesticides (OCP);
- Polychlorinated Biphenyls (PCBs);
- Arsenic, cadmium, copper, lead, mercury and zinc (common metals); and
- Asbestos.

Developments containing hazardous building materials (including demolition):

The COPCs for developments containing hazardous building materials are presented below;

- Lead; and
- Asbestos.

5.3 *POTENTIAL PATHWAYS*

The pathways through which contaminants may reach receptors are in part dependent by the nature and behaviour of the contaminant. Considering the potential contamination sources and the likely subsurface conditions to be encountered on the site, the following potential pathways have been identified, taking into account the development plan:

- Direct dermal contact;
- Incidental ingestion;
- Inhalation of particulate matter (dust);
- Inhalation of vapours;
- Dissolution or suspension (leaching) from soils to groundwater; and
- Ecological exposure to impacted soil and groundwater.

Pathways not considered:

- Ingestion of impacted biota (terrestrial or aquatic);

5.4 *RECEPTORS*

Based on the proposed high-density residential development the potential receptors for the contaminants of concern are:

- Site workers (acute/short term risks);
- Future residential site users;
- Offsite residential users;

- Groundwater; and
- Aquatic ecological receptors (i.e. Narara Creek, approximately 1.2 km east of the site).

5.5 *PRELIMINARY CONCEPTUAL MODEL*

The identified potential contaminant sources, pathways and receptors have been assessed to establish plausible pollutant linkages:

- Dermal contact with impacted soils in landscaped areas by future site users;
- Dermal contact with impacted soils during construction by site workers;
- Dermal contact with impacted groundwater/surface water during construction by site workers;
- Incidental ingestion of impacted soils in landscaped areas by future site users;
- Incidental ingestion of impacted soils during construction by site workers;
- Incidental ingestion of impacted groundwater/surface water during construction by site workers;
- Inhalation of particulate matter (asbestos or contaminated soil) by future site users;
- Inhalation of particulate matter (asbestos or contaminated soil) during construction by site workers;
- Inhalation of volatile contaminant from soil/groundwater by future site users (indoor and outdoor);
- Inhalation of volatile contaminant from soil/groundwater by site workers during construction (indoor and outdoor);
- Contamination of groundwater through the downward migration of leachable contaminants;
- Potential contamination of surface water (Narara Creek) could occur through downward and lateral migration of leachable/soluble contaminants;
- Terrestrial biota uptake of contaminants from soils or groundwater; and
- Aquatic biota uptake of contaminants from surface water.

In summary, a number of potential pollutant linkages are present, which require further assessment.

6 DATA QUALITY OBJECTIVES

The DQO process is a seven-step iterative planning approach that is used to define the type, quantity and quality of data needed to inform decisions relating to the environmental condition of a site.

The preliminary conceptual site model is presented as Section 5 of this report.

6.1 *STEP 1 – STATE THE PROBLEM*

This step comprises a summary of the environmental impact that will require new environmental data and identifies the resources required to resolve the issue.

The problem is:

The site history assessment has indicated that potentially contaminating activities have occurred at the site through previous development of the site. In consideration of the above, further information is required to assess the suitability of the site for the proposed use.

The objective is:

To provide information on concentrations of the identified contaminants of concern in the site soils to assess whether the site is suitable for the proposed development.

The project team comprised Mark Challoner (Principal Environmental Scientist) (Project Manager /peer review), with Tristan Goodbody (Senior Environmental Engineer) with responsibility for technical reporting and Henry Noakes (Geo-environmental Engineer) as the field team. The Sub-contract analytical laboratory was Envirolab, and drilling services were provided by Numac.

The appropriate regulator is the Central Coast Council.

The preliminary conceptual site model is detailed in Section 5.

6.2 *STEP 2 – IDENTIFY THE DECISION STATEMENT*

This step comprises the identification of decisions that need to be made about the impact and the new environmental data required to make them.

- Are contaminant concentrations present in soil above the relevant Tier 1 guideline criteria?

- If contaminants are present in soil above the relevant guideline criteria does a complete source – exposure pathway – receptor link exist, or will exist during and following the proposed development works;
- What further investigation or remediation works should be carried out to remove/manage the identified complete source – exposure pathway – receptor linkages;

It is expected that by resolving these questions, it will be possible to further develop the preliminary CSM presented in Section 5 and assess the suitability of the site for the proposed development.

6.3 *STEP 3 – IDENTIFY INPUTS TO THE DECISION*

This step involves the identification of the information required to support any decision and whether any new environmental data will be required.

- Soil laboratory analytical data collected, field observations and measurements made during field work;
- The contaminants of concern are as follows:
    - Petroleum Hydrocarbons (analysed as TRH);
    - Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX);
    - Polycyclic Aromatic Hydrocarbons (PAHs);
    - Organochlorine Pesticides (OCP);
    - Polychlorinated Biphenyls (PCBs);
    - Arsenic, cadmium, copper, lead, mercury and zinc (common metals); and
    - Asbestos.
- Adopted Tier 1 screening criteria presented in the ASC NEPM (NEPC 2013) relevant for the proposed land use area of the site. The adopted screening criteria are presented in Section 8.

6.4 *STEP 4 – DEFINE THE STUDY BOUNDARIES*

This step involves the spatial and temporal aspects of the environmental media that the data must represent to support the decision (s).

- Lateral as defined by the lot boundaries shown on Figure 2, and in the Plan of Subdivision of Lots 31 and 32 Section 4 DP 1591;

- Vertical 8 m below existing ground level was considered sufficient for the assessment to enable the construction of one basement level, and any potential localised deeper excavations;
- Temporal – This project involves the collection of spot sampling at the recommended locations. As a result, it will be representative of a single moment in time and as such, will be subject to climatic and anthropogenic activities at that point or related to human activities that have occurred up to that point at the particular sampling location and therefore may not be representative of long term concentrations;

6.5 *STEP 5 – DEVELOP THE DECISION RULE*

This step comprises defining the parameter of interest, specifying the action level and integrating Step 1 to 4 into a single statement that gives a logical basis for choosing between alternative actions.

- The acceptable limits for the QA/QC samples collected during the investigation are presented in Table D1 presented in Appendix D;

  A decision on the acceptance of the analytical data will be made on the basis of the Data Quality Indicators (DQI) in the context of the PARCC parameters as follows.

  - Precision: A quantitative measure of the variability (or reproducibility) of data;
  - Accuracy: A quantitative measure of the closeness of reported data to the "true" value;
  - Representativeness: The confidence (expressed qualitatively) that data is representative of each media present on the site;
  - Completeness: A measure of the amount of useable data from a data collection activity; and
  - Comparability: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.
- To conclude the decision, the assessment decision rules must be met. The results of sampling and analysis of soil must meet the following criteria:

  - The calculated 95% Upper Confidence Level value (95%UCL) for COPCs do not exist in soil samples at concentrations in excess of Tier 1 Assessment Criteria;
  - the standard deviation of the results should be less than 50% of the relevant investigation or screening level; and,
  - No single analytical result for a COPC should exceed 250% of the relevant investigation level or screening level.
- The results of the asbestos analyses must meet the following criteria:

- No observed Asbestos Containing Material (ACM) on site surface and no detections in excess of 0.04% w/w;
- No detections of fibrous asbestos/asbestos fines in excess of 0.001%.

6.6 *STEP 6 – SPECIFY LIMITS ON DECISION ERRORS*

This step involves specifying the decision-maker's acceptable limits on decision errors.

The acceptable limits on decision error to be applied in the investigation have been developed based on Data Quality Indicators of precision, accuracy, representativeness, comparability and completeness.

The tolerable limits on decision errors are the probability that 95% of data will satisfy the DQI's, therefore a limit on the decision error will be 5% that a conclusive statement may be incorrect.

In applying statistical analysis to a data set:

- The calculated 95% Upper Confidence Level value (95%UCL) for COPCs concentrations in soil samples should not exceed the Tier 1 Assessment Criteria;
- No single analytical result for a COPC should exceed 250% of the relevant investigation level or screening level; and
- The standard deviation of the results should be less than 50% of the relevant investigation or screening level

The potential for significant decision errors can be minimised by completing a robust Quality Analysis and Quality Control (QA/QC) program and by designing a sampling programme that includes appropriate sampling and analytical density for the purposes of the investigation.

6.7 *STEP 7 – OPTIMISE THE FIELDWORK PROGRAM DESIGN*

The optimised fieldwork program that was executed is presented as Section 7.

7 FIELDWORK PROGRAMME

7.1 *SITE WALKOVER ASSESSMENT*

A site walkover assessment was undertaken to assess and identify present and past recognized environmental conditions (potential contaminating activities or substances), current landforms and site conditions. The site walkover was undertaken on a grid, with transect lines approximately 15 m apart.

7.2 *INTRUSIVE INVESTIGATION*

7.2.1 Sample Density

Six sample locations were assessed as part of the fieldwork programme to comply with the sample density prescribed by Table A of the NSW EPA (1995) Sampling Design Guidelines for a site 0.12 ha in size.

7.2.2 Sample Pattern

Sample locations were selected on a regular grid pattern, to ensure site coverage and since no specific areas of environmental concern were identified as part of the preliminary conceptual site model. Sample locations are presented as Figure 2.

7.2.3 Sample Depth

Samples were collected from near surface sample points and through the soil profile at regular intervals.

7.2.4 Sample Analysis Schedule

The submitted analysis schedule is presented in Table 7.

7.2.5 Field Screening

Field screening of samples were carried out by a combination of olfactory and visual contamination indications such as odours, staining or the presence of building rubble etc and using a photoionisation detector (PID) to screen for volatile organic compounds. The PID was bump tested a minimum of twice per day.

In accordance with ASC NEPM (NEPC 2013), Schedule B (2) Section 11.3.2, field screening of 10 L soil samples for asbestos was carried out at all sample locations from near surface soils.

7.2.6 Method of Sample Collection

Care was taken to ensure that representative samples were obtained and that the integrity was maintained, particularly when dealing with potentially volatile or semi-volatile compounds. Specific sampling procedures for each method of collection are provided below in following sections.

7.2.7 Sample Collection

Samples were collected directly from Standard Penetration Test (SPT) tubes or directly from the site surface using new nitrile gloves for each sample and placing the soil directly into laboratory supplied containers.

7.2.8 Decontamination Procedures

Dedicated sampling equipment (new nitrile gloves) and laboratory prepared sample containers were used. The SPT tube was decontaminated using a combination of Decon 90 and potable water.

7.2.9 Sample Containers

Soil sample containers comprised glass jars with Teflon lined lids and zip locked bags supplied by either the primary laboratory. The jars were completely filled leaving no headspace, labelled with the job number, date, unique sampling point identification and initials of the project environmental scientist/engineer.

7.2.10 Method of Sample Storage and Handling

The samples were immediately placed in an esky/cool box in which ice has been added, to keep the samples cool. The samples in the cool box were then transported to the laboratory.

7.2.11 Sample Logging

A log of boreholes and soil samples collected were completed during fieldwork by a qualified geo-environmental engineer. The log records the following data:

- Sample number and depth;
- Soil classification, colour, consistency or density, odour and moisture content;
- Groundwater colour, odour, suspensions;
- Depth of excavation;

- Method of excavation; and
- The depth of first encountered free water.

7.2.12 QA/QC Documentation

While on site, the supervising engineer filled out a copy of a 'sample register', which documents:

- Time of sample collection;
- Weather;
- Unique sample identification number; and
- Sample location and depth.

All samples were classified in the field based on soil/fill/groundwater characteristics and obvious signs of contamination such as discolouration or odour were noted on the field logs.

All samples, including QC samples, were transported to the primary and check laboratories under Chain-of Custody (COC) procedures and maintained in an ice-filled cooler. The following details were recorded on the COC form:

- Site identification;
- The sampler;
- Nature of the sample;
- Collection time and date;
- Analyses to be performed;
- Sample preservation method;
- Departure time from site; and
- Dispatch courier(s).

8 SITE ASSESSMENT CRITERIA

Tier 1 Screening Criteria to be used for the assessment of the analytical data are presented below. These are generic assessment criteria derived from standard land uses and exposure settings and, as such, are inherently conservative. These Tier 1 criteria are to form the basis for assessment of the suitability of the site for the proposed residential development.

8.1 *SOIL INVESTIGATION AND SCREENING LEVELS*

Health investigation levels (HILs) have been developed for a broad range of metals and organic substances. The HILs are applicable for assessing human health risk via all relevant pathways of exposure and are generic to all soil types. The HILs applied to the site are, therefore, based on the future use of the site, and the site can be divided in accordance with the proposed future use. For the proposed development, the criteria applicable to high density residential with minimal access for soil access (HIL B) is the adopted Tier 1 Screening Criteria.

Health screening levels (HSLs) have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation and direct contact pathways. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures. They apply to different soil types, and depths below surface to >4 m. For multi-storey buildings where non-residential uses (e.g. car parking or commercial use) exist in a basement or at ground level, then land use category HSL-D (commercial/industrial) should be applied. Based on the proposed development at the site, there is a proposed basement car park, therefore the HSL D will apply to the site.

'Petroleum hydrocarbon management limits' ('management limits') are applicable to petroleum hydrocarbon compounds only. They are applicable as screening levels following evaluation of human health and ecological risks and risks to groundwater resources. They are relevant for operating sites where significant sub-surface leakage of petroleum compounds has occurred and when decommissioning industrial and commercial sites. As such, they are not relevant to this site and have not been used.

Ecological investigation levels/Screening Levels (EILs) have been developed for selected metals and organic substances and are applicable for assessing risk to terrestrial ecosystems. EILs/ESLs can depend on specific soil physicochemical properties and land use scenarios. EILs/ESLs apply to the top two metres of soil. For the purpose of this investigation, data will be assessed in the context of urban residential and public open space. Site specific soil physiochemical data will be used to determine EILs.

Asbestos HSL Health screening levels for asbestos in soils, which are based on scenario-specific likely exposure levels, are adopted from the Western Australia, Department of Health (WA DoH) guidelines – as prescribed in NEPM 2013. Based on the proposed end use, multi-level residential the Residential B exposure setting has been selected.

A summary of the relevant adopted Tier 1 Screening Criteria is presented in Table 8

8.2 *AESTHETICS*

Aesthetic issues generally relate to the presence of low-concern or non-hazardous inert foreign material (refuse) in soil or fill resulting from human activity (NEPC, 1999).

Site assessment may not detect contamination above human health or environmental assessment criteria, but further assessment would be required in the following circumstances:

- Highly malodorous soils or extracted groundwater (e.g. strong residual petroleum hydrocarbon odours, hydrogen sulphide in soil or extracted groundwater, organo-sulfur compounds);
- Hydrocarbon sheen on surface water;
- Discoloured chemical deposits or soil staining with chemical waste other than of a very minor nature;
- Large monolithic deposits of otherwise low-risk material, e.g. gypsum as powder or plasterboard, cement kiln dust;
- Presence of putrescible refuse including material that may generate hazardous levels of methane such as a deep-fill profile of green waste or large quantities of timber waste; and
- Soils containing residue from animal burial (e.g. former abattoir sites).

9 QUALITY ASSURANCE AND QUALITY CONTROL

The field and laboratory QA/QC programme for this project is consistent with ASC NEPM (NEPC, 2013) requirements. Laboratory Certificates of Analysis, Sample Receipt Notification, and Chain of Custody documentation is presented as Appendix E.

9.1 *FIELD QA/QC PROGRAMME*

Soil samples were collected by an experienced environmental engineer, under established CES protocols. CES personnel have been trained in sample collection and handling techniques.

For the purpose of assessing the data quality presented in this report, CES collected and analysed Quality Control (QC) samples while the laboratory completed their own QC. This section of the report focuses on the methodology used in the field investigation to ensure quality data has been collected. A discussion of the deviations from the QA/QC Acceptance Limits given in Table 1 is also provided.

9.1.1 Blind Replicate Samples

One duplicate and one triplicate sample were collected and analysed in the laboratory, which equates to a rate of >10% of primary environmental samples. This exceeds the requirements of the ASC NEPM (NEPC 2013) of 5%.

The calculated Relative Percentage Difference (RPD) for the primary sample and blind replicates are presented in Table D2. All calculated RPD conformed to the Data Acceptance Criteria (DAC) presented in Table D1.

9.2 *LABORATORY QA / QC PROGRAMME*

The reliability of test results from the analytical laboratories were monitored according to the QA/QC procedures used by the NATA accredited laboratory. The QA/QC programme employed by the NATA registered laboratories specified sample tracking procedures, methods of extraction, analysis, PQLs and acceptance criteria for results.

No laboratory QAQC outliers were reported by the laboratory.

9.3 *QAQC ASSESSMENT*

The field and laboratory QA/QC programme demonstrates that the data provided by the laboratory is representative of the properties of the samples provided by CES. The samples were collected in

accordance with established CES SOPs. The QA/QC assessment did not detect any issues with the quality of the data collected therefore CES has a high degree of confidence in the quality of the data provided, and the data within this report is representative and suitable for the assessment.

10 RESULTS

10.1 *SITE WALKOVER OBSERVATIONS*

A site walkover was undertaken by a CES Senior Environmental Engineer on 18 December 2018. Selected photographs from the site walkover are presented as Appendix F.

10.1.1 Current Use of the Site

The site is currently vacant and used as a car park.

10.1.2 General Description of Structures

No structures were observed onsite.

10.1.3 Potable Water Supply and Sewage Disposal System

No potable water supply was observed onsite.

10.1.4 Use of Petroleum Products and Hazardous Materials

No use of petroleum products or hazardous materials was observed.

10.1.5 Storage of Petroleum Products and Hazardous Materials

No bulk fuel storage was observed onsite during the site walkover.

10.1.6 Disposal of Petroleum Products and Hazardous Materials

No evidence of on-site disposal of petroleum products or hazardous materials was observed on-site during the site walkover.

No evidence of onsite disposal of drums or oils was observed.

10.1.7 Odours

No odours which could reasonably be considered to be indicative of evidence of contamination were detected during the site walkover.

10.1.8 Pools of Liquid, Leaks and Spills

With the exception of minor ponded stormwater on the site surface no pools of liquid, leaks or spills were observed during the site walkover.

10.1.9 Drums and Unidentified Substance Containers

No drums or unidentified substance containers were observed during the site walkover.

10.1.10 PCBs Associated with Electrical or Hydraulic Equipment

No PCB associated equipment were observed during the site walkover.

10.1.11 Heating and Cooling System

No heating or cooling systems were observed during the site walkover.

10.1.12 Drains and Sumps

With the exception of the stormwater drain to the west of the site, no drains or sumps were observed during the site walkover.

10.1.13 Stained Soil or Pavement

No staining was observed on soils at the site surface or observed on soils during drilling.

10.1.14 Stressed Vegetation

Vegetation observed onsite did not display signs of stress.

10.1.15 Solid Waste and Waste Filling

No evidence of solid waste or waste filling was observed during the site walkover inspection.

10.1.16 Wells

No groundwater wells were observed onsite during the site walkover.

10.1.17 Asbestos Containing Materials

No suspected Asbestos Containing Materials (ACM) were observed on-site during the site walkover, with the exception of one material fragment which was collected and submitted to the

NATA accredited laboratory for asbestos analysis (Sample identification number MAT01). The sample was observed on the site surface, near the centre of the southern boundary of the site. No further suspected ACM were observed in the vicinity or in other areas of the site.

10.1.18 Fire Fighting Chemicals

No firefighting chemicals were observed during the site walkover.

10.2 *INTRUSIVE INVESTIGATION*

10.2.1 Encountered Subsurface Conditions

Borehole logs recorded from each location are presented as Appendix G.

A subsurface model has been prepared and is presented in Table 9.

The depths of the various strata are based on the depths encountered at the borehole locations and may be different at other parts of the site. Detailed descriptions and depths of materials encountered are presented on the borehole logs included in Appendix G.

It should be noted that the depths provided in this table relate to the ground level at the time of the current geotechnical investigation in March 2018.

Table 9: Inferred Subsurface Model

Geotechnical Unit	Approximate Depth to Top of Unit (m)	Approximate Thickness (m)	Typical Description
Unit 1 – Topsoil/Fill	0	0.3 to 2.2	Silty sand, fine to medium grained with trace roots and organics, typically moist. / Sand, fine grained, trace bricks, concrete and tiles, typically dry.
Unit 2 - Alluvium	0.3 to 2.2	~10	Sandy clay, low plasticity, mottled orange/brown/grey. Sands fine grained. Trace carbonaceous organics throughout unit.
*Unit 3 – Sandstone (Class V)	~10.3	~4.1	Sandstone, coarse grained, pale grey, typically medium strength and slightly weathered with seams of high weathering and very low to low strength. Defect spacing typically less than 200mm.
*Unit 4 – Sandstone (Class III)	~14.41	Not Proven	Sandstone, medium grained, pale grey, medium strength and slightly to moderately weathered.

Geotechnical Unit	Approximate Depth to Top of Unit (m)	Approximate Thickness (m)	Typical Description
			Occasional carbonaceous laminations throughout rock. Defect spacing typically greater than 600mm.

Groundwater was encountered in all boreholes at depths from 6.8 to 8.9 m bgl with the exception of BH06, where groundwater was not encountered.

10.2.2 Field Screening

No soils encountered during fieldwork exhibited visual or olfactory indicators of contamination such as odours or staining.

PID screening of soils did not detect VOC in soil headspace in excess of 0.1 ppm (detection limit of the equipment). PID results are presented on borehole logs presented as Appendix G

No asbestos or suspected asbestos containing materials (ACM) were detected in 10 L soil field screening.

Acid sulfate Soil screening results are presented as Appendix H.

10.2.3 Laboratory Analysis

Laboratory Certificates of Analysis, Sample Receipt Notification, and Chain of Custody documentation is presented as Appendix E.

A summary of laboratory analysis and a comparison of the analysis results to the ASC NEPM (NEPC 2013) HIL B/HSL D for high density residential land use and EILs are presented as Table 10.

An assessment of the laboratory results indicates that the contaminants of potential concern identified in the Preliminary Conceptual Site Model do not exceed the conservative Tier 1 human health or ecological risk screening criteria.

Analysis of material fragment sample MAT01 collected from the site surface detected Chrysotile asbestos in a beige fibre cement matrix.

11 DISCUSSION

11.1 *SITE HISTORY*

The desk top assessment of the site history indicated that the site had the potential to have been impacted through historic filling associated with previous development, and construction and demolition works associated with the previous residential development. Historical title information indicating that previous ownership of the site included a blacksmith and a sawmiller are considered to represent the professions of the previous owners, rather than being representative of the historical activities undertaken at the site, due to the historical aerial photograph review which did not identify commercial/industrial activities at the site.

11.2 *SITE WALKOVER*

The site walkover assessment, undertaken on 18 December 2018 by an experienced CES Geo-Environmental Engineer, did not identify any evidence of contamination or contaminating activities being undertaken at the site. The site was being utilised as a car park at the time of the fieldwork. During the site walkover a small (80x50 mm) fragment of bonded ACM was observed on the site surface near the centre of the southern site boundary, adjacent to Beane Street. Laboratory analysis confirmed the presence of Chrysotile asbestos fibres contained within a fibre cement matrix. Further discussion on asbestos is presented below.

11.3 *INTRUSIVE INVESTIGATION*

An intrusive investigation of the site was undertaken on 18 to 20 December 2018, with six locations on a gird-based sampling pattern investigated, in accordance with the requirements of Table A of the *Sampling Design Guidelines* (NSW EPA 1995). The encountered subsurface profile is presented in Section 10.2.1. Field screening and laboratory analysis of samples did not detect any evidence of significant contamination, or in excess of the conservative Tier 1 human health and ecological risk screening criteria, therefore soil and fill underlying the site are considered to be a low risk to human health and the environment.

11.4 *ASBESTOS*

One fragment of ACM was detected during fieldwork. No asbestos or ACM were detected in soil samples collected during drilling works in both field screening and laboratory analysis. In consideration of the site walkover observations and the field screening and laboratory analysis of the intrusive investigation, the asbestos fragment is understood to present localised impact, possibly from the nearby roadway or service excavations in the nearby road reserve. With the exception of the fragment at surface, which was subsequently removed by sample collection, no

asbestos was detected. As such asbestos was not detected in excess of the Tier 1 screening criteria, and therefore the asbestos risk is low. It should be noted however, that all areas of the site surface could not be assessed due to the presence of parked cars and vegetation during fieldwork. A visual assessment of the site surface should be undertaken following the clearing of the site, to confirm that no further ACM are present on the site surface. The inspection should be undertaken following vegetation clearing and prior to any excavation works and pay special attention to the southern site boundary and the area where the ACM was previously identified. During site clearing works, personal protective equipment and good housekeeping/hygiene practices typically employed during construction projects including minimisation of generation of dust are considered appropriate to minimise the potential risk posed by additional ACM on the site surface (considered unlikely).

The potential presence of localised asbestos fragments in surface soils should be considered in the waste classification of materials to be removed from site during development.

11.5 *GROUNDWATER*

Groundwater was encountered between 6.8 and 8.9 m bgl during the intrusive investigation. The site history assessment and site walkover did not identify a history bulk fuel storage at the site, and the soil sampling programme undertaken did not detect significant contamination in site soils. Based on the above, impact to groundwater from historic use of the site was considered to be low risk. In addition, based on the historical aerial photograph review and the site visit observations nearby upgradient sites (based on likely groundwater flow towards Narara Creek) were considered unlikely to pose a significant risk to groundwater onsite.

11.6 *REVISED CSM*

A revised Conceptual Site Model is presented below.

11.6.1 Sources of Contamination

- Localised hazardous building materials (ACM) in near surface soils.

11.6.2 Contaminants of Potential Concern (CoPC)

- Asbestos.

11.6.3 Potential Pathways

- Inhalation of particulate matter (fibres/dust).

11.6.4 Receptors

- Site workers (acute/short term risks) that can be controlled by standard PPE;
- Offsite nearby site users (only during construction).

Future residential site users are not considered to be a significant receptor as all surface soil and fill are likely to be removed as part of the bulk earthworks for the single level basement car park, as such there will be no risk from asbestos fibres following development.

11.6.5 Preliminary Conceptual Model

- Inhalation of particulate matter (asbestos fibres) during construction by site workers; and
- Inhalation of particulate matter (asbestos fibres) by nearby site users.

It is noted that based on the investigation results, the likelihood of significant asbestos contamination is low. If no further asbestos or ACM are encountered during the visual inspection, it can be considered that no contamination source is present. In the absence of a source no source-pathway-receptor linkages can be present, and the risk associated with contamination at the site is low.

11.7 *SITE SUITIBILITY*

Based on the investigation results there is a low risk that the site has been contaminated based on current or historic land use, and the site is likely to be suitable for the proposed high-density residential land use.

12 LIMITATIONS OF THIS REPORT

This report has been prepared for use by the client who commissioned the works in accordance with the project brief and based on information provided by the client. The advice contained in this report relates only to the current project and all results, conclusions and recommendations should be reviewed by a competent person with experience in geotechnical and environmental investigations before being used for any other purpose. CES accepts no liability for use or interpretation by any person or body other than the client. This report must not be reproduced except in full and must not be amended in any way without prior approval by the client and CES.

This report does not provide a complete assessment of the environmental status of the site and is limited to the scope defined therein. Should information become available regarding conditions at the site including previously unknown sources of contamination, CES reserves the right to review the report in the context of the additional information.

13 REFERENCES

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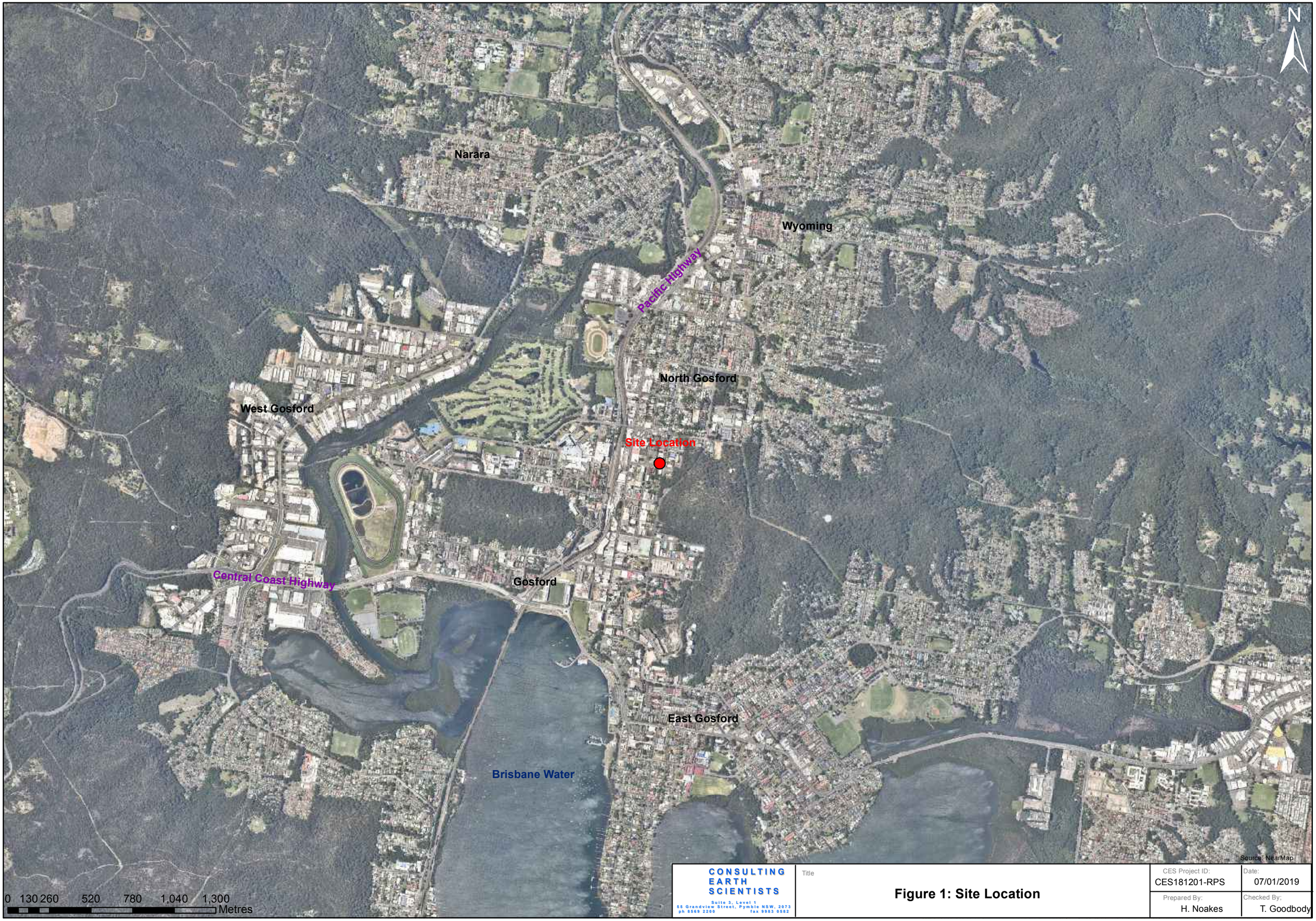
Figures



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Title

Figure 1: Site Location

CES Project ID:	Date:
CES181201-RPS	07/01/2019
Prepared By: H. Noakes	Checked By: T. Goodbody

Legend

- Borehole
- Borehole/Corehole
- Approximate Lot Boundary

N

BH06

BH03

Lot 31

BH01

Gertrude Street

BH05

Lot 32

BH04

BH02

Beane Street

0 1.25 2.5 5 7.5 10 12.5 Metres

Source: NearMap

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Title

Figure 2: Site Layout

CES Project ID:	Date:
CES181201-RPS	07/01/2019
Prepared By: H. Noakes	Checked By; T. Goodbody

Table 7: Sample and Analysis Programme					
Location	Eastings	Northings	Depth	Type	Analysis
BH01	346153.06	6300806.7	1.8-1.9	Soil Sample	TRH, BTEX, PAH, OCP, PCBs metals and asbestos (NEPM method)
BH02	346152.31	6300791.6	0.2-0.3	Soil Sample	TRH, BTEX, PAH, OCP, PCBs metals and asbestos (NEPM method)
BH03	346135.67	6300811.4	0.7-0.8	Soil Sample	TRH, BTEX, PAH, OCP, PCBs metals and asbestos (NEPM method)
BH04	346131	6300794.8	0.2-0.3	Soil Sample	TRH, BTEX, PAH, OCP, PCBs metals and asbestos (NEPM method)
BH05	346116.14	6300798.2	1.5-1.95	Soil Sample	TRH, BTEX, PAH, OCP, PCBs metals and asbestos (NEPM method)
BH06	346120.53	6300810.8	0.5-0.6	Soil Sample	TRH, BTEX, PAH, OCP, PCBs metals and asbestos (NEPM method)

Project: 56-58 Beane Street Gosford
Client: Root Partnerships Pty Ltd
CES Project Number: CES181201-RPS
Table 8: Site Assessment Criteria HIL/HSL, EIL/ESL

Parameters	Unit	PQL	EIL, Urban residential and public open space	ESL, Urban residential and public open space	Residential, Soil HIL B / HSL D	Recreational C, Soil HIL C/ HSL C
FRACTION 1	mg/kg	25		180	45	NL
Benzene	mg/kg	0.2		50	0.5	NL
Toluene	mg/kg	0.5		85	160	NL
Ethylbenzene	mg/kg	1		70	55	NL
Xylenes (total)	mg/kg			105	40	NL
Naphthalene	mg/kg	1	170		3	NL
FRACTION 2	mg/kg	50		120	110	
TRH >C16-C34	mg/kg	100		300		
TRH >C34-C40	mg/kg	100		2800		
Naphthalene	mg/kg	0.1	170		3	
Benzo(a)pyrene	mg/kg	0.05		0.6		
Benzo(a)pyrene TEQ	mg/kg	0.5			4	3
Total +ve	mg/kg	-			400	300
Total PCB	mg/kg	0.1			1	1
Arsenic	mg/kg	4	100		500	300
Cadmium	mg/kg	0.4			150	90
Chromium	mg/kg	1	360		500	300
Copper	mg/kg	1	220		30000	17000
Lead	mg/kg	1	1100		1200	600
Mercury	mg/kg	0.1			120	80
Nickel	mg/kg	1	260		1200	1200
Zinc	mg/kg	1	740		60000	30000
HCB	mg/kg	0.1			15	10
Heptachlor	mg/kg	0.1			10	10
Chlordane	mg/kg	0.1			90	70
Aldrin and Dieldrin	mg/kg	0.1			10	10
Endrin	mg/kg	0.1			20	20
Endosulfan	mg/kg	0.1			400	340
DDT (Total)	mg/kg	0.1	180			
DDT+DDE+DDD	mg/kg	0.1			600	400
Methoxychlor	mg/kg	0.1			500	400
Chlorpyriphos	mg/kg	0.1			340	250
Visual					No asbestos at surface	No asbestos at surface
ACM >7mm Estimation	g	--			0.04%	0.02%
FA and AF Estimation	%(w/w)	<0.001			0.001%	0.001%

Project: 56-58 Beane Street Gosford
Client: Root Partnerships Pty Ltd
CES Project Number: CES181201-RPS
Table 10: Soil Analytical Results - HIL/HSL, EIL/ESL Assessment

Parameters	Unit	PQL	EIL, Urban residential and public open space	ESL, Urban residential and public open space	Residential, Soil HIL B / HSL D	Recreational C, Soil HIL C/ HSL C	Sample ID	BH01	BH02	BH03	BH04	BH05	BH06
							Depth (mbgl)	1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95	0.5-0.6
							Date Sampled	18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018	20/12/2018
							Soil Unit						
							Laboratory report	208654	208654	208654	208654	208654	208654
FRACTION 1	mg/kg	25		180	45	NL		<25	<25	<25	<25	<25	<25
Benzene	mg/kg	0.2		50	0.5	NL		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	0.5		85	160	NL		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	1		70	55	NL		<1	<1	<1	<1	<1	<1
Xylenes (total)	mg/kg			105	40	NL		<1	<1	<1	<1	<1	<1
Naphthalene	mg/kg	1	170		3	NL		<1	<1	<1	<1	<1	<1
FRACTION 2	mg/kg	50		120	110			<50	<50	<50	<50	<50	<50
TRH >C16-C34	mg/kg	100		300				<100	<100	<100	<100	<100	<100
TRH >C34-C40	mg/kg	100		2800				<100	<100	<100	<100	<100	<100
Naphthalene	mg/kg	0.1	170		3			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.05		0.6				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ	mg/kg	0.5			4	3		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve	mg/kg	-			400	300		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total PCB	mg/kg	0.1			1	1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	mg/kg	4	100		500	300		<4	<4	<4	<4	<4	<4
Cadmium	mg/kg	0.4			150	90		<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	1	360		500	300		10	9	6	18	7	11
Copper	mg/kg	1	220		30000	17000		2	5	3	11	7	4
Lead	mg/kg	1	1100		1200	600		11	24	12	16	20	204.5
Mercury	mg/kg	0.1			120	80		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	260		1200	1200		1	2	<1	12	3	3
Zinc	mg/kg	1	740		60000	30000		3	45	12	24	31	120
HCB	mg/kg	0.1			15	10		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1			10	10		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	0.1			90	70		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	0.1			10	10		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	0.1			20	20		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	0.1			400	340		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT (Total)	mg/kg	0.1	180					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	mg/kg	0.1			600	400		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1			500	400		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	0.1			340	250		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
pH1:5 soil:water	pH Units							NT	NT	NT	NT	NT	7
Organic Matter	mg/kg	1000						NT	NT	NT	NT	NT	6700
Cation Exchange Capacity	meq/100g	1						NT	NT	NT	NT	NT	19
Clay in soils <2µm	meq/100g	1						NT	NT	NT	NT	NT	7
Sample mass tested	g							Approx. 35g	Approx. 20g	Approx. 25g	Approx. 25g	Approx. 25g	Approx. 25g
Sample Description	-							Orange sandy soil	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	-							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	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	No asbestos detected

Appendix A

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 18 Dec 2018 11:02:00

Reference: LS004807 EP

Address: 56-58 Beane Street, Gosford, NSW 2250

Table of Contents

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
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

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 Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	Dept. Finance, Services & Innovation	17/12/2018	17/12/2018	Daily	-	-	-	-
Topographic Data	Dept. Finance, Services & Innovation	17/07/2018	17/07/2018	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	29/11/2018	09/11/2018	Monthly	1000	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	13/12/2018	13/12/2018	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	04/12/2018	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	06/11/2018	07/03/2017	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	29/11/2018	29/11/2018	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	11/01/2018	11/01/2018	As required	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	27/11/2018	27/11/2018	Monthly	1000	0	0	3
Delicensed POEO Activities still Regulated by the EPA	Environment Protection Authority	27/11/2018	27/11/2018	Monthly	1000	0	0	2
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	27/11/2018	27/11/2018	Monthly	1000	0	0	5
UPSS Environmentally Sensitive Zones	Environment Protection Authority	14/04/2015	12/01/2010	As required	1000	1	1	1
UBD Business Directory 1982 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	19	66
UBD Business Directory 1982 (Road & Area Matches)	Hardie Grant			Not required	150	-	5	7
UBD Business Directory 1970 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	23	23
UBD Business Directory 1970 (Road & Area Matches)	Hardie Grant			Not required	150	-	28	35
UBD Business Directory 1961 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	14	14
UBD Business Directory 1961 (Road & Area Matches)	Hardie Grant			Not required	150	-	30	30
UBD Business Directory 1950 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	1
UBD Business Directory 1950 (Road & Area Matches)	Hardie Grant			Not required	150	-	9	10
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	2	25
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	2	17
Points of Interest	Dept. Finance, Services & Innovation	12/10/2018	12/10/2018	Quarterly	1000	0	0	46
Tanks (Areas)	Dept. Finance, Services & Innovation	15/10/2018	15/10/2018	Quarterly	1000	0	0	0
Tanks (Points)	Dept. Finance, Services & Innovation	15/10/2018	15/10/2018	Quarterly	1000	0	0	2
Major Easements	Dept. Finance, Services & Innovation	12/10/2018	12/10/2018	Quarterly	1000	0	0	27
State Forest	Dept. Finance, Services & Innovation	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	18/01/2018	30/09/2017	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Botany Groundwater Management Zones	NSW Department of Primary Industries	15/03/2018	01/10/2005	As required	1000	0	0	0
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	0	0	50
Geological Units 1:250,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	1	-	3
Geological Structures 1:250,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Soil Landscapes	NSW Office of Environment & Heritage	12/08/2014		None planned	1000	1	-	6
Atlas of Australian Soils	CSIRO	19/05/2017	17/02/2011	As required	1000	1	2	2
Environmental Planning Instrument - Acid Sulfate Soils	NSW Department of Planning and Environment	23/10/2018	12/10/2018	As required	500	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Office of Environment & Heritage	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	Dept. Finance, Services & Innovation	13/07/2017	01/07/2017	As required	1000	0	0	0
SEPP 14 - Coastal Wetlands	NSW Planning and Environment	17/12/2015	24/10/2008	Annually	1000	0	0	0
SEPP 26 - Littoral Rainforest	NSW Planning and Environment	17/12/2015	05/02/1988	Annually	1000	0	0	0
SEPP 71 - Coastal Protection	NSW Planning and Environment	17/12/2015	01/08/2003	Annually	1000	0	1	1
SEPP Major Developments 2005	NSW Planning and Environment	09/03/2013	25/05/2005	Under Review	1000	0	0	0
SEPP Strategic Land Use Areas	NSW Planning and Environment	01/08/2017	28/01/2014	Annually	1000	0	0	0
EPI - Land Zoning	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	1000	1	3	84
EPI - Minimum Lot Size	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	1	-	-
EPI - Height of Buildings	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	1	-	-
EPI - Floor Space Ratio	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	1	-	-
EPI - Land Application	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	0	-	-
EPI - Land Reservation Acquisition	NSW Planning and Environment	23/10/2018	12/10/2018	Quarterly	0	0	-	-
State Heritage Register - Curtilages	NSW Office of Environment & Heritage	18/10/2018	19/01/2018	Quarterly	1000	0	0	0
Environmental Planning Instrument - Heritage	NSW Department of Planning and Environment	23/10/2018	12/10/2018	Quarterly	1000	0	0	22
Bush Fire Prone Land	NSW Rural Fire Service	27/11/2018	31/07/2018	Quarterly	1000	1	2	3
Vegetation of Gosford LGA	Council of the City of Gosford / NSW Office of Environment and Heritage	08/12/2014	31/12/2009	As required	1000	0	1	7
Ramsar Wetlands	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	1	3
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	2	9
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	12/12/2018	12/12/2018	Daily	10000	-	-	-

Aerial Imagery 2018

56-58 Beane Street, Gosford, NSW 2250

Scale: 0 50 100 Meters	Data Sources: Aerial Imagery © Department Finance, Services & Innovation	Coordinate System: GDA 1994 MGA Zone 56	Date: 17 December 2018

Contaminated Land & Waste Management Facilities

56-58 Beane Street, Gosford, NSW 2250

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 (m)	Direction
N/A	No records in buffer								

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land & Waste Management Facilities

56-58 Beane Street, Gosford, NSW 2250

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority

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

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 (m)	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia

EPA PFAS Investigation Program

56-58 Beane Street, Gosford, NSW 2250

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority

EPA Other Sites with Contamination Issues

56-58 Beane Street, Gosford, NSW 2250

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 Stategy Area

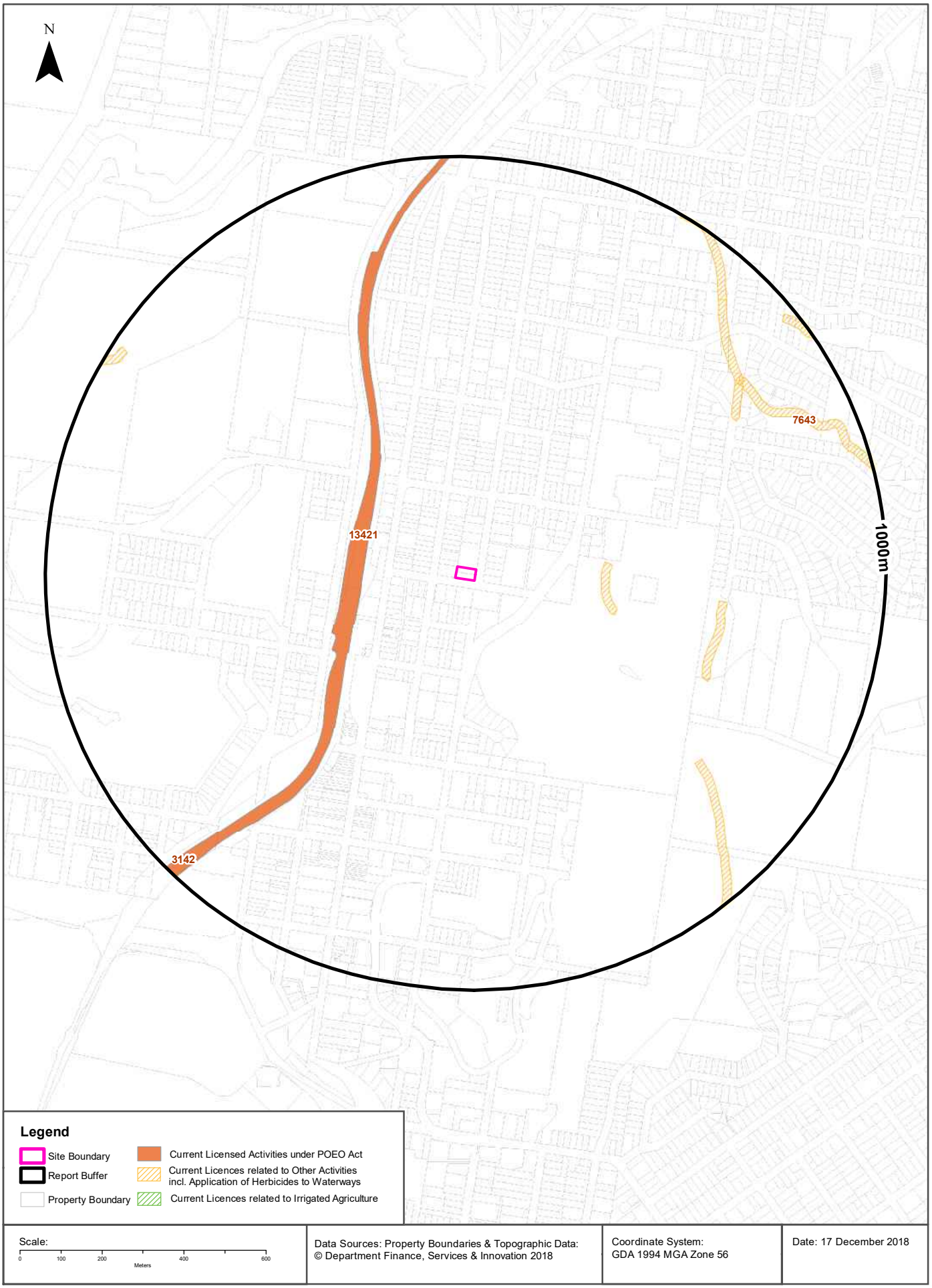
Sites within the dataset buffer:

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

Current EPA Licensed Activities

56-58 Beane Street, Gosford, NSW 2250



EPA Activities

56-58 Beane Street, Gosford, NSW 2250

Licensed Activities under the POEO Act 1997

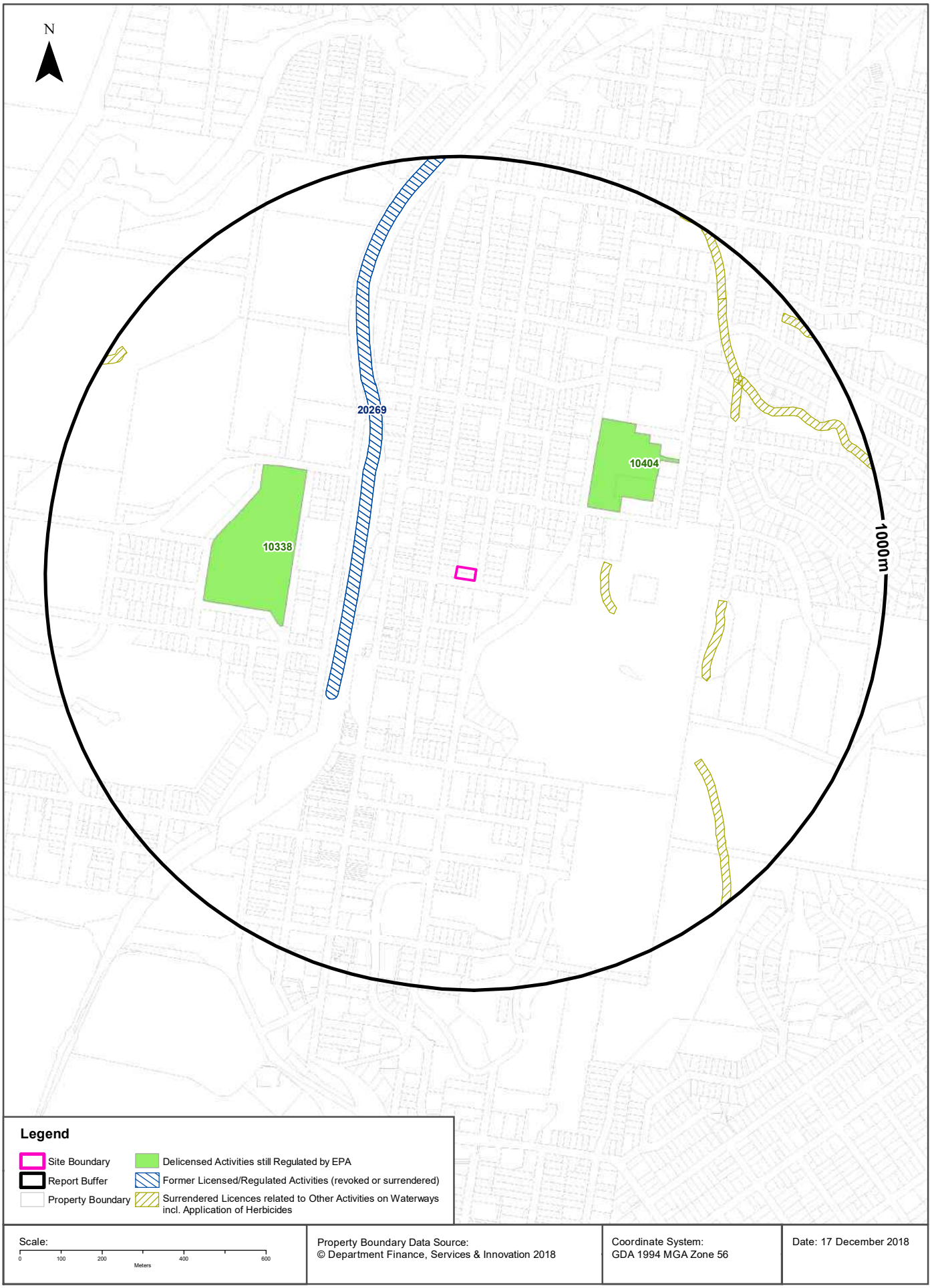
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		Australian Rail Track Corporation (ARTC) network as defined by the ARTC Network Deeds within NSW., SYDNEY, NSW 2001		Railway systems activities	Network of Features	226m	West
13421	JOHN HOLLAND RAIL PTY LTD		PO Box 215 , PARRAMATTA, NSW 2124		Railway systems activities	Network of Features	226m	West
7643	Central Coast Council	WATERWAYS OF GOSFORD CITY COUNCIL	MULTIPLE WATERWAYS, GOSFORD, NSW 2250	GOSFORD	Other activities	Network of Features	303m	East

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

56-58 Beane Street, Gosford, NSW 2250



EPA Activities

56-58 Beane Street, Gosford, NSW 2250

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
10404	HEALTHE CARE NORTH GOSFORD PTY LTD	NORTH GOSFORD PRIVATE HOSPITAL	9 BURRABIL AVENUE	GOSFORD	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	313m	North East
10338	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	GOSFORD HOSPITAL	HOLDEN STREET	GOSFORD	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	399m	West

Delicensed Activities Data Source: 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
20269	DOWNER EDI WORKS PTY LTD	Gosford Passing Loops Project, Main North Line Corridor - 2km section between Gosford and Narara Stations, GOSFORD	Surrendered	14/05/2013	Crushing, grinding or separating	Road Match	227m	North West
20269	DOWNER EDI WORKS PTY LTD	Gosford Passing Loops Project, Main North Line Corridor - 2km section between Gosford and Narara Stations, GOSFORD	Surrendered	14/05/2013	Railway systems activities	Road Match	227m	North West
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	303m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	303m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	303m	-

Former Licensed Activities Data Source: Environment Protection Authority

UPSS Sensitive Zones

56-58 Beane Street, Gosford, NSW 2250

1982 Historical Business Directory Records

56-58 Beane Street, Gosford, NSW 2250

Historical Business Directories

56-58 Beane Street, Gosford, NSW 2250

1982 Business Directory Records
Premise or Road Intersection Matches

Records from the 1982 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
JOINERY MANUFACTURERS	Parry, B. & Sons Pty. Ltd., 55 Beane St., Gosford	124470	Premise Match	43m	South West
SHOP &MR OFFICE FITTERS	Parry, B. & Sons Pty. Ltd.. 55 Beane St., Gosford	125259	Premise Match	43m	South West
STEEL FABRICATORS	Kirkness, J. E., 170 Gertrude St., Gosford	125342	Premise Match	74m	North
TRANSMISSION EQUIPMENT MFRS. &/OR DISTS	Kirkness, J. E., 170 Gertrude St., Gosford	125460	Premise Match	74m	North
MOTOR ACCESSORIES &/ OR SPARE PARTS-RETAIL	Kirkness, J. E., 170 Gertrude St., Gosford	124652	Premise Match	74m	North
PULLEY MFRS. &/OR DISTS	Kirkness, J. E., 170 Gertrude St., Gosford	125092	Premise Match	74m	North
TOOLMAKERS	Kirkness, J. E., 170 Gertrude St., Gosford	125434	Premise Match	74m	North
BALL &/OR ROLLER BEARINGS MFRS. &/OR IMPS. &/OR DISTS	Kirkness, J. E., 170 Gertrude St., Gosford	123546	Premise Match	74m	North
BEARINGS &/OR BUSH MFRS. &/OR DISTS	Kirkness, J. E., 170 Gertrude St., Gosford	123575	Premise Match	74m	North
BELTING MFRS. &./ OR IMPS. &/OR DISTS	Kirkness, J. E., 170 Gertrude St., Gosford	123577	Premise Match	74m	North
DIE & PRESS TOOL MAKERS.	Kirkness, J. E., 170 Gertrude St., Gosford	123946	Premise Match	74m	North
ENGINEERS - FABRICATING	Kirkness, J. E., 170 Gertrude St., Gosford	124073	Premise Match	74m	North
ENGINEERS - GENERAL &/ OR MANUFACTURING &/OR MECHANICAL	Kirkness, J. E., 170 Gertrude St., Gosford	124079	Premise Match	74m	North
ENGINEERS SUPPLIES	Kirkness, J. E., 170 Gertrude St., Gosford	124097	Premise Match	74m	North
GEAR CUTTERS &/OR MFRS	Kirkness, J. E., 170 Gertrude St., Gosford	124231	Premise Match	74m	North
MACHINE TOOL MFRS. &/OR IMPS. &/ OR DISTS	Kirkness, J. E., 170 Gertrude St., Gosford	124517	Premise Match	74m	North
ENGINEERS - PRECISION	Kirkness, J. G., 170 Gertrude St., Gosford	124084	Premise Match	74m	North
HIRING SERVICES	Racecourse Totalizators Pty. Ltd., 170 Gertrude St., Gosford	124368	Premise Match	74m	North
TOTALISATOR SPECIALISTS	Racecourse Totalizators Pty. Ltd., 170 Gertrude St., Gosford	125439	Premise Match	74m	North
RANGES - ELECTRIC - MFRS. &/OR IMPS. &/OR DISTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125115	Premise Match	109m	West
RANGES - FUEL &/OR SLOW COMBUSTION - MFRS. &/OR IMPS. &/OR DISTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125117	Premise Match	109m	West
SEED MERCHANTS.	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125242	Premise Match	109m	West
MOTOR CAR &/OR TRUCK DEALERS - NEW &/OR USED.	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124699	Premise Match	109m	West

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
MOTOR CYCLE IMPS. &/ OR DISTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124725	Premise Match	109m	West
OUTBOARD MOTOR MFRS. & / OR DISTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124946	Premise Match	109m	West
LAWNMOWER SALES & / OR SERVICE	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124496	Premise Match	109m	West
INSURANCE AGENTS.	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124410	Premise Match	109m	West
IRRIGATION SYSTEMS &/ OR EQUIPMENT MFRS. &/OR DISTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124445	Premise Match	109m	West
PRODUCE MERCHANTS - RETAIL	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125083	Premise Match	109m	West
TRAILERS &/OR SEMI-TRAILERS MFRS. &/OR DISTS. &/ OR HIRERS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125459	Premise Match	109m	West
TOOL DEALERS - RETAIL	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125432	Premise Match	109m	West
TRACTOR IMPS. &/OR MFRS. &/OR DISTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125454	Premise Match	109m	West
HARDWARE &/OR BUILDERS SUPPLIES	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124325	Premise Match	109m	West
FERTILIZER MFRS. &/OR SUPPLIERS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	124113	Premise Match	109m	West
AGRICULTURAL MACHINERY HIRERS &/OR DEALERS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	123440	Premise Match	109m	West
AGRICULTURAL MACHINERY MFRS. &/ OR IMPS. &/OR DISTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	123442	Premise Match	109m	West
BOX & CASE MFRS. &/OR MERCHANTS	Gosford Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	123633	Premise Match	109m	West
TRACTOR REPAIR SPECIALISTS	Gostord Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125456	Premise Match	109m	West
PLUMBERS SUPPLIES.	Gostord Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125050	Premise Match	109m	West
PUMP & PUMPING EQUIPMENT MFRS. &/OR DISTS	Gostord Co-op Citrus Packing House Ltd., 307 Mann St., Gosford	125093	Premise Match	109m	West
TOY DEALERS - RETAIL	Rocking Horse Stud, The, 319 Mann St., Gosford	125449	Premise Match	117m	North West
TOY MFRS. &/OR DISTS	Rocking Horse Stud, The, 319 Mann St., Gosford	125452	Premise Match	117m	North West
CLOTHING - RETAIL - BABY &/OR CHILDRENS WEAR	Rocking Horse Stud, The, 319 Mann St., Gosford	123813	Premise Match	117m	North West
MEDICAL PRACTITIONERS	Barker, B., 16 Hills St., Gosford	124533	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Bassett, H., 16 Hills St., Gosford	124534	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Catt, M., 16 Hills St., Gosford	124540	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Chapman, M., 16 Hills St., Gosford	124541	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Deves, J., 16 Hills St., Gosford	124546	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Ewing, P., 16 Hills St., Gosford	124551	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Hall, P., 16 Hills St., Gosford	124555	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Hampson, R., 16 Hills St., Gosford	124556	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Hendry, P. I. A., 16 Hills St., Gosford	124558	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Kewley, G. D., 16 Hills St., Gosford	124564	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Lennon, E., 16 Hills St., Gosford	124569	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Malek. N., 16 Hills St., Gosford	124574	Premise Match	131m	North West

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
MEDICAL PRACTITIONERS	McLellan, G. M. R., 16 Hills St., Gosford	124572	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Mearses, S. 16 Hills St., Gosford	124575	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Morton, D., 16 Hills St., Gosford	124577	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Mylne, G., 16 Hills St., Gosford	124579	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Roberts, G., 16 Hills St., Gosford	124583	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Scobie, M., 16 Hills St., Gosford	124586	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Sinclair, D. S., 16 Hills St., Gosford	124587	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Vandeleur, J., 16 Hills St., Gosford	124591	Premise Match	131m	North West
MEDICAL PRACTITIONERS	Woods, W., 16 Hills St., Gosford	124595	Premise Match	131m	North West
ELECTRICAL CONTRACTORS - LICENSED	Hot Water Maintenance Pty. Ltd., 18A Hills St., Gosford	124027	Premise Match	145m	North West
HOT WATER SYSTEMS - ELECTRIC MFRS. &/OR DISTS.	Hot Water Maintenance Pty. Ltd., 18A Hills St., Gosford	124385	Premise Match	145m	North West

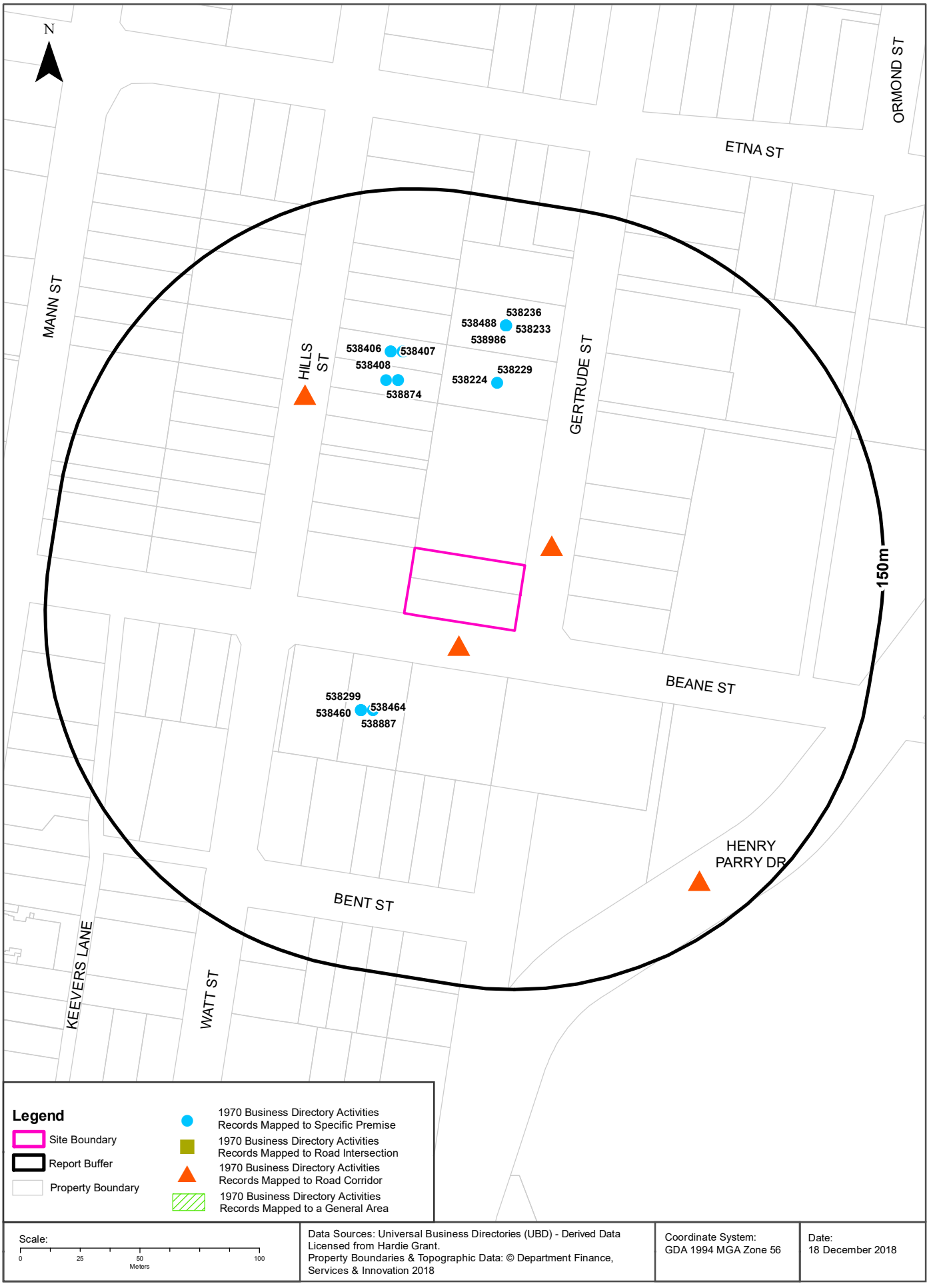
1982 Business Directory Records Road or Area Matches

Records from the 1982 UBD Business Directory, 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:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
MOTOR GARAGES &/OR ENGINEERS &/ OR SERVICE STATIONS	Ashworth. J., 46 Beane St., Gosford	124747	Road Match	0m
BOARDS &/ OR COMMITTEES - OFFICIAL	Central Coast .(N.S.W.) Citrus Marketing Board, Beane St., Gosford	123587	Road Match	0m
HAIRDRESSERS - LADIES &/OR BEAUTY SALONS	Rochelle Salon, 41 Beane St., Gosford	124300	Road Match	0m
MOTOR WRECKERS.	Gosford Spare Parts, 20 Hills St., Gosford	124886	Road Match	45m
GOVERNMENT DEPARTMENTS.	Public Trust Office, Watt St., Gosford	124265	Road Match	51m
HAIRDRESSERS - MENS.	Glens Clip Joint, Henry Parry Dr., Gosford	124311	Road Match	119m
SCHOOLS, COLLEGES - TECHNICAL	Gosford Tech. School, Henry Parry Dr., Gosford	125226	Road Match	119m

1970 Historical Business Directory Records

56-58 Beane Street, Gosford, NSW 2250



Historical Business Directories

56-58 Beane Street, Gosford, NSW 2250

1970 Business Directory Records
Premise or Road Intersection Matches

Records from the 1970 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
GLASS MERCHANTS &/OR GLAZIERS	Parry, 6. & Sons, 53 Beane St. Gosford	538327	Premise Match	44m	South West
JOINERY MANUFACTURERS	Parry, B. & Sons, 53 Beane St. Gosford	538460	Premise Match	44m	South West
FURNITURE-CHURCH-MFRS./W'SALERS	Parry, B. & Sons, 53 Beane St. Gosford	538299	Premise Match	44m	South West
SHOP & OFFICE FITTERS	Parry, B. & Sons, 53 Beane St. Gosford	538887	Premise Match	44m	South West
JOINERY MERCHANTS	Parry, B. and Sons. 53 Beane St. Gosford	538464	Premise Match	44m	South West
SCRAP METAL MERCHANTS	Spare Parts Gosford, 15 Hill St. Gosford	538874	Premise Match	71m	North
ENGINEERS-GENERAL, MFRG. & MECHANICAL	Kirkness, J. E., 170 Gertrude St. Gosford	538224	Premise Match	74m	North
ENGINEERS-PRECISION	Kirkness, J. E., 170 Gertrude St. Gosford	538229	Premise Match	74m	North
INSTRUMENT REPAIRERS	Tyrrell Bros., 17 Hills St. Gosford	538406	Premise Match	83m	North
INSTRUMENTS-AUTOMOTIVE-SPECIALISTS	Tyrrell Bros., 17 Hills St. Gosford	538407	Premise Match	83m	North
INSTRUMENTS-INDUSTRIAL-MFRS. &/OR DISTS.	Tyrrell Bros., 17. Hills St. Gosford	538408	Premise Match	83m	North
MACHINE TOOL MANUFACTURERS &/OR IMPORTERS &/OR DISTS.	Kirkness, J. E., 172-174 Gertrude St. Gosford	538488	Premise Match	98m	North
PULLEY MANUFACTURERS	Kirkness, J. E., 172-174 Gertrude St. Gosford	538802	Premise Match	98m	North
ENGINEERS-STRUCTURAL	Kirkness, J. E., 172-174 Gertrude St. Gosford	538233	Premise Match	98m	North
GEAR CUTTERS &/OR MANUFACTURERS	Kirkness, J. E., 172-174 Gertrude St. Gosford	538315	Premise Match	98m	North
BALL & ROLLER BEARINGS MFRS./IMPORTERS &/OR DISTS.	Kirkness, J. E., 172-174 Gertrude St. Gosford	537895	Premise Match	98m	North
BEARINGS & BUSH MANUFACTURER & DISTRIBUTOR	Kirkness, J. E., 172-174 Gertrude St. Gosford	537907	Premise Match	98m	North
BELTING MANUFACTURERS &/OR DISTRIBUTORS	Kirkness, J. E., 172-174 Gertrude St. Gosford	537924	Premise Match	98m	North
DIE & PRESS TOOL MAKERS	Kirkness, J. E., 172-174 Gertrude St. Gosford	538109	Premise Match	98m	North
ENGINEERS' SUPPLIES	Kirkness, J. E., 172-174 Gertrude St. Gosford	538236	Premise Match	98m	North
TOOL MAKERS	Kirkness, J. E., 172-174 Gertrude St. Gosford	538973	Premise Match	98m	North
TRANSMISSION EQUIPMENT MFRS. &/OR DIST.	Kirkness, J. E., 172-174 Gertrude St. Gosford	538986	Premise Match	98m	North
WELDERS-ELECTRIC &/OR OXY	Kirkness, J. E., 172-174 Gertrude St. Gosford	539013	Premise Match	98m	North

1970 Business Directory Records
Road or Area Matches

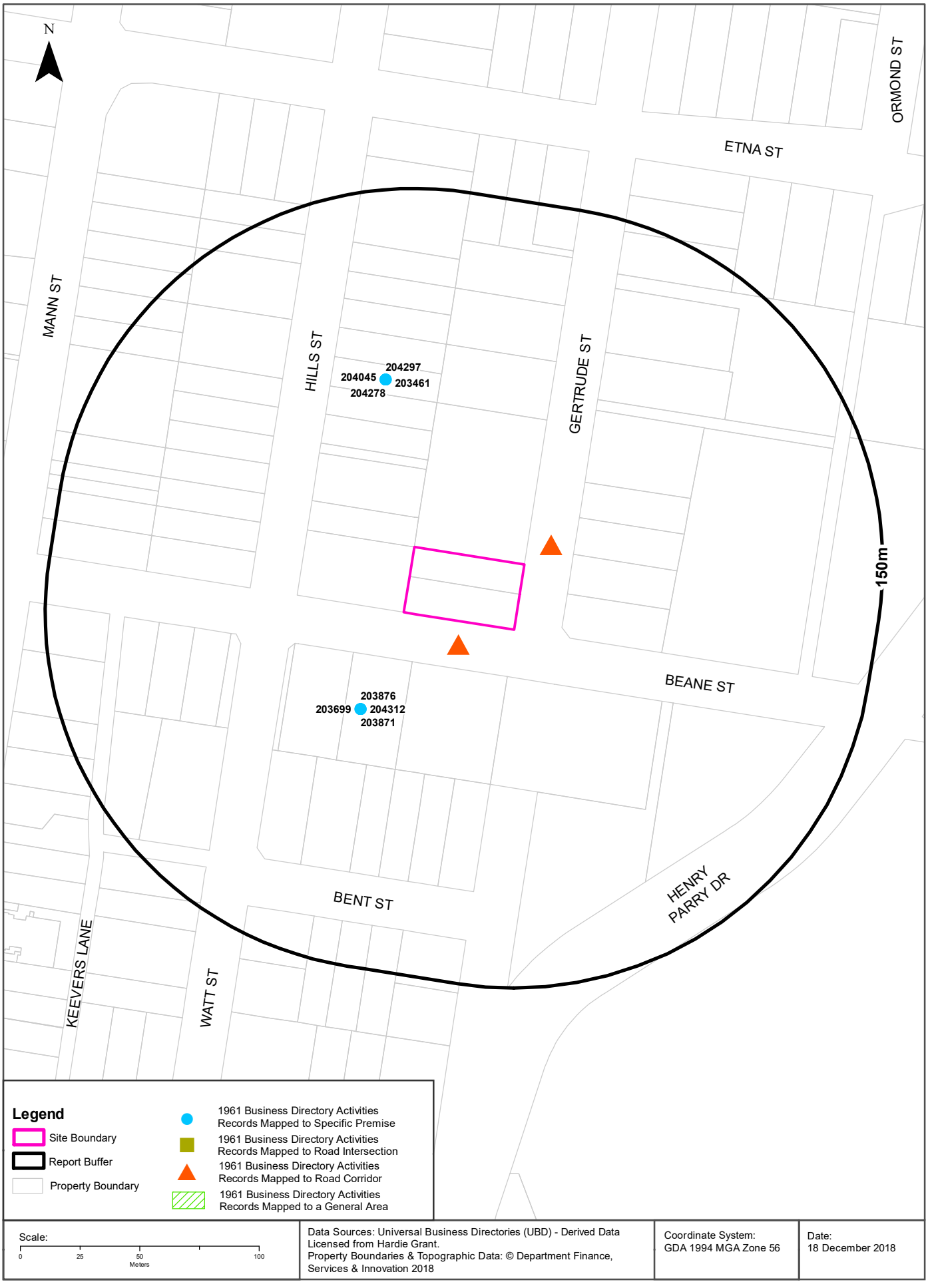
Records from the 1970 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
MILK VENDORS	Dibben Bros., 65 Gertrude St. Gosford	538527	Road Match	0m
SMALLGOODS MFRS. & WHOLESALERS	Dibben Bros., 65 Gertrude St. Gosford	538892	Road Match	0m
ELECTRIC CABLE FLEXIBLE &/OR WIRE MANUFACTURER & DISTRIBUTOR	Faulks Ltd., Beane St. Gosford	538176	Road Match	0m
ELECTRIC ELEMENT MANUFACTURERS &/OR DISTRIBUTORS	Faulks Ltd., Beane St. Gosford	538178	Road Match	0m
ELECTRIC LIGHT FITTINGS (SHADES, BRACKETS, ETC.) MFRS. & DISTS.	Faulks Ltd., Beane St. Gosford	538181	Road Match	0m
ELECTRIC MOTORS-DEALERS &/OR WHOLESALERS	Faulks Ltd., Beane St. Gosford	538184	Road Match	0m
ELECTRIC SWITCH & CONTROL GEAR MFRS. &/OR DISTRIBUTORS	Faulks Ltd., Beane St. Gosford	538187	Road Match	0m
ELECTRIC URNS-MFRS. &/OR DISTRIBUTORS	Faulks Ltd., Beane St. Gosford	538189	Road Match	0m
ELECTRICAL SUPPLIES APPLIANCES-WHOLESALE	Faulks Ltd., Beane St. Gosford	538212	Road Match	0m
MOTOR ACCESSORIES & SPARE PARTS DEALERS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538567	Road Match	0m
MOTOR BODY BUILDERS & REPAIRERS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538580	Road Match	0m
MOTOR BRAKE SERVICES	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538586	Road Match	0m
MOTOR CAR & TRUCK DEALERS-NEW & USED	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538598	Road Match	0m
MOTOR CARBURETTOR/TUNING SPECIALISTS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538609	Road Match	0m
MOTOR ELECTRICIANS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538622	Road Match	0m
MOTOR ENGINE RECONDITIONERS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538624	Road Match	0m
MOTOR GARAGES & ENGINEERS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538640	Road Match	0m
MOTOR OIL & SPIRIT DEPOTS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538661	Road Match	0m
MOTOR PAINTERS & PANEL BEATERS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538670	Road Match	0m
MOTOR SPARE PARTS-MFRS. &/OR W'SALERS.	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538696	Road Match	0m
MOTOR TOWING SERVICES	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538699	Road Match	0m
MOTOR WRECKERS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538710	Road Match	0m
SCHOOLS & COLLEGES-TECHNICAL	Gosford Technical School, Gertrude St. Gosford	538871	Road Match	0m
BOAT, LAUNCH, YACHT BUILDERS & REPAIRERS	Offshore Marine, 46 Beane St. Gosford	537933	Road Match	0m
MOTELS	Olympic Motel, Gertrude St. Gosford	538559	Road Match	0m
NURSERYMEN	Ulakl Nursery, 21 Beane St. Gosford	538731	Road Match	0m
MOTOR OIL & SPIRIT DEPOTS	Valvoline (Aust.) Supply Depot, Gertrude St. Gosford	538666	Road Match	0m
MOTOR WRECKERS	Gosford Spare Parts, 20 Hills St. Gosford	538711	Road Match	45m
FURNITURE DEALERS-SECONDHAND	Anderson's Furniture, 131 Gertrude St. Gosford	538300	Road Match	119m
FURNITURE-NURSERY-MFRS. &/OR W'SALERS	Anderson's Furniture, 131 Gertrude St. Gosford	538304	Road Match	119m

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
FURNITURE-OFFICE-RETAIL	Anderson's Furniture, 131 Gertrude St. Gosford	538307	Road Match	119m
BLIND MANUFACTURERS & SPECIALISTS	Andersons Furniture, 131 Gertrude St. Gosford	537927	Road Match	119m
CARPET & FLOOR COVERINGS	Andersons Furniture, 131 Gertrude St. Gosford	538024	Road Match	119m
FURNITURE & FURNISHINGS	Andersons Furniture, 131 Gertrude St. Gosford	538289	Road Match	119m
FURNITURE -GARDEN ORNAMENTAL - MFRS. & WHOLESALERS	Andersons Furniture, 131 Gertrude St. Gosford	538302	Road Match	119m

1961 Historical Business Directory Records

56-58 Beane Street, Gosford, NSW 2250



Historical Business Directories

56-58 Beane Street, Gosford, NSW 2250

1961 Business Directory Records
Premise or Road Intersection Matches

Records from the 1961 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
GLASS MERCHANTS	Parry, B. & Sons, 53 Beane St., Gosford	203729	Premise Match	44m	South West
GLAZIERS	Parry, B. & Sons, 53 Beane St., Gosford	203734	Premise Match	44m	South West
JOINERY MANUFACTURERS	Parry, B. & Sons, 53 Beane St., Gosford	203871	Premise Match	44m	South West
SHOP & OFFICE FITTERS	Parry, B. & Sons, 53 Beane St., Gosford	204312	Premise Match	44m	South West
JOINERY MERCHANTS	Parry, B. and Sons, 53 Beane St., Gosford	203876	Premise Match	44m	South West
FURNITURE-CHURCH-MNFRS./W'SALERS.	Parry, B., and Sons, 53 Beane St., Gosford	203699	Premise Match	44m	South West
CARRIERS & CARTAGE CONTRACTORS	Monkcom's Carrying Service Pty Limited., 15 Hill St., Gosford	203461	Premise Match	71m	North
CARRIERS & CARTAGE CONTRACTORS	Monkcom's Carrying Service Pty. Limited., 15 Hill St., Gosford	203468	Premise Match	71m	North
FURNITURE REMOVALIST & STORAGE	Monkcom's Carrying Service Pty. Limited., 15 Hill St., Gosford	203720	Premise Match	71m	North
ROAD TRANSPORT SERVICES-N.S.W.	Monkcom's Carrying Service Pty. Limited., 15 Hill St., Gosford	204278	Premise Match	71m	North
SCRAP METAL MERCHANTS	Spare Parts Gosford, 15 Hill St., Gosford	204293	Premise Match	71m	North
SECONDHAND DEALERS	Spare Parts Gosford, 15 Hill St., Gosford	204297	Premise Match	71m	North
BATTERY SERVICE STATIONS	Spare Parts Gosford, 15 Hill St., Gosford	203302	Premise Match	71m	North
MOTOR GARAGES & ENGINEERS	Spare Parts Gosford, 15 Hill St., Gosford	204045	Premise Match	71m	North

1961 Business Directory Records
Road or Area Matches

Records from the 1961 UBD Business Directory, 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:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
FLOOR COVERING-INDUSTRIAL-SPECIALISTS	Anderson's Furniture, 131 Gertrude St., Gosford	203649	Road Match	0m
FLYSCREEN DOORS, WINDOWS-MFRS.	Anderson's Furniture, 131 Gertrude St., Gosford	203653	Road Match	0m
FURNITURE DEALERS-SECONDHAND	Anderson's Furniture, 131 Gertrude St., Gosford	203702	Road Match	0m
FURNITURE-HOUSEHOLD-RETAIL	Anderson's Furniture, 131 Gertrude St., Gosford	203711	Road Match	0m
FURNITURE-NURSERY-RETAIL	Anderson's Furniture, 131 Gertrude St., Gosford	203715	Road Match	0m

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
FURNITURE-OFFICE-RETAIL	Anderson's Furniture, 131 Gertrude St., Gosford	203717	Road Match	0m
FURNITURE-ORNAMENTAL GARDEN	Anderson's Furniture, 131 Gertrude St., Gosford	203718	Road Match	0m
OFFICE EQUIPMENT MANUFACTURER/DISTRIBUTOR	Anderson's Furniture, 131 Gertrude St., Gosford	204130	Road Match	0m
MILK VENDORS	Dibben Bros., 65 Gertrude St., Gosford	203947	Road Match	0m
SMALLGOODS MFRS. & WHOLESALERS	Dibben Bros., 65 Gertrude St., Gosford	204319	Road Match	0m
AGRICULTURAL MACHINERY DEALERS	Domino Rural Services Pty. Ltd., Beane St., Gosford	203189	Road Match	0m
AGRICULTURAL MACHINERY REPAIRS	Domino Rural Services Pty. Ltd., Beane St., Gosford	203221	Road Match	0m
MOTOR ACCESSORIES & SPARE PARTS DEALERS	Domino Rural Services Pty. Ltd., Beane St., Gosford	203977	Road Match	0m
MOTOR CAR & TRUCK DEALERS-NEW & USED	Domino Rural Services Pty. Ltd., Beane St., Gosford	204005	Road Match	0m
TRACTOR IMPORTER AND MANUFACTURERS AND DISTRIBUTORS	Domino Rural Services Pty. Ltd., Beane St., Gosford	204402	Road Match	0m
WELDERS-ELECTRIC & OXY	Domino Rural Services Pty. Ltd., Beane St., Gosford	204436	Road Match	0m
EARTH MOVING & ROAD MAKING CONTRACTORS	Earth Movers (The) (G. J. Joyce Pty. Ltd.) 160 Gertrude St., Gosford	203557	Road Match	0m
SCHOOLS & COLLEGES-TECHNICAL	Gosford Technical School, Gertrude St., Gosford	204291	Road Match	0m
EARTH MOVING & ROAD MAKING CONTRACTORS	Joyces Sawmill, 160 Gertrude St., Gosford	203560	Road Match	0m
TIMBER MERCHANTS & SAWMILLERS	Joyces Sawmill, 160 Gertrude St., Gosford	204386	Road Match	0m
BEARINGS & BUSH MANUFACTURER & DISTRIBUTOR	Kirkness, J. E., 127 Gertrude St., Gosford	203307	Road Match	0m
ENGINEERS-GENERAL, MFRG. & MECHANICAL	Kirkness, J. E., 127 Gertrude St., Gosford	203602	Road Match	0m
ENGINEERS-PRECISION	Kirkness, J. E., 127 Gertrude St., Gosford	203607	Road Match	0m
ENGINEERS-STRUCTURAL	Kirkness, J. E., 127 Gertrude St., Gosford	203611	Road Match	0m
ENGINEERS-SUPPLIES	Kirkness, J. E., 127 Gertrude St., Gosford	203616	Road Match	0m
MOTOR ACCESSORIES & SPARE PARTS DEALERS	Kirkness, J. E., 127 Gertrude St., Gosford	203982	Road Match	0m
PULLEY MANUFACTURER	Kirkness, J. E., 127 Gertrude St., Gosford	204210	Road Match	0m
TOOL MAKERS	Kirkness, J. E., 127 Gertrude St., Gosford	204393	Road Match	0m
WELDERS-ELECTRIC & OXY	Kirkness, J. E., 127 Gertrude St., Gosford	204440	Road Match	0m
ENGINEERS-GENERAL, MFRG. & MECHANICAL	Rosenfelder, E., Gertude St., Gosford	203604	Road Match	0m

1950 Historical Business Directory Records

56-58 Beane Street, Gosford, NSW 2250

Historical Business Directories

56-58 Beane Street, Gosford, NSW 2250

1950 Business Directory Records
Premise or Road Intersection Matches

Records from the 1950 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Feature Point	Direction
HOSPITALS	Gosford District Hospital, Haldon St., Gosford	184420	Premise Match	131m	North West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Records
Road or Area Matches

Records from the 1950 UBD Business Directory, 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:

Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
TAXIS &/OR HIRE CARS	Campbell, K., Gertrude St., Gosford	184685	Road Match	0m
TAXIS &/OR HIRE CARS	Cattail, J. T., 151 Gertrude St., Gosford	184686	Road Match	0m
BAG MERCHANTS	Craft, F., 77 Gertrude St., Gosford	184158	Road Match	0m
MILK VENDORS	Dibben, J. H., Gertrude St., Gosford	184505	Road Match	0m
MUSIC TEACHERS	Drummond, Mrs. J., Gertrude St., Gosford	184566	Road Match	0m
BUILDERS & BUILDING CONTRACTORS	Easey, A., Gertrude St., Gosford	184185	Road Match	0m
CASE MANUFACTURERS	Kirkness, R. G., 121 Gertrude St., Gosford	184254	Road Match	0m
DRESSMAKERS & COSTUMIERS	O'Neill, Mrs. M., Gertrude St., Gosford	184313	Road Match	0m
TAXIS &/OR HIRE CARS	Thomas, M. E., Gertrude St., Gosford	185883	Road Match	0m
TAXIS &/OR HIRE CARS	Jones, C., Bent St., Gosford	184689	Road Match	111m

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Historical Business Directories

56-58 Beane Street, Gosford, NSW 2250

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:

Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Feature Point	Direction
BATTERY SERVICE STATIONS	Spare Parts Gosford, 15 Hill St., Gosford	203302	1961	Premise Match	71m	North
MOTOR GARAGES & ENGINEERS	Spare Parts Gosford, 15 Hill St., Gosford	204045	1961	Premise Match	71m	North
MOTOR GARAGES &/OR ENGINEERS &/ OR SERVICE STATIONS	Parson's Garage Fly. Ltd., 325 Mann St., Gosford	124789	1982	Premise Match	161m	North West
MOTOR GARAGES & ENGINEERS	Parsons Garage Pty. Ltd., 325 Mann St. Gosford	538649	1970	Premise Match	161m	North West
MOTOR GARAGES & ENGINEERS	Parsons Garage Pty. Ltd., 325 Mann St., Gosford	204040	1961	Premise Match	161m	North West
BATTERY SERVICE STATIONS	Parsons Garage Pty. Ltd., 325 Mann St., Gosford	203300	1961	Premise Match	161m	North West
MOTOR GARAGES & ENGINEERS	Parsons Garage Pty. Ltd., 325 Mann St., Gosford	184542	1950	Premise Match	161m	North West
BATTERY SERVICE STATIONS	Parson's Garage Pty. Ltd., 325 Mann St., Gosford	184167	1950	Premise Match	161m	North West
MOTOR SERVICE STATIONS-PETROL, OIL, Etc.	Parson's Service Station, 322 Mann St., Gosford	204091	1961	Premise Match	203m	North West
MOTOR GARAGES &/OR ENGINEERS &/ OR SERVICE STATIONS	Booths Service Station. 253 Mann St., Gosford	124748	1982	Premise Match	253m	South West
MOTOR GARAGES & ENGINEERS	Booths Service Station, 253 Mann St. Gosford	538630	1970	Premise Match	253m	South West
MOTOR GARAGES & ENGINEERS	Booths Service Station, 253 Mann St., Gosford	204026	1961	Premise Match	253m	South West
BATTERY SERVICE STATIONS	Booths Service Station, 253 Mann St., Gosford	203293	1961	Premise Match	253m	South West
MOTOR GARAGES & ENGINEERS	Gosford Service Station Pty. Ltd., 249 Mann St., Gosford	204035	1961	Premise Match	283m	South West
MOTOR GARAGES & ENGINEERS	Gosford Service Station, 249 Mann St., Gosford	184541	1950	Premise Match	283m	South West
DRY CLEANERS, PRESSERS & DYERS	Gosford Dry Cleaners, 243 Mann St. Gosford	538165	1970	Premise Match	295m	South West
DRY CLEANERS, PRESSERS & DYERS	Back-Like-New Dry Cleaners, 243 Mann St., Gosford	203551	1961	Premise Match	295m	South West
DRY CLEANERS, PRESSERS & DYERS	Back-Like-New Dry Cleaners,243 Mann St., Gosford	184317	1950	Premise Match	295m	South West
BATTERY SERVICE STATIONS	Richardson Motors, 237 Mann St., Gosford	184168	1950	Premise Match	295m	South West
MOTOR GARAGES & ENGINEERS	Richardson Motors, 237 Mann St., Gosford	184543	1950	Premise Match	295m	South West
MOTOR SERVICE STATIONS-PETROL, OILS, Etc.	Central Coast Pest Control 14 Watt St., Gosford Gosford	538684	1970	Premise Match	397m	South
MOTOR GARAGES &/OR ENGINEERS &/ OR SERVICE STATIONS	Regal Motors Gosford, 360 Mann St., Gosford	124793	1982	Premise Match	434m	North
MOTOR GARAGES & ENGINEERS	Grawill Motors, Cnr. Erina & Watt Sts. Gosford	538641	1970	Road Intersection	458m	South
MOTOR GARAGES & ENGINEERS	Grawill Motors, Cnr. Erina & Watt Sts., Gosford	204036	1961	Road Intersection	458m	South
MOTOR GARAGES & ENGINEERS	Baker, F. G., 196 Mann St., Gosford	184537	1950	Premise Match	463m	South West

Historical Business Directories

56-58 Beane Street, Gosford, NSW 2250

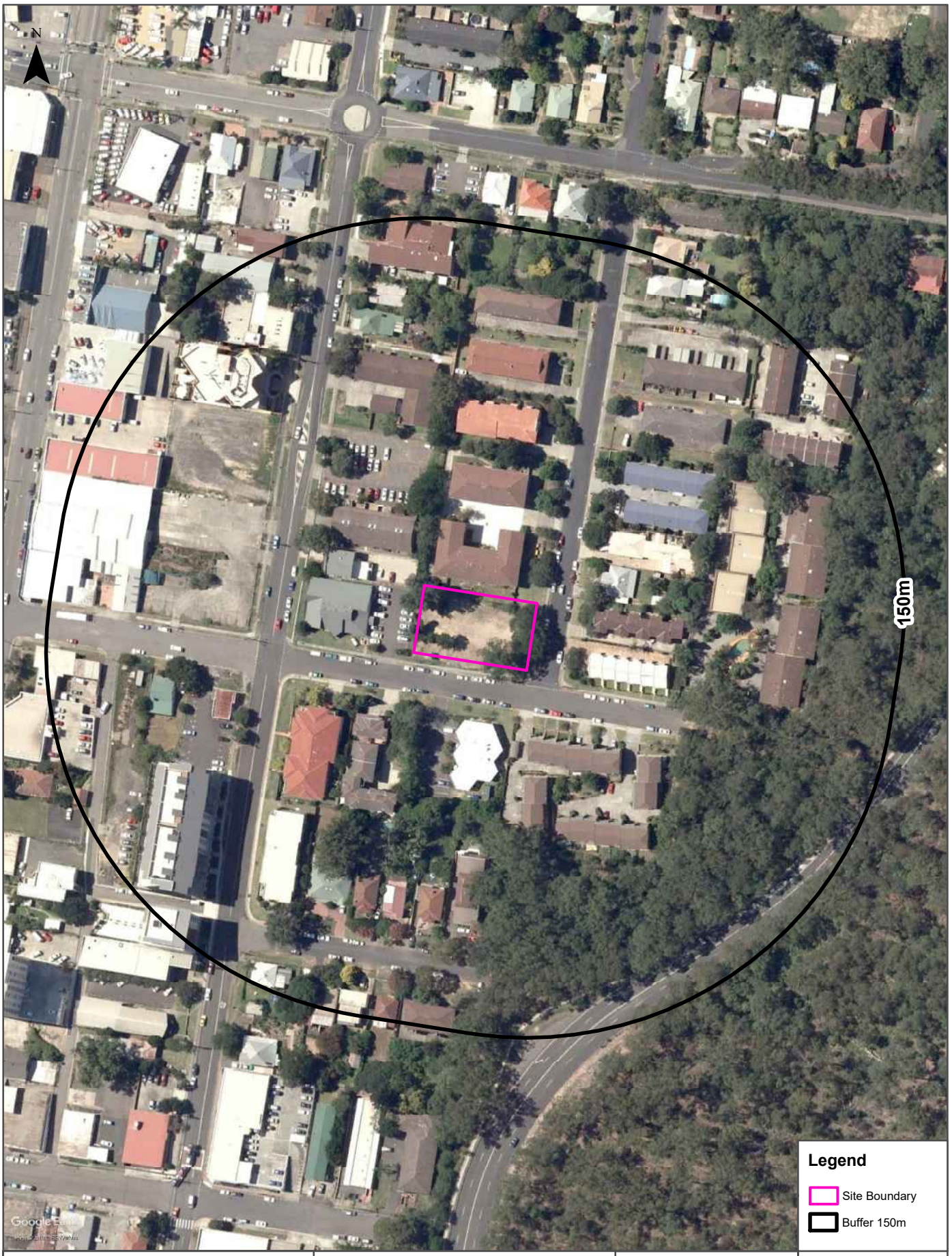
Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

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:

Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
MOTOR GARAGES &/OR ENGINEERS &/ OR SERVICE STATIONS	Ashworth. J., 46 Beane St., Gosford	124747	1982	Road Match	0m
MOTOR GARAGES & ENGINEERS	Gosford Motors Pty. Ltd., Gertrude St. Gosford	538640	1970	Road Match	0m
MOTOR SERVICE STATIONS-PETROL, OILS, Etc.	Atlantic Service Station, la Pacific Hghwy., West Gosford Gosford	538680	1970	Road Match	155m
MOTOR GARAGES & ENGINEERS	Booths Garage, 253 Mann St., Gosford	184538	1950	Road Match	155m
BATTERY SERVICE STATIONS	Booth's Garage, 253 Mann St., Gosford	184166	1950	Road Match	155m
MOTOR GARAGES &/OR ENGINEERS &/ OR SERVICE STATIONS	Caltex Service Station, 314 Mann St., Gosford	124756	1982	Road Match	155m
DRY CLEANERS, PRESSERS & DYERS	Malley, C. O., 165 Mann St., Gosford	184318	1950	Road Match	155m
MOTOR GARAGES & ENGINEERS	Snelling Motors Pty. Ltd., Pacific Highway., Gosford	184545	1950	Road Match	155m
MOTOR GARAGES & ENGINEERS	Sungold Motors, Pacific Highway., Gosford	204048	1961	Road Match	155m
MOTOR GARAGES & ENGINEERS	Love, J. E. & R. W., Showground Rd. Gosford	538646	1970	Road Match	277m
BATTERY SERVICE STATIONS	Grawill Motors Pty. Ltd., Erina St., Gosford	203298	1961	Road Match	445m
MOTOR SERVICE STATIONS-PETROL, OILS, Etc.	BP Orange Grove Service Station, Pacific Hghwy., West Gosford Gosford	538681	1970	Road Match	472m
MOTOR GARAGES & ENGINEERS	Golden Fleece Service Station, Pacific Hghwy., West Gosford Gosford	538639	1970	Road Match	472m
MOTOR SERVICE STATIONS-PETROL, OILS, Etc.	Lakeview Service Station, Pacific Hghwy. West Gosford	538688	1970	Road Match	472m
MOTOR GARAGES & ENGINEERS	Lakeview Service Station, Pacific Hghwy., West Gosford Gosford	538645	1970	Road Match	472m
MOTOR GARAGES & ENGINEERS	Noble, S. H. Pty. Ltd., Pacific Hghwy., West Gosford Gosford	538648	1970	Road Match	472m
DRY CLEANERS, PRESSERS & DYERS	Topper Dry Cleaners, 14 Baker St., Gosford	203552	1961	Road Match	496m

Aerial Imagery 2010

56-58 Beane Street, Gosford, NSW 2250



Aerial Imagery 2007

56-58 Beane Street, Gosford, NSW 2250

Scale:
0 25 50 100
Meters

Data Source Aerial Imagery: © 2018 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 17 December 2018

Aerial Imagery 1991

56-58 Beane Street, Gosford, NSW 2250

Aerial Imagery 1984

56-58 Beane Street, Gosford, NSW 2250

Aerial Imagery 1982

56-58 Beane Street, Gosford, NSW 2250

Aerial Imagery 1976

56-58 Beane Street, Gosford, NSW 2250

Aerial Imagery 1965

56-58 Beane Street, Gosford, NSW 2250

Aerial Imagery 1954

56-58 Beane Street, Gosford, NSW 2250

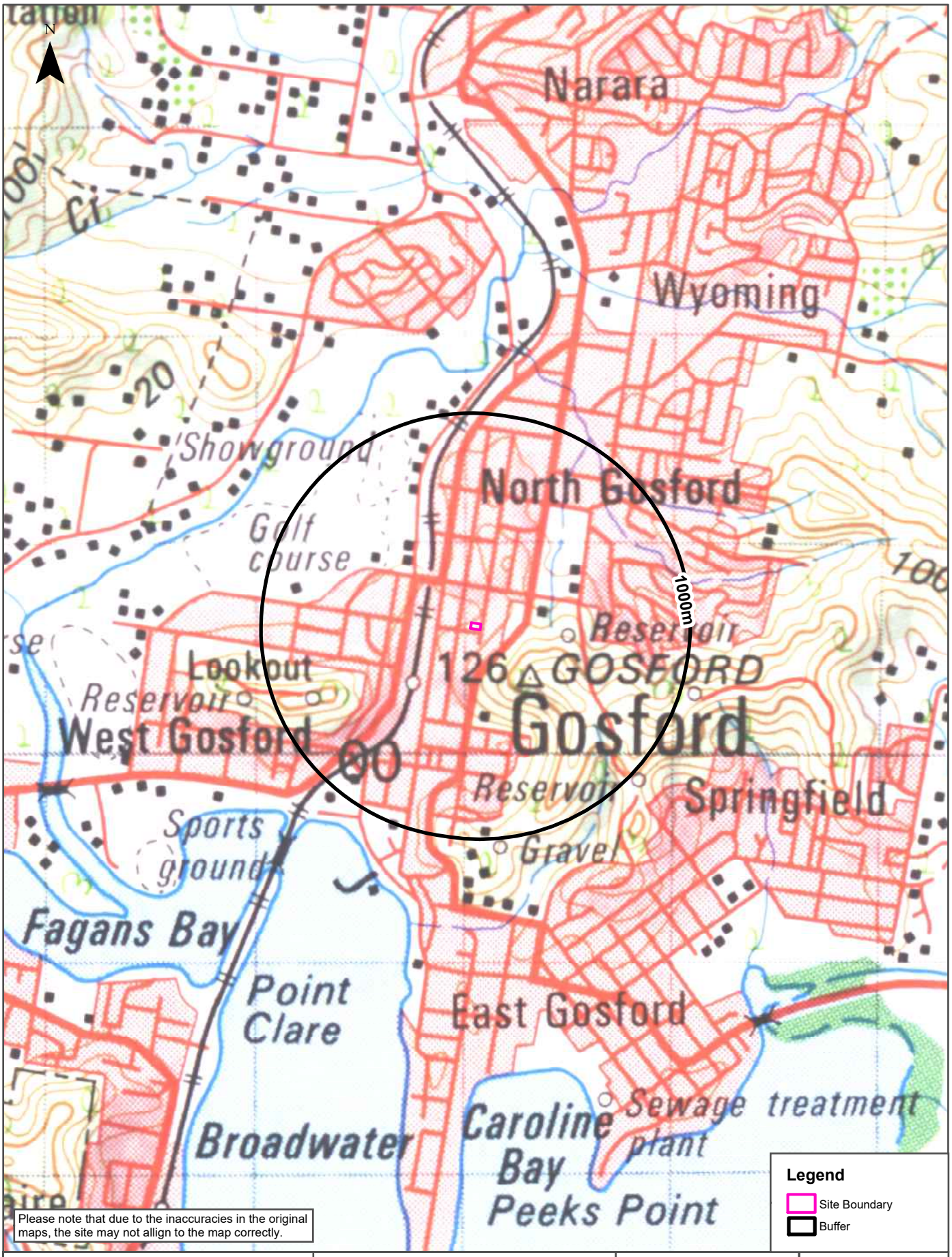
Topographic Map 2015

56-58 Beane Street, Gosford, NSW 2250

Scale: 0 100 200 400 600 Meters	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 17 December 2018

Historical Map 1975

56-58 Beane Street, Gosford, NSW 2250



Scale: 0 125 250 500 750 1,000 1,250 Meters

Data Sources: NATMAP 1:100,000 Topographic Maps Geoscience Australia

Coordinate System: GDA 1994 MGA Zone 56

Date: 17 December 2018

Historical Map 1942

56-58 Beane Street, Gosford, NSW 2250

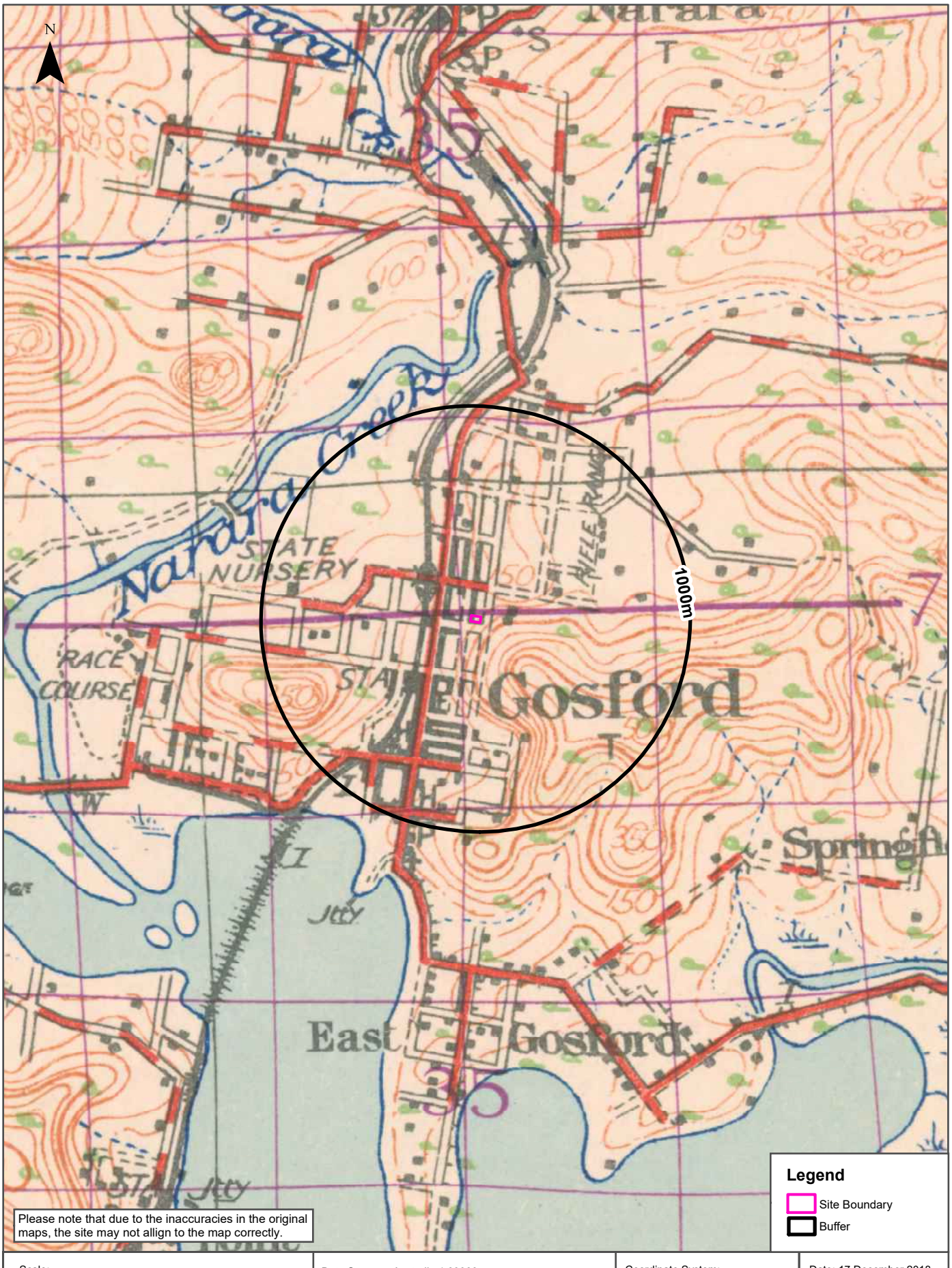
Please note that due to the inaccuracies in the original maps, the site may not allign to the map correctly.

Scale:	Data Sources: Australia 1:63360, Produced by Australian Section Imperial General Staff	Coordinate System: GDA 1994 MGA Zone 56	Date: 17 December 2018

0 125 250 500 750 1,000 1,250 Meters

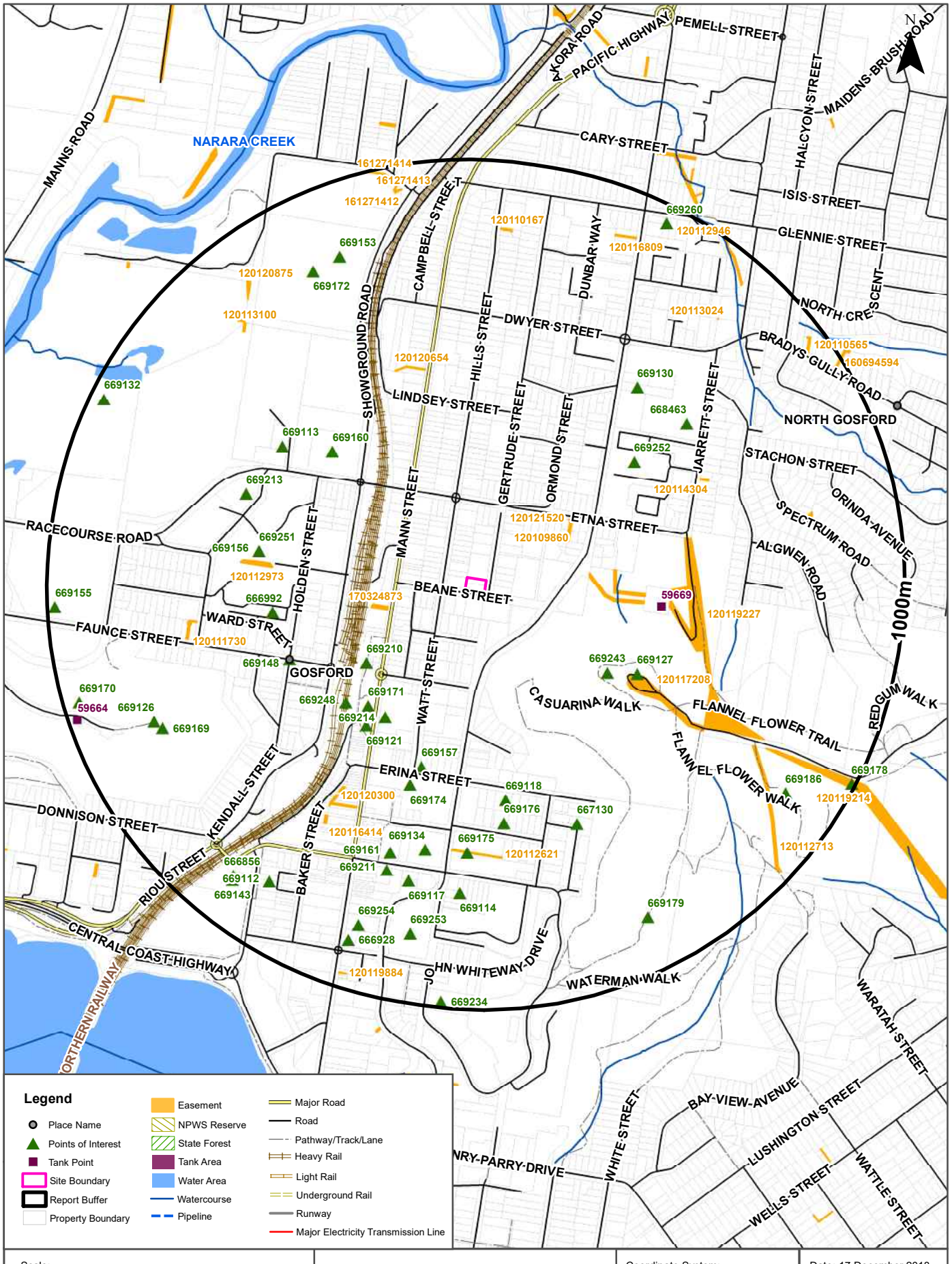
Historical Map 1921

56-58 Beane Street, Gosford, NSW 2250



Topographic Features

56-58 Beane Street, Gosford, NSW 2250



Legend

- Place Name
- Points of Interest
- Tank Point
- Site Boundary
- Report Buffer
- Property Boundary
- Easement
- NPWS Reserve
- State Forest
- Tank Area
- Water Area
- Watercourse
- Pipeline
- Major Road
- Road
- Pathway/Track/Lane
- Heavy Rail
- Light Rail
- Underground Rail
- Runway
- Major Electricity Transmission Line

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2018

Coordinate System: GDA 1994 MGA Zone 56

Date: 17 December 2018

Topographic Features

56-58 Beane Street, Gosford, NSW 2250

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
669210	Transport Interchange	GOSFORD BUS INTERCHANGE	294m	South West
669243	Lookout	NURRUNGA LOOKOUT	351m	South East
669214	Medical Centre	GATEWAY COMMUNITY HEALTH CENTRE	361m	South West
669171	Park	BURNS PLACE	364m	South West
669248	Railway Station	GOSFORD RAILWAY STATION	394m	South West
669121	Tourist Information Centre	GOSFORD VISITOR INFORMATION CENTRE	403m	South West
669127	Mountain/Hill/Peak	MOUNT MOUAT	414m	South East
669157	Post Office	GOSFORD POST OFFICE	438m	South
669160	High School	GOSFORD HIGH SCHOOL	440m	North West
669148	Town	GOSFORD	452m	West
669252	General Hospital	GOSFORD PRIVATE HOSPITAL	453m	North East
666992	Helipad	Helipad	463m	West
669174	Shopping Centre	IMPERIAL SHOPPING CENTRE	487m	South
669118	Place Of Worship	Place Of Worship	500m	South
669156	General Hospital	GOSFORD HOSPITAL	501m	West
669251	General Hospital	CENTRAL COAST TRANSITIONAL CARE FACILITY	501m	West
669113	Club	GOSFORD GOLF CLUB	541m	North West
669176	Place Of Worship	CHRISTIAN SCIENTIST CHURCH	555m	South
669213	Medical Centre	GOSFORD HOSPITAL COMMUNITY HEALTH SERVICES	564m	West
669130	Cemetery	GOSFORD CEMETERY	587m	North East
667130	Community Facility	RED CROSS SOCIETY	597m	South East
668463	Special School	NORTH GOSFORD LEARNING CENTRE	608m	North East
669175	Shopping Centre	GOSFORD TOWN CENTRE	624m	South
669134	Park	KIBBLE PARK	630m	South
669161	Library	GOSFORD LIBRARY	654m	South
669211	High School	ET AUSTRALIA SECONDARY COLLEGE	698m	South
669117	Place Of Worship	UNITING CHURCH	711m	South
669114	Court House	GOSFORD COURT HOUSE	722m	South
669169	Lookout	PRESIDENTS HILL LOOKOUT	796m	South West
669126	Mountain/Hill/Peak	PRESIDENTS HILL	808m	South West

Map Id	Feature Type	Label	Distance	Direction
669172	Dog Track	GOSFORD GREYHOUND TRACK	820m	North West
669153	Showground	GOSFORD SHOWGROUND	826m	North
669253	TAFE College	GOSFORD TAFE COLLEGE	834m	South
669112	Club	CENTRAL COAST LEAGUES CLUB	842m	South West
669254	Local Government Chambers	GOSFORD CITY COUNCIL	843m	South
669186	Park	RUMBALARA RESERVE	865m	South East
669179	Lookout	OURAKA LOOKOUT	870m	South East
666856	Community Facility	GOSFORD CITY BOWLING CLUB	881m	South West
666928	Community Facility	CENTRAL COAST CONSERVATORIUM	884m	South
669143	Sports Field	BOWLING GREENS	891m	South West
669260	Combined Primary-Secondary School	MEADOWBANK EDUCATION TRUST NORTH GOSFORD CAMPUS	957m	North East
669170	Park	WATERVIEW PARK	961m	West
669132	Golf Course	GOSFORD GOLF COURSE	966m	North West
669155	High School	HENRY KENDALL HIGH SCHOOL	981m	West
669234	Park	JOHN WHITEWAY DRIVE BUSH RESERVE	985m	South
669178	Lookout	YARUGA LOOKOUT	990m	South East

Topographic Features

56-58 Beane Street, Gosford, NSW 2250

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
	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
59669	Water	Operational		24/10/2011	423m	East
59664	Water	Operational		24/10/2011	978m	West

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
170324873	Primary	Right of way	7m	189m	West
120121520	Primary	Undefined		214m	North East
120109860	Primary	Undefined		233m	North East
120119227	Primary	Undefined		246m	East
120112713	Primary	Undefined		305m	South East
120117208	Primary	Undefined		399m	South East
120112973	Primary	Undefined		463m	West
120120654	Primary	Undefined		507m	North
120120300	Primary	Undefined		554m	South West
120114304	Primary	Undefined		565m	North East
120112621	Primary	Undefined		620m	South
120116414	Primary	Undefined		633m	South West

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120111730	Primary	Undefined		645m	West
120119214	Primary	Undefined		769m	South East
120108095	Primary	Undefined		781m	East
120113100	Primary	Undefined		793m	North West
120110167	Primary	Undefined		833m	North
120113024	Primary	Undefined		835m	North East
120120875	Primary	Undefined		846m	North West
120116809	Primary	Undefined		881m	North East
120112946	Primary	Undefined		934m	North East
161271412	Secondary	5		936m	North
161271413	Secondary	17		938m	North
120110565	Primary	Undefined		940m	North East
161271414	Secondary	5		944m	North
120119884	Primary	Undefined		962m	South
160694594	Primary	Right of way		977m	North East

Topographic Features

56-58 Beane Street, Gosford, NSW 2250

State Forest

What State Forest exist within the dataset buffer?

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

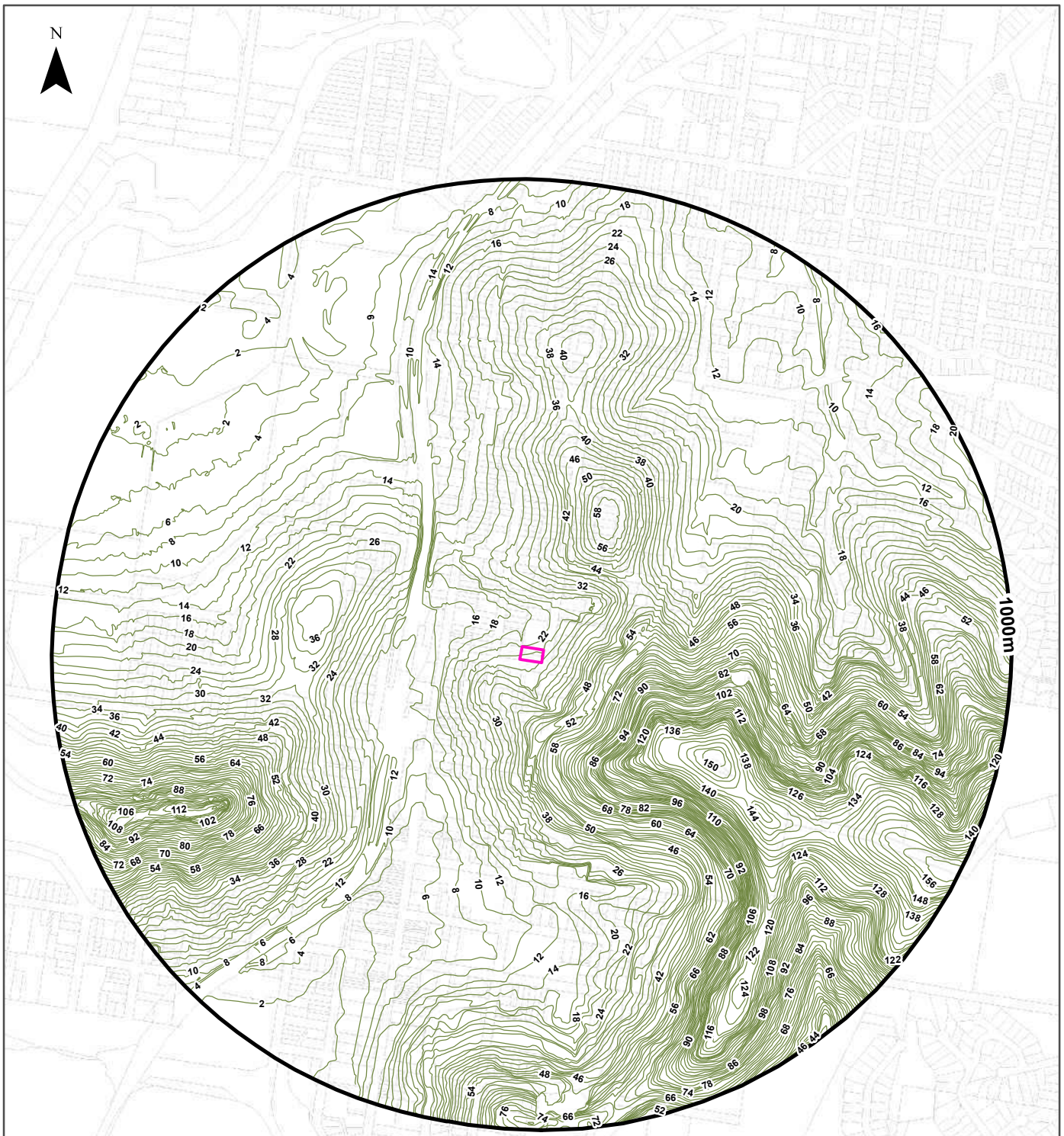
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

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

Elevation Contours (m AHD)

56-58 Beane Street, Gosford, NSW 2250



Legend

- Elevation Contour (m AHD)
- Site Boundary
- Report Buffer
- Property Boundary

Accuracy & Currency: This contour data can be up to 0.4 of the contour interval out in height and must therefore not be used for any design or engineering works, but only as a general guide to topography. Gaps may occur along contour lines due to vertical topography, obscured topography in the source photography such as buildings, dense vegetation or dead ground, or the fact that original buildings have been replaced in the intervening thirty years since the original contour capture.

Scale:	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2018	Coordinate System: GDA 1994 MGA Zone 56	Date: 17 December 2018

0 100 200 400 Meters

Hydrogeology & Groundwater

56-58 Beane Street, Gosford, NSW 2250

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description
Porous, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Botany Groundwater Management Zones

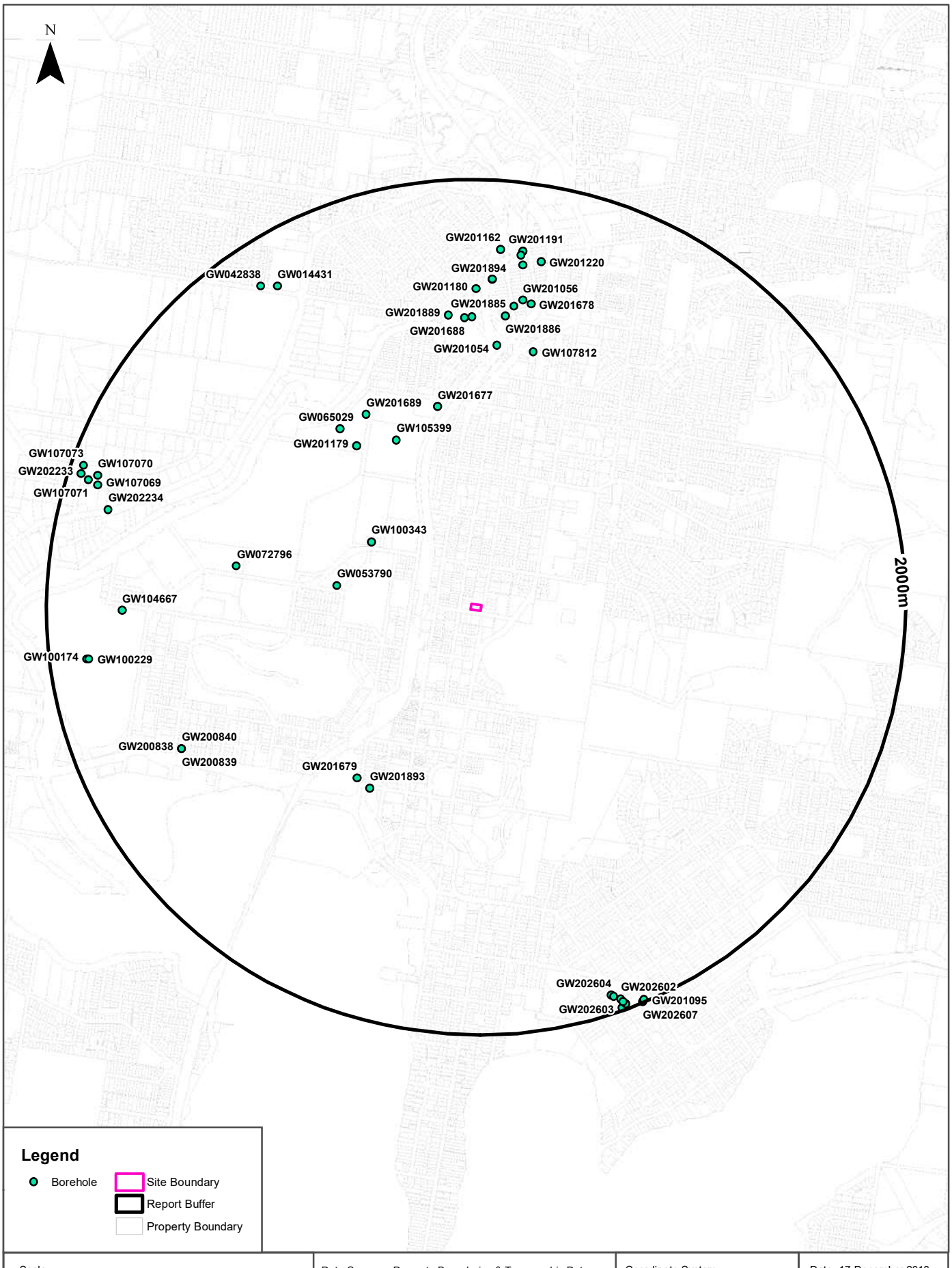
Groundwater management zones relating to the Botany Sand Beds aquifer within the dataset buffer:

Management Zone No.	Restriction	Distance	Direction
N/A	No records in buffer		

Botany Groundwater Management Zones Data Source : NSW Department of Primary Industries

Groundwater Boreholes

56-58 Beane Street, Gosford, NSW 2250



Hydrogeology & Groundwater

56-58 Beane Street, Gosford, NSW 2250

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW100343	20BL151781	Bore	Private	Test Bore	Test Bore		15/03/1993	73.00	73.00	2800	5.50	9.000		553m	North West
GW053790	20BL112177	Bore	Private	Industrial	General Use		01/01/1980	42.70						639m	West
GW105399	20BL161874	Bore		Recreation (groundwater)	Recreation (groundwater)		14/08/2003	48.50	48.50	660	6.60	2.500		847m	North West
GW201179	20BL170252	Bore	Local Govt	Monitoring Bore	Monitoring Bore		12/03/2007	16.20	16.20		3.05			920m	North West
GW201677	20BL171554	Bore	Local Govt	Town Water Supply	Town Water Supply		28/06/2006	205.00	205.00		7.00	8.000		942m	North
GW201679	20BL169297, 20BL171510	Bore	Local Govt	Irrigation, Recreation - Low Security	Irrigation, Recreation - Low Security		20/09/2004	102.00	102.00					958m	South West
GW201893	20BL169565	Bore	Local Govt	Recreation (groundwater)	Recreation (groundwater)		08/08/2004	78.00	78.00			1.500		969m	South West
GW201689	20BL171660	Bore - Nested (2)	Local Govt	Monitoring Bore	Monitoring Bore		22/11/2007	62.00	62.00	600	3.60	4.000		1020m	North West
GW065029	20BL140219	Bore	Private	Industrial, Recreation (groundwater)	Recreation (groundwater)		22/12/1989	62.00		Fresh				1031m	North West
GW072796	20BL156464, 20BL156467	Bore	Private	Recreation (groundwater), Test Bore	Recreation (groundwater)		21/01/1995	90.00	90.00	Good	9.00	0.804		1121m	West
GW107812	20BL164709	Bore		Monitoring Bore	Monitoring Bore		02/11/2004	5.00	5.00		2.53			1219m	North
GW201054	20BL171582	Bore	Local Govt	Monitoring Bore	Monitoring Bore		26/10/2007	10.50	10.50		1.50			1224m	North
GW201688	20BL163922, 20BL171644	Bore	Local Govt	Test Bore, Town Water Supply	Town Water Supply		16/04/2005	160.00	160.00					1348m	North
GW201888	20BL170257	Bore - Nested (2)	Local Govt	Monitoring Bore	Monitoring Bore		16/02/2006	42.00	42.00					1352m	North
GW201889	20BL170256	Bore - Nested (3)	Local Govt	Monitoring Bore	Monitoring Bore		22/02/2006	150.00	150.00		4.00			1363m	North
GW201886	20BL170261	Bore - Nested (2)	Local Govt	Monitoring Bore	Monitoring Bore		08/03/2006	46.00	46.00		4.00	6.000		1366m	North
GW201885	20BL170262	Bore	Local Govt	Monitoring Bore	Monitoring Bore		28/09/2005	60.00	60.00			8.760		1415m	North
GW201678	20BL171553	Bore	Local Govt	Town Water Supply	Town Water Supply		15/01/2006	165.00	184.00		4.00	25.000		1438m	North
GW201056	20BL171582	Bore	Local Govt	Monitoring Bore	Monitoring Bore		05/12/2011	15.20	15.00		1.10			1449m	North
GW201180	20BL170258	Bore	Local Govt	Monitoring Bore	Monitoring Bore		12/02/2006	42.00	42.00					1483m	North
GW200840	20BL172281	Bore	Private	Test Bore	Monitoring Bore		24/05/2010	8.00	8.00		3.00			1512m	South West
GW200838	20BL172281	Bore	Private	Test Bore	Monitoring Bore		12/05/2010	7.50	7.50		3.00			1512m	South West

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW200 839	20BL172 281	Bore	Private	Test Bore	Monitoring Bore		12/05/2010	7.50	7.50		3.00			1512m	South West
GW201 894	20BL170 259	Bore - Nested (2)	Local Govt	Monitoring Bore	Monitoring Bore		02/02/2006	144.00	144.00		2.50			1529m	North
GW201 895	20BL170 259	Bore	Local Govt	Monitoring Bore	Monitoring Bore		02/02/2006	24.00	24.00		2.50			1531m	North
GW202 285	20BL171 610	Bore	Local Govt	Test Bore, Town Water Supply	Test Bore, Town Water Supply		11/03/2005	125.50	130.00					1614m	North
GW104 667	20BL161 331	Bore	Private	Test Bore	Test Bore		03/01/2003	42.50	42.50	398	12.60	4.000		1641m	West
GW201 220	20BL170 278	Bore - Nested (2)	Local Govt	Monitoring Bore	Monitoring Bore		24/03/2006	156.00	156.00		0.00			1643m	North
GW201 887	20BL170 260	Bore - Nested (2)	Local Govt	Monitoring Bore	Monitoring Bore		31/03/2006	42.00	42.00					1660m	North
GW201 162	20BL163 931, 20BL170 785	Bore	Local Govt	Monitoring Bore, Test Bore	Monitoring Bore		11/03/2005	125.50	125.50					1675m	North
GW201 191	20BL170 263	Bore	Local Govt	Monitoring Bore	Monitoring Bore		26/10/2007	10.50	0.25		1.50			1678m	North
GW014 431	20BL010 756	Bore open thru rock	Private	Stock	Stock		01/03/1960	24.30						1754m	North West
GW202 234	20BL170 129	Bore	Private	Monitoring Bore	Monitoring Bore		07/03/2006	5.10	5.10		1.50			1768m	West
GW042 838	20BL101 122	Bore open thru rock	Private	Domestic, Irrigation, Stock	Irrigation		01/08/1975	29.00	29.00	501-1000 ppm				1795m	North West
GW100 229	20BL152 519, 20BL160 089	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		24/01/1993	39.00	39.00	1500		4.800		1814m	West
GW100 174	20BL144 993	Bore	Private	Test Bore	Test Bore		04/11/1992	60.00	60.00	3500		3.100		1825m	West
GW107 069	20BL164 753	Bore		Monitoring Bore	Monitoring Bore		11/10/2004	4.00	4.00		1.52			1847m	West
GW107 070	20BL164 753	Bore		Monitoring Bore	Monitoring Bore		11/10/2004	5.00	5.00		1.48			1862m	West
GW107 072	20BL164 753	Bore		Monitoring Bore	Monitoring Bore		11/10/2004	2.50	2.50		1.22			1897m	West
GW107 071	20BL164 753	Bore		Monitoring Bore	Monitoring Bore		11/10/2004	5.00	5.00		1.24			1897m	West
GW202 604	20BL172 992	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2011	4.00	4.00					1913m	South
GW202 603	20BL172 989	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2011	4.00	4.00					1924m	South
GW202 233	20BL170 129	Bore	Private	Monitoring Bore	Monitoring Bore		07/03/2006	5.20	5.20		1.00			1938m	West
GW107 073	20BL164 753	Bore		Monitoring Bore	Monitoring Bore		12/10/2004	4.20	4.20		1.12			1939m	West
GW202 602	20BL172 990	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2011	4.00	4.00					1947m	South
GW202 601	20BL172 991	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2011	4.00	4.00					1962m	South
GW201 097	20BL172 766	Bore	Private	Monitoring Bore	Monitoring Bore		15/04/2011	6.00	6.00		2.20			1975m	South
GW202 600	20BL172 993	Bore	Private	Monitoring Bore	Monitoring Bore		17/10/2011	4.00	4.00					1987m	South
GW201 095	20BL172 765	Bore	Private	Monitoring Bore	Monitoring Bore		13/04/2011	9.00	9.00		2.70			1988m	South East
GW202 607	20BL173 200	Bore	Private	Monitoring Bore	Monitoring Bore		05/07/2012	8.20	8.20		3.50			1995m	South East

Hydrogeology & Groundwater

56-58 Beane Street, Gosford, NSW 2250

Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW100343	0.00m-9.00m TOPSOIL & SAND (WB) 9.00m-18.50m RED CLAY 18.50m-29.00m SAND (WB) 29.00m-30.00m GRAVEL (WB) 30.00m-45.00m GREY SANDSTONE (MEDIUM GRAIN) 45.00m-47.00m GREY SANDSTONE, CLAY (MEDIUM GRAIN) 47.00m-52.00m GREY SANDSTONE (FINE GRAIN) 52.00m-54.00m GREY SANDSTONE (MEDIUM GRAIN) & BED SHALE 54.00m-55.00m CLAY BAND 55.00m-61.00m GREY SANDSTONE (MEDIUM GRAIN) 61.00m-62.00m GREY SANDSTONE (MEDIUM GRAIN) & BED SHALE 62.00m-72.50m GREY SANDSTONE (MEDIUM GRAIN) W.B. 72.50m-73.00m GREY SANDSTONE (MEDIUM GRAIN) & BED SHALE	553m	North West
GW105399	0.00m-4.00m CLAY 4.00m-15.00m SAND/SILT/CLAY/SANDSTONE BANDS/ROCKS 15.00m-25.00m SANDSTONE GREY SOFT 25.00m-27.00m CLAYSTONE FRACTURED 27.00m-29.00m SANDSTONE GREY SOFT 29.00m-35.50m SILTSTONE SOFT 35.50m-37.00m SANDSTONE GREY 37.00m-37.30m CLAY 37.30m-40.00m SANDSTONE GREY 40.00m-40.20m CLAY 40.20m-44.10m SILTSTONE SOFT 44.10m-44.20m DOLERITE 44.20m-44.40m DOLERITE FRACTURED 44.40m-45.00m DOLERITE V/FINE GRAIN/HARD/CREAM 45.00m-48.50m SANDSTONE GREY	847m	North West
GW201179	0.00m-2.50m FILL,SOIL,CLAY,GRAVEL 2.50m-3.50m SANDY CLAY 3.50m-13.50m SAND SILTY WET,GREY 13.50m-16.20m SAND,YELLOW BROWN	920m	North West
GW201677	0.00m-5.00m Clay, red 5.00m-12.00m Sandy Clay 12.00m-24.00m Clay, wet 24.00m-57.00m Shale, grey 57.00m-67.00m Sandstone, shale bands 67.00m-118.00m Shale 118.00m-140.00m Sandstone/Shale/Siltstone 140.00m-150.00m Sandstone, fine 150.00m-205.00m Sandstone, minor fractures	942m	North
GW201679	0.00m-6.00m Sand, medium, golden 6.00m-13.00m Clay, grey 13.00m-16.00m Sand, fine, grey, with clay 16.00m-24.00m Sand, medium-fine, grey, with dirty water & clay 24.00m-25.00m Gravel & Sand, harder 25.00m-30.00m Shale, grey 30.00m-35.00m Sandstone, wtih some Shale bands, highly fractured 35.00m-57.00m Shale 57.00m-65.00m Sandstone 65.00m-65.00m Shale 65.00m-75.50m Sandstone, grey 75.50m-102.00m Shale	958m	South West

Groundwater No	Drillers Log	Distance	Direction
GW201893	0.00m-3.00m Sandy Clay, with wood & gravel 3.00m-5.00m Clay, marine, grey 5.00m-11.00m Sand, grey, with clay 11.00m-12.00m Sandstone, weathered layer 12.00m-14.00m Sandy Clay 14.00m-16.00m Sandstone, weathered 16.00m-20.00m Clay; pink & red 20.00m-27.00m Shale, grey 27.00m-30.00m Sandstone, white 30.00m-34.00m Shale 34.00m-35.00m Sandstone 35.00m-44.00m Shale, grey red 44.00m-46.00m Sandstone 46.00m-60.00m Shale & Sandstone layers 60.00m-78.00m Shale, solid, grey Sandstone layers	969m	South West
GW201689	0.00m-1.00m Fill 1.00m-15.00m Sand, grey, fine to medium 15.00m-16.00m Sand, yellow, medium 16.00m-17.00m Clay, white-cream 17.00m-20.00m Sandstone, strongly weathered, grey 20.00m-23.00m Claystone, white to light grey 23.00m-26.00m Sandstone, cream to yellow 26.00m-33.00m Shale & Siltstone, in part iron rich 33.00m-36.00m Shale, light grey 36.00m-41.00m Shale, grey 41.00m-62.00m Shale, grey, & Sandstone interbedded	1020m	North West
GW072796	5.00m-17.00m Clay-sandstone	1121m	West
GW107812	0.00m-0.50m TOPSOIL/FILL 0.50m-3.80m SILTY SANDY CLAY 3.80m-5.00m SILTY SAND	1219m	North
GW201054	0.00m-0.10m Fill: Ashphalt 0.10m-0.25m Fill: Road Base 0.25m-0.45m Fill: Concrete Slab 0.45m-1.80m Clay, brown 1.80m-2.00m Sand, dry, brown 2.00m-8.50m Sand, wet, grey 8.50m-10.50m Sand, bands of & hard Clay	1224m	North
GW201688	0.00m-11.00m Topsoil, sandy, grey brown 11.00m-18.00m Siltstone, weathered, pink to orange 18.00m-21.00m Sandstone, red 21.00m-24.00m Sandstone, grey, with clay layers 24.00m-45.00m Shale, grey 45.00m-50.00m Sandstone, grey 50.00m-72.00m Shale, grey 72.00m-105.00m Sandstone, grey 105.00m-108.00m Shale, orange grey 108.00m-128.00m Shale, dark grey 128.00m-132.00m Shale, pinkish grey 132.00m-146.00m Shale, grey 146.00m-155.00m Sandstone, coarse grained 155.00m-159.00m Shale, grey, reddish brown 159.00m-160.00m Shale, greenish grey	1348m	North
GW201888	0.00m-3.00m Clay, brown/black 3.00m-5.00m Clay, dark brown, Sand & Silt 5.00m-9.00m Clay/Sand, brown 9.00m-11.00m Sand/Gravel, coasre, angular 11.00m-16.00m Sandy Clay; grey 16.00m-17.00m Sand, black, organics & coarse angular 17.00m-23.00m Sandy Clay; grey 23.00m-27.00m Rock/Shale, grey, with organics 27.00m-42.00m Clay, grey/Shale	1352m	North
GW201889	0.00m-3.00m Clay, & organics, grey 3.00m-12.00m Clay, & fine Sand, grey, wet 12.00m-15.00m Sandstone & organics 15.00m-20.00m Sandstone/Shale, soft 20.00m-147.00m Shale, with minor soft sand bands, clay/grey 147.00m-150.00m Sandstone	1363m	North
GW201886	0.00m-4.00m Clay 4.00m-9.00m Clay, dark 9.00m-15.00m Sand/Gravels 15.00m-22.00m Clay & Gravels 22.00m-46.00m Shale/Gravels	1366m	North

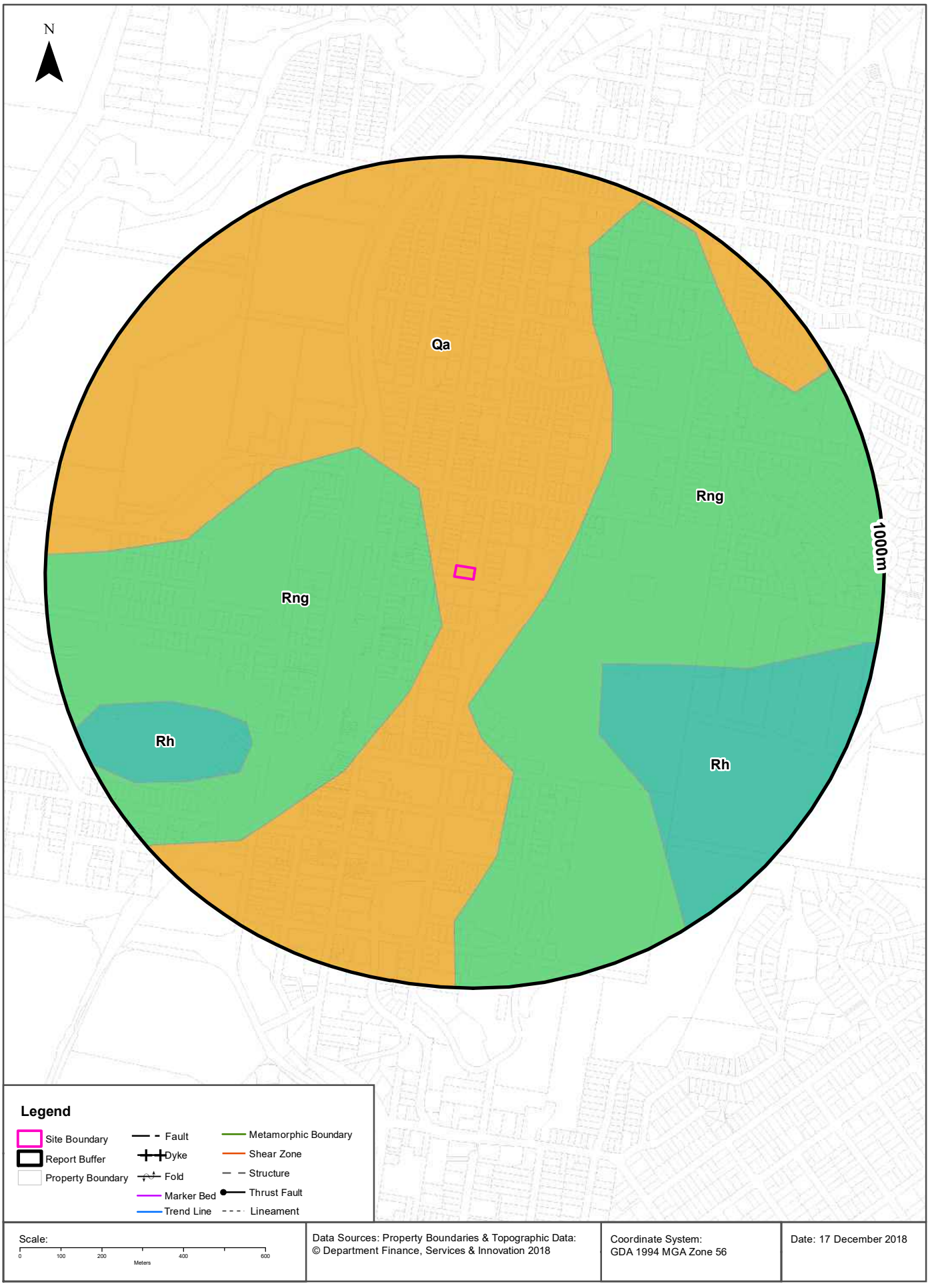
Groundwater No	Drillers Log	Distance	Direction
GW201885	0.00m-4.00m Sand, dark grey/brown/orange 4.00m-7.00m Clay, grey orange, sand wood 7.00m-12.00m Sand/Wood/Charcoal, grey 12.00m-23.00m Sand, grey, charcoal woods vegetation 23.00m-29.00m Sand, hard, grey, quartz, soft zones 29.00m-31.00m Sand, hard, grey, wood 31.00m-36.00m Sandstone, grey, fine-medium 36.00m-39.00m Sandstone, light grey & dark brown 39.00m-42.00m Sandstone, fractured, medium, grey 42.00m-45.00m Shale, dark grey & brown 45.00m-60.00m Sandstone, grey	1415m	North
GW201678	0.00m-2.00m Clay, light tan/grey, compact 2.00m-5.00m Clay, Sand interbeds, grey 5.00m-22.00m Sand, silty, wood, charcoal, water bearing 22.00m-36.00m Rock, ligth grey, fractured 36.00m-164.00m Sandstone, fractured, grey 164.00m-170.00m Shale, brownish/red, hard 170.00m-184.00m Shale, brownish red	1438m	North
GW201056	0.00m-0.40m Fill: Road Base 0.40m-1.50m Sand, brown 1.50m-5.00m Sand, light grey 5.00m-15.00m Sand, dark grey	1449m	North
GW201180	0.00m-5.00m GREY CLAY AND ALLUVIALS 5.00m-10.00m SAND MEDIUM /FINE 10.00m-18.00m CLAY/SANDSTONE 18.00m-26.00m SANDSTONE GREY,SHALE GREY 26.00m-38.00m SHALE GREY,CLAYS SOFT 38.00m-42.00m SHALES GREY	1483m	North
GW200838	0.00m-1.50m Fill 1.50m-3.00m Sandstone, light yellow, weathered 3.00m-6.00m Sandstone, fractured, yellow, grey lense 6.00m-7.50m Sandstone, grey, black lense	1512m	South West
GW200839	0.00m-1.50m Fill 1.50m-3.00m Sandstone, light yellow, weathered 3.00m-6.00m Sandstone, fractured, yellow, grey lense 6.00m-7.50m Sandstone, grey, black lense	1512m	South West
GW200840	0.00m-1.50m Fill 1.50m-3.00m Sandstone, light yellow, weathered 3.00m-6.00m Sandstone, fractured, yellow, grey lense 6.00m-8.00m Sandstone, grey, black lense	1512m	South West
GW201894	0.00m-12.00m Sand, organics, grey 12.00m-24.00m Sandy Clay, brown 24.00m-24.00m Clay & mixed Gravels, grey 24.00m-28.00m Clay & Shales, soft, light grey, getting harder & darker in colour with depth 28.00m-121.00m Shale, high clay content 121.00m-131.00m Sandstone & Shale bands 131.00m-144.00m Sandstone/Clay bands	1529m	North
GW201895	0.00m-12.00m Sand, & Organics, grey 12.00m-24.00m Sandy Clay, brown	1531m	North
GW202285	0.00m-24.00m Fill; grey sandy slop with wood 24.00m-31.00m Shale & Clay layers 31.00m-48.00m Shale, grey 48.00m-54.00m Sandstone, grey 54.00m-60.00m Shale, grey 60.00m-81.00m Sandstone, grey, with fractures 81.00m-84.00m Sandstone, grey 84.00m-90.00m Shale & grey Sandstone 90.00m-94.00m Sandstone, grey 94.00m-106.00m Shale, grey to brown 106.00m-118.00m Sandstone, grey, fractured 118.00m-121.00m Shale & Sandstone layers 121.00m-124.00m Shale, dark grey 124.00m-130.00m Shale, grey green	1614m	North

Groundwater No	Drillers Log	Distance	Direction
GW104667	0.00m-0.20m BITUMEN 0.20m-8.00m SANDSTONE L/BROWN 8.00m-17.30m SANDSTONE/CLAYSTONE 17.30m-18.50m SANDSTONE FRACTURED 18.50m-20.00m SANDSTONE/IRONSTONE FRACTURED 20.00m-20.50m IRONSTONE 20.50m-22.00m SANDSTONE L/BROWN 22.00m-23.50m CLAYSTONE 23.50m-27.50m SANDSTONE/IRONSTONE 27.50m-29.70m CLAYSTONE 29.70m-32.50m SANDSTONE L/BROWN 32.50m-33.00m SANDSTONE/QUARTZ 33.00m-34.50m CLAYSTONE/SHALE 34.50m-36.00m SILTSTONE SOFT 36.00m-37.30m CLAY L/BLUE/STIFF 37.30m-38.50m SILTSTONE L/GREY 38.50m-42.20m SHALE RED 42.20m-42.50m SILTSTONE	1641m	West
GW201220	0.00m-3.00m CLAY BROWN 3.00m-8.00m SAND 8.00m-19.00m CLAY GREY 19.00m-29.00m CLAY GREY BROWN 29.00m-156.00m CLAY GREY,SHALES	1643m	North
GW201887	0.00m-2.00m Clay, medium 2.00m-8.00m Sandy Clay 8.00m-11.00m Sand, orange 11.00m-26.00m Sand, organics, clay mix 26.00m-30.00m Rock, soft, clay bands 30.00m-42.00m Shale, decomposed, & hard shale bands	1660m	North
GW201162	0.00m-24.00m Sand Slop, grey, with wood 24.00m-31.00m Shale, & Clay layers 31.00m-48.00m Shale, grey 48.00m-54.00m Sandstone, grey 54.00m-60.00m Shale, grey 60.00m-81.00m Sandstone, grey, fractured 81.00m-84.00m Sandstone, grey 84.00m-90.00m Shale, & grey Sandstone 90.00m-94.00m Sandstone, grey 94.00m-106.00m Shale, grey to brown 106.00m-118.00m Sandstone, grey, fractured 118.00m-121.00m Shale & Sandstone layers 121.00m-124.00m Shale, dark grey 124.00m-125.50m Shale, grey green	1675m	North
GW201191	0.00m-0.10m ASPHALT 0.10m-0.25m ROAD BASE 0.25m-0.45m CONCRETE SLAB 0.45m-1.80m CLAY BROWN 1.80m-2.00m SAND DRY BROWN 2.00m-8.50m SAND WET GREY 8.50m-10.50m CLAY HARD	1678m	North
GW202234	0.00m-0.80m Fill; Gravelly Sand, road-base material, medium grained, red/brown, angular gravels up to 100mm diameter, loose, moist 0.80m-1.50m Fill; Gravelly Sandy Clay; moderate plasticity, grey, angular gravels, medium grained sand, moist 1.50m-2.80m Clayey Sand; fine to medium grained, grey, low plasticity clay, moist, well graded, moist 2.80m-3.50m Peat; Clay; low to moderate plsticity, black/grey, moist/wet 3.50m-5.10m Clay; low plasticity, dark grey, loose, wet	1768m	West
GW042838	0.00m-0.24m Soil 0.24m-3.35m Clay 3.35m-9.14m Sand Wet Clay 9.14m-12.50m Clay 12.50m-22.86m Sandstone Water Supply 22.86m-28.96m Shale	1795m	North West
GW100229	0.00m-8.00m WHITE SANDSTONE 8.00m-20.00m GREY SANDSTONE 20.00m-29.00m BROWN WEATHERED SANDSTONE 29.00m-33.00m GREY SANDSTONE 33.00m-39.00m GREY SILTSTONE	1814m	West

Groundwater No	Drillers Log	Distance	Direction
GW100174	0.00m-1.00m SANDY BLACK LOAM 1.00m-3.00m GREY CLAY 3.00m-4.00m SILTY GREY SAND 4.00m-8.00m SANDY GREY CLAY 8.00m-9.00m WHITE SILTY SAND 9.00m-12.00m SANDY GREY CLAY 12.00m-18.00m GREY CLAY 18.00m-21.00m BROWN WEATHERED SANDSTONE 21.00m-22.00m FRACTURED GREY SANDSTONE 22.00m-35.00m GREY SANDSTONE 35.00m-36.00m FRACTURED SANDSTONE 36.00m-56.00m GREY SILTSTONE 56.00m-57.00m SOFT GREY SHALE 57.00m-60.00m GREY SANDSTONE	1825m	West
GW107069	0.00m-1.20m FILL, SANDY CLAY 1.20m-2.10m FILL,CLAY 2.10m-3.70m PEAT, SANDY CLAY 3.70m-4.00m SAND	1847m	West
GW107070	0.00m-2.00m FILL,SANDY CLAY 2.00m-3.00m PEAT,SANDY CLAY 3.00m-4.00m SAND 4.00m-5.00m SANDY CLAY	1862m	West
GW107071	0.00m-2.00m FILL,CLAYEY SAND 2.00m-2.30m SANDY CLAY 2.30m-2.80m PEAT,SANDY CLAY 2.80m-5.00m SAND	1897m	West
GW107072	0.00m-2.50m FILL.,SANDY CLAY	1897m	West
GW202604	0.00m-0.15m Silt, Sandy; topsoil, soft, brown, frequent roots, moderate to high organic content 0.15m-0.90m Silt, Sandy; soft, light brown, reduced organic content 0.90m-2.80m Silt, Sandy; fine grained sands, brown-grey 2.80m-4.00m Silt, Sandy; fine grained sands, hard, brown-grey, wet from 3m	1913m	South
GW202603	0.00m-0.30m Sand, slightly sand, slightly gravelly; gravels subangular-subrounded, fine to mediumg grain of sandstone, light brown m 0.30m-1.00m Sand, silty; fine grained, light brown, some root structures 1.00m-3.00m Silt, Sandy; fine grained sand, soft, light brown 3.00m-4.00m Silt, Sandy; fine grained sand, soft, grey mottled brown, wet	1924m	South
GW202233	0.00m-0.25m Fill; Asphalt, angular gravels, loose, wet 0.25m-0.50m Fill; Sandy Clay; low to moderate plasticity, medium grained sands with subangular gravels 0.50m-2.40m Sandy Clay, moderate to high plasticity, grey with red mottling, fine grained sands, some gravels, moist 2.40m-3.00m Peat; Sandy Clay, low to moderate plasticity, black/dark grey, moist 3.00m-4.00m Sandy Clay; low plasticity, grey, medium grained sand 4.00m-5.00m Clay; high plasticity, stiff, fine grained sand 5.00m-5.20m Sand; fine to medium grained, grey, some clay	1938m	West
GW107073	0.00m-2.10m FILL,SANDY CLAY 2.10m-2.80m PEAT,SANDY CLAY 2.80m-3.50m SAND 3.50m-4.20m CLAY	1939m	West
GW202601	0.00m-0.10m Sand, Clayey; with grass of surface, brown 0.10m-0.30m Sand, Clayey; with subangular to subrounded, fine to coarse gravels of sandstone, brown, wood & metal fragments, rootlet 0.30m-0.90m Sand, Clayey; fine grained, light brown, moist 0.90m-1.40m Sand, Silty; fine grained, grey, wet 1.40m-4.00m Silt, Sandy; soft, fineg rained, grey, wet	1962m	South
GW201097	0.00m-0.20m Clay, Gravelly; brown, slightly sandy, frequent rootlets 0.20m-1.10m Clay, Gravelly; brown gravel is angular to subangular, fine to coarse grained of concrete, slightly sandy 1.10m-1.30m Clayey Sand; light grye, very clayey 1.30m-6.00m Sandy Clay; light grey & brown, sand is fine grained, clay is mottled with brown from 4.5m	1975m	South
GW202600	0.00m-0.10m Fill; road base 0.10m-0.30m Sand, silty; soft, fine grained, with some gravels, dark brown 0.30m-0.40m Sand, silty; soft, fine grained, angular gravels, dark brown 0.40m-0.70m Sand, silty; soft, fine grained, light brown 0.70m-4.00m Sand, silty; coarse to fine grained, angular to subangular gravels of sandstone, grey-brown	1987m	South
GW201095	0.00m-4.80m Clayey Sand; light brown to brown 4.80m-9.00m Silt, Sandy; light grey, medium plasticity, firm to stiff, fine grained Sand	1988m	South East
GW202607	0.00m-3.50m Fill; Clayey sand/rippsed sandstone, light brown to brown, moist 3.50m-8.20m Sand/Sandstone; fine grained, grey/red, weathered bedrock, with silt & traces of clay	1995m	South East

Geology 1:250,000

56-58 Beane Street, Gosford, NSW 2250



Geology

56-58 Beane Street, Gosford, NSW 2250

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qa	Undifferentiated alluvial deposits; sand, silt, clay and gravel; some residual and colluvial deposits. Includes some channel, levee, lacustrine, floodplain and swamp deposits. May include some higher level Tertiary terraces	undifferentiated			Cainozoic			1:250,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qa	Undifferentiated alluvial deposits; sand, silt, clay and gravel; some residual and colluvial deposits. Includes some channel, levee, lacustrine, floodplain and swamp deposits. May include some higher level Tertiary terraces	undifferentiated			Cainozoic			1:250,000
Rh	Sandstone quartz with some shale	Hawkesbury Sandstone			Mesozoic			1:250,000
Rng	Sandstone	Gosford Subgroup	Narrabeen Group	Gosford Subgroup	Mesozoic			1:250,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

Geological Data Source : NSW Department of Industry, Resources & Energy

Naturally Occurring Asbestos Potential

56-58 Beane Street, Gosford, NSW 2250

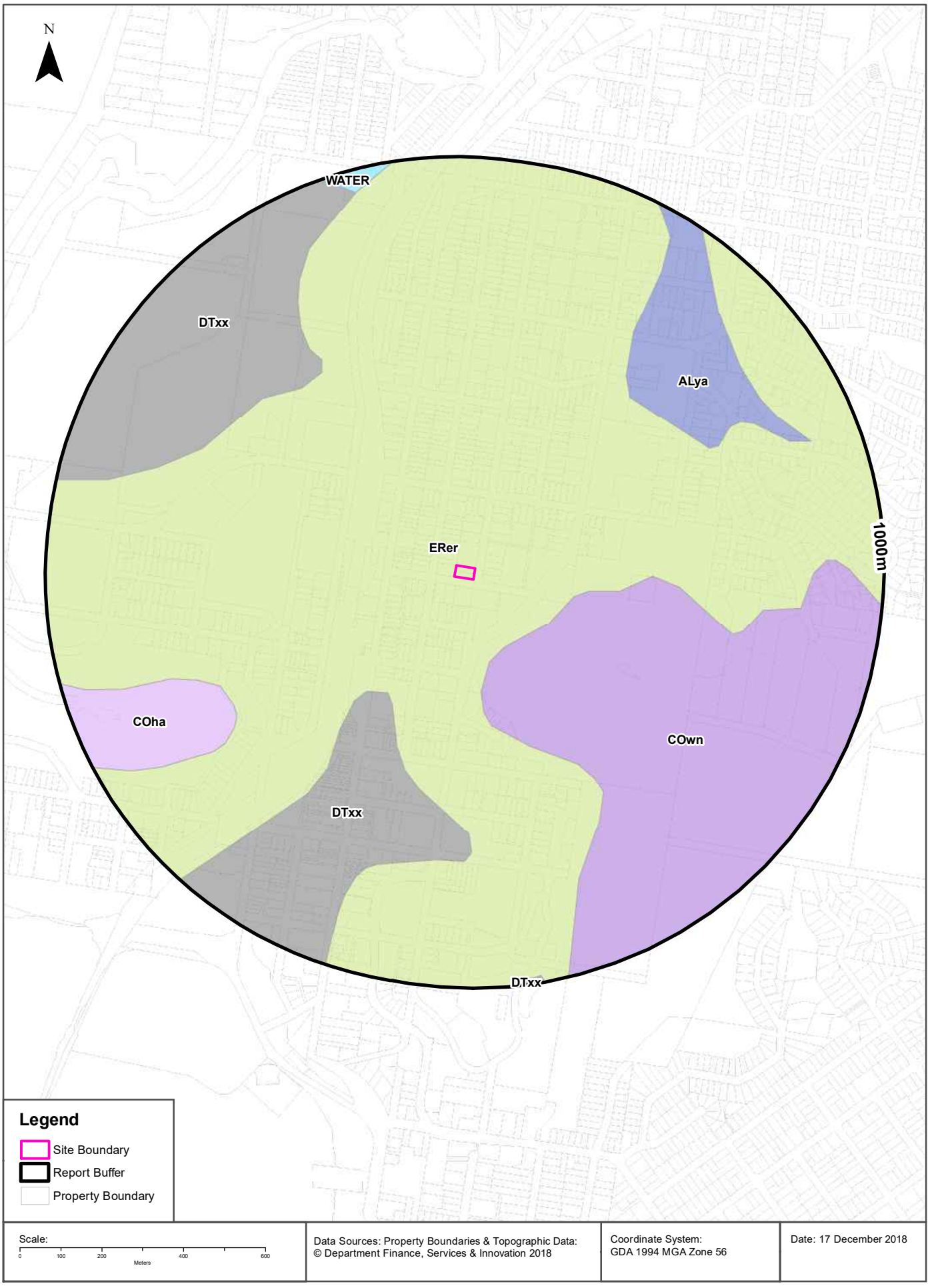
Naturally Occurring Asbestos Potential

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												

Soil Landscapes

56-58 Beane Street, Gosford, NSW 2250



Soils

56-58 Beane Street, Gosford, NSW 2250

Soil Landscapes

What are the onsite Soil Landscapes?

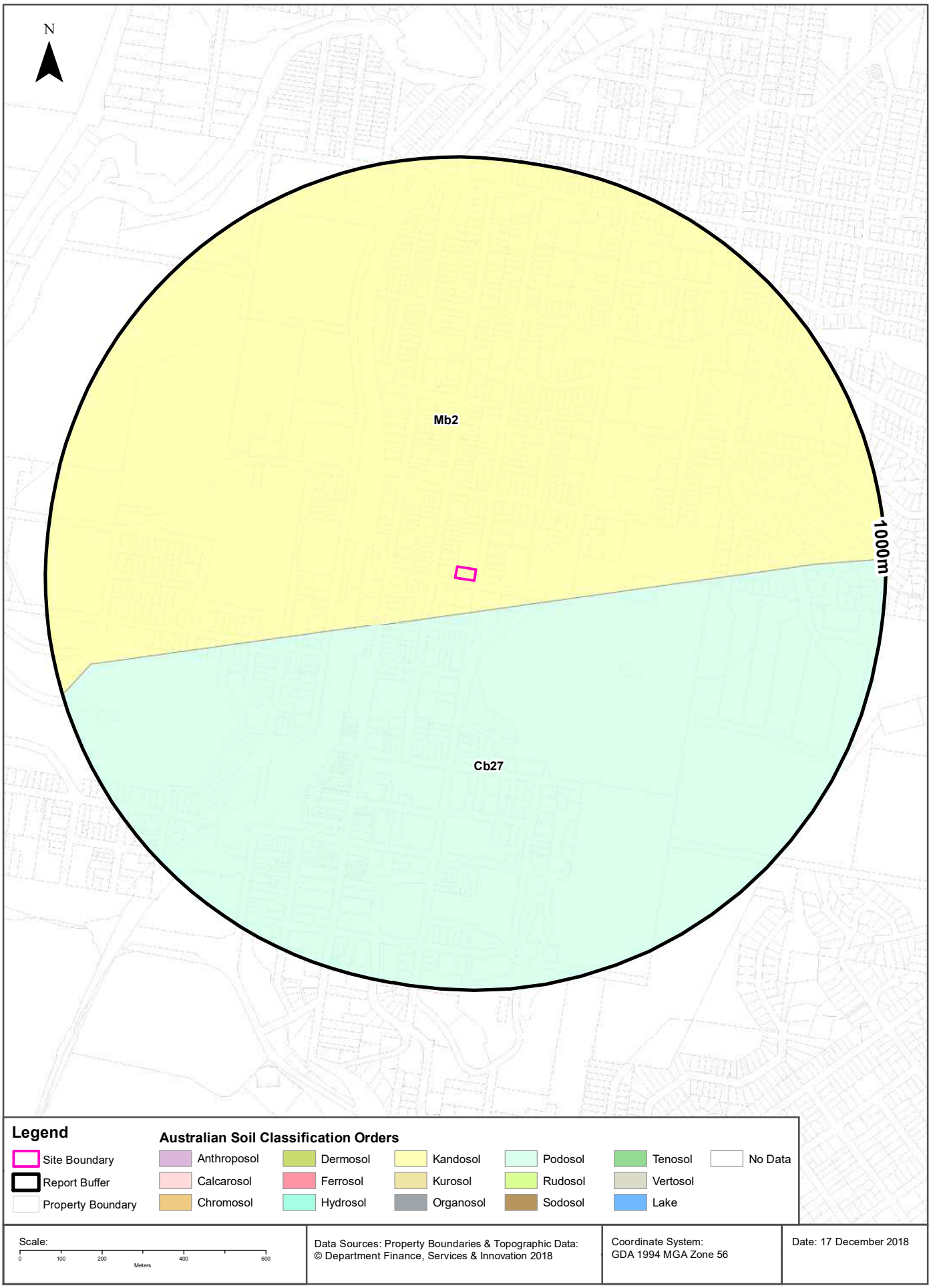
Soil Code	Name	Group	Process	Map Sheet	Scale
ERer	ERINA		EROSIONAL	Gosford & Lake Macquarie	1:100,000

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
ALya	YARRAMALONG		ALLUVIAL	Gosford & Lake Macquarie	1:100,000
COha	HAWKESBURY		COLLUVIAL	Gosford & Lake Macquarie	1:100,000
COwn	WATAGAN		COLLUVIAL	Gosford & Lake Macquarie	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Gosford & Lake Macquarie	1:100,000
ERer	ERINA		EROSIONAL	Gosford & Lake Macquarie	1:100,000
WATER	WATER		WATER	Gosford & Lake Macquarie	1:100,000

Atlas of Australian Soils

56-58 Beane Street, Gosford, NSW 2250



Soils

56-58 Beane Street, Gosford, NSW 2250

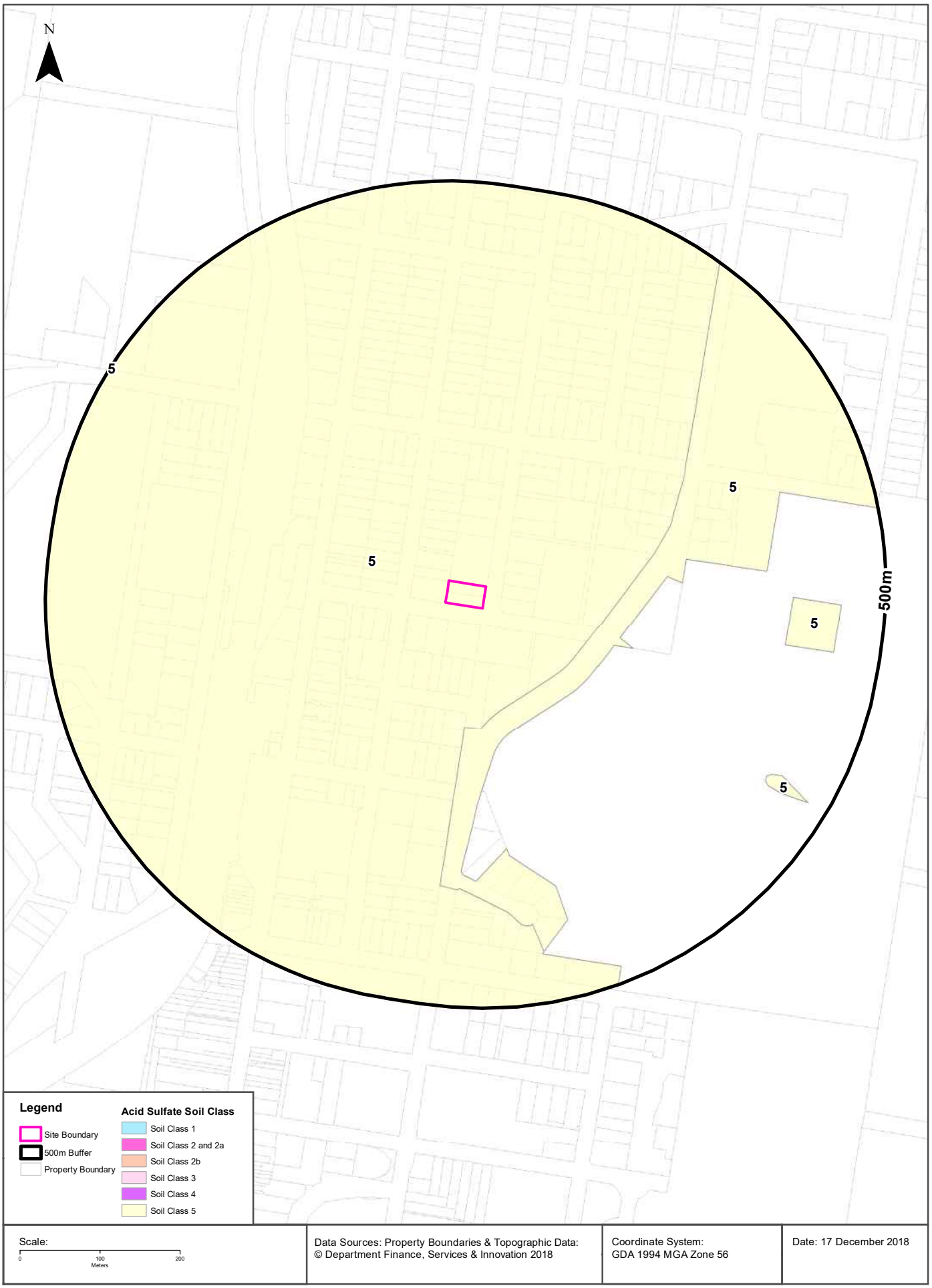
Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance
Mb2	Kandosol	Dissected sandstone plateau of moderate to strong relief with sandstone pillars, ledges, and slabs-- level to undulating ridges, irregularly benched slopes, steep ridges, cliffs, canyons, narrow sandy valleys: chief soils are (i) on areas of gentle to moderate relief, acid yellow leached earths (Gn2.74) and (Gn2.34) and acid leached yellow earths (Gn2.24)-sometimes these soils contain ironstone gravel; and (ii) on, or adjacent to, areas of strong relief, siliceous sands (Uc1.2), leached sands (Uc2.12) and (Uc2.2), and shallow forms of the above (Gn2) soils. Associated are: (i) on flat to gently undulating remnants of the original plateau surface, leached sands (Uc2.3), siliceous sands (Uc1.2), sandy earths (Uc5.22), and (Gn2) soils as for (i) above (these areas are in part comparable with unit Cb29); (ii) on flat ironstone gravelly remnants of the original plateau surface, (Gn2) soils as for unit Mb5(i); (iii) on gently undulating ridges where interbedded shales are exposed, shallow, often stony (Dy3.41), (Dr2.21), and related soils similar to unit Tb35; (iv) narrow valleys of (Uc2.3) soils flanked by moderate slopes of (Dy3.41) soils; (v) escarpments of steep hills with shallow (Dy) and (Dr) soils between sandstone pillars; and (vi) shallow (Um) soils, such as (Um6.21) on steep hills of basic rocks. As mapped, minor areas of units Mg20, Mm1, and Mw8 are included. Data are limited.	0m
Cb27	Podosol	Coastal sand plains and dunes, lagoons, and swampy areas: chief soils are leached sands (Uc2.3 and Uc2.2). Associated are dunes of siliceous sands (Uc1.2) and/or calcareous sands (Uc1.l) fringing the coastline; and swampy areas of (Uf6) soils and (Uc1.2) soils with peaty surfaces. Unit Cb27 has similarities with units Cb28 and Ca6.	73m

Acid Sulfate Soils

56-58 Beane Street, Gosford, NSW 2250



Acid Sulfate Soils

56-58 Beane Street, Gosford, NSW 2250

Environmental Planning Instrument - Acid Sulfate Soils

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

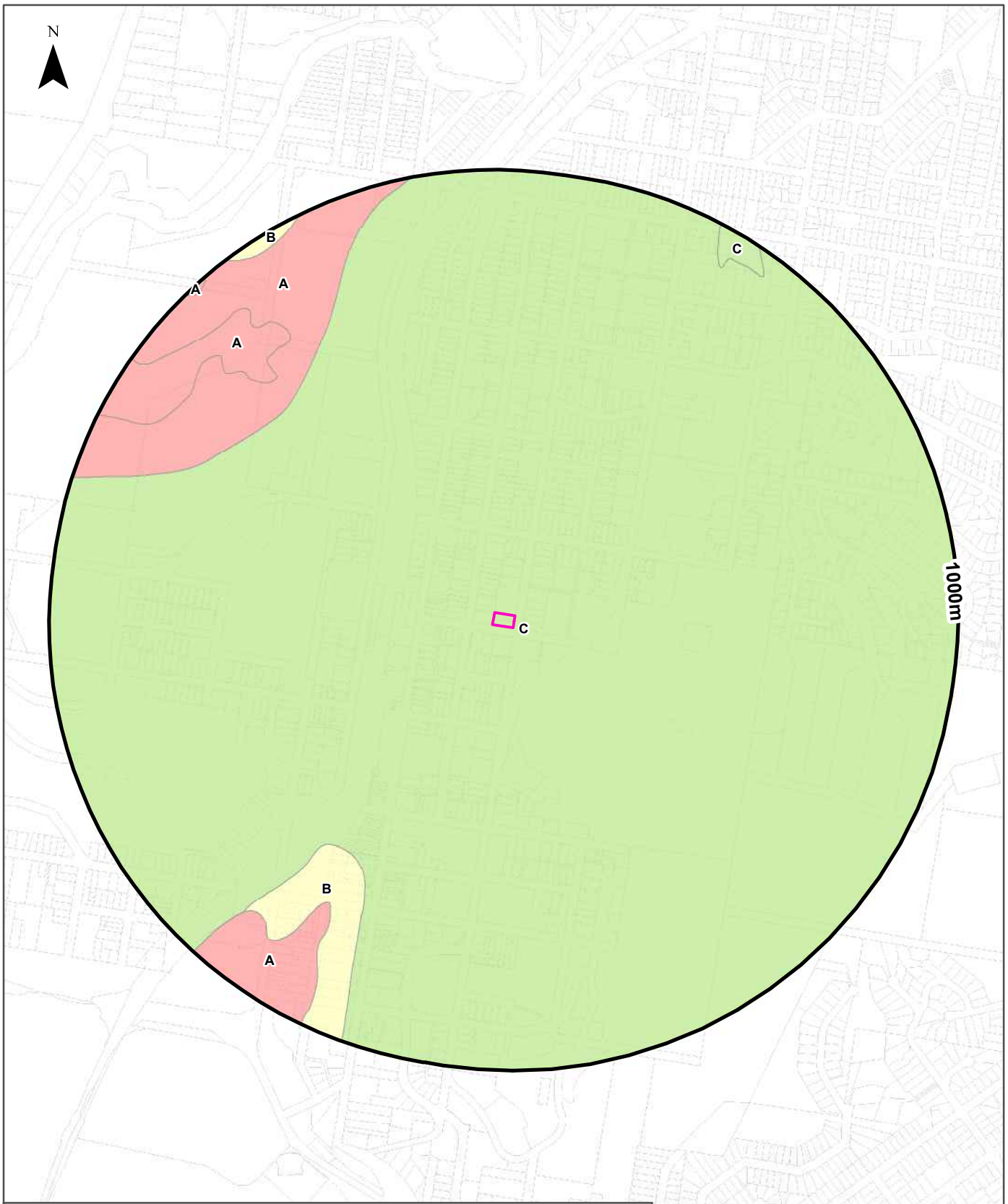
Soil Class	Description	EPI
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	State Environmental Planning Policy (Gosford City Centre) 2018

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

Soil Class	Description	EPI	Distance	Direction
None				

Atlas of Australian Acid Sulfate Soils

56-58 Beane Street, Gosford, NSW 2250



Legend

- Site Boundary
- Report Buffer
- Property Boundary

Probability of occurrence of Acid Sulfate Soils

- A. High (>70%)
- B. Low (6-70%)
- C. Extremely Low (1-5%)
- D. No Chance (0%)
- No Data

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2018

Coordinate System: GDA 1994 MGA Zone 56

Date: 17December 2018

Acid Sulfate Soils

56-58 Beane Street, Gosford, NSW 2250

Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m
B	Low Probability of occurrence. 6-70% chance of occurrence.	607m
A	High Probability of occurrence. >70% chance of occurrence.	660m

Dryland Salinity

56-58 Beane Street, Gosford, NSW 2250

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

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

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

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
N/A	Outside Data Coverage			

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

Mining Subsidence Districts

56-58 Beane Street, Gosford, NSW 2250

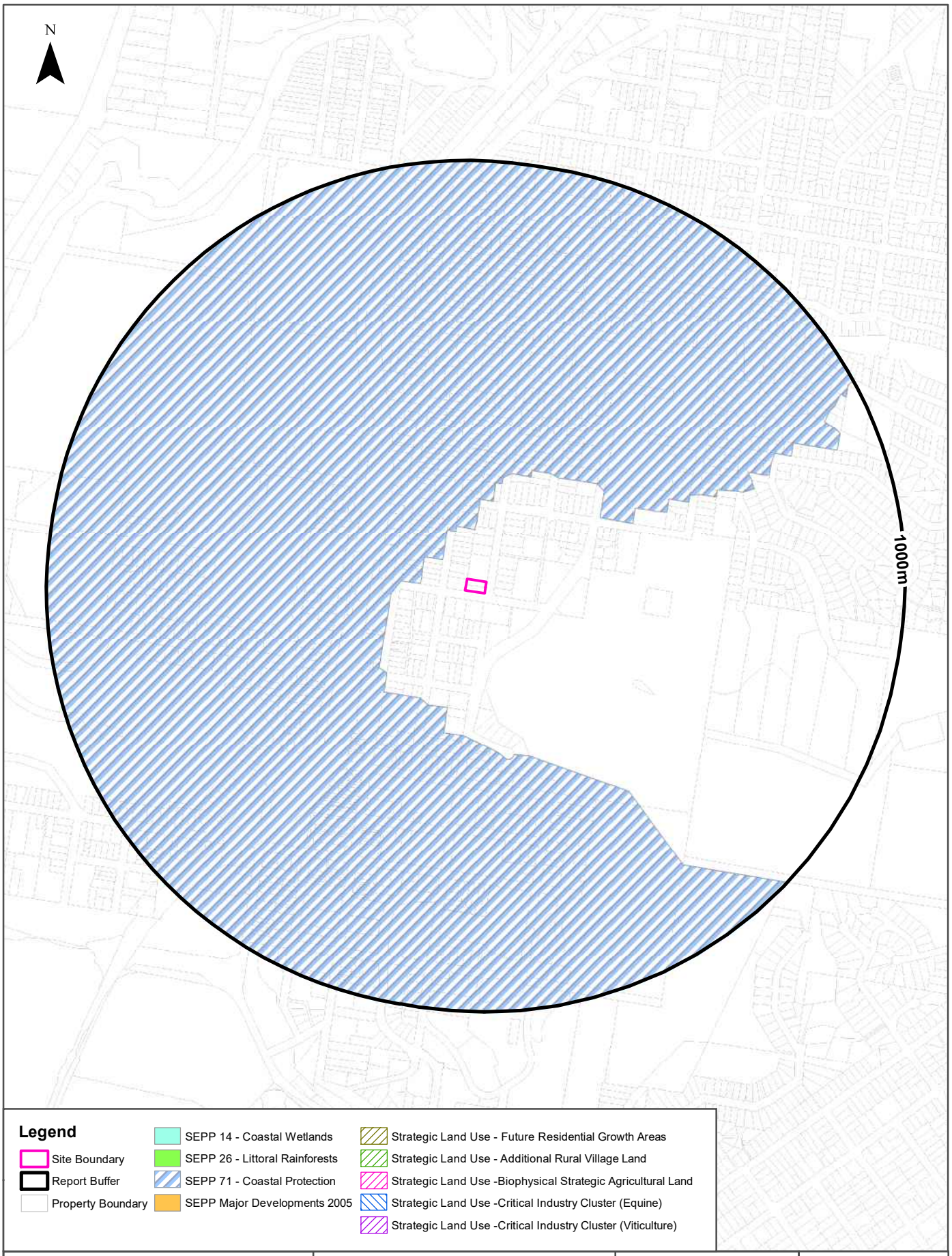
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

State Environmental Planning Policy

56-58 Beane Street, Gosford, NSW 2250



Environmental Zoning

56-58 Beane Street, Gosford, NSW 2250

State Environmental Planning Policy Protected Areas

Are there any State Environmental Planning Policy Protected Areas onsite or within the dataset buffer?

Dataset	Onsite	Within Site Buffer	Distance
SEPP14 - Coastal Wetlands	No	No	N/A
SEPP26 - Littoral Rainforests	No	No	N/A
SEPP71 - Coastal Protection Zone	No	Yes	75m

SEPP Protected Areas Data Source: NSW Department of Planning & Environment

State Environmental Planning Policy Major Developments (2005)

State Environmental Planning Policy Major Developments within the dataset buffer:

Map Id	Feature	Effective Date	Distance	Direction
N/A	No records within buffer			

SEPP Major Development Data Source: NSW Department of Planning & Environment

State Environmental Planning Policy Strategic Land Use Areas

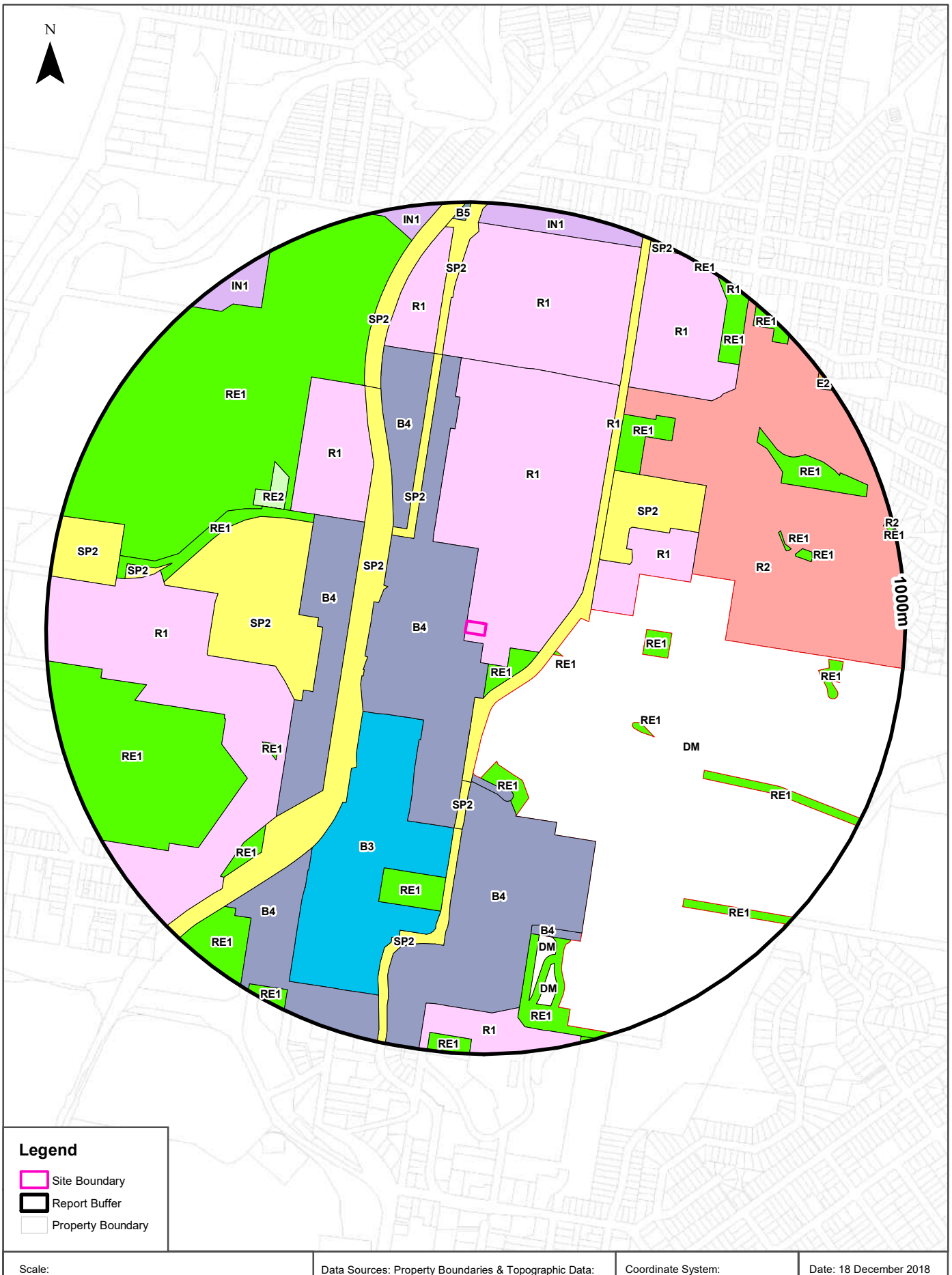
State Environmental Planning Policy Strategic Land Use Areas onsite or within the dataset buffer:

Strategic Land Use	SEPPNo	Effective Date	Amendment	Amendment Year	Distance	Direction
No records within buffer						

SEPP Strategic Land Use Data Source: NSW Department of Planning & Environment

EPI Planning Zones

56-58 Beane Street, Gosford, NSW 2250



Legend

- Site Boundary
- Report Buffer
- Property Boundary

Scale: 0 100 200 400 600 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2018 Planning: NSW Crown Copyright - Planning & Environment	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 December 2018

Environmental Planning Instrument

56-58 Beane Street, Gosford, NSW 2250

Land Zoning

What Environmental Planning Instrument Land Zones exist within the dataset buffer?

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R1	General Residential	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	0m	Onsite
B4	Mixed Use	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	0m	West
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	69m	South East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		119m	South East
SP2	Infrastructure	Road	Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		119m	North
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		123m	South East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		124m	South East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		126m	South East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		129m	South East
DM	Deferred Matter		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		149m	East
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		150m	South
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		170m	East
SP2	Infrastructure	Rail Infrastructure Facility	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	206m	South West
B3	Commercial Core		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		222m	South
B3	Commercial Core	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	231m	South West
SP2	Infrastructure	Road	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	234m	North
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		252m	East
B4	Mixed Use	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	262m	North
B4	Mixed Use	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	277m	West
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		301m	South
SP2	Infrastructure	Health Services Facilities	Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		313m	North East
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		329m	South
R1	General Residential	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	339m	North West

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
SP2	Infrastructure	Health Services Facilities	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	340m	West
SP2	Infrastructure	Road	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	350m	South
B4	Mixed Use	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	351m	South
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		380m	East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		411m	South East
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	436m	West
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		438m	South
R1	General Residential	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	438m	West
SP2	Infrastructure	Road	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	465m	South
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		478m	North East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		497m	North West
R2	Low Density Residential		Gosford Local Environmental Plan 2014	29/06/2018	29/06/2018	29/06/2018	Amendment No 32	506m	North East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		511m	North West
RE2	Private Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		511m	North West
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	519m	South West
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		544m	North East
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		573m	North West
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	586m	South
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		588m	North East
SP2	Infrastructure	Rail Infrastructure Facility	Gosford Local Environmental Plan 2014	04/08/2017	04/08/2017	29/06/2018	Amendment No 25	591m	North
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	606m	West
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		608m	North
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		612m	North West
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		616m	South East
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		618m	North
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		621m	North
B4	Commercial Core	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	630m	South
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		638m	North
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		643m	North
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		656m	North

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		661m	North East
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	661m	South West
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		667m	North
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		679m	North
B4	Mixed Use		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		701m	South
SP2	Infrastructure	Health Services Facilities	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	717m	West
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		720m	South
DM	Deferred Matter		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		727m	South
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		731m	East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		756m	East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		779m	North East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		788m	South East
DM	Deferred Matter		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		800m	South
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		801m	East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		836m	North East
SP2	Infrastructure	Educational Establishment	Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		842m	West
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	852m	South West
R1	General Residential	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	887m	South
IN1	General Industrial		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		894m	North
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		940m	South
IN1	General Industrial		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		945m	North
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	953m	South West
B5	Business Development		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		956m	North
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	956m	South
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		956m	North East
R1	General Residential		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		962m	South
E2	Environmental Conservation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		968m	North East
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		976m	East
SP2	Infrastructure	Education & Place of Worship	Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		976m	North East
RE1	Public Recreation	<Null>	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	984m	South
RE1	Public Recreation		Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	29/06/2018		984m	South

Environmental Planning Instrument

56-58 Beane Street, Gosford, NSW 2250

Minimum Lot Size

What are the onsite Environmental Planning Instrument Minimum Lot Sizes?

Symbol	Minimum Lot Size	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
K	550 m²	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	100

Maximum Height of Buildings

What are the onsite Environmental Planning Instrument Maximum Height of Buildings?

Symbol	Maximum Height of Building	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
19	24.00 m	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	<Null>	100

Floor Space Ratio

What are the onsite Environmental Planning Instrument Floor Space Ratios?

Symbol	Floor Space Ratio	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
22	3.00	SEPP	12/10/2018	12/10/2018	12/10/2018	<Null>	100

Land Application

What are the onsite Environmental Planning Instrument Land Applications?

Application Type	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
No Data						

Land Reservation Acquisition

What are the onsite Environmental Planning Instrument Land Reservation Acquisitions?

Reservation	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Comments	Percentage of Site Area
No Data							

Heritage Items

56-58 Beane Street, Gosford, NSW 2250

Heritage

56-58 Beane Street, Gosford, NSW 2250

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
N/A	No records in buffer							

Environmental Planning Instrument - Heritage

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

Map Id	Name	Classification	Significance	EPI	Published Date	Commenced Date	Currency Date	Distance	Direction
43	Mitre 10 store	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	109m	West
45	Railway bridge and viaduct	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	273m	North West
47	Railway turntable	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	279m	South West
48	Signal box, water column and tank	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	279m	South West
49	Large-faced clock with wooden frame	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	279m	South West
27	Burns Place Park, feature eucalypt and stands of mature trees	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	296m	South West
29	Gosford Hotel	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	420m	South West
129	Former cemetery, 'Bradys Gully'	Item - General	Local	Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	04/08/2017	478m	North East
42	Building facade, First National Real Estate	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	574m	South West
46	Dwyer Pavilion	Item - General	Local	Gosford Local Environmental Plan 2014	11/02/2014	11/02/2014	04/08/2017	643m	North West
28	Union Hotel	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	676m	South West
41	Feature tree'fig	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	736m	South

Map Id	Name	Classification	Significance	EPI	Published Date	Commenced Date	Currency Date	Distance	Direction
39	Gosford City Council administration building	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	813m	South
40	Former Brisbane Water County Council building	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	825m	South West
38	Conservatorium of Music (former courthouse and police station)	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	856m	South
30	Former Gosford Public School and residence, now TAFE Building E	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	863m	South
25	Avenue and feature trees'Grahame Park	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	903m	South West
37	Creighton's Funeral Parlour	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	917m	South
36	Former School of Arts	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	926m	South
A26	Footings of former police stables	Item - Archaeological	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	928m	South
A25	Footings of former sergeant'??s residence/police station	Item - Archaeological	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	945m	South
35	Part of Gosford South Post Office	Item - General	Local	State Environmental Planning Policy (Gosford City Centre) 2018	12/10/2018	12/10/2018	12/10/2018	971m	South

Natural Hazards - Bush Fire Prone Land

56-58 Beane Street, Gosford, NSW 2250

Natural Hazards

56-58 Beane Street, Gosford, NSW 2250

Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	0m	Onsite
Vegetation Category 1	59m	East
Vegetation Category 2	553m	South East

Ecological Constraints - Vegetation & RAMSAR Wetlands

56-58 Beane Street, Gosford, NSW 2250

Ecological Constraints

56-58 Beane Street, Gosford, NSW 2250

Vegetation of Gosford LGA

What vegetation of Gosford LGA exists within the dataset buffer?

Veg Class	Community	Keith Class	REMS Name	Key Species	EEC Equivalent	Myrtle Rust	Significance	Distance	Direction
E22ai	E22ai - Narrabeen Coastal Blackbutt Forest	Northern Hinterland Wet Sclerophyll Forests	Coastal Narrabeen Shrub Forest	E.pilularis S.glomulifera A.torulosa		High	Regionally Significant Vegetation	59m	East
Xr	Disturbed - Canopy Only			various	Individual site assessment required	Low		178m	North East
E6ai	E6ai - Coastal Narrabeen Moist Forest	North Coast Wet Sclerophyll Forests	Coastal Narrabeen Moist Forest	E.saligna A.torulosa S.glomulifera E.acmenoides E.pilularis		Extreme		519m	North East
E37	E37 - Swamp Mahogany - Paperbark Forest	Coastal Swamp Forests	Swamp Mahogany - Paperbark Forest	E.robusta M.linariifolia M.sieberi M.styphelioides E.resinifera	Swamp Sclerophyll Forest on Coastal Floodplains EEC	Extreme	Endangered Ecological Communities	618m	North West
Xs	Disturbed - Regrowth			various	Individual site assessment required	Low		647m	North West
E1ai	E1ai - Coastal Warm Temperate Rainforest	Northern Warm Temperate Rainforests/ Subtropical Rainforests	Coastal Warm Temperate - Subtropical Rainforest	A.smithii D.sassafras C.glaucescens C.apetalum E.saligna A.excelsa	Lowland Rainforest EEC (site-by-site assessment required)	Extreme	Endangered Ecological Communities	867m	South East
E22c	E22c - Narrabeen Coastal Peppermint Forest	Sydney Coastal Dry Sclerophyll Forests	Coastal Narrabeen Shrub Forest	E.piperita C.gummifera A.costata		Low	Regionally Significant Vegetation	979m	North East

Vegetation of Gosford LGA: Council of the City of Gosford / NSW Office of Environment and Heritage

Ramsar Wetlands

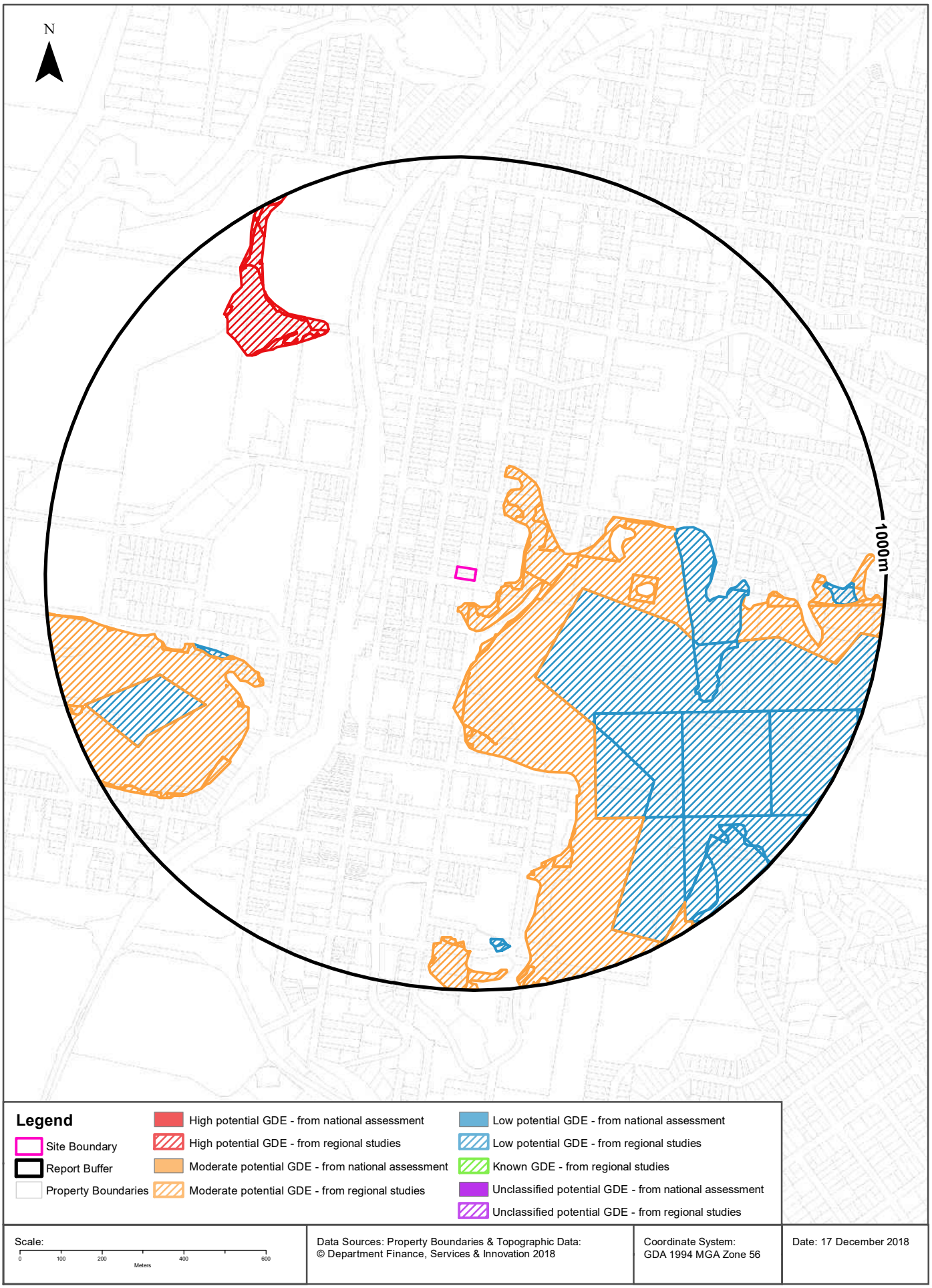
What Ramsar Wetland areas exist within the dataset buffer?

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 Environment

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

56-58 Beane Street, Gosford, NSW 2250



Ecological Constraints

56-58 Beane Street, Gosford, NSW 2250

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	Moderate potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		54m
Terrestrial	Low potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		241m
Terrestrial	High potential GDE - from regional studies	Deeply dissected sandstone plateaus.	Vegetation		652m

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

56-58 Beane Street, Gosford, NSW 2250

Ecological Constraints

56-58 Beane Street, Gosford, NSW 2250

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	2	Deeply dissected sandstone plateaus.	Vegetation		54m
Terrestrial	1	Deeply dissected sandstone plateaus.	Vegetation		60m
Terrestrial	7	Deeply dissected sandstone plateaus.	Vegetation		111m
Terrestrial	4	Deeply dissected sandstone plateaus.	Vegetation		241m
Terrestrial	3	Deeply dissected sandstone plateaus.	Vegetation		459m
Terrestrial	10	Deeply dissected sandstone plateaus.	Vegetation		581m
Terrestrial	6	Deeply dissected sandstone plateaus.	Vegetation		594m
Terrestrial	5	Deeply dissected sandstone plateaus.	Vegetation		717m
Terrestrial	8	Deeply dissected sandstone plateaus.	Vegetation		787m

Ecological Constraints

56-58 Beane Street, Gosford, NSW 2250

NSW BioNet Atlas

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Heleioporus australiacus	Giant Burrowing Frog	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria brevipalmata	Green-thighed Frog	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Mixophyes balbus	Stuttering Frog	Endangered	Category 2	Vulnerable	
Animalia	Amphibia	Mixophyes iteratus	Giant Barred Frog	Endangered	Category 2	Endangered	
Animalia	Amphibia	Pseudophryne australis	Red-crowned Toadlet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardea ibis	Cattle Egret	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ardenna carneipes	Flesh-footed Shearwater	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Ardenna grisea	Sooty Shearwater	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ardenna pacificus	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Charadrius mongolus	Lesser Sand-plover	Vulnerable	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Diomedea exulans	Wandering Albatross	Endangered	Not Sensitive	Endangered	JAMBA
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Gygis alba	White Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	CAMBA
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	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pachycephala olivacea	Olive Whistler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Phaethon rubricauda	Red-tailed Tropicbird	Vulnerable	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pterodroma nigripennis	Black-winged Petrel	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus magnificus	Wompoo Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Puffinus assimilis	Little Shearwater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stercorarius parasiticus	Arctic Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Thalassarche cauta	Shy Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalassarche chrysostoma	Grey-headed Albatross	Not Listed	Not Sensitive	Endangered	
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Todiramphus chloris	Collared Kingfisher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa glareola	Wood Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Xenus cinereus	Terek Sandpiper	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Dugong dugon	Dugong	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Kerivoula papuensis	Golden-tipped Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Macropus parma	Parma Wallaby	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Megaptera novaeangliae	Humpback Whale	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Miniopterus australis	Little Bentwing-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Mormopterus norfolkensis	Eastern Freetail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus australis	Yellow-bellied Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Potorous tridactylus	Long-nosed Potoroo	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pseudomys gracilicaudatus	Eastern Chestnut Mouse	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Reptilia	Dermochelys coriacea	Leatherback Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Hoplocephalus bitorquatus	Pale-headed Snake	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Hoplocephalus bungaroides	Broad-headed Snake	Endangered	Category 2	Vulnerable	
Animalia	Reptilia	Hoplocephalus stephensii	Stephens' Banded Snake	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Varanus rosenbergi	Rosenberg's Goanna	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia pubescens	Downy Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Ancistrachne maidenii		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Baloskion longipes	Dense Cord-rush	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Chamaesyce psammogeton	Sand Spurge	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Cryptostylis hunteriana	Leafless Tongue Orchid	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Darwinia glaucophylla		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Dendrobium melaleucaphilum	Spider orchid	Endangered	Category 2	Not Listed	
Plantae	Flora	Diuris bracteata		Endangered	Category 2	Extinct	
Plantae	Flora	Epacris purpurascens subsp. purpurascens		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus camfieldii	Camfield's Stringybark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Grammitis stenophylla	Narrow-leaf Finger Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Grevillea shiressii		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Hibbertia procumbens	Spreading Guinea Flower	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Lindsaea fraseri	Fraser's Screw Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca biconvexa	Biconvex Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca deanei	Deane's Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Persoonia hirsuta	Hairy Geebung	Endangered	Category 3	Endangered	
Plantae	Flora	Prostanthera askania	Tranquility Mintbush	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Prostanthera junonis	Somersby Mintbush	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Senecio spathulatus	Coast Groundsel	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Syzygium hodgkinsoniae	Red Lilly Pilly	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca glandulosa		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Tylophora woollsii	Cryptic Forest Twiner	Endangered	Not Sensitive	Endangered	

Data does not include NSW category 1 sensitive species.

Data obtained 17/12/2018

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Appendix B

Central Coast Council

Sequence No: 78516156
Job No: 15459806
Location: 56-58 Beane Street, Gosford, NSW 2250

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.

Legend

- Sewer Maintenance Hole
- Sewer Dead End
- Sewer Lamphole
- Sewer Service Connection
- Sewer Gravity Main
- Sewer Gravity Main (Asbestos)
- Sewer Gravity Main - Expired
- Sewer Pressure Main
- Sewer Pressure Main - Expired
- Water Hydrant
- Water Valve
- Watermain
- Watermain (Asbestos)
- Watermain - Expired
- Watermain - Expired (Asbestos)
- Watermain - Recycled
- Drainage Pit
- Drainage Pipe
- Drainage Pipe - Expired
- Cadastre - Central Coast

Scale: 1:1000

N

Projection: GDA 1994 Transverse Mercator; GCS GDA 1994

Appendix C

Cadastral Records Enquiry Report : Lot 31 Section 4 DP 1591

Ref : NOUSER

Locality : GOSFORD
Parish : GOSFORD
LGA : CENTRAL COAST
County : NORTHUMBERLAND

This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

	Status	Surv/Comp	Purpose
DP18726			
Lot(s): 7			
DP1225681	REGISTERED	SURVEY	EASEMENT
Lot(s): 1			
SP61742	PRE-EXAM	COMPILATION	STRATA PLAN
DP1006006			
Lot(s): 100, 103			
DP862610	HISTORICAL	SURVEY	CONSOLIDATION
DP1011599			
Lot(s): 1			
DP406428	HISTORICAL	SURVEY	UNRESEARCHED
DP1027283			
Lot(s): 1, 2			
DP849777	HISTORICAL	SURVEY	SUBDIVISION
DP1044058			
Lot(s): 202			
DP1177250	REGISTERED	SURVEY	EASEMENT
DP1190778	REGISTERED	COMPILATION	EASEMENT
Lot(s): 202, 203			
DP805082	HISTORICAL	SURVEY	SUBDIVISION
DP1117484			
Lot(s): 7029			
NSW GAZ.	17-10-1986		Folio : 5129
NOTIFICATION OF CREATION OF EASEMENT AFFECTING THE LAND SHOWN AS RIGHT OF CARRIAGEWAY 10 WIDE IN DP720717			
DP1187459			
Lot(s): 1			
DP1184980	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
DP1184994	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
DP1185021	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
CA166835 - LOT 119 DP1184980			
CA166843 - LOT 120 DP1184994			
CA166855 - LOT 121 DP1185021			
SP14004			
DP1042082	REGISTERED	SURVEY	CONSOLIDATION
SP87023	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
SP62240			
DP882655	HISTORICAL	SURVEY	CONSOLIDATION
SP63890			
DP14122	HISTORICAL	SURVEY	UNRESEARCHED
DP1017650	HISTORICAL	SURVEY	REDEFINITION
SP64935			
DP758466	HISTORICAL	COMPILATION	CROWN ADMIN NO.
DP1008734	HISTORICAL	SURVEY	ROADS ACT, 1993
DP1011052	HISTORICAL	SURVEY	CONSOLIDATION
SP68909			
DP1591	HISTORICAL	SURVEY	UNRESEARCHED
DP1042082	HISTORICAL	SURVEY	CONSOLIDATION
SP69798			
DP1591	HISTORICAL	SURVEY	UNRESEARCHED
DP1046093	HISTORICAL	SURVEY	CONSOLIDATION
SP72451			
DP1048303	HISTORICAL	SURVEY	CONSOLIDATION
DP1061661	HISTORICAL	SURVEY	SUBDIVISION
SP73137			
DP14122	HISTORICAL	SURVEY	UNRESEARCHED
DP1063968	HISTORICAL	SURVEY	CONSOLIDATION

	Status	Surv/Comp	Purpose
SP77413			
DP1591	HISTORICAL	SURVEY	UNRESEARCHED
DP18726	HISTORICAL	SURVEY	UNRESEARCHED
DP349868	HISTORICAL	COMPILATION	UNRESEARCHED
DP1004626	HISTORICAL	COMPILATION	LIMITED FOLIO CREATION
DP1008225	HISTORICAL	SURVEY	CONSOLIDATION
DP1078487	HISTORICAL	SURVEY	CONSOLIDATION
SP77414	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
PA81430 - LOT 1 DP1008225			
SP94753			
DP1223347	HISTORICAL	SURVEY	CONSOLIDATION

Road

Polygon Id(s): 105052945, 105239842, 105301929, 105409981, 105568651, 105591253, 105648072, 106714651, 106714660, 106737653, 106760655

EX-SUR 59/33 DP446245

Plan	Surv/Comp	Purpose
DP1591	SURVEY	UNRESEARCHED
DP12148	SURVEY	UNRESEARCHED
DP14122	SURVEY	UNRESEARCHED
DP18726	SURVEY	UNRESEARCHED
DP127201	COMPILATION	DEPARTMENTAL
DP201121	SURVEY	SUBDIVISION
DP229792	SURVEY	SUBDIVISION
DP309913	SURVEY	UNRESEARCHED
DP345236	SURVEY	UNRESEARCHED
DP377238	COMPILATION	UNRESEARCHED
DP406884	SURVEY	UNRESEARCHED
DP419686	SURVEY	UNRESEARCHED
DP513889	SURVEY	SUBDIVISION
DP555943	SURVEY	SUBDIVISION
DP589618	SURVEY	SUBDIVISION
DP706156	COMPILATION	CONSOLIDATION
DP805082	SURVEY	SUBDIVISION
DP837225	SURVEY	REDEFINITION
DP837748	SURVEY	SUBDIVISION
DP837750	SURVEY	SUBDIVISION
DP843057	SURVEY	SUBDIVISION
DP857320	SURVEY	REDEFINITION
DP911163	COMPILATION	UNRESEARCHED
DP911164	COMPILATION	UNRESEARCHED
DP996250	COMPILATION	DEPARTMENTAL
DP1006006	SURVEY	SUBDIVISION
DP1011599	COMPILATION	CONSOLIDATION
DP1020208	COMPILATION	LIMITED FOLIO CREATION
DP1027283	SURVEY	SUBDIVISION
DP1044058	SURVEY	SUBDIVISION
DP1117484	COMPILATION	CROWN LAND CONVERSION
DP1157415	COMPILATION	CROWN LAND CONVERSION
DP1187459	SURVEY	CONSOLIDATION
SP11994	COMPILATION	STRATA PLAN
SP14004	COMPILATION	STRATA PLAN
SP18828	COMPILATION	STRATA PLAN
SP19020	COMPILATION	STRATA PLAN
SP31797	COMPILATION	STRATA PLAN
SP33362	COMPILATION	STRATA PLAN
SP34699	COMPILATION	STRATA PLAN
SP38390	COMPILATION	STRATA PLAN
SP46812	COMPILATION	STRATA PLAN
SP54939	COMPILATION	STRATA PLAN
SP57750	COMPILATION	STRATA PLAN
SP57998	COMPILATION	STRATA PLAN
SP62240	COMPILATION	STRATA PLAN
SP63890	COMPILATION	STRATA PLAN
SP64935	COMPILATION	STRATA PLAN
SP68909	COMPILATION	STRATA PLAN
SP69798	COMPILATION	STRATA PLAN
SP72451	COMPILATION	STRATA PLAN
SP73137	COMPILATION	STRATA PLAN
SP77413	COMPILATION	STRATA PLAN
SP94753	COMPILATION	STRATA PLAN

[redacted]

RTIFICATE OF TITLE

NEW SOUTH WALES

OPERTY ACT, 1900, as amended.

Appln. No. 6338

Prior Title Vol. 5364 Fol. 105

Vol. 10433 Fol. 102

Edition issued 8-11-1966

DM. K437284

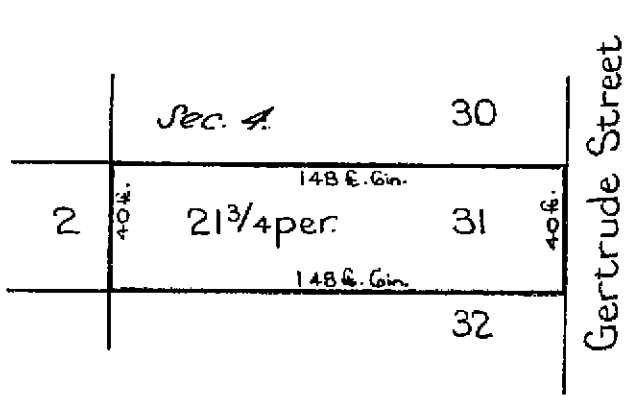
(Page 1) Vol. 10433 Fol. 102

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

Witness J. Vandine

Registrar General.

PLAN SHOWING LOCATION OF LAND



K.437284

Scale: 60 feet to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 31 of Section 4 in Deposited Plan 1591 in the Shire of Gosford, Parish of Gosford and County of Northumberland being part of Suburban Allotment 1 of Section 28 granted to Henry Augustus Crause on 15-10-1858.

Registrar General.

FIRST SCHEDULE (continued overleaf).

HC

THE HOUSING COMMISSION OF NEW SOUTH WALES.

Registrar General.

SECOND SCHEDULE (continued overleaf).

GRY

1. Reservations and conditions, if any, contained in the Crown Grant above referred to

Registrar General.

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

Vol. 10433 Fol 102

FIRST SCHEDULE (continued)

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

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
EW Transfer	L 914508 P	8.6.1970	Easement to drain water, as more fully set out in the said instrument, affecting that part of the land within described shown as "Site of Proposed Easement to drain water 8' wide" in plan annexed to Transfer No. L 914508	11.8.1970	Jonathan			

(Page 2 of 2 pages)

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

[redacted]

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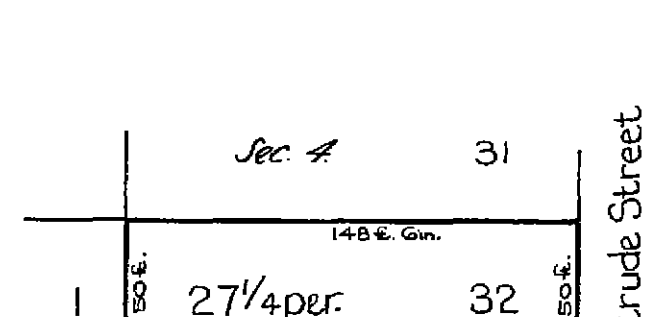
Registrar General.

PLAN SHOWING LOCATION OF LAND

CANCELLED

SEE AUTO FOLIO



K.437284

Scale: 60 feet to one inch.

ESTATE AND LAND REFERRED TO

S

Estate in Fee Simple in Lot 32 of Section 4 in Deposited Plan 1591 in the Shire of Gosford, Parish of Gosford and County of Northumberland being part of Suburban Allotment 1 of Section 28 granted to Henry Augustus Crause on 15-10-1858.

Registrar General.

FIRST SCHEDULE (continued overleaf).

HC

THE HOUSING COMMISSION OF NEW SOUTH WALES.

Registrar General.

SECOND SCHEDULE (continued overleaf).

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1. Reservations and conditions, if any, contained in the Crown Grant above referred to

Registrar General.

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Vol. 10433 Fol 103

C.T. 9/6/
L914508
(Man)

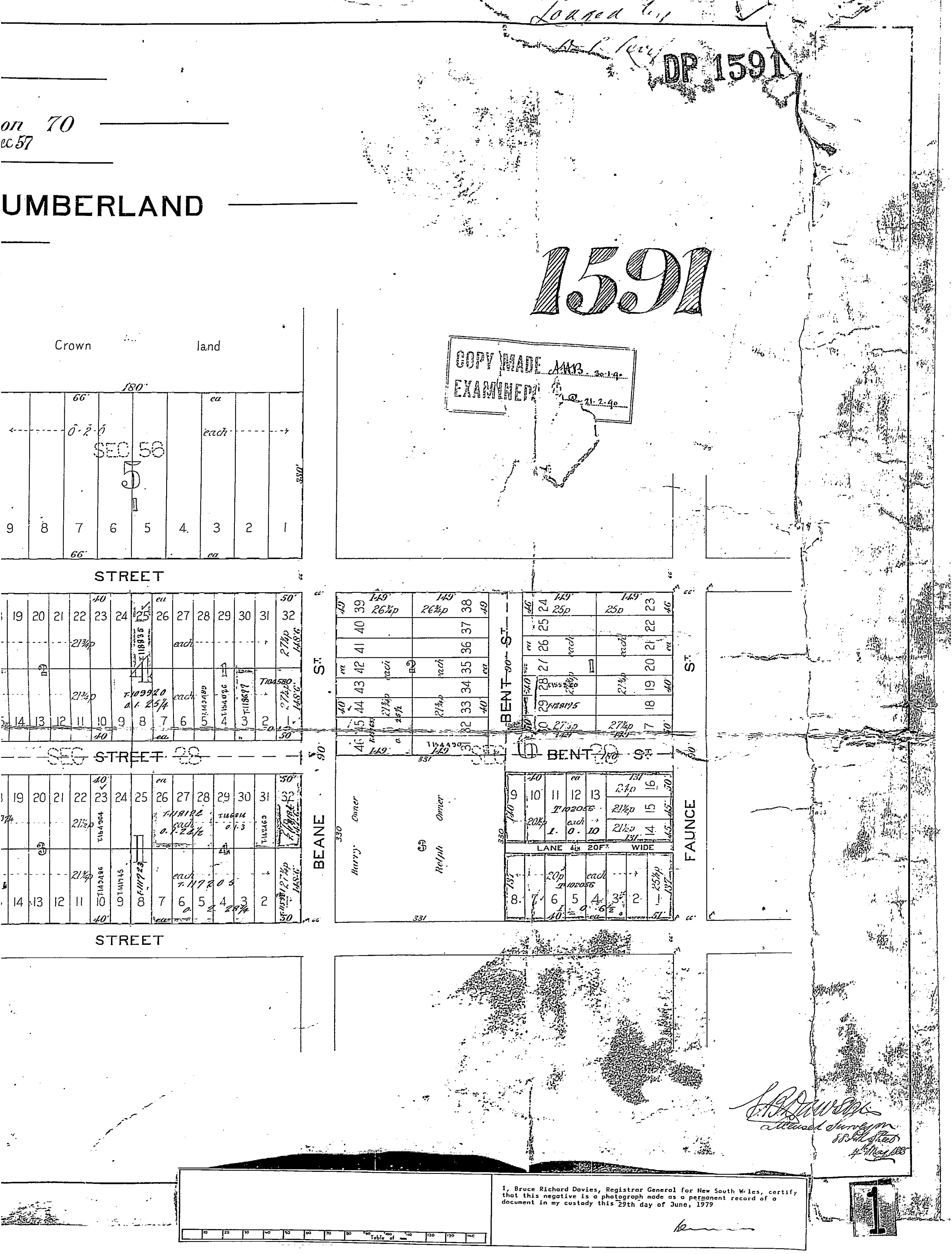
FIRST SCHEDULE (continued)

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

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
NATURE	NUMBER	DATE				
EW Transfer	L914508 P	8.6.1970	Easement to drain water, as more fully set out in the said instrument, affecting that part of the land within described shown as "Site of Proposed Easement to drain water 8' wide" in plan annexed to Transfer No. L914508.	11.8.1970	J. Watson	

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



I, Bruce Richard Davies, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 29th day of June, 1979

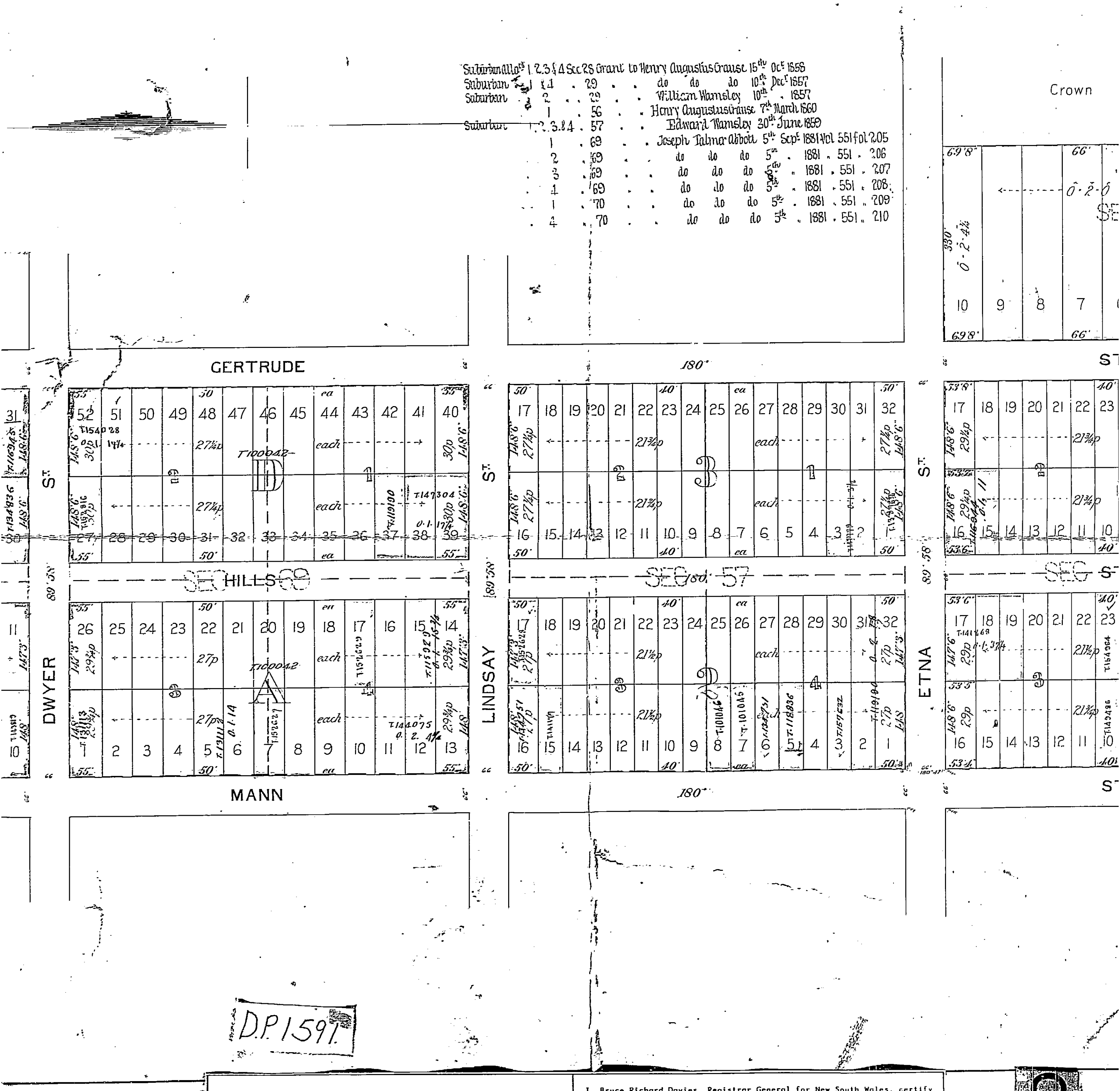
SUBDIVISION

of ~~lots~~ allo^ts 1. 2. 3. 4. Section 69 & ~~lots~~ allo^ts 1. 4. Section 70
allo^ts 1.2.3 & 4 Sec 28 allo^ts 1.2. 4 Sec 29 allo^t 1 Sec 56 allo^ts 1.2.3 & 4 Sec 57

TOWN OF GOSFORD

PARISH OF GOSFORD Co OF NORTHUMBER

Scale 100 ft to an inch



I, Bruce Richard Davies, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 29th day of June, 1979

Table of mm

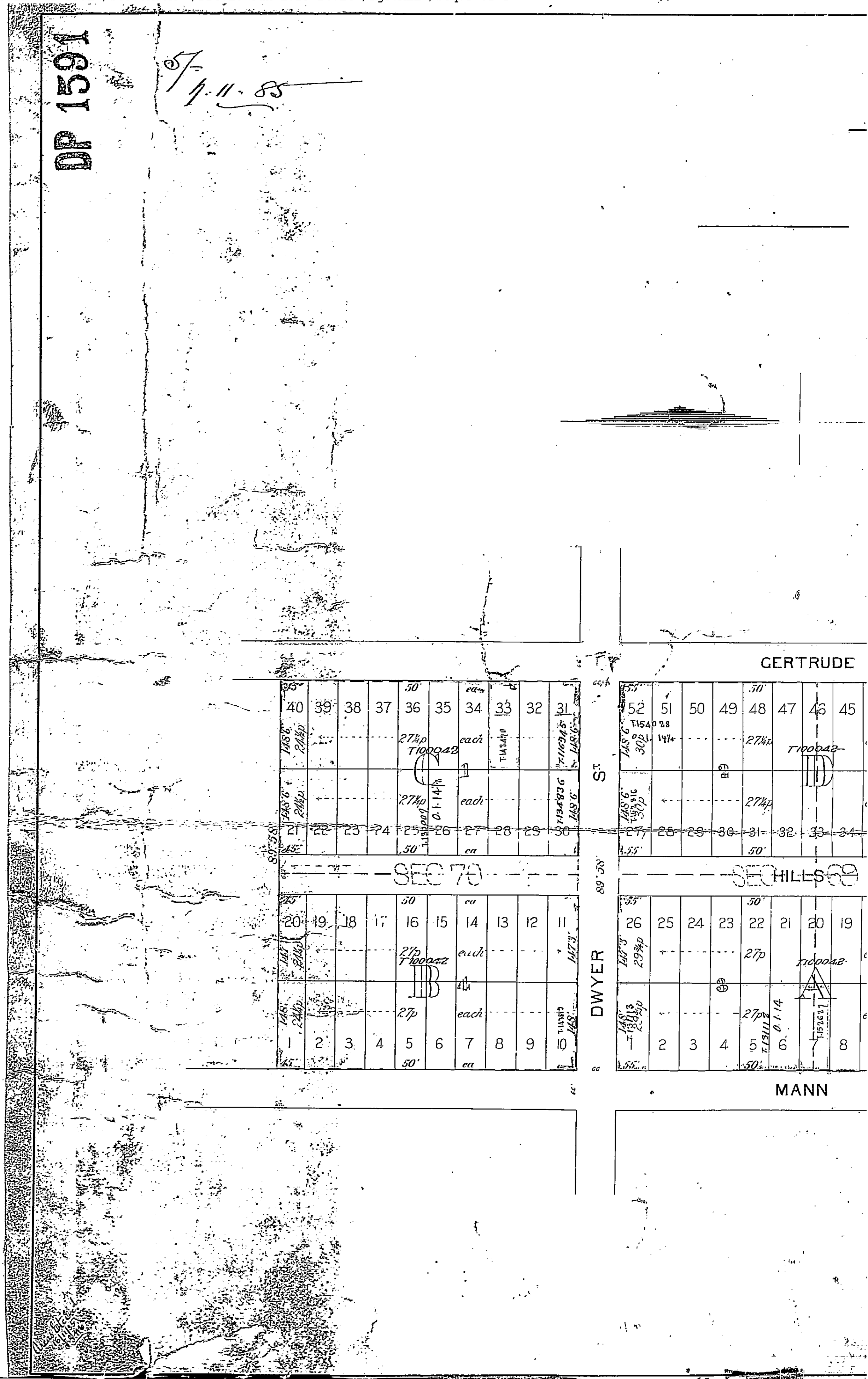
2

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 1591

FEET	INCHES	METRES
3	3 3/4	1.01
20	-	6.095
40	-	12.19
45	-	13.715
46	-	14.02
49	-	14.935
50	-	15.24
51	-	15.545
53	4	16.255
53	8	16.36
55	-	16.765
66	-	20.115
69	8	21.235
90	-	27.43
137	-	41.76
140	-	42.67
147	3	44.88
147	6	44.96
148	-	45.11
148	6	45.265
149	-	45.415
180	-	54.86
330	-	100.58
331	-	100.89

AC RD P	SQ M
- - 14 1/2	366.7
- - 20	505.9
- - 20 1/2	518.5
- - 21 1/2	543.8
- - 21 3/4	550.1
- - 24	607
- - 25	632.3
- - 25 1/2	645
- - 26 3/4	676.6
- - 27	682.9
- - 27 1/4	689.2
- - 27 1/2	695.6
- - 29	733.5
- - 29 1/4	739.8
- - 29 3/4	752.5
- - 30	758.8
- 1 3	1088
- 1 3 1/2	1100
- 1 9	1239
- 1 14	1366
- 1 14 1/4	1372
- 1 14 1/2	1378
- 1 16 3/4	1435
- 1 17 1/4	1448
- 1 24 1/2	1631
- 1 25 1/4	1650
- 1 25 1/2	1657
- 1 26 1/2	1682
- 1 32 1/4	1827
- 1 37 1/4	1954
- 2 -	2023
- 2 4 1/4	2131
- 2 18	2479
- 2 28 3/4	2751
1 - 6 1/2	4211
1 - 10	4300



3

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 31/4/1591

SEARCH DATE	TIME	EDITION NO	DATE
17/12/2018	10:25 AM	-	-

VOL 10433 FOL 102 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT 31 OF SECTION 4 IN DEPOSITED PLAN 1591
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1591

FIRST SCHEDULE

NEW SOUTH WALES LAND AND HOUSING CORPORATION

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 L914508 EASEMENT TO DRAIN WATER AFFECTING THAT PART OF THE LAND WITHIN DESCRIBED SHOWN AS SITE OF PROPOSED EASEMENT TO DRAIN WATER 8' WIDE IN PLAN ANNEXED TO L914508

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 17/12/2018

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 32/4/1591

SEARCH DATE	TIME	EDITION NO	DATE
17/12/2018	10:26 AM	-	-

VOL 10433 FOL 103 IS THE CURRENT CERTIFICATE OF TITLE

LAND

LOT 32 OF SECTION 4 IN DEPOSITED PLAN 1591
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1591

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NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 17/12/2018

Appendix D

Table D1: QC Sample Data Acceptance Criteria

QC Sample Type	Method of Assessment	Acceptable Range
Field QC		
Blind Replicates and Split Samples	The assessment of split replicate is undertaken by calculating the Relative Percent Difference (RPD) of the replicate concentration compared with the original sample concentration. The RPD is defined as: $RPD = 100 \times \frac{\lvert X_1 - X_2 \rvert}{\text{Average}}$ Where: X_1 and X_2 are the concentration of the original and replicate samples.	The acceptable range depends upon the levels detected: ▪ 0 – 100% RPD (When the average concentration is < 5 times the LOR/EQL) ▪ 0 – 75% RPD (When the average concentration is 5 to 10 times the LOR/EQL) ▪ 0 – 50% RPD (When the average concentration is > 10 times the LOR/EQL)
Blanks (Rinsate and Trip Blanks)	Each blank is analysed as per the original samples.	Analytical Result < LOR/EQL
Laboratory-prepared Trip Spike	The trip spike is analysed after returning from the field and the % recovery of the known spike is calculated.	70% - 130%
Laboratory QC		
Laboratory Duplicates	Assessment as per Blind Replicates and Split Samples.	The acceptable range depends upon the levels detected: ▪ 0 – 100% RPD (When the average concentration is < 4 times the LOR/EQL) ▪ 0 – 50% RPD (When the average concentration is 4 to 10 times the LOR/EQL) ▪ 0 – 30% RPD (When the average concentration is > 10 times the LOR/EQL)
Surrogates Matrix Spikes Laboratory Control Samples	Assessment is undertaken by determining the percent recovery of the known spike or addition to the sample. $\% \text{ Recovery} = 100 \times \frac{C - A}{B}$ Where: A = Concentration of analyte determined in the original sample; B = Added Concentration; C = Calculated Concentration.	70% - 130% (General Analytes) 50% - 130% (Phenols) 60% - 130% (OP Pesticides) If the result is outside the above ranges, the result must be < 3x Standard Deviation of the Historical Mean (calculated over past 12 months)
Method Blanks	Each blank is analysed as per the original samples.	Analytical Result < LOR/EQL

Note: EQL = Laboratory Estimated Quantitation Limit (EQL) or the minimum detection limit for a particular analyte. LOR = Limit of Reporting or the minimum detectable limit for a particular analyte.

Project: 56-58 Beane Street Gosford
Client: Root Partnerships Pty Ltd
CES Project Number: CES181201-RPS
Table D2: QAQC

		Batch	208654	208654	208654				
		Sample	BH05	QC11	QC12				
		Depth	1.5-1.95	1.5-1.95	1.5-1.95	**Primary vs. Duplicate RPDs**		**Primary vs. Triplicate RPDs**	
Parameter		Sample Date	19/12/2018	19/12/2018	19/12/2018	**Average**	**RPD**	**Average**	**RPD**
	Units	PQL 1	**Primary**	**Duplicate**	**Triplicate**				
TRH C_6 - C_9	mg/kg	25	<25	<25	<25	N/A	N/A	N/A	N/A
TRH C_6 - C_{10}	mg/kg	25	<25	<25	<25	N/A	N/A	N/A	N/A
TPHC_6-C_{10} less BTEX (F1)	mg/kg	25	<25	<25	<25	N/A	N/A	N/A	N/A
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	N/A	N/A	N/A	N/A
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Ethylbenzene	mg/kg	1	<1	<1	<1	N/A	N/A	N/A	N/A
m+p-xylene	mg/kg	2	<2	<2	<2	N/A	N/A	N/A	N/A
o-Xylene	mg/kg	1	<1	<1	<1	N/A	N/A	N/A	N/A
Xylenes total	mg/kg	1	<1	<1	<1	N/A	N/A	N/A	N/A
naphthalene	mg/kg	1	<1	<1	<1	N/A	N/A	N/A	N/A
TRH C10 - C14	mg/kg	50	<50	<50	<50	N/A	N/A	N/A	N/A
TRH C15 - C28	mg/kg	100	<100	<100	<100	N/A	N/A	N/A	N/A
TRH C29 - C36	mg/kg	100	<100	<100	<100	N/A	N/A	N/A	N/A
TRH >C10-C16	mg/kg	50	<50	<50	<50	N/A	N/A	N/A	N/A
TRH >C10 - C16 less Naphthalene (F2)	mg/kg	50	<50	<50	<50	N/A	N/A	N/A	N/A
TRH >C16-C34	mg/kg	100	<100	<100	<100	N/A	N/A	N/A	N/A
TRH >C34-C40	mg/kg	100	<100	<100	<100	N/A	N/A	N/A	N/A
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Benzo(b,j+k)fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Benzo(a)pyrene	mg/kg	0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Total Positive PAHs	mg/kg	0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A
Arsenic	mg/kg	4	<4	<4	<4	N/A	N/A	N/A	N/A
Cadmium	mg/kg	0.4	<0.4	<0.4	<0.4	N/A	N/A	N/A	N/A
Chromium	mg/kg	1	7	6	4	6.5	15%	5.50	55%
Copper	mg/kg	1	7	5	3	6	33%	5.00	80%
Lead	mg/kg	1	20	21	18	20.5	5%	19.00	11%
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Nickel	mg/kg	1	3	2	1	2.5	40%	2.00	100%
Zinc	mg/kg	1	31	26	16	28.5	18%	23.50	64%
Aroclor 1016	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Aroclor 1221	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Aroclor 1232	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Aroclor 1242	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Aroclor 1248	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Total +ve PCBs (1016-1260)	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
HCB	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
alpha-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
gamma-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
beta-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
delta-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Heptachlor Epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
gamma-Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
alpha-chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Endosulfan I	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
pp-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Dieldrin	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Endrin	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
pp-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Endosulfan II	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
pp-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Endosulfan Sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Azinphos-methyl (Guthion)	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Bromophos-ethyl	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Chlorpyriphos	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Chlorpyriphos-methyl	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Diazinon	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Dichlorvos	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Dimethoate	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Ethion	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Fenitrothion	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Malathion	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Parathion	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Ronnel	mg/kg	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A

RPD Control Limits:

- 0 – 100% RPD (When the average concentration is 5 times the LOR/EQL)
- 0 – 75% RPD (When the average concentration is 5 to 10 times the LOR/EQL)
- 0 – 50% RPD (When the average concentration is > 10 times the LOR/EQL)

Appendix E

Envirolab Services Pty Ltd
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CERTIFICATE OF ANALYSIS 208654

Client Details

Client	Consulting Earth Scientists Pty Ltd
Attention	Henry Noakes
Address	Suite 3, Level 1, 55 Grandview Street, Pymble, NSW, 2073

Sample Details

Your Reference	**CES181201-RPS**
Number of Samples	8 Soil, 1 Material
Date samples received	20/12/2018
Date completed instructions received	20/12/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	07/01/2019
Date of Issue	07/01/2019

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Steven Luong, Senior Chemist

Authorised By

Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	27/12/2018	27/12/2018	27/12/2018	27/12/2018	27/12/2018
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	%	93	89	98	89	90

vTRH(C6-C10)/BTEXN in Soil				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	27/12/2018	27/12/2018	27/12/2018
TRH C_6 - C_9	mg/kg	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	87	93

svTRH (C10-C40) in Soil						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
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
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	89	88	85	85

svTRH (C10-C40) in Soil				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	85	85	84

PAHs in Soil						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	27/12/2018	27/12/2018	27/12/2018	27/12/2018	27/12/2018
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	98	101	98	97

PAHs in Soil				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	27/12/2018	27/12/2018	27/12/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	98	95	97

Organochlorine Pesticides in soil						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-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
beta-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
pp-DDD	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-DDT	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
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	%	88	87	86	87	85

Organochlorine Pesticides in soil				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	83	84

Organophosphorus Pesticides						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	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
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
Ethion	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
Parathion	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
Surrogate TCMX	%	88	87	86	87	85

Organophosphorus Pesticides				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	83	84

PCBs in Soil						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
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 TCLMX	%	88	87	86	87	85

PCBs in Soil				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date extracted	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCLMX	%	83	83	84

Acid Extractable metals in soil						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	9	6	18	7
Copper	mg/kg	2	5	3	11	7
Lead	mg/kg	11	24	12	16	20
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	2	<1	12	3
Zinc	mg/kg	3	45	12	24	31

Acid Extractable metals in soil				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	21/12/2018	21/12/2018	21/12/2018
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	6	4	11
Copper	mg/kg	5	3	4
Lead	mg/kg	21	18	204.5
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	2	1	3
Zinc	mg/kg	26	16	120

Moisture						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/12/2018	21/12/2018	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	24/12/2018	24/12/2018	24/12/2018	24/12/2018	24/12/2018
Moisture	%	7.6	9.1	9.6	13	14

Moisture				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	21/12/2018	21/12/2018	21/12/2018
Date analysed	-	24/12/2018	24/12/2018	24/12/2018
Moisture	%	13	14	19

Asbestos ID - soils						
Our Reference		208654-1	208654-2	208654-3	208654-4	208654-5
Your Reference	UNITS	BH01	BH02	BH03	BH04	BH05
Depth		1.8-1.9	0.2-0.3	0.7-0.8	0.2-0.3	1.5-1.95
Date Sampled		18/12/2018	18/12/2018	18/12/2018	19/12/2018	19/12/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/12/2018	28/12/2018	28/12/2018	28/12/2018	28/12/2018
Sample mass tested	g	Approx. 35g	Approx. 20g	Approx. 25g	Approx. 25g	Approx. 25g
Sample Description	-	Orange sandy soil	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils				
Our Reference		208654-6	208654-7	208654-8
Your Reference	UNITS	QC11	QC12	BH06
Depth		-	-	0.5-0.6
Date Sampled		19/12/2018	19/12/2018	20/12/2018
Type of sample		Soil	Soil	Soil
Date analysed	-	28/12/2018	28/12/2018	28/12/2018
Sample mass tested	g	Approx. 25g	Approx. 25g	Approx. 25g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected

Misc Inorg - Soil		
Our Reference		208654-8
Your Reference	UNITS	BH06
Depth		0.5-0.6
Date Sampled		20/12/2018
Type of sample		Soil
Date prepared	-	03/01/2019
Date analysed	-	03/01/2019
pH 1:5 soil:water	pH Units	7.0
Organic Matter, Walkely Black	mg/kg	6,700

CEC		
Our Reference		208654-8
Your Reference	UNITS	BH06
Depth		0.5-0.6
Date Sampled		20/12/2018
Type of sample		Soil
Date prepared	-	03/01/2019
Date analysed	-	03/01/2019
Exchangeable Ca	meq/100g	19
Exchangeable K	meq/100g	0.1
Exchangeable Mg	meq/100g	0.26
Exchangeable Na	meq/100g	<0.1
Cation Exchange Capacity	meq/100g	19

Clay 50-120g		
Our Reference		208654-8
Your Reference	UNITS	BH06
Depth		0.5-0.6
Date Sampled		20/12/2018
Type of sample		Soil
Date prepared	-	31/12/0018
Date analysed	-	31/12/2018
Clay in soils <2µm	% (w/w)	7

Asbestos ID - materials		
Our Reference		208654-9
Your Reference	UNITS	MAT01
Depth		SURFACE
Date Sampled		19/12/2018
Type of sample		Material
Date analysed	-	21/12/2018
Mass / Dimension of Sample	-	80x50x5mm
Sample Description	-	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected

Method ID	Methodology Summary
AS1289.3.6.3	Determination Particle Size Analysis using AS1289.3.6.3 and AS1289.3.6.1 and in house method INORG-107. Clay fraction at <2µm reported.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-036	Total Organic Matter - A titrimetric method that measures the oxidisable organic content of soils. Based upon Rayment and Lyons 2011 where TOM is estimated as = TOC * 1.724.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. 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-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	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-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.

Method ID	Methodology Summary
Org-012	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. 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-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	208654-2
Date extracted	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Date analysed	-			27/12/2018	1	27/12/2018	27/12/2018		27/12/2018	27/12/2018
TRH C_6 - C_9	mg/kg	25	Org-016	<25	1	<25	<25	0	95	95
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	1	<25	<25	0	95	95
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	104	105
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	92	93
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	93	94
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	92	92
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	94	96
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	93	1	93	95	2	94	95

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	208654-2
Date extracted	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Date analysed	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	1	<50	<50	0	96	108
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	1	<100	<100	0	88	100
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	1	<100	<100	0	111	102
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	1	<50	<50	0	96	108
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	1	<100	<100	0	88	100
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	1	<100	<100	0	111	102
Surrogate o-Terphenyl	%		Org-003	91	1	88	89	1	95	89

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	208654-2
Date extracted	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Date analysed	-			27/12/2018	1	27/12/2018	27/12/2018		27/12/2018	27/12/2018
Naphthalene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	96	92
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	98	91
Phenanthrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	94	91
Anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	95	99
Pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	90	95
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	106	101
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	1	<0.05	<0.05	0	105	101
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	103	1	102	100	2	96	96

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	208654-2
Date extracted	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Date analysed	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
HCB	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	114	113
gamma-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	80	77
Heptachlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	86	85
delta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	73	72
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	79	78
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	82	80
Dieldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	91	89
Endrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	83	81
pp-DDD	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	82	79
Endosulfan II	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	80	83
Methoxychlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	89	1	88	87	1	100	98

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	208654-2
Date extracted	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Date analysed	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	93	92
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	94	93
Dimethoate	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	92	81
Fenitrothion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	110	108
Malathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	81	88
Parathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	105	105
Ronnel	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	100	99
Surrogate TCMX	%		Org-008	89	1	88	87	1	86	85

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	208654-2
Date extracted	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Date analysed	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	102	102
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCLMX	%		Org-006	89	1	88	87	1	86	85

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	208654-2
Date prepared	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Date analysed	-			21/12/2018	1	21/12/2018	21/12/2018		21/12/2018	21/12/2018
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	119	99
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	106	95
Chromium	mg/kg	1	Metals-020	<1	1	10	11	10	114	102
Copper	mg/kg	1	Metals-020	<1	1	2	1	67	124	120
Lead	mg/kg	1	Metals-020	<1	1	11	11	0	108	102
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	100	101
Nickel	mg/kg	1	Metals-020	<1	1	1	1	0	112	101
Zinc	mg/kg	1	Metals-020	<1	1	3	3	0	105	85

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	[NT]
Date prepared	-			03/01/2019	[NT]	[NT]	[NT]	[NT]	03/01/2019	[NT]
Date analysed	-			03/01/2019	[NT]	[NT]	[NT]	[NT]	03/01/2019	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	102	[NT]
Organic Matter, Walkely Black	mg/kg	1000	Inorg-036	<1000	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	[NT]
Date prepared	-			03/01/2019	[NT]	[NT]	[NT]	[NT]	03/01/2019	[NT]
Date analysed	-			03/01/2019	[NT]	[NT]	[NT]	[NT]	03/01/2019	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	[NT]	[NT]	91	[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.

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; 60-140% for organics (+/-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.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying
40-50g of sample in its own container.
Note: Samples 208654-1 to 8 were sub-sampled from jars provided by the client.

CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 424 344

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
Ph: 02 9910 6200 / sydney@envirolab.com.au

Perth Lab - MPL Laboratories
16-18 Hayden Crt Myaree, WA 6154
Ph: 08 9317 2505 / lab@mpl.com.au

Melbourne Lab - Envirolab Services
1A Dalmore Drive Scoresby VIC 3179
Ph: 03 9763 2500 / melbourne@envirolab.com.au

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph: 08 7087 6800 / adelaide@envirolab.com.au

Brisbane Office - Envirolab Services
20a, 10-20 Depot St, Banyo, QLD 4014
Ph: 07 3266 9532 / brisbane@envirolab.com.au

Darwin Office - Envirolab Services
Unit 7, 17 Willes Rd, Berrimah, NT 0820
Ph: 08 8967 1201 / darwin@envirolab.com.au

Client: Consulting Earth Scientists
Contact Person: Henry Noakes
Project Mgr: Max Kemnitz
Sampler: Henry Noakes
Address: Suite 3 Level 1, 55 Grandview Street, NSW
Phone: 285692200 Mob: 0413601751 0403273626
Email: tristan.goodbody@consultingearth.com.au; henry.noakes@consultingearth.com.au

Client Project Name / Number / Site etc (ie report title): CES181201-RPS
PO No.:
Envirolab Quote No.:
Date results required: Std
Or choose: standard / same day / 1 day / 2 day / 3 day
Note: Inform lab in advance if urgent turnaround is required - surcharges apply
Additional report format: esdat / equis /
Lab Comments:

Envirolab Sample ID	Client Sample ID or information	Depth (m)	Date sampled	Type of sample	Combo 6a	pH, Cation Exchange Capacity, Organic Content, Clay Content	ASBESTOS	Comments
1	BH01	1.8-1.9	18/12/18	Jar	X			
2	BH02	0.2-0.3	"	Jar	X			
3	BH03	0.7-0.8	"	Jar	X			
4	BH04	0.2-0.3	19/12/18	Jar	X			
5	BH05	1.5-1.95	"	Jar	X			
6	QC11	-	-	Jar	X			
7	QC12	-	-	Jar	X			
8	BH06	0.5-0.6	20/12/18	Jar	X	X		
9	MAT01	SURFACE	19/12/18	Jar			X	

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 208654
Date Received: 20/12/18
Time Received: ~~17~~ 17:10
Received by: TN
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (Company):	CES	Received by (Company):	ES
Print Name:	Henry Noakes	Print Name:	TNguyen
Date & Time:	20/12/18 13:16	Date & Time:	20/12/18 17:10
Signature:		Signature:	

Lab Use Only

Job number:	Cooling: Ice / Ice pack / None
Temperature:	Security seal: Intact / Broken / None
TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Consulting Earth Scientists Pty Ltd
Attention	Henry Noakes

Sample Login Details

Your reference	CES181201-RPS
Envirolab Reference	208654
Date Sample Received	20/12/2018
Date Instructions Received	20/12/2018
Date Results Expected to be Reported	07/01/2019

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	8 Soil, 1 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	24
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticidesin soil	Organophosphorus Pesticides	PCBsin Soil	Acid Extractable metalsin soil	Asbestos ID - soils	Misc Inorg - Soil	CEC	Clay 50-120g	Asbestos ID - materials
BH01-1.8-1.9	✓	✓	✓	✓	✓	✓	✓	✓				
BH02-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓				
BH03-0.7-0.8	✓	✓	✓	✓	✓	✓	✓	✓				
BH04-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓				
BH05-1.5-1.95	✓	✓	✓	✓	✓	✓	✓	✓				
QC11	✓	✓	✓	✓	✓	✓	✓	✓				
QC12	✓	✓	✓	✓	✓	✓	✓	✓				
BH06-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MAT01-SURFACE												✓

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.

Appendix F

CONSULTING EARTH SCIENTISTS

Photographic Log

Client Name:	Site Location:	Project Number:
ROOT PARTNERSHIPS PTY LTD	56-58 Beane Street Gosford	CES181201-RPS

Date:	Plate No:
18 December 2018	Plate 1

Description:
Site vegetation condition, western boundary

Direction Photo Taken:
South

CONSULTING EARTH SCIENTISTS

Photographic Log

Client Name:	Site Location:	Project Number:
ROOT PARTNERSHIPS PTY LTD	56-58 Beane Street Gosford	CES181201-RPS

Date:	Plate No:
18 December 2018	Plate 2

Description:
Central site surface.

Direction Photo Taken:
North

CONSULTING EARTH SCIENTISTS

Photographic Log

Client Name:	Site Location:	Project Number:
ROOT PARTNERSHIPS PTY LTD	56-58 Beane Street Gosford	CES181201-RPS

Date: 18 December 2018

Plate No: **Plate 3**

Description: Eastern site boundary car parking.

Direction Photo Taken: Northwest

CONSULTING EARTH SCIENTISTS

Photographic Log

Client Name:	Site Location:	Project Number:
ROOT PARTNERSHIPS PTY LTD	56-58 Beane Street Gosford	CES181201-RPS

Date: 18 December 2018

Plate No: **Plate 4**

Description: Rubble on central site surface

Direction Photo Taken: South

Appendix G

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

CONSULTING EARTH SCIENTISTS
Jones Bay Wharf 19-21, Suite 55
26-32 Pirrama Road, Pyrmont NSW 2009
PH: (02) 8569 2200 FAX: (02) 9552 4399
www.consultingearth.com.au

LOG ID: BH01

X-Coord:	346153	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300806	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
0.0					FILL: SAND, fine grained, pale brown/yellow. Trace brick and tile fragments.		D				0m to 0.5m = 0.0
0.5								0.5m to 0.6m	0.5m to 0.95m {4,6,7} N=13	0.95m PP>600kPa	
				CL	Sandy CLAY: Low plasticity, pale yellow/brown. Sand is fine grained and angular.	VSt	MC=PI				
1.0									1m to 1.45m {7,8,10} N=18	1.45m PP>600kPa	1
					Becoming mottled dark orange/yellow.						
1.5									1.5m to 1.95m {6,10,14} N=24	1.95m PP>600kPa	1.5m to 1.6m = 0.0
								1.8m to 1.9m			
2.0									2m to 2.45m {12,13,12} N=25	2.45m PP>600kPa	2
2.5				SC	Clayey SAND: Fine grained, pale yellow/orange. Trace gravels, fine grained, dark orange, rounded.	MD	M		2.5m to 2.95m {10,12,12} N=24	2.95m PP>600kPa	
3.0									3m to 3.45m {7,10,11} N=21		3 3m to 3.1m = 0.0

Project ID:	CES181201-RPS	CONSULTING EARTH SCIENTISTS	**LOG ID: BH01**
Client:	Root Partnerships Pty Ltd	Jones Bay Wharf 19-21, Suite 55 26-32 Pirrama Road, Pyrmont NSW 2009 PH: (02) 8569 2200 FAX: (02) 9552 4399 www.consultingearth.com.au	Sheet: 2 of 3
Project:	Environmental and Geotechnical Site Investigation		
Location:	56-58 Beane Street, Gosford NSW		

X-Coord:	346153	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300806	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
3.5	125mm V-Bit Auger							3.3m to 3.4m		3.45m PP>600kPa	
4.0									4m to 4.45m {8,9,11} N=20	4.45m PP>600kPa	4
4.5											4.5m to 4.6m = 0.0
5.0				CL	Sandy CLAY: Low plasticity, mottled dark orange/pale grey. Sand is fine grained, angular. Trace gravels, fine grained, pale grey and rounded.	VSt	MC=PI		5m to 5.45m {10,12,13} N=25	5.45m PP>600kPa	5
5.5											
6.0						St			6m to 6.45m {7,6,8} N=14		6m to 6.1m = 0.0 6

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

CONSULTING EARTH SCIENTISTS
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www.consultingearth.com.au

LOG ID: BH01

X-Coord:	346153	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300806	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
6.5				SC	Clayey SAND: Fine to medium grained, mottled dark orange/pale brown. Trace gravels, fine grained , pale grey, rounded. Trace carbonaceous organics, black, decomposing.	MD	M			6.45m PP>600kPa	
7.0					Becoming pale grey.				7m to 7.45m {5,7,9} N=16		7
				CL	Sandy CLAY: Low plasticity, mottled dark orange/pale grey. Sand is fine grained and angular. Trace carbonaceous organics, black, decomposing.	VSt	MC=PI			7.45m PP>600kPa	
7.5											7.5m to 7.6m = 0.0
8.0									8m to 8.45m {6,8,9} N=17		8
										8.45m PP>600kPa	
8.5					Borehole terminated at 8.45m depth. Target depth.						

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

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LOG ID: BH02

Sheet: 1 of 3

X-Coord:	346152	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300791	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
0.0					FILL: SAND, fine grained pale brown/yellow. Trace brick and tile fragments, .		D	0.2m to 0.3m			0m to 0.5m = 0.0
0.5				CL	Sandy CLAY: Low plasticity, mottled pale orange/brown/grey. Sand is fine grained, angular. Trace carbonaceous organics, black, decomposing.	St	MC=PI		0.5m to 0.95m {6,6,8} N=14	0.95m PP>600kPa	
1.0											1
1.5					Moisture content decreasing.	H	MC<PI		1.5m to 1.95m {11,16,17} N=33	1.95m PP>600kPa	1.5m to 1.6m = 0.0
2.0											2
2.5											
3.0									3m to 3.45m {9,18,16} N=34		3m to 3.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

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LOG ID: BH02

X-Coord:	346152	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300791	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
3.5	125mm V-Bit Auger									3.45m PP>600kPa	
4.0											4
4.5					Moisture content increasing.	VSt	MC=PI		4.5m to 4.95m {11,12,11} N=23	4.95m PP>600kPa	4.5m to 4.6m = 0.0
5.0											5
5.5											
6.0								6m to 6.1m	6m to 6.45m {9,10,11} N=21		6 6m to 6.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
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LOG ID: BH02

X-Coord:	346152	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300791	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
6.5										6.45m PP>600kPa	
7.0											7
7.5						St			7.5m to 7.95m {4,5,6} N=11		7.5m to 7.6m = 0.0
				SC	Clayey SAND: Fine to medium grained, dark orange to brown. Trace gravels, fine grained, pale grey, rounded. Trace carbonaceous organics, black, decomposing.	MD	M			7.95m PP>600kPa	
8.0											8

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
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LOG ID: BH03

X-Coord:	346135	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300811	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
0.0					FILL: SAND, fine grained pale brown/yellow. Trace concrete, brick and tile fragments, .		D	0.1m to 0.2m			0m to 0.5m = 0.0
0.5								0.7m to 0.8m	0.5m to 0.95m {4,4,3} N=7	0.95m PP>600kPa	
1.0				CL	Sandy CLAY: Low plasticity, dark orange. Sand is fine grained, angular. Trace carbonaceous organics, black, decomposing.	VSt	MC=PI				
1.5									1.5m to 1.95m {6,8,8} N=16	1.95m PP>600kPa	1.5m to 1.6m = 0.0
2.0											
2.5											
3.0					Becoming mottled orange/pale grey/brown.				3m to 3.45m {6,7,11} N=18		3m to 3.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
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LOG ID: BH03

X-Coord:	346135	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300811	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
3.5	125mm V-Bit Auger									3.45m PP>600kPa	
4.0											4
4.5									4.5m to 4.95m {7,10,14} N=24	4.95m PP>600kPa	4.5m to 4.6m = 0.0
5.0											5
5.5											
6.0				SC	Clayey SAND: Fine to medium grained, mottled pale grey/dark orange. Trace carbonaceous	MD	M		6m to 6.45m {6,7,7} N=14		6 6m to 6.1m = 0.0

Project ID:	CES181201-RPS
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LOG ID: BH03

X-Coord:	346135	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300811	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
					organics, black, decomposing.					6.45m PP>600kPa	
6.5											
7.0											7
7.5				CL	Sandy CLAY: Low plasticity, mottled pale grey/brown/orange. Sand is fine grained, angular.	VSt	MC=PI		7.5m to 7.95m {6,8,9} N=17	7.95m PP>600kPa	7.5m to 7.6m = 0.0
8.0											8

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
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LOG ID: BH04

X-Coord:	346131	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300794	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
0.0					FILL: SAND, fine grained pale brown/yellow. Trace concrete, brick and tile fragments, .		D	0.2m to 0.3m			0m to 0.5m = 0.0
0.5				CL	Sandy CLAY: Low plasticity, mottled pale orange/brown. Sand is fine grained, angular. Trace gravels, fine grained, dark grey, rounded.	VSt	MC<PI		0.5m to 0.95m {7,9,9} N=18	0.95m PP>600kPa	
1.0											1
1.5						H			1.5m to 1.95m {5,13,18} N=31	1.95m PP>600kPa	1.5m to 1.6m = 0.0
2.0											2
2.5											
3.0									3m to 3.45m {9,14,16} N=30		3m to 3.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

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LOG ID: BH04

X-Coord:	346131	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300794	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
3.5	125mm V-Bit Auger				Becoming mottled dark orange/brown.					3.45m PP>600kPa	
4.0					Becoming mottled pale grey/brown. Trace carbonaceous organics, black, decomposing. Moisture content increasing.		MC=PI				4
4.5						VSt			4.5m to 4.95m {9,11,14} N=25		4.5m to 4.6m = 0.0
5.0										4.95m PP>600kPa	5
5.5											
6.0									6m to 6.45m {6,7,8} N=15		6 6m to 6.1m = 0.0

Project ID:	CES181201-RPS	CONSULTING EARTH SCIENTISTS	**LOG ID: BH04**
Client:	Root Partnerships Pty Ltd	Jones Bay Wharf 19-21, Suite 55 26-32 Pirrama Road, Pyrmont NSW 2009 PH: (02) 8569 2200 FAX: (02) 9552 4399 www.consultingearth.com.au	Sheet: 3 of 4
Project:	Environmental and Geotechnical Site Investigation		
Location:	56-58 Beane Street, Gosford NSW		

X-Coord:	346131	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300794	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
6.5										6.45m PP>600kPa	
7.0											7
7.5					Becoming pale grey.				7.5m to 7.95m {6,8,10} N=18		7.5m to 7.6m = 0.0
					Becoming dark orange.					7.95m PP>600kPa	
8.0											8
8.5											
		▼									
9.0											9

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

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LOG ID: BH04

X-Coord:	346131	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300794	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
9.5											
10.0				CH	CLAY: High plasticity, pale orange. With some sand, fine to medium grained, angular.		MC>PI				10
10.5					Auger refusal at 10.3m depth. Refer to core log.						

Project ID:	CES181201-RPS
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Project:	Environmental and Geotechnical Site Investigation
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Corehole ID: BH04

X-Coord:	346131	**Date Commenced:**	20/12/2018	**Logged by:**	HJN
Y-Coord:	6300794	**Date Completed:**	20/12/2018	**Checked by:**	D.L
Surface Elevation (R.L):		**Hole Diameter (mm):**	52		

Drilling Information | **LITHOLOGY** | **Natural Defects**

Depth (mBGL)	Method (Support)	% Coreloss	Water	Symbol	Rock Description (ROCK TYPE: grain characteristics, colour structure, minor components)	Weathering	Estimated Strength MPa (EL 0.03, VL 0.1, L 0.3, M 1, H 3, VH 10, EH)	Is (50) MPa	RQD %	Spacing (mm) (20, 60, 200, 600, 2000)	Description
10.5	NMLC Core				PQ Casing installed to 10.4m. 10.4m to 10.7m - Coreloss						
					SANDSTONE: Coarse grained, pale grey, medium strength, slightly weathered. Approxiamtely 5% gravels in matrix, fine grained, pale green and grey, rounded. Laminations 15 degrees to horizontal.	SW			25		10.87m {JT5, RF, PLN, CO (Clay, HPL, pale grey)}
11.0											11
11.5											11.67m to 11.69m {EWS (Sand, medium to coarse grained, pale orange, rounded)}
					Becoming stained dark orange and moderately weathered.	MW					11.825m {PT15, RF, PLN, CN, HW}
12.0											11.96m {PT75, RF, UN, CN} 11.99m {PT15, RF, PLN, CN}
					Becoming high strength and slightly weathered	SW			50		12
					Becoming moderately weathered.	MW					
12.5											12.57m {JT10, RF, ST, CN}
											12.88m to 13.6m {CS, CN, 10-20mm fragments}
13.0											13
					13.21m to 13.4m Coreloss						

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Corehole ID: BH04

X-Coord:	346131	**Date Commenced:**	20/12/2018	**Logged by:**	HJN
Y-Coord:	6300794	**Date Completed:**	20/12/2018	**Checked by:**	D.L
Surface Elevation (R.L):		**Hole Diameter (mm):**	52		

Drilling Information					LITHOLOGY					Natural Defects		
Depth (mBGL)		Method (Support)	% Coreloss	Water	Symbol	Rock Description ROCK TYPE: grain characteristics, colour structure, minor components	Weathering	Estimated Strength MPa (0.03 EL, 0.1 VL, 0.3 L, 1 M, 3 H, 10 VH, EH)	Is (50) MPa	RQD %	Spacing (mm) (20, 60, 200, 600, 2000)	Description
13.5						SANDSTONE: Medium grained, pale grey, low strength, highly weathered. Orange staining throughout matrix.	HW					13.66m to 13.7m {Joint spacing typically 20mm, JT10, RF, ST, CN}
14.0						Becoming very low strength and highly weathered. Carbonaceous laminations at 20-25mm spacing.				60		14
14.5						Becoming medium strength and moderately weathered. Carbonaceous laminations not evident.	MW					14.75m {JT75, RF, ST, CN}
						With carbonaceous laminations at 30-40mm spacing.						14.85m {JT75, RF, ST, CO (Clay, LPL, dark orange)}
						Carbonaceous laminations not evident.						
15.0						Borehole terminated at 14.9m depth. Target						15

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
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LOG ID: BH05

X-Coord:	346116	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300798	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
0.0					TOPSOIL: Silty SAND, fine to medium grained, dark grey. Trace fine roots and organics.		M				0m to 0.5m = 0.0
0.5								0.5m to 0.6m	0.5m to 0.95m {3,3,2} N=5		
					FILL: Sandy CLAY, low plasticity, pale orange. Sand is fine grained, angular.		MC=PI			0.95m PP=250kPa	
1.0											1
1.5					Becoming dark grey.			1.5m to 1.95m	1.5m to 1.95m {1,1,1} N=2		1.5m to 1.6m = 0.0
										1.95m PP=200kPa	
2.0											2
2.5				CI	CLAY: Medium plasticity, mottled dark orange/pale grey. With some sand, fine grained, angular. Trace carbonaceous organics, black, decomposing.	VSt					
3.0									3m to 3.45m {5,7,8} N=15		3m to 3.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

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LOG ID: BH05

X-Coord:	346116	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300798	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
3.5	125mm V-Bit Auger									3.45m PP>600kPa	
4.0				CL	Sandy CLAY: Low plasticity, mottled orange/pale grey. Sand is fine grained, angular. Trace carbonaceous organics, black, decomposing.						4
4.5									4.5m to 4.95m {6,7,9} N=16	4.95m PP>600kPa	4.5m to 4.6m = 0.0
5.0											5
5.5											
6.0									6m to 6.45m {7,10,13} N=23		6 6m to 6.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
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LOG ID: BH05

X-Coord:	346116	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300798	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
6.5										6.45m PP>600kPa	
7.0											7
7.5									7.5m to 7.95m {9,12,11} N=23	7.95m PP>600kPa	7.5m to 7.6m = 0.0
8.0					Borehole terminated at 8m depth. Target depth.						8

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

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LOG ID: BH06

X-Coord:	346120	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300810	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
0.0					TOPSOIL: Silty SAND, fine to medium grained, dark grey. Trace fine roots and organics.		M				0m to 0.5m = 0.0
					FILL: Clayey SAND, fine grained, dark brown. Trace brick.						
0.5								0.5m to 0.6m	0.5m to 0.95m {11,4,2} N=6		
					Becoming pale orange.						
					Becoming dark brown.						
1.0											1
1.5								1.5m to 1.95m	1.5m to 1.95m {3,3,3} N=6		1.5m to 1.6m = 0.0
					Becoming very dark grey, high organic content.						
2.0											2
				CL	Sandy CLAY: Low plasticity, mottled pale orange/brown/grey. Sand is fine grained, angular. Trace carbonaceous organics, black, decomposing.	St	MC=PI				
2.5											
3.0									3m to 3.45m {5,7,6} N=13		3 3m to 3.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
Location:	56-58 Beane Street, Gosford NSW

CONSULTING EARTH SCIENTISTS
Jones Bay Wharf 19-21, Suite 55
26-32 Pirrama Road, Pyrmont NSW 2009
PH: (02) 8569 2200 FAX: (02) 9552 4399
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LOG ID: BH06

X-Coord:	346120	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300810	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
3.5	125mm V-Bit Auger									3.45m PP=350kPa	
4.0											4
4.5						VSt			4.5m to 4.95m {7,8,9} N=17	4.95m PP>600kPa	4.5m to 4.6m = 0.0
5.0											5
5.5											
6.0				CH	CLAY: Medium plasticity, mottled dark orange/pale grey. With some sand, fine grained, angular.	St			6m to 6.45m {4,6,8} N=14		6 6m to 6.1m = 0.0

Project ID:	CES181201-RPS
Client:	Root Partnerships Pty Ltd
Project:	Environmental and Geotechnical Site Investigation
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LOG ID: BH06

X-Coord:	346120	**Date Commenced:**	18/12/2018	**Logged by:**	HJN
Y-Coord:	6300810	**Date Completed:**	18/12/2018	**Checked by:**	MK
Surface Elevation (R.L) :		**Hole Diameter (mm):**	125mm		

Drilling Information			LITHOLOGY					Samples	Tests		
Depth (mBGL)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Environmental Sample ID	SPT	Soil Penetrometer (kPa)	Photo-Ionisation Detector (ppm)
6.5										6.45m PP>600kPa	
7.0											7
7.5				CL	Sandy CLAY: Low plasticity, mottled pale orange/grey/brown. Sand is fine grained, angular. Trace gravels, dark grey, fine grained, rounded. Trace carbonaceous organics, black, decomposing.	VSt			7.5m to 7.95m {5,8,10} N=18	7.95m PP>600kPa	7.5m to 7.6m = 0.0
8.0					Borehole terminated at 8m depth. Target depth.						8

Borelog Symbols and Notes

CONSULTING EARTH SCIENTISTS
Suite 3, Level 1•55 Grandview Street• Pymble NSW 2073
Telephone: 02 88569 2200 • Fax: 02 9983 0582 •

DRILLING INFORMATION:

Support		Method		Water	
None	No support provided	HA	HAND AUGER		Inflow of water
Mud	Drilling mud used	RA	ROTARY AIR		Water Loss
NQ	NQ size drilling pipe (69.9 mm ODia)	ADV	Auger 'V'-STEEL BIT		Water Level during drilling / excavation
HQ	HQ size drilling pipe (88.9 mm ODia)	ADTC	Auger 'TUNGSTEN-CARBIDE' BIT		Stabilised Water Level
PQ	PQ size drilling pipe (139.9mm ODia)	NMLC	DIAMOND CORING		

SAMPLING:

Sample ID

ddmmyy-01-SM Date-Sample Number-Initials of Sampler

Note : Sample Depth is indicated by horizontal lines which define the start and end depths

Type		
	D	Small Disturbed Sample
	U50	Undisturbed 50mm dia. tube sample
	B	Bulk Disturbed Sample
	PT	Geoprobe Push Tube Sample in
	J	Environmental Sample collected in a laboratory supplied glass jar
	SPT	SPT Split Tube Sampler

FIELD TESTS:

Standard Penetration Test (SPT)

{2,3,4}	Number of blows per 150mm over a depth of 450mm
N = 7	SPT "N" number = sum of last two blow counts
#R	Refusal. SPT not able to penetrate
HB	Hammer Bouncing

Vane Shear

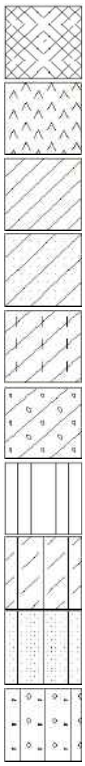
VS=30 Vane Shear Reading of 30 kPa

Pocket Penetromenter

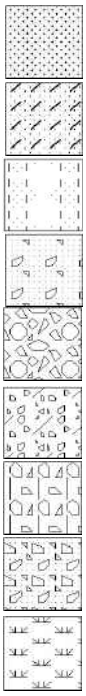
PP=100 Pocket Penetrometer Reading of 100 kPa (unless in notated column)

SYMBOLS:

Soils

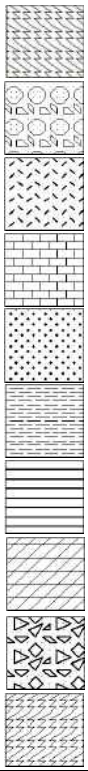


FILL
TOPSOIL
CLAY
SANDY CLAY
SILTY CLAY
GRAVELLY CLAY
SILT
CLAYEY SILT
SANDY SILT
GRAVELLY SILT



SAND
CLAYEY SAND
SILTY SAND
GRAVELLY SAND
GRAVEL
CLAYEY GRAVEL
SILTY GRAVEL
SANDY GRAVEL
PEAT

Rocks



GNEISS
CONGLOMERATE
GRANITE
LIMESTONE
SANDSTONE
SILTSTONE, MUDSTONE
SHALE
SHALEY CLAY (Extremely Weathered Shale)
VOLCANIC BRECCIA
BASALT

Other

NO CORE
ASPHALT
BENTONITE PLUG
WELL SCREEN
WELL BACKFILLED SAND
CONCRETE

NATURAL ROCK DEFECTS:

Description Order:

Fracture Type, Orientation, Roughness, Shape, Infill, Other

Fracture Type

JT	Joint
PT	Bedding Plane Parting
SS	Sheared Surface
SZ	Sheared Zone
SSM	Sheared Seam
CS	Crushed Seam
IS	Infilled Seam
EWS	Extremely Weathered Seam

Orientation

JT75	75 degrees from Horizontal
VT	Vertical
HZ (or 0o)	Horizontal

Shape

PLN	Planar
CU	Curved
UN	Undulating
ST	Stepped
IR	Irregular

Roughness

VR	Very Rough
RF	Rough
SO	Smooth
POL	Polished
SLK	Slickensided

Infilling

CN	Clean
SN	Stained
VN	Veneer
CO	Coating

Others

DIS	Discontinuous
TI	Tight
HW	Highly Weathered

Sample Location	Depth (m)		Soil Description	pH_F	PH_{FOX} (Oxidation in 30% Hydrogen Peroxide)		
	Top	Bottom		pH in 1:5 distilled water	pH	Efferve-scence	pH Change
	(m)	(m)			$_{FOX}$	(See Note 1)	(pH_F-pH_{FOX})
BH01	0.6	0.7	Sandy Clay	6.7	5.1	a	1.6
	1.3	1.4	Sandy Clay	5.8	5.2	a	0.6
	2.2	2.3	Sandy Clay	4.5	4.5	a	0.0
	3.2	3.3	Clayey Sand	5.1	4.6	a	0.5
	4.0	4.1	Clayey Sand	5.0	4.8	a	0.2
	4.6	4.7	Clayey Sand	4.7	4.5	a	0.2
	5.0	5.1	Clayey Sand	4.5	4.5	a	0.0
	6.0	6.1	Sandy Clay	4.7	4.5	a	0.2
	7.0	7.1	Clayey Sand	4.2	4.2	a	0.0
BH02	0.5	0.6	Sandy Clay	5.2	5.1	a	0.1
	1.0	1.1	Sandy Clay	5.2	4.0	a	1.2
	1.5	1.6	Sandy Clay	5.1	4.6	a	0.5
	2.0	2.1	Sandy Clay	4.6	4.1	a	0.5
	2.5	2.6	Sandy Clay	4.8	4.6	a	0.2
	3.0	3.1	Sandy Clay	4.5	4.5	a	0.0
	3.5	3.6	Sandy Clay	4.8	4.0	b	0.8
	4.0	4.1	Sandy Clay	4.7	4.4	a	0.3
	4.5	4.6	Sandy Clay	4.8	4.8	a	0
	5.0	5.1	Sandy Clay	5.1	4.1	a	1

Sample Location	Depth (m)		Soil Description	pH_F	PH_{FOX} (Oxidation in 30% Hydrogen Peroxide)		
	Top	Bottom		pH in 1:5 distilled water	pH	Efferve-scence	pH Change
	(m)	(m)			pH_{FOX}	(See Note 1)	(pH_F-pH_{FOX})
BH02 (Continued)	5.5	5.6	Sandy Clay	5.1	4	b	1.1
	6.0	6.1	Sandy Clay	5.1	4.6	a	0.5
	6.5	6.6	Sandy Clay	5.1	3.9	b	1.2
	7.0	7.1	Sandy Clay	4.6	3.5	a	1.1
	7.5	7.6	Clayey Sand	5.6	5.3	a	0.3
	7.9	8.0	Clayey Sand	5.8	5.3	a	0.5
BH03	0.5	0.6	Fill: Sand	5.9	5.9	a	0
	1.0	1.1	Sandy Clay	6.3	5.6	a	0.7
	1.5	1.6	Sandy Clay	5.5	4.5	a	1
	2.0	2.1	Sandy Clay	5.8	4.3	a	1.5
	2.5	2.6	Sandy Clay	5.2	4	a	1.2
	3.0	3.1	Sandy Clay	5.2	4.2	a	1
	3.5	3.6	Sandy Clay	4.9	4.2	a	0.7
	4.0	4.1	Sandy Clay	5.1	4.1	a	1
	4.5	4.6	Sandy Clay	5.8	4.5	a	1.3
	5.0	5.1	Sandy Clay	5.6	4.7	a	0.9
	5.5	5.6	Sandy Clay	5.6	4.4	a	1.2
	6.0	6.1	Clayey Sand	6	5.2	a	0.8
	6.5	6.6	Clayey Sand	6.2	5.8	a	0.4

Sample Location	Depth (m)		Soil Description	pH_F	PH_{FOX} (Oxidation in 30% Hydrogen Peroxide)		
	Top	Bottom		pH in 1:5 distilled water	pH	Efferve-scence	pH Change
	(m)	(m)			pH_{FOX}	(See Note 1)	(pH_F-pH_{FOX})
BH03 (Continued)	7.0	7.1	Clayey Sand	5.8	4.2	b	1.6
	7.5	7.6	Sandy Clay	6	5.9	a	0.1
BH04	0.5	0.6	Sandy Clay	5.1	4.7	a	0.4
	1.0	1.1	Sandy Clay	5.4	4.9	a	0.5
	1.5	1.6	Sandy Clay	4.9	4	a	0.9
	2.0	2.1	Sandy Clay	6	3.6	a	2.4
	2.5	2.6	Sandy Clay	5	4.7	a	0.3
	3.0	3.1	Sandy Clay	6.4	4.6	a	1.8
	3.5	3.6	Sandy Clay	6	3.9	a	2.1
	4.0	4.1	Sandy Clay	5.8	4.2	a	1.6
	4.5	4.6	Sandy Clay	5.7	4.6	a	1.1
	5.0	5.1	Sandy Clay	5.2	4.7	a	0.5
	5.5	5.6	Sandy Clay	5.6	4.6	a	1
	6.0	6.1	Sandy Clay	5.7	4.5	a	1.2
	6.5	6.6	Sandy Clay	5.5	4.7	a	0.8
	7.0	7.1	Sandy Clay	5.2	4.3	a	0.9
	7.5	7.6	Sandy Clay	5.2	4.1	a	1.1

Note 1: - Observed reaction: a. No visible effervescence b. Slight to moderate effervescence c. Vigorous effervescent reaction