Our ref: PS107373-CLM-LTR-SJC RevB

By email
pbrogan@bloompark.com.au

9 August 2018

Peter Brogan
Managing Director
Bloompark Consulting Pty Ltd
Suite 2.04/41 McLaren Street
North Sydney
NSW 2060

Dear Peter

Targeted contamination investigation - St Joseph's College, Mary Street, Hunters Hill NSW

1. INTRODUCTION AND BACKGROUND

WSP Australia Pty Ltd (WSP) was requested by Bloompark Consulting Pty Ltd (Bloompark) to provide a response to contamination matters identified as required for a Development Application (DA) submission to council to redevelop existing classroom buildings as part of the Physical Education and Sports Precinct Project (PESPP) at St Josephs College, Mary Street, Hunters Hill, NSW (the site). WSP undertook an investigation titled *Targeted Environmental Contamination and Geotechnical Investigation - St Josephs College, Mary St, Hunters Hill, NSW* (WSP, 2018).

WSP conducted searches of publicly available NSW Government databases, undertook a site inspection and drilled 10 environmental bores to a depth of 3.2 m below ground level (mBGL) to collect soil samples for laboratory analysis.

One soil sample per borehole was analysed for the primary contaminants of concern heavy metals and pesticides. Selected samples were also analysed for pH and cation exchange capacity (CEC) in order to calculate site-specific environmental investigation levels (EILs). One sample, in which black ashy material was noted, was scheduled for additional total recoverable hydrocarbon (TRH) and polycyclic aromatic hydrocarbon (PAH) analysis.

Laboratory analysis results of all soil samples collected during the investigation were less than the adopted assessment criteria with the exception of concentrations of benzo(a)pyrene and TRH (C_6-C_{34}) in sample BH05_1.0 m which exceeded the adopted EILs and a concentration of benzo(a)pyrene toxicity equivalency quotient (TEQ) which exceeded the adopted assessment criteria for protection of human health for high density residential use. Several individual PAH compounds were also detected in this sample and are likely derived from a black coal ash source according to the online PAH Source Analyst calculator.

WSP concluded that the site was suitable for the proposed development but recommended the removal of excess material excavated in the vicinity of BH05 during the proposed development.

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2. CONTAMINATION IN RELATION TO THE PROPOSED PESPP

WSP understand that the PESPP does not involve development in area of BH05 where the ashy material was encountered. The location of BH05 is show in Figure 1 in Attachment A. Because the BH05 location is outside of the PESPP footprint no remedial works are required for the proposed development.

WSP recommend that Bloompark inform the school that the concentration of benzo(a)pyrene TEQ in the ashy material in BH05 presents a potential risk to the users of the school and that additional sample collection is undertaken from the shallow soil above the ashy materials in BH05 to assess the presence of shallow impact at this location. If the ashy material is at depth, we would recommend leaving in place and managing under an environmental management plan. If there are benzo(a)pyrene TEQ concentrations above the assessment criteria near the surface, we would recommend either removing this shallow soil or capping it to remove the direct contact pathway.

3. LIMITATIONS

The findings of this letter are based on the findings of WSP (2018). WSP performed its services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties, express or implied are made.

Subject to the scope of work, WSP's assessment was limited strictly to identifying the environmental conditions associated with the subject area and does not include evaluation of any other issues. The absence of any identified hazardous or toxic materials should not be interpreted as a guarantee that such materials do not exist on the subject area.

This report does not comment on any regulatory obligations based on the findings. This report relates only to the objectives stated and does not relate to any other work undertaken for the Client. It is a report based on the concentrations of contaminants observed in soil, water and gases at the time of the sample collection. These conditions may change with time and space.

All conclusions and recommendations regarding the property are the professional opinions of the WSP personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, WSP assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements or sources outside of WSP, or developments resulting from situations outside the scope of this project.

WSP is not engaged in environmental assessment and reporting for the purpose of advertising sales promoting, or endorsement of any Client interests, including raising investment capital, recommending investment decisions, or other publicity purposes. The Client acknowledges that this report is for their exclusive use.

4. CLOSING

If you have any queries regarding the above information, please contact the undersigned on 02 9272 1478.

Yours sincerely

Imogen Powell
Senior Environmental Scientist

Encl: Figures

ATTACHMENT A
FIGURE

Figure 1

Bore locations and PESPP location

St Joseph's College, Mary Street, Hunters Hill NSW

Geotechnical Borehole (16)

Environmental + Geotechnical Borehole(16)

PESPP area

WSP | PARSONS BRINCKERHOFF

BLOOMPARK CONSULTING PTY LTD

TARGETED ENVIRONMENTAL CONTAMINATION AND GEOTECHNICAL INVESTIGATION

ST JOSEPH'S COLLEGE, MARY STREET, HUNTERS HILL NSW

JULY 2018

Question today
Imagine tomorrow
Create for the future

Targeted environmental contamination and geotechnical investigation
St Joseph's College, Mary Street, Hunters Hill NSW

Bloompark Consulting Pty Ltd

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REV	DATE	DETAILS
1	20/10/2016	Draft for comment
2	19/07/2018	Final

	NAME	DATE	SIGNATURE
Prepared by:	Alex Ross	Date: 19/07/2018	pp
Reviewed by:	Peter Moore	Date: 19/07/2018	pp
Approved by:	Peter Moore	Date: 19/07/2018	pp

Our ref: PS107373-CLM-REP-STJC Rev2.docx

By email
pbrogan@bloompark.com.au

19 July 2018

Peter Brogan
Managing Director
Bloompark Consulting Pty Ltd
Suite 2.04, 41 McLaren Street
North Sydney
NSW 2060

Dear Peter

Targeted environmental contamination and geotechnical investigation
St Joseph's College, Mary Street, Hunters Hill NSW

INTRODUCTION

WSP has been requested by Bloompark Consulting Pty Ltd ('Bloompark') to provide a response to contamination matters identified as required for a Development Application (DA) submission associated with St Joseph's College, Mary St, Hunters Hill, NSW. The responses below are provided with reference to previous investigation undertaken at the site by WSP "*Targeted Environmental Contamination and Geotechnical Investigation – St Joseph's College, Mary St, Hunters Hill, NSW"* dated 21 November 2016

STATE SIGNIFICANT DEVELOPMENT REQUIREMENTS

Soil and Groundwater Contamination – Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.

Based on the footprint of the proposed development, nickel concentrations exceed the general solid waste criteria for off-site disposal. Toxicity characteristics leaching procedure (TCLP) analysis is recommended to determine whether the nickel concentration can reduce the soil classification to general solid waste.

Contaminant of concern concentrations in the two samples collected within the footprint of the proposed development and four nearby samples are suitable for the proposed land use.

Note that further samples may be required under the NSW EPA Sampling Design Guidelines (1995) to determine a circular hot spot using a system sampling pattern. For an area of 3, 00

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m2 to 4, 00 m 2, approximately 10 samples are required, Further, under waste classification guidelines excavated soils to remain on-site or to be disposed off-site are required to be sampled at a rate of 1 per 25 m^3 or 1 per 100 m^3

Contamination – Describe mitigation and management options that will be used to prevent, control, abate or minimise identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.

There are no known contaminant concentrations above the ecological and human health criteria with the footprint of the proposed development. Standard Occupational Health and Safety (OHS) practises should always be managed on-site during redevelopment.

Contamination – Include and assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.

As mentioned above, a greater density of sampling may be required to assess the entire extent of the proposed development adequately. Should soils be excavated and removed off-site, there will likely be minimal to no residual impacts as bedrock is generally encountered at 1m. Any impacts are likely to be in the fill.

OTHER REQUIREMENTS

It is also understood that a Hazardous Material Survey is required. Specifically, to undertake a hazardous material survey of all existing structures and infrastructure prior to any demolition or site preparation works. This has been completed by Healthy Buildings International Pty Ltd, summarised in their report entitled "**Hazardous Material Inspection Report",** dated March 2018.

CONCLUSIONS

We trust that this letter meets your requirements at this stage. Please do not hesitate to contact the undersigned should you have any queries

Yours sincerely

Julie Porter

Julie Porter
Principal Environmental Engineer

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

ABBREVIATIONS

ABC	Ambient Background Concentrations
ACL	Added Contaminant Limit
ACM	Asbestos containing materials
AHD	Australian Height Datum
ASS	Acid sulfate soil (soils containing iron sulfides)
BaP	Benzo a pyrene
CEC	Cation Exchange Capacity
CLM	Contaminated Land Management Act
COC	Chain of custody
CoPC	Contaminants of potential concern
DQO	Data quality objectives
EIL	Ecological Investigation Levels
ESL	Ecological Screening Levels
Ha	Hectare
HIL	Health-based Investigation Levels
HSL	Health Screening Levels
LGA	Local Government Area
LOR	Limits of Reporting
M8	Eight heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc)
mbgl	Metres below ground level
NEPM	National Environmental Protection Measure
NSW EPA	The environmental regulatory body has undergone a number of name changes, including: Department of Environment and Conservation (DEC); Department of Environment and Climate Change (DECC); Department of Environment, Climate Change and Water (DECCW); and, Office of Environment and Heritage (OEH). For the purpose of currency, the organisation is referred to as NSW EPA in this report.
OCP	Organochlorine pesticides
OPP	Organophosphorus pesticides
PAH	Polycyclic aromatic hydrocarbons
pH	Unit of measurement for acidity and alkalinity
PID	Photoionisation detector
POEO	Protection of the Environment Operations Act
QA/QC	Quality assurance / quality control
RPD	Relative percentage difference
TRH	Total Recoverable Hydrocarbons (C6 to C40)
USCS	Unified soil classification system
VOC	Volatile organic compounds

EXECUTIVE SUMMARY

WSP was commissioned by Bloompark Consulting Pty Ltd ('Bloompark')to conduct a Targeted Environmental Site Assessment (ESA) and geotechnical investigation at St Joseph's College located at Mary Street, Hunters Hill, NSW ('the Site'). The whole Site totals an area of approximately 72,970m^2, however, the current investigation pertains to a portion of the Site, approximately 22,100m^2 in area.

The objective of the investigation was to provide Bloompark with an environmental and geotechnical assessment of soil and bedrock underlying the Site to facilitate a proposed development of new class room buildings. The targeted ESA will provide conclusions based on the Site being suitable for ongoing use as a 'Special Purpose Type 2' (SP-2)-Infrastructure (Educational Establishment) land use setting.

A review of aerial photos from 1943 to 2015 and title deeds demonstrate that the Site was originally part of a rural/residential setting. The Site itself was subdivided into smaller agricultural and residential lots and appears to have amalgamated into one lot in 1961. The majority of the class room buildings, amenities, sports fields and landscaped areas appear to have been developed between 1961 and 1982 since which time, only minor developments have occurred.

WSP conducted searches of publicly available NSW Government databases on 27 September 2016 to determine if the Site is subject to any environmental constraints. WSP concluded the Site is not listed under Section 60 of the CLM Act, the Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (2009) and the Site does not possess a licence under the POEO Act 1997. The Site is located in a UPSS sensitive zone, however no UST's are known to be present on Site. WSP recommends Bloompark consult with the NSW Office of Environment and Heritage to ensure that the proposed development does not impinge on Heritage Items and native vegetation on Site.

A site inspection conducted on 22 September did not identify notable signs of contamination or potentially contaminating activities. As part of the current targeted ESA sixteen (16) soil bores were drilled to a maximum depth of 3.2mbgl (10 environmental bores) and 6.0mbgl (16 geotechnical bores) using mechanical solid flight auger and hand auger to collect soil samples and assess the underlying geotechnical conditions on Site.

The Site slopes to the south and contains paved areas, bitumen hardstand and landscaped areas. The lithology across the Site was fairly consistent, comprising shallow fill of gravelly and sandy clays and silty or gravelly sands to 0.3-2.4mbgl, overlying natural clays and sandy clays. Underlying weathered sandstone bedrock was generally encountered between 1.1-2.9mbgl.

One soil sample per environmental location was submitted for laboratory analysis for the primary contaminants of concern (CoPC) which included heavy metals and pesticides. Selected samples were also analysed for pH and cation exchange capacity (CEC) in order to calculate site-specific EILs. One sample, in which black ashy material was noted, was scheduled for additional total recoverable hydrocarbon (TRH) and polycyclic aromatic hydrocarbon (PAH) analysis.

Laboratory analysis of all soil samples collected during the investigation were less than applicable guideline criteria with the exception of sample BH05_1.0m which exceeded the adopted Site criteria for TRH (C_6-C_{34}), Benzo(a)pyrene (BaP) and BaP Toxicity Equivalent Quotient (TEQ). Two samples exceeded the CT1 (General Solid Waste) criteria for Nickel and Sample BH05_1.0 exceeded the CT2 (Restricted Solid Waste) criteria for BaP. WSP recommends additional TCLP analysis for further waste classification. Field and laboratory QA/QC was considered acceptable.

Based on the findings of this targeted ESA, WSP conclude that the Site is suitable for the proposed development from a contamination perspective under a (conservative) high-density residential land use setting. However, the "ashy" material at BH05_1.0 should be further analysed for BaP TCLP prior to offsite disposal. WSP also recommends additional TCLP analysis of samples BH08_0.2 and BH15_0.2 for Nickel for further waste classification. Soils at the remaining locations are appropriate for offsite disposal as General Solid Waste (non-putrescible)

1 INTRODUCTION

1.1 BACKGROUND

WSP was commissioned by Bloompark Consulting Pty Ltd ('Bloompark') to conduct a targeted environmental and geotechnical site assessment (ESA) at a site at Mary Street, Hunters Hill NSW ('the Site'). The Site is part of Lot 2 DP527024 and is currently occupied by St Joseph's College. The total area of the lot is approximately 72,970 m^2, however the current investigation pertains to a portion of the lot that is approximately 22,100 m^2. The combined environmental and geotechnical investigation is to support a development application (DA) to council to redevelop existing classroom buildings on Site (Physical Education and Sports Precinct Project (PESPP)). The Site location and boundaries are detailed on Figure 1 and 2, **Appendix A**.

The PESPP comprises:

- Demolition of the following existing buildings (which are not heritage significant) near the intersection of Luke Street and Gladesville Road:
  - College Shop
  - Healy Gym and Maintenance Workshop
  - Outdoor Sports Courts
  - Workshop/Storage and Shed.
- Construction of the Physical Education and Sports Precinct Project (PESPP) comprising the following facilities:
  - Lower Ground Floor: New car parking, maintenance workshops, storage, offices, amenities etc. A net increase of 55 car parking spaces is proposed (85 new spaces to be provided in the SCP basement less 30 at grade spaces to be removed)
  - Ground floor: Three indoor sports courts, amenities, kitchen and entry lobbies
  - First Floor: Void over sports courts, bench seating (180 seats), staff facilities, two general learning areas and foyer
  - Driveway entry to the PESPP (no new vehicular cross overs)
  - Landscaping and tree removal/replacement.
- Construction of a new single storey building to accommodate the relocated Healy Gym in the north-western corner of the site near the intersection of Mary Street and Mark Street.
- New kiosk substation and landscaping in the north-eastern corner of the site
- Use of the completed works as an educational establishment.
- Staging which would facilitate completion of the PESPP in up to two stages (noting that the entire project may be completed in one stage).

1.2 PROJECT OBJECTIVES

The primary objective of the investigation is to provide Bloompark with an assessment of soil and bedrock underlying the portion of the Site prior to redevelopment under the PESPP.

The investigation will provide conclusions based on the Site being 'suitable for the current land use' and assist Bloomparks DA to council.

The specific objectives of the Site Investigation are to:

— Assess the risk of any identified contamination within the context of the 'SP2-infrastructure' land use setting;

— Assess the underlying geotechnical conditions on Site; and

— Determine the suitability of the Site for the proposed redevelopment and ongoing SP2-infrastructure land use.

1.3 SCOPE OF WORK

To meet the project objectives, WSP completed the following scope of work. The scope of works was designed to meet the project objectives within the constraints of the Site:

— Preparation of Works Plans: Preparation of safety documentation including a Health Environment and Safety Plan (HESP) prior to any works on site proceeding along with a Dial Before You Dig (DBYD) underground services search.

— Conduct background research from publically available databases and requests for information from the Site operators.

— Conduct a site inspection to 'ground truth' environmental setting and site characteristic information.

— Establish sampling points as specified by Bloompark and "clear" suitable sampling locations by a licensed service locator.

— Install sixteen (16) soil borings including sixteen (15) geotechnical bores and eight (8) environmental bores with a mechanical drilling rig using solid flight auger technique.

— Sampling, field screening (PID and pH) and laboratory analysis of soils for pH, eight heavy metals (M8), organochlorine (OC) and organophosphate (OP) pesticides, and cation exchange capacity (CEC) to derive site specific EILS. One sample was also analysed for total recoverable hydrocarbons (TRH) and polycyclic aromatic hydrocarbons (PAHs).

— Prepare an ESA report summarising investigation data collected, potential risks to human health and the environment for the Site and conclusions on the suitability of the Site for continuing use as a school.

1.4 SCOPE OF WORK

To meet the project objectives, WSP completed the following scope of work. The scope of works was designed to meet the project objectives within the constraints of the Site:

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— Conduct a site inspection to 'ground truth' environmental setting and site characteristic information.

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— Install sixteen (16) soil borings including sixteen (16) geotechnical bores and ten (10) environmental bores with a mechanical drilling rig using solid flight auger technique.

— Sampling, field screening (Photoionisation detector (PID) and pH) and laboratory analysis of soils for pH, eight heavy metals (M8), organochlorine (OC) and organophosphate (OP) pesticides, and cation exchange capacity (CEC)

to derive site specific EILS. One sample was also analysed for total recoverable hydrocarbons (TRH) and polycyclic aromatic hydrocarbons (PAHs) based on field observations.

— Prepare a report summarising investigation data collected, potential risks to human health and the environment for the Site and conclusions on the suitability of the Site for continuing use as a school from a contamination perspective and geotechnical considerations for the proposed facility.

1.5 REPORT LIMITATIONS

The findings of this report are based on the scope of work outlined in Section 1.3. WSP performed its services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties, express or implied are made.

Subject to the scope of work, WSP's assessment was limited strictly to identifying the environmental conditions associated with the subject area and does not include evaluation of any other issues. The absence of any identified hazardous or toxic materials should not be interpreted as a guarantee that such materials do not exist on the subject area.

This report does not comment on any regulatory obligations based on the findings. This report relates only to the objectives stated and does not relate to any other work undertaken for the Client. It is a report based on the concentrations of contaminants observed in soil, water and gases at the time of the sample collection. These conditions may change with time and space.

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2 SITE CHARACTERISTICS

2.1 SITE LOCATION

The Site is located at Mary Street, Hunters Hill, NSW, 2110, specifically Lot 2, DP527024 (Refer to Figure 1 and 2, **Appendix A**). St Joseph's Secondary College currently occupies the entire Site. The current investigation area pertains to an eastern portion of the Site that is approximately 22,100m·

2.2 SITE DESCRIPTION

Observations of the Site were made by WSP scientists Alex Ross and Jacques Chiomey during a site inspection on 22 September 2016 to determine Site constraints and observe any Areas of Environmental Concern (AECs). Photographs from WSP's site inspection and fieldworks are presented within **Appendix C.** The Site layout is shown in Figure 2 and 3, **Appendix A.**

Table 2.1: Site Details

PARAMETER	SITE DETAILS
Street Address	Mary Street, Hunters Hill, New South Wales, 2110.
Legal Descriptor	Lot 2, DP527024 (part of only)
Local Government Area	Hunters Hill
Zoning	Zone SP2-Infrastructure (Educational Establishment)
Current Land use	Secondary School
Site Area	72,970m^2 approx. (the current investigation area is approximately 22,100m^2)
Geographical Coordinates	33°49'54.03"S, 151°08'21.27"E

2.3 SURROUNDING LAND USE

The Site is surrounded by the following land uses:

- North: Ryde Road, beyond which is low density residential land use;
- West: Mary Street, beyond which is low density residential land use;
- South: Gladesville Road, beyond which is low density residential land use and Tarban Creek approximately 384m southeast; and
- East: Low density residential land use and B-4 ('Mixed Use') land use.

3 DESKTOP STUDY

WSP engaged Lotsearch Pty Ltd ('Lotsearch') to conduct desktop searches of online databases to retrieve publically available information pertaining to the Site. A copy of the online searches provided by Lotsearch and historical titles requested by WSP are included in **Appendix I.**

3.1 TOPOGRAPHY

The Site elevation is approximately 34-40m Australian Height Datum (AHD) and slopes gently to the south towards Tarban Creek, following the regional topography.

3.2 HYDROLOGY

The nearest surface water bodies are Tarban Creek approximately 384m to the southeast which drains into the Parramatta River and Burns Bay approximately 315m to the northeast which forms part of the Lane Cove River.

The Site consists of schooling facilities including asphalt and paved hardstand areas, landscaped areas and garden beds, classroom, amenities and boarding house buildings, an indoor gymnasium and fitness centre, an outdoor 50m swimming pool, a laundry building, outdoor basketball courts and a maintenance workshop.

Stormwater drainage lines would be expected to direct runoff from the northern portion of the Site towards Ryde road, runoff from the eastern portion of the Site towards Luke Street and runoff from the southern portion of the Site towards Gladesville Road.

3.3 SOILS AND GEOLOGY

The NSW Office of Environment and Heritage (NSW OEH) *Sydney 1:100,000 Map Sheet* identified the Site to be located within a Glenorie Erosional Soil Landscape. The soils in this landscape are developed from weathering of Quaternary sediments near the Parramatta River and Lane Cove River and generally consist of shallow layered sedimentary coarse fragments, sands and loamy sands over bedrock or relict soils.

The Acid Sulfate Soil (ASS) Risk map sourced from Land and Property Information (LPI) identified that the Site and surrounds are located within an area of "Soil Class 5" indicating works that lowering the water table of "Class 2" soils (385m south of the Site) below 1m AHD may present an environmental risk. As the Site is located approximately 34-40m AHD, the proposed works are unlikely to have any effect on the water table of the "Class 2" soils 384m to the south of the Site.

The Site is located in an area of low probability of dryland salinity according to the National Land and Water Resources Audit (NLWRA).

According to the NSW Department of Industry, Resources and Energy (NSW DIRE) *Sydney 1:100,000 Geological Series Sheet*, the Site is underlain by;

— Soils of the Glenorie Landscape comprising shallow to moderately deep red to brown loams, clay loams and clays.

— Triassic Hawkesbury Sandstone with minor shale and laminite lenses.

— There is a nearby outcrop of Triassic Wianamatta Group Ashfield Shale.

No records of naturally occurring asbestos potential were found within a 1km radius of the Site according to the NSW DIRE records search.

3.4 HYDROGEOLOGY

A search of Department of Primary Industries Office of Water database shows there are seven (7) registered groundwater bore records located within a 2km radius of the Site:

- GW108901;
- GW109575;
- GW109573;
- GW109576;
- GW109574;
- GW202406; and
- GW053747.

The driller's logs provided for these bores indicated that:

- Fill material was generally encountered to maximum depths of 0.18 – 1.0 mbgl;
- Silty and sandy clays were generally encountered to maximum depths of 0.5 – 4.0 mbgl;
- Shale was generally encountered to maximum depths of 7.5 -12.0 mbgl; and
- Sandstone was generally encountered to maximum depths of 6.0 – 182.50 mbgl.
- No further details of the groundwater or geological conditions were provided in these logs.

3.5 SENSITIVE RECEPTORS AND ENVIRONMENTS

Nearby sensitive environments and potential receptors for site based contamination are:

- School users;
- Local residential properties within 30m of the Site in every direction;
- Public recreation areas as close as 114m east of the Site;
- Environmental conservation areas as close as 227m southwest of the Site;
- Threatened Ecological Communities such as Sydney Turpentine Ironbark Forest (245m south), Swamp Oak Floodplain Forest (347m northeast), Coastal Saltmarsh (434m south) and Swamp Sclerophyll Forest (510m south);
- Groundwater beneath the Site; and
- Surface water bodies including Burns Bay and Tarban Creek located 315 m to the northeast and 384m south of the Site respectively.

3.6 GOVERNMENT DATABASE SEARCHES

Searches of publicly available NSW Government databases on 27 September 2016 was used to determine if the Site is subject to any environmental constraints. WSP concluded the following:

3.6.1 CONTAMINATED LAND MANAGEMENT SEARCH

An online search of the list of contaminated sites notified to the NSW EPA (*Section 60 Duty to Report Contamination*) indicated two sites within a 1km radius of the Site;

— Coles Express Service Station – 4 Ryde Road, Hunters Hill (66m east of Site). Regulation under CLM Act is currently not required for this site; and

— Caltex Service Station – 116 Victoria Road, Gladesville (946m southwest of Site). The management status of this site is currently under assessment.

The EPA has assessed the contamination on site at the Coles Express Service Station and deemed it unnecessary to enforce regulation under the CLM (1997) Act. The Caltex Service Station is located 946m hydraulically downgradient of the Site and is therefore not considered to be a contamination risk to the Site.

— A search of the NSW EPA Contaminated Lands Records of Notice, Former Gasworks and National Waste Management Site Database registers revealed no records within a 1km radius of the Site.

3.6.2 PROTECTION OF THE ENVIRONMENT OPERATIONS (POEO) ACT 1997

3.6.2.1 LICENSING REQUIREMENTS UNDER THE POEO ACT 1997

A search of the Protection of the Environment Operations Act (POEO) public register for licences, applications and notices indicated there are no facilities on the Site, immediately adjacent sites and within a 1km radius of the Site that possess a licence under the Protection of the Environment Operations (POEO) Act 1997.

3.6.2.2 DELICENSED ACTIVITIES STILL REGULATED BY THE EPA OR FORMER LICENSED ACTIVITIES, NOW REVOKED OR SURRENDERED

The following delicensed activities or former licensed activities under the POEO Act 1997, now revoked or surrendered were found within a 1km radius of the Site;

— Licence No 11280 - Hazardous, Industrial or Group A Waste Generation or Storage at Hunters Hill Private Hospital (904m east of Site): Delicensed Activity still regulated by the EPA;

— Licence No 4653 – Application of Herbicides (256m from Site): Former Licensed Activity now revoked or surrendered;

— Licence No 4838 - Application of Herbicides (256m from Site): Former Licensed Activity now revoked or surrendered; and

— Licence No 6630 - Application of Herbicides (256m from Site): Former Licensed Activity now revoked or surrendered.

3.6.2.3 UNDERGROUND PETROLEUM STORAGE SYSTEMS (UPSS) REGULATIONS

The Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2014 (UPSS Regulation) was introduced to outline the statutory requirements for the management and operation of underground petroleum storage system (UPSS) infrastructure in NSW. The UPSS Sensitive Zone Map of Hunters Hill shows that the Site is located within a UPSS ‘Sensitive Zone’. WSP is not aware of any UPSS infrastructure currently present on Site.

3.6.3 ENVIRONMENTAL ZONING

3.6.3.1 STATE ENVIRONMENTAL ZONING

No records of State Environmental Planning Policy (SEPP) Protected Areas, Major Developments or Strategic Land Use Areas were found within a 1km radius of the Site according to the NSW Department of Planning and Environment (NSW DPE).

3.6.3.2 LOCAL ENVIRONMENTAL ZONING

The only land application document pertaining to the Site is the Hunters Hill Local Environmental Plan (2012).

3.6.4 NATURAL HAZARDS

The nearest natural hazard risk area is a 'Vegetation Buffer' 209m to the southwest of Site that is considered to be 'Bushfire Prone Land' according to the NSW RFS GIS Data Set.

3.7 SITE HISTORY

3.7.1 HISTORICAL TITLE DEEDS

Historical Certificates of Title for Lot 2 DP527024 were obtained by WSP. The review of title deed records indicates that the current registered proprietor of the Site are Trustees of The Marist Brothers. A summary of the historical title deeds for Lot 2 DP527024 (Note-c) is listed below. The full title deed shows nine (9) variations of titles (Notes a-i) prior to 1944, probably relating to the subdivision of the Site prior to this time. Note c has been presented below as it pertains to the largest portion of the Site prior to 1960. For a detailed record of previous ownership refer to the title searches provided in **Appendix I**.

Table 2.2: Summary of Certificates of Title – Note (c)

YEAR	PROPRIETOR	LIKELY LANDUSE
1988 – to date	Trustees of the Marist Brothers	Current land-use: secondary school
1968 – 1988	Trustees of the Marist Brothers	Secondary School
1960 – 1968	Trustees of the Marist Brothers	Secondary School
1944 – 1960	Trustees of the Marist Brothers	Secondary School
1916 – 1944	Clarke, J., Ludeke, J., Reilly, W. and Murray, J. (school teachers)	Secondary School
1916 - 1916	Clarke, J., Ludeke, J. and Reilly, W. (school teachers)	Secondary School
1911 - 1916	Dullela, D., Clarke, J., Ludeke, J. and Reilly, W. (school teachers)	Secondary School
1911 - 1911	Dullela, D. (school teacher)	Secondary School
1885 – 1911	Dullela, D., Balazuc, J. and Garell, A. (school teachers)	Secondary School
1878 – 1885	Dullela, D., Balazuc, J. and Laboureyras, P. (school teachers)	Unknown
1877 – 1878	Dullela, D., Fraisse, J.A.H. and Laboureyras, P. (school teachers)	Unknown

3.7.2 HISTORICAL AERIAL PHOTOGRAPHS

Periodic aerial photographs were reviewed to assist in identifying the history of the Site and the surrounding area. The aerial photographs reviewed were from 1943, 1956, 1961 1965,1970, 1982, 1991, 2000, 2007 and 2015 of which the 1943 was reviewed from publically available sources (refer to **Appendix D**). A summary of the historical aerial photographs can be found below in Table 2.2.

Table 3.2: Site Aerial Photograph Review

YEAR	DESCRIPTION OF SITE AND SURROUNDING AREAS
1943	One large 'T-shaped' building occupies the northwest of the Site and two smaller buildings occupy the centre of the Site and the north of the Site along Mark Street, all are likely school buildings. A plot of land to the south of the Site appears to contain three residential buildings and an adjacent plot to the southeast

YEAR	DESCRIPTION OF SITE AND SURROUNDING AREAS
	of the Site appears to be agricultural land use. The remainder of the Site contains landscaped areas and playing fields. Land use to the east, west and north appears to be predominantly low-density residential while land use to the south appears to be predominantly undeveloped or open space with limited low-density residential development.
1956	The Site appears to be mainly unchanged from the 1943 aerial image. Residential housing density to the east and west appears to have increased slightly.
1961	The three residential buildings to the south of the Site have been demolished and the agricultural plot to the southeast of the Site has been cleared. A 50m swimming pool has been built along the eastern boundary of the Site along Luke St. Surrounding land use appears to be mainly unchanged since the 1956 aerial image.
1965	The Site appears to be mainly unchanged since the previous 1961 aerial image. Low-density residential development to the south and north appears to have increased since the 1961 aerial photograph.
1970	The classroom building at the centre of the Site has been extended westward to the Mary Street Site boundary. Three additional buildings have been erected to the north of the Site along Mark Street and four outdoor tennis courts have been built along the eastern boundary of the Site. The playing fields have been extended to the south to Gladesville Road, while the plot of land in the south eastern corner of the Site appears to be undeveloped. Surrounding land use appears mainly unchanged in all directions.
1982	The classroom/office buildings to the north and north west of Site have both been extended and additional buildings (current gymnasium, fitness centre, maintenance workshop and classrooms) have been erected to the south of the swimming pool. Internal roads through the Site appear to have been sealed with bitumen hardstand. Outdoor tennis courts and cricket pitches have been constructed in the former agricultural plot in the south eastern corner of the Site. Surrounding land use appears to be mainly unchanged from the previous 1970 aerial image.
1991	The Site appears to be mainly unchanged from the previous 1982 aerial image. Residential housing density to the southeast appears to have increased slightly.
2000	The boarding house buildings to the north of the Site have been extended to include an extra southern wing. Otherwise, the Site appears to be mainly unchanged. Residential development continues with a large scale construction development underway to the southeast of the Site.
2015	Two small buildings have been erected to the south of the Site adjacent to the tennis courts. The remainder of the Site appears to be mainly unchanged since the previous aerial photograph. A large nursing home/estate has been built in the area to the southeast of the Site noted in the previous aerial image. Residential development has also increased to the east of the Site where what appears to be a commercial/industrial plot of land has been sub-divided and redeveloped into low density residential dwellings.

No historical aerial information for the Site is provided prior to 1943, however a Wikipedia search revealed that the Marist Brothers established the school on Site in 1881. The school comprised one wooden building which was expanded between 1882 and 1894. An additional lot to the southeast of Site was acquired 1892 where the current outdoor basketball courts are located.

The 1943 aerial photograph shows three buildings that may have been used for school purposes in the centre and to the north of the Site. Three smaller buildings, possibly residential dwellings are located in the southern portion of the Site. The remaining area of the complex is undeveloped and appears to be used for agricultural purposes. The surrounding land use to the north, west and east appears to be sparse, low density residential while the south of the Site appears to be undeveloped and open space and possible agricultural use.

By 1961 the three residential buildings to the south of the Site have been demolished and the agricultural plot to the southeast has been cleared, with a swimming pool evident. Surrounding low-density residential development has intensified in all directions.

By 1970, three buildings (possibly the current boarding houses) had been erected in the north of the Site adjacent to Ryde Road while the central classroom building had been extended to the west as far as Mary Street. Four outdoor tennis courts have been built and the playing fields have been extended south to Gladesville Road.

By 1982, the classroom and office buildings to the northwest of the Site have been extended and additional buildings had been constructed to the east of the Site along Mary St including the current gymnasium, fitness centre and maintenance workshop. Outdoor tennis courts and cricket pitched have been built in the former agricultural plot to the south east of the Site. All internal roads now appear to be sealed with bitumen hardstand.

By 2015, the boarding house buildings to the north of the Site have been extended with additional wings included and two small buildings have been erected to the south of the Site along Gladesville Drive. Surrounding low density residential development has increased in every direction, but recent developments have been from the south and the east of the Site. Minimal changes to the Site appear to have been made since the 2015 aerial image.

In summary, based on the historical documents reviewed:

- The Site is not currently listed on Section 60 of the NSW EPA Duty to Report Contamination, POEO Act (1997) and WSP does not consider any sites located within a 1km radius to pose an environmental risk to the Site.
- The Site is located in a UPSS Sensitive area however WSP is not aware of any UPSS infrastructure currently present on Site.
- Three (3) Heritage Items and one (1) item of native vegetation are currently listed for the Site. WSP recommends Bloompark seek further advice from the NSW Office of Environment and Heritage to ensure that the proposed development does not impact any of the listed items.
- The Site has been used as a school since its development in 1881 and is therefore considered to be of low contamination risk.

4 ASSESSMENT METHODOLGY

The following outlines the methodology adopted by WSP for the detailed environmental site assessment (ESA), including rationale for soil bore locations, description of field equipment used, decontamination procedures, field and laboratory quality assurance and control, laboratory analytical methods and sample preservation.

4.1 GUIDANCE DOCUMENTS

The assessment methodology has been developed with guidance stated in the following guidelines:

- DEC (2006) Guidelines for the NSW Site Auditor Scheme (2nd Edition);
- DECCW (2006) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997;
- National Environment Protection Council (2013) National Environment Protection Measure 2013 – Assessment of Site Contamination. Schedule B(1): Guideline on the Investigation Levels for Soil and Groundwater;
- National Environment Protection Council (2013) National Environment Protection Measure 2013 – Assessment of Site Contamination. Schedule B(2): Guideline on Data Collection, Sample Design and Reporting;
- NSW EPA (1995) Sampling Design Guidelines;
- NSW OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites.

4.2 DATA QUALITY OBJECTIVES

The Data Quality Objectives (DQO) process is a systematic planning tool based on the scientific method for establishing criteria for data quality and for developing data collection designs. The DQO defines the experimental process required to test a hypothesis. The DQO process has been developed to ensure that efforts relating to data collection are cost effective, by eliminating unnecessary, duplicative or overly precise data whilst at the same time, ensuring the data collected is of sufficient quality and quantity to support defensible decision making.

It is recognised that the most efficient way to accomplish these goals is to establish criteria for defensible decision making before data collection begins and develop a data collection design based on these criteria. By using the DQO process to plan the investigation effort, the relevant parties can improve the effectiveness, efficiency and defensibility of a decision in a resource and cost effective manner.

The DQO process consists of seven steps, which are designed to clarify the study objectives, define the appropriate type of data and specify tolerable levels of potential decision errors. The seven-step DQO process adopted for the assessment can be summarised as:

- Step 1 – Defining the Problem;
- Step 2 – Identify the Decision;
- Step 3 – Identify Inputs to the Decision;
- Step 4 – Define the Study Boundaries;
- Step 5 – Develop a Decision Rule;
- Step 6 – Specify Limits on Decision Errors; and
- Step 7 – Optimise the Design for Obtaining the Data.

4.2.1 DEFINE THE PROBLEM

WSP understand that the assessment is required to determine the potential for contamination issues associated with activities at the service station portion of the complex, might they be historical and/or current.

Bloompark Consulting Pty Ltd requires an understanding of the following for the Site:

- Broad characterisation of existing site conditions;
- Describe the site boundaries;
- Investigate and document the site history;
- Identify potential sources of contamination;
- Identify and assess the likely extent and concentration of contamination (if any) in soil beneath the Site to facilitate the DA to council for the proposed development;
- Assess the likely source of any identified contamination;
- Assess the nature and depth of the underlying bedrock material from a geotechnical perspective to facilitate the proposed development;
- Whether there is any risk to the environment and/or human health as a result of any identified contamination; and
- Whether the Site is suitable for continuing SP2 (Special Purpose-Educational Facility) land use.

4.2.2 IDENTIFY THE DECISION

The relevant decision statements for this Site Assessment are:

- "Does any contamination at the Site occur at concentrations that pose an unacceptable liability or risk to the environment and / or human health, based on the current land use as a school, including any potential for off-site migration of contaminants?"
- And if so:
- What is the potential impact of the identified contamination issues on the proposed development, and what measures could be adopted in order to mitigate them? and
- Which is the likely source and what activities (current or historic) are likely to have contributed to the identified contamination?

4.2.3 IDENTIFY THE INPUTS TO THE DECISION

Key data required to resolve the project problem includes identified concentrations of contaminants of concern in soil collected in the study area, the pathways for contaminant movement (underlying geological and hydrogeological conditions) and the location of sensitive receptors. The investigation strategy will seek not only to identify the nature and extent of contamination but to identify the sources of contamination such that any required management strategy can be focussed on what has caused the contamination.

The CoPC identified were based on the review of historical and current land uses and operations and based on WSP review of historical information.

The sampling strategy was to establish soil boreholes that will allow for sampling at various depths across the Site for representative coverage.

The selection of appropriate assessment criteria is to be based on SP2-Special Land Use (Educational Facility) use into the future. As there is a boarding house for students located on Site, the Site shall be considered under the most conservative land use type (Low-density residential or 'Residential-A').

The results of QA/QC sampling and analysis will assist in determining whether the data collected as part of the assessment works are of an acceptable quality for comparison against the adopted site assessment criteria.

4.2.4 DEFINE THE BOUNDARIES OF THE STUDY

The environmental assessment is limited to the investigation area comprising an area approximately 22,100m^2 in the eastern portion of Lot 2 DP527024. Consideration will also be given to capture potential off-site sources of contamination that may impact the Site. For the purposes of the assessment, the Site boundaries are considered to be defined by the boundary shown (Figure 2, **Appendix A**). It is noted that the Site is located within a larger lot. The use of cadastral boundaries to define the study area is therefore not feasible.

The vertical extent of the study boundary is to the depth assessed at each location. Borelogs are presented in **Appendix E.**

The temporal boundaries of the study will be limited to those dates that the investigation is undertaken.

4.2.5 DEVELOP A DECISION RULE

This assessment includes the comparison of individual soil sample results to the following published guidelines. These guidelines are considered acceptable for low density residential (Residential-A) land use as part of the Site is utilised as a boarding house.

- Health Based Investigation Levels (HILs), Health Screening Levels (HSLs), Ecological Screening levels (ESLs) and Ecological Investigation Levels (EILs) published in the National Environment Protection Amendment Measure (NEPC, 2013);
- Site-specific EIL criteria for heavy metals based on soil pH and Cation Exchange Capacity (CEC);
- Where individual sample values exceed the adopted criteria, the Site may still be considered suitable for residential land use if the following conditions are met;
- The 95% UCL value is less than the criteria;
- The standard deviation does not exceed 50% of the adopted criteria value and
- The values are less than 250% of the criteria.

4.2.6 SPECIFY TOLERABLE LIMITS ON DECISION ERRORS

The precision, accuracy, repeatability, completeness and comparability of the data generated were assessed against the Data Quality Indicators (DQIs). The acceptable limits for data Quality Assurance (QA) include the following:

- Accuracy is measured by percent recovery '%R'. Accuracy data is expected to vary within the range of 70-130 %R for inorganics including metals and 60-140% for organics;
- Precision is measured using the Standard Deviation 'SD' or Relative Percent Difference '%RPD'. Acceptable RPD criteria are as follows: < 10 x LOR = No limit; 10-20 x LOR = 0-50%; and >20 X LOR = 0-20%. For RPD criteria outside these ranges, a review should be conducted of the cause.

The above DQIs assume that the distribution of contamination in the sample is uniform. Where samples comprise heterogeneous materials, the contamination distribution can vary significantly over small distances resulting in higher than expected RPDs.

4.2.7 OPTIMISE THE DESIGN OF OBTAINING DATA

With consideration of NSW EPA (1995) *Sampling Design Guidelines*, the review of existing environmental data and the evaluation of operational decision rules, a resource-effective data collection approach for generating data to meet the project objectives was developed. This was achieved through the development of a sampling program that used a targeted sampling regime that focused on known contamination sources.

5 ASSESSMENT CRITERIA

5.1 SOIL CRITERIA

5.1.1 HEALTH BASED CRITERIA

Assessment criteria have been selected from NSW EPA made or endorsed guidance documents following consideration of the continuing SP2 -Special Use-Infrastructure (Educational Establishment) land use. It is noted that a boarding house for students is located on Site which would place that area of the Site under a high-density residential land-use setting (Residential-B) and the remainder of the Site would be classified as open space and recreation. As such the conservative health-based criteria adopted are the high-density residential thresholds presented in NEPC, 2013 ('Column B'). These have been reproduced in Table 5.5.1.

5.1.2 ECOLOGICAL BASED CRITERIA

Ecological risk has also been considered pertinent to assessing the Site's continued use for use as an educational establishment. In accordance with NEPC, 2013, protection of the environment should be a consideration of all site assessments. NEPC, 2013 provides a protocol for deriving Ecological Investigation Levels (EILs) for metals and generic Ecological Screening Levels (ESLs) for TPH and BTEX. These will be used as a basis for discussion on the likely risk to ecological receptors.

The EILs for metals concentrations were calculated from an ambient background concentration (ABC) with an "added contaminant limit" (ACL) based on the pH, CEC and/or clay content. Thus the EIL = ABC+ACL. Sample BH03_1.0m was taken from the natural clays that are considered representative of the natural soil conditions on Site. Heavy metal concentrations from this sample were therefore used as the ABC for EIL calculations.

The average of the laboratory pH of the soil was 5.8 pH units while the average of the field pH was 6.6. We have assumed an average of 6.0 pH units as an average of the field and the laboratory results. CEC was analysed at the laboratory for selected samples and the average was calculated to be 8.1 meq/100g. Calculated EILs are presented in Table 5.5.1.

5.1.3 MANAGEMENT LIMITS

With respect to hydrocarbons, criteria have also been adopted from the Management Limits (Table 1 B(7)) as published in NEPM 2013. These limits are applied following consideration of appropriate ESLs and HSLs and represent upper limit concentrations to ensure that soils retained onsite are:

- Unlikely to form observable non-aqueous phase liquids;
- Represent a fire or explosive hazard; or
- Have deleterious effects on underground infrastructure.

Table 5.5.1: Soil Validation Criteria

CONTAMINANT	HEALTH BASED	ECOLOGICAL	MANAGEMENT LIMITS
	Residential B	**Urban Residential/Open Space EIL/ESL**	**Residential, parkland and public open space**
Units	(mg/kg)	(mg/kg)	(mg/kg)
Metals and Inorganics			

CONTAMINANT	HEALTH BASED	ECOLOGICAL	MANAGEMENT LIMITS
Arsenic	500	100	-
Cadmium	150	-	-
Chromium (VI)	500	160 (III)	-
Copper	30,000	160	-
Lead	1200	1100	-
Mercury	120	-	-
Nickel	1200	100	-
Zinc	60,000	340	-
Polycyclic Aromatic Hydrocarbons and Phenols			
Naphthalene	5*	170	-
Benzo(a)pyrene	-	0.7	-
Carcinogenic PAHs (BaP TEQ)	4	-	-
Total PAHs	400	-	-
Phenol	45,000	-	-
Organochlorine Pesticides and Polychlorinated Biphenyls			
DDT+DDE+DDD	600	180 (DDT only)	-
Aldrin + Dieldrin	10	-	-
Chlordane	90	-	-
Endosulfan	400	-	-
Endrin	20	-	-
Heptachlor	10	-	-
Methoxychlor	500	-	-
PCBs	1	-	-
Petroleum Hydrocarbons, Benzene, Toluene, Ethylbenzene and Xylene			
F1 (C_6-C_{10})	50*	180*	700*
F2 (>C_{10}-C_{16})	280*	120*	1,000*
F3 (>C_{16}-C_{34})	-	300*	2,500*
F4 (>C_{34}-C_{40})	-	2,800*	10,000*

Notes:

1 * Screening value based on NEPM (2013) ESL/HSL/ML for sandy soils and at depth 0-1m.

2 NL = non limiting

6 GEOTECHNICAL INVESTIGATION FINDINGS

A report presenting the findings of the geotechnical investigation was provided by AW Geotechnical Pty Ltd and can be found in **Appendix H.** The pertinent information from the geotechnical report includes:

- A total of sixteen (16) locations across the Site were assessed for geotechnical characteristics.
- "Extremely Weathered" (Class V) rock was encountered at fourteen (14) locations ranging between 900mm and 5100mm below ground level (bgl). "Distinctly Weathered" (Class IV) rock was encountered at thirteen (13) locations at depths ranging from 1200mm to 5100mm bgl.
- The Site is classified as Class "P" for problem sites according to the AS2870-2011 classification for Residential Slabs and Footings due to the presence of trees and the existing structure that constitute "Abnormal Moisture Conditions" as well as "Uncontrolled" fill material in the investigation area.
- The clays encountered on Site are classified as "Class H1" assumed to have a "High" potential change volume with changes in moisture content and may result in high levels of surface movement (Ys) of 41-60mm due to swelling and shrinking. The presence of trees and existing structures on Site may increase the expected surface movement by 30-50% and this should be taken into consideration with the design.
- The natural clays found on Site are suitable for re-compaction, however the shrink and swell changes of the clays with moisture should be considered in the footing design.
- Based on in-situ DCP testing the natural clay-based strata have an estimated California Bearing Ratio (CBR) value of 2-4%.
- For high level strip pad footings, the following allowable bearing pressures are applicable:
  - 100kPa at all levels in the natural stiff clay; and
  - 200kPa founded 50mm and deeper into the stiff clay strata.
- For bored piers, the following allowable bearing pressures are applicable:
  - 250 kPa founded 1000mm and deeper into the natural stiff clay;
  - 400 kPa founded 500mm into the Class V XW –Rock; and
  - 750 kPa founded at the depth of mechanical auger refusal (Class IV DW-Rock).
- Provisions must be made in the design and construction of the proposed development for differential movement of features such as walls, slabs, fences, paths and plumbing supported by the natural strata.
- Single trees must be 1.0 times their height away from any structural footings and for rows of trees, this distance must be increased.
- Adequate drainage should be implemented during excavation works to ensure that the underlying soils (particularly the silty topsoil) do not become un-trafficable. If soils become un-trafficable, the earthworks contractor may be required to import "subgrade" material in order to continue with construction.
- "Wet" or "moist" layers were encountered in the soil profile which may result in water seepage during excavations. Water seepage may also occur after rain or through permeable seams in the soil profile, therefore long-term water proofing in those areas may need to be considered.CONCLUSIONS
- contamination investigation findings

7 CONTAMINATION INVESTIGATION FINDINGS

7.1 SCHEDULE OF WORKS

A site inspection was conducted on 22 September 2016 by WSP Environmental Scientists Alex Ross and Jacques Chiomey with Bloompark Project Director Lee Thomson and Project Manager Dennis Hwang in order to address access issues, mark out sampling locations and identify potential sources of contamination. Intrusive works were then conducted by Hart Geo utilising a Land Cruiser-mounted drill rig with solid flight auger and supervised by Alex Ross and Jacques Chiomey.

Table 7.7.1: Schedule of Works

DATE	DESCRIPTION OF SITE ACTIVITIES
30 August 2016	Site inspection and assessment of Areas of Environmental Concern and confirm drilling locations.
	Underground utility locating and concrete coring.
	Soil boring, sampling and borehole reinstatement.

7.2 LOCATIONS OF BOREHOLES

Sixteen (16) boreholes in total were drilled across the investigation area. Soil samples were collected at ten (10) locations to identify potential soil contamination. Sixteen (16) locations were assessed for geotechnical purposes. Borehole locations were based on site coverage of the proposed development area and were selected by Bloompark and confirmed on Site by Lee Thomson (Bloompark) during the site inspection. Borehole coordinates were taken in the field using a hand-held Garmin GPS unit which is accurate within a 5m radius. Coordinates of sampling locations are included in Table 7.2.

Table 7.2: Borehole Coordinates

BOREHOLE ID	EASTINGS	NORTHINGS
BH01	151°8’28.00”	33°49’51.00”
BH03	151°8’14.00”	33°49’53.00”
BH04	151°8’25.90”	33°49’53.87”
BH05	151°8’25.00”	33°49’52.00”
BH07	151°8’25.54”	33°49’56.23”
BH08	151°8’24.00”	33°49’56.00”
BH09	151°8’25.00”	33°49’57.41”
BH11	151°8’22.74”	33°49’54.91”
BH12	151°8’23.00”	33°49’55.00”
BH14	151°8’26.49”	33°49’54.83”

BOREHOLE ID	EASTINGS	NORTHINGS
BH15	151°8’23.04”	33°49’53.88”
BH16	151°8’26.00”	33°49’58.00”

Site investigation locations are illustrated in Figure 4, **Appendix A.**

7.3 DRILLING OF BOREHOLES

Boreholes were drilled across the Site using a Land Cruiser-mounted solid flight auger drill rig. Environmental boreholes were drilled to a maximum depth of 3.2mbgl into natural soils, weathered rock, or until refusal.

7.4 SOIL LOGGING AND SAMPLING

Each soil borehole was described using the Unified Soil Classification System (USCS). All observations were recorded on borehole logs **(Appendix E)**.

Soil sampling was conducted at approximately 0.2 mbgl, 0.5 mbgl, 1.0 mbgl and each 1.0 m thereafter during the drilling of boreholes. The sampling rationale was occasionally adjusted to target changes in the soil profile or suspect anthropogenic inclusions that may pose an environmental risk. Samples were collected from the auger tip and were split into two parts (primary and secondary samples). The secondary samples were placed into snap lock plastic bags and screened for Volatile Organic Compounds (VOC) using a Photoionisation Detector (PID). The augers were decontaminated between sample locations.

The primary sample was placed into a laboratory prepared 250ml glass jar with the details of the sample, including the sample name, job number, date of sample and sample depth. For sample integrity and to minimise the potential for cross-contamination, disposable nitrile gloves were replaced between each sampling event. For preservation and in accordance with NEPM (2013) procedures, samples were stored in an ice filled Esky to keep the samples cool prior to being couriered to the laboratory.

One (1) sample per environmental bore (10 samples in total) were submitted for laboratory analysis for the primary contaminants of concern (heavy metals, OC and OP pesticides). Samples were also analysed for pH and cation exchange capacity (CEC) to assist in the calculation of site-specific EILs. Sample BH05_1.0m where dark colouring of the soil was noted, was scheduled for additional TRH and PAH analysis.

Two QA/QC samples were also analysed to satisfy quality control procedures. PID readings, measuring volatile soil vapours ranged between 0.0 and 10.7ppm across the Site. No olfactory indication (odours) of contamination were noted during sampling. Remaining samples were retained by the laboratory should further analysis be required.

All field equipment used during soil sampling was calibrated prior to use. Calibration certificates are included in **Appendix F**.

7.5 SAMPLE STORAGE AND HANDLING

Soil samples were immediately placed in an ice-filled Esky to keep the samples cool. Eskies were packed with ice to keep temperatures low during transit. A chain of custody (CoC) form was filled out with the sample ID and required analyses, and dispatched to the laboratory for analysis. A copy of the CoC documentation is included in **Appendix G**.

7.6 LABORATORY ANALYSIS AND METHODS

Sample analysis was conducted by EnviroLab Group Services Pty Ltd (NATA No. 825). Secondary quality assurance analysis (inter-laboratory duplicate analysis) was conducted by ALS Group Services Pty Ltd (NATA No. 2901). All analyses were undertaken in accordance with NATA approved methods as detailed on the laboratory certificates of analysis (**Appendix G**).

7.7 QUALITY ASSURANCE / QUALITY CONTROL

For any given project, all investigation data are potentially subject to sampling and data reduction errors. Data quality objectives are therefore established to control the sources of errors and quantify the errors whenever possible. Quality control (QC) procedures are designed to both increase sample data quality and help interpret discrepancies in results.

All work was conducted in accordance with industry-accepted standards and quality assured procedures. Field quality control included rigorous sample collection, decontamination procedures and sample documentation. WSP also implemented QC procedures during soil sampling by collecting representative QC samples for subsequent laboratory analyses. Following these analyses, laboratory and sampling data quality objectives were analysed and reported in terms of data precision, accuracy and completeness.

One (1) duplicate and one (1) triplicate soil sample were taken from primary soil sample BH16_0.5m. Samples were collected and analysed for contaminants of concern for to assess the precision, accuracy and comparability of the laboratory analyses.

The triplicate soil sample was analysed by the secondary laboratory (ALS) as an inter-laboratory duplicate. WSP standard field procedures require that samples are collected from discrete locations and not composited at the rate of one sample per twenty soil samples collected in the field (1:20).

Laboratory QAQC procedures included sample spikes for organic analysis. The results of the QC testing are presented in the laboratory reports, which also indicate how much of a particular analyte was recovered.

Duplicate testing is also undertaken by the laboratory to compare the results obtained in analysing sample.

8 FIELD OBSERVATIONS

The Site has been developed for school use with several classroom buildings, office buildings, maintenance and amenities buildings, a boarding house, a pool and indoor gymnasium and fitness centre, outdoor basketball courts, playing fields, landscaped areas and sealed internal roads. The Site slopes to the south towards Gladesville Road.

Stormwater drainage lines would be expected to direct runoff from the northern portion of the Site towards Ryde road, runoff from the eastern portion of the Site towards Luke Street and runoff from the southern portion of the Site towards Gladesville Road.

8.1 SOIL

Bitumen hardstand, paved surfaces and landscaped areas were encountered across the Site. The underlying lithology generally comprised fill comprising silty or gravelly sands and gravelly or sandy clays. Gravel inclusions comprised crushed concrete, crushed brick, crushed sandstone, bitumen and black, ashy material to 0.3-2.4mgbl. Underlying natural soils were encountered to 4.3-4.5mbgl and comprised medium to firm, grey, orange and brown clays or sandy clays with ironstone or sandstone inclusions. Weathered sandstone bedrock was encountered at 1.1 -2.9 mbgl across the Site. Water ingress was not noted in the soil profile at any borehole location.

A summary of the lithology across the Site is presented in the borelogs **Appendix E.**

Black ashy/charcoal-like material was noted in the fill material at sampling locations;

- BH05 (0.6-1.1mbgl); and
- BH09 (1.5-1.8mbgl).

BH09 was assessed for geotechnical purposes only, however, due to the presence of black “ashy material” WSP recommends the additional testing of sample BH09_1.8m for PAHs and heavy metals.

No odours were noted in the soils at any of the sampling locations. PID readings taken from the soils ranged from 0.0-10.7 parts per million (ppm).

Soil field pH was recorded using a 1:5 (soil to water) ratio solution and a calibrated pH meter. Soil pH readings in the reworked, gravelly clays ranged from 4.35-10.80. The highest pH readings were generally located in the upper fill material which often contained gravels of crushed concrete and crushed brick. Calibration certificates for the pH meter are included in **Appendix F.**

Borehole logs are presented in **Appendix E** detailing the soil profile encountered during drilling.

9 ANALYTICAL RESULTS

The soil results summary tables are presented in Table 1, **Appendix B.** Copies of laboratory certificates are included in **Appendix G.**

9.1 SOIL

The following comments relating to soil laboratory results can be made:

All soil samples analysed were either non-detect or below the most conservative adopted assessment criteria for heavy metals and pesticides.

Soil laboratory pH results ranged from 4.9 – 9.4 pH units.

Black, ashy material was noted at BH05_1.0m so additional TRH and PAH analysis was scheduled for this sample and the following results were above the adopted site criteria:

- TRH (C_{16}-C_{34}) concentration of 720 mg/kg exceeded the adopted NEPM (2013) ESL criteria of 300 mg/kg;
- Benzo(a)pyrene (BaP) concentration of 17 mg/kg exceeded the adopted NEPM (2013) ESL criteria of 0.7 mg/kg;
- BaP Toxicity Equivalent Quotient (TEQ) concentration of 25 mg/kg exceeded the adopted NEPM (2013) HIL-A criteria of 3 mg/kg; and
- A range of individual PAH compounds were detected. WSP used the online PAH Source Analyst tool which compares individual PAH concentrations with a database of known PAH sources. PAH results of sample BH05_1.0m indicated that the likely source of PAH contamination in the sample is derived from a "Black Coal Tar/Ash" or "Road seal" source. The results of the PAH Source Analyst calculations are used as a guide only to make inferences and are shown in **Appendix B.**
- As the soil at BH05 is in exceedance of the adopted health-based criteria, WSP recommends the disposal of this ashy material in the vicinity of BH05 to a licenced waste facility. WSP recommends further characterisation of any soils excavated in the vicinity of BH05 during the proposed development in order to determine the appropriate waste classification of the material prior to offsite disposal.

9.2 PRELIMINARY WASTE CLASSIFICATION (WITHOUT TCLP)

The laboratory results without TCLP were compared against the NSW EPA Waste Classification criteria and the following comments can be made:

- Sample BH08_0.2 exceeded the CT1 (General Solid Waste) criteria for Nickel;
- Sample BH15_0.2 exceeded the CT1 (General Solid Waste) criteria for Nickel; and
- Sample BH05_1.0 exceeded the CT2 (Restricted Solid Waste) criteria for BaP.

Based on the total concentrations of analytes tested for, soils at BH08 and BH15 are currently classified as **Restricted Solid Waste** and soils at BH05 are currently classified as **Hazardous Solid Waste**. The soils at the remaining locations are currently considered appropriate for offsite disposal as **General Solid Waste**.

WSP recommends additional TCLP analysis for Nickel in samples BH08_0.2 and BH15_0.2 and for BaP in sample BH05_1.0 for further waste classification.

9.3 DATA QUALITY ASSESSMENT

All field instruments (PID and soil pH meter) were calibrated prior to use. Calibration certificates are included in **Appendix F**.

9.3.1 FIELD QA/QC

The following QA/QC samples were collected in the field and analysed at the laboratory:

- DUP2 was an intra-laboratory duplicate sample of primary sample BH16_0.5m; and
- TRIP2 was an inter-laboratory triplicate sample of primary sample BH16_0.5m.
- The following comments are made as a summary regarding the quality of the field and analytical components of this project:
- Sample integrity and container requirements were documented as acceptable;
- Holding time compliances were documented as acceptable. All samples were received by the laboratory within the relevant holding times;
- All intra-laboratory and inter-laboratory duplicate sample RPDs were within the acceptable ranges;
- The primary (EnviroLab) and secondary (ALS) laboratories and all laboratory test methods were NATA registered at the time of analysis.

In summary, the field QAQC data is determined to be of sufficient quality to ensure validity of the conclusions reached for this assessment.

9.3.2 LABORATORY QA/QC

Laboratory QA/QC comprised of chain-of-custody requirements, sample integrity and holding times, use of acceptable NATA-registered laboratory methods and laboratory QA/QC results. Laboratory QAQC are detailed on the laboratory certificates provided in **Appendix G**.

All laboratory QA/QC requirements for soil were met with the exception of internal laboratory duplicate sample 154140-1 which was outside the RPD criteria for Copper (56%). The maximum concentration recorded in the duplicate testing was 16 mg/kg which is below the most sensitive applicable site criteria of 160 mg/kg. The RPD exceedance is likely due to inherent heterogeneity of the fill material sampled and is not considered to affect the overall integrity of the data set from a QA/QC perspective.

The internal QA/QC results are considered acceptable for the purpose of this investigation.

10 DISCUSSION AND CONCLUSIONS

WSP has undertaken a targeted environmental and geotechnical investigation at Mary Street, Hunters Hill, NSW (part of Lot 2, DP527024). A review of aerial photos from 1943 to 2015, historical title deeds and online searches demonstrate that the Site was originally part of a rural/residential setting with portions of the Site being utilised as a school from as early as 1881. Construction of several classroom buildings, a 50m swimming pool and clearing of agricultural activities in the southeast of the Site occurred between 1956 and 1961. The Site was developed to its current condition by 2015 with few major construction activities occurring since 1982. The Site is located in a primarily low density residential land use setting with the majority of recent development occurring to the east across Luke St and to the south across Gladesville Road.

WSP reviewed publically available NSW Government databases to determine if the Site is subject to any environmental constraints. WSP concluded the Site is not listed under Section 60 of the CLM Act, the *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997* (2009) and the Site does not possess a licence under the POEO Act 1997. Two sites listed under Section 60 of the CLM Act are located within a 1km buffer of the Site but are not considered to pose an environmental risk to the Site.

The investigation comprised the installation of sixteen (16) soil bores for environmental and geotechnical assessment across the Site. Fill material was generally encountered to depths between 0.3-2.4mbgl, overlying natural clays. Fill inclusions generally consisted of crushed brick, crushed concrete, crushed sandstone and occasional (BH05) black ashy material. Weathered sandstone bedrock was generally encountered between 1.1-2.9mbgl.

Laboratory analysis of soil samples collected during the investigation from ten environmental locations nominated by Bloomfield indicated heavy metal and pesticide concentrations that were non-detect or below the adopted Site criteria. Black, ashy material was noted at BH05 and was scheduled for additional TRH and PAH analysis and exceeded the adopted Site criteria for TRH (C_{16}-C_{34}), BaP and BaP (TEQ). Several individual PAH compounds were also detected in this sample and are likely derived from a black coal ash source according to the online PAH Source Analyst calculator. WSP recommends the removal of excess material excavated in the vicinity of BH05 during the proposed development, however further characterisation of the material will be required during the development for waste classification purposes. Nickel concentrations in samples BH08_0.2 and BH15_0.2 also exceeded the CT1 criteria for General Solid Waste (non-putrescible) and WSP recommends additional TCLP analyses for these samples for further waste classification.

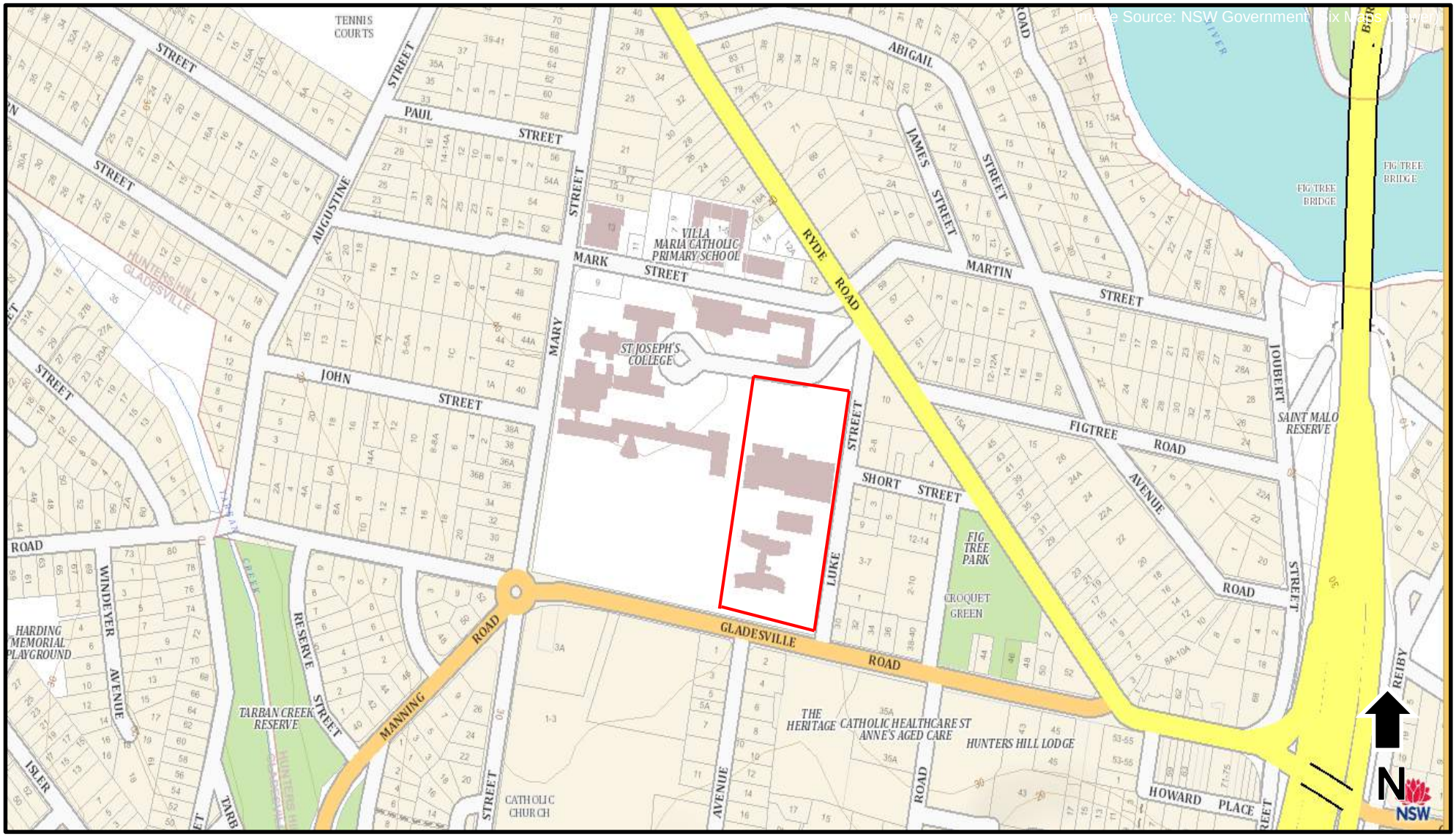
Based on the findings of this environmental and geotechnical site assessment, WSP conclude that the Site is suitable for the proposed development under the current low density land use setting. However, consideration needs to be given to the removal of black, ashy material at BH05 for future development.

11 REFERENCES

- Australian Standard AS 4482.1 (2005) *Guide to sampling and investigation of potentially contaminated soil, Part 1: Non-volatile and Semi-volatile compounds. Standards Australia, New South Wales*
- Chapman G.A., Murphy, C.L., Tille P.J., Atkinson G. and Morse R.J., 2009 Ed. 4, *Soil Landscapes of the Sydney 1:100,000* Sheet map, Department of Environment, Climate Change and Water, Sydney
- Fuel and Infrastructure Management Australasia (2014) *Targeted ESA Report: Report Number 41499-SM Service Station Site 524 Great Western Highway, St Marys, NSW, 2760*
- National Environmental Protection Council, 2013 National Environment Protection *(Assessment of Site Contamination) Amendment Measure 2013 (No. 1) - NEPM ASC, 2013*
- NSW Department of Mineral Resources, 1983 *Sydney 1:100,000 Series Sheet 9130*
- NSW EPA, 1995, *Sampling Design Guidelines*
- NSW EPA, 2006 *Guidelines for the NSW Site Auditor Scheme (2nd Edition)*
- NSW EPA, 2011, *Guidelines for Consultants Reporting on Contaminated Sites*
- NSW EPA, 1997 Protection of the Environment Operations Act
- NSW EPA, 2010 Protection of the Environment Operations (Clean Air) Regulations
- NSW EPA, 2014 *Waste Classification Guidelines, Part 1: Classifying Waste*
- PAH Source Analyst Website (Environmental Earth Sciences International, NSW) viewed 13th October 2016: http://www.pahsourceanalyst.com.au/index.html
- Wikipedia Page viewed 19th October 2016: https://en.wikipedia.org/wiki/St_Joseph%27s_College,_Hunters_Hill

APPENDIX A

FIGURES



Site Boundary (approximate)

1 50m

Figure 1

Site Location Plan

Environmental Contamination and Geotechnical Assessment
Phase 1/2
Hunters Hill
St Joseph's College

WSP | PARSONS BRINCKERHOFF

Figure 2

Sampling Locations

Environmental Contamination and Geotechnical Assessment
Phase 1/2
Hunters Hill
St Joseph's College

Geotechnical Borehole (16)

Environmental + Geotechnical Borehole(16)

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APPENDIX B

RESULTS TABLES

	pH		Metals								Cation Exchange Capacity					Organochlorine Pesticides																					
	pH 1:5 (lab)	pH 1:5 (field)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Exchangeable Ca	Exchangeable K	Exchangeable Mg	Exchangeable Na	CEC	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
	pH_Units	pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	meq/100g	meq/100g	meq/100g	meq/100g	meq/100g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	4	0.4	1	1	1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.1		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1
NEPM HIL-B Residential			500	150		30000	1200	120	1200	60000									10							600		400	400		20			10		500
NEPM HIL-C Recreational			300	90		17000	600	80	1200	30000									10							400		340	340		20			10		400
NEPM HSL-A/B, 0m to <1m, Sand, Soil																																				
NEPM EIL, Urban Res & Open Space			100		160	160	1100		100	340														180											
NEPM ESL, Urban Res & Open Space, Coarse																																				
NEPM ML Residential, Parkland & Open Space, Coarse																																				

Field_ID	Sample_Depth_Range	Sampled_Date-Time	SampleCode	Lab_Report_Number																																	
BH01	0.2	22/09/2016	154140-1	154140	**6.3**	**6.65**	**4**	<0.4	**8**	**9**	**30**	<0.1	**6**	**56**	**8.7**	**0.3**	**1.3**	<0.1	**10**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH03	1	22/09/2016	154140-7	154140	**4.9**	-	<4	<0.4	**18**	<1	**15**	<0.1	<1	**3**	**0.5**	<0.1	**1.3**	<0.1	**2**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH04	2	22/09/2016	154140-12	154140	**5.5**	-	**6**	<0.4	**21**	<1	**14**	<0.1	<1	**1**	**2.4**	<0.1	**1.6**	**0.29**	**4.3**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH05	1	22/09/2016	154140-15	154140	**6.6**	-	**7**	<0.4	**27**	**2**	**21**	<0.1	**2**	**14**	**9.3**	<0.1	**1.8**	**0.32**	**12**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH08	0.2	22/09/2016	154140-18	154140	**9.4**	**10.8**	<4	<0.4	**65**	**30**	**98**	<0.1	**58**	**99**	**24**	**0.2**	**1.3**	<0.1	**26**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH11	1.5	22/09/2016	154140-24	154140	**5.5**	**7.07**	<4	<0.4	**5**	**6**	**12**	<0.1	<1	**1**	**1**	<0.1	**0.7**	**0.16**	**2**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH12	1	22/09/2016	154140-27	154140	**5.1**	**7.5**	**8**	<0.4	**34**	**3**	**39**	**0.1**	**3**	**52**	**3.7**	**0.2**	**4**	**0.44**	**8.3**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH14	2.8	22/09/2016	154140-33	154140	**4.9**	**4.86**	<4	<0.4	**10**	<1	**9**	<0.1	<1	**4**	**0.6**	<0.1	**0.48**	**0.12**	**1.2**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH15	0.2	22/09/2016	154140-34	154140	**6.3**	**7.4**	<4	<0.4	**25**	**28**	**9**	<0.1	**79**	**41**	**19**	**0.2**	**1.5**	**0.22**	**20**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH16	0.5	22/09/2016	154140-39	154140	**5.3**	**4.93**	**9**	<0.4	**16**	**16**	**22**	<0.1	**2**	**19**	**2.5**	**0.2**	**0.68**	<0.1	**3.4**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DUP2	0.5	22/09/2016	154140-42	154140	**5**	**4.93**	**9**	<0.4	**16**	**14**	**19**	<0.1	**2**	**13**	**1.6**	**0.2**	**0.46**	<0.1	**2.3**	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRIP2	0.5	22/09/2016	ES1621550001	ES1621550	**4.9**	**4.93**	**10**	<1	**16**	**14**	**23**	<0.1	<2	**21**	**3.1**	**0.9**	**0.3**	**0.2**	**6.4**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2

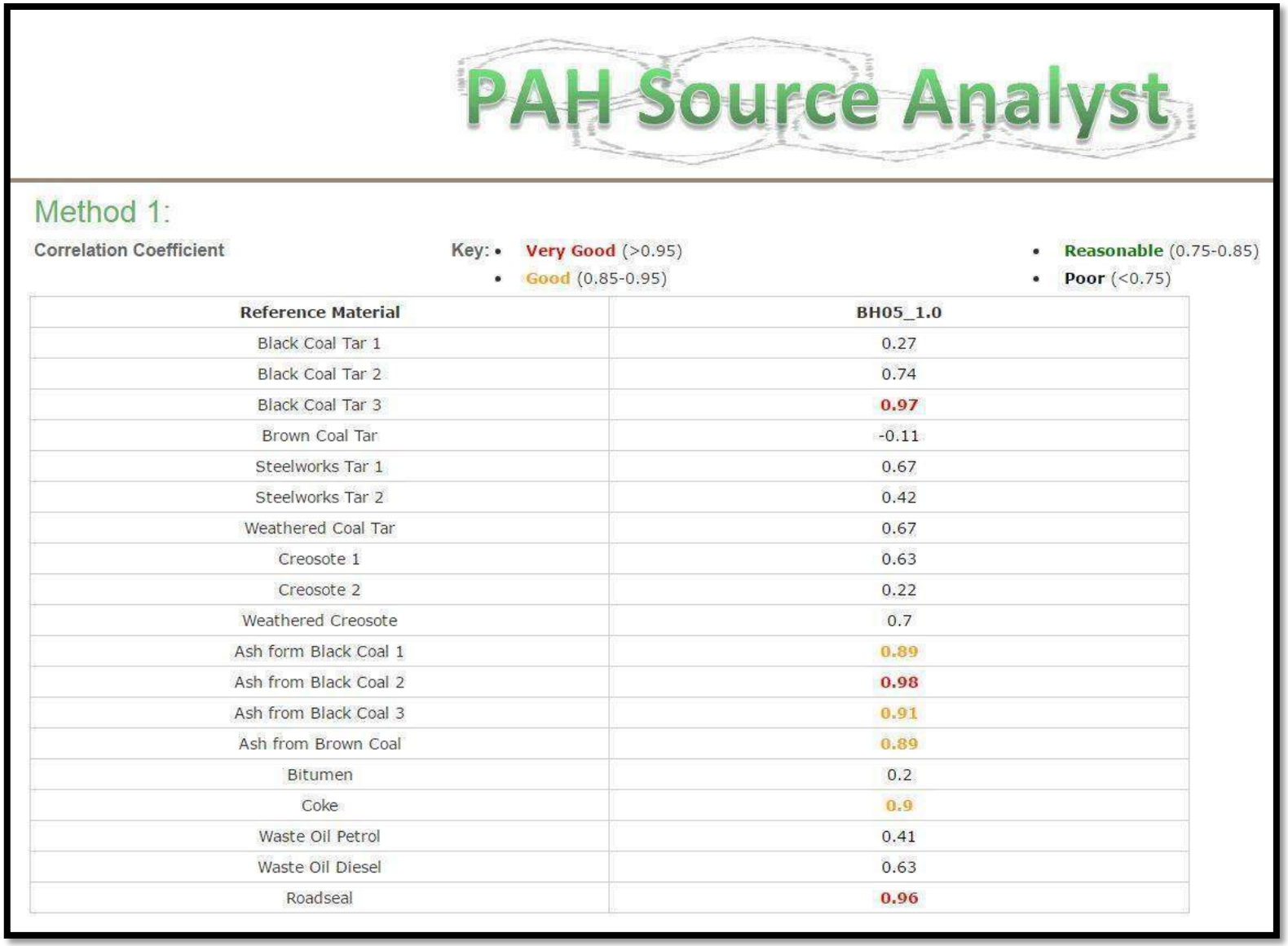
	Organophosphorous Pesticides														Total Recoverable Hydrocarbons									PAHs																			
	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Parathion	Ronnel	Pesticides (total, NSW Waste 2008)		>C10 - C36 (Sum of total)	>C10-C16	>C16-C34	>C34-C40	>C6 - C9	>C10 - C14	>C15 - C28	>C29-C36	>C6-C10	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Total Positive PAHs	Benzo(a)pyrene TEQ calc (zero)	Benzo(a)pyrene TEQ calc(half)	Benzo(a)pyrene TEQ calc(PQL)	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.1	0.1				50	100	100	25	50	100	100	25	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.5	0.5	0.5
NEPM HIL-B Residential			340																															3							4
NEPM HIL-C Recreational			250																																							3
NEPM HSL-A/B, 0m to <1m, Sand, Soil																																		5							
NEPM EIL, Urban Res & Open Space																																		170							
NEPM ESL, Urban Res & Open Space, Coarse																120	300	2800					180					0.7														
NEPM ML Residential, Parkland & Open Space, Coarse																1000	2500	10000					700																				

Field_ID	Sample_Depth_Range	Sampled_Date-Time	SampleCode	Lab_Report_Number																																									
BH01	0.2	22/09/2016	154140-1	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	1	22/09/2016	154140-7	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	2	22/09/2016	154140-12	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	1	22/09/2016	154140-15	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		**805**	<50	**720**	**100**	<25	<50	**520**	**260**	<25		**0.4**	**4.3**	**7.6**	**18**	**17**	**8.7**	**14**	**2**	**37**	**2.3**	**11**	**1.2**	**35**	**31**	**210**	**25**	**25**	**25**
BH08	0.2	22/09/2016	154140-18	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	1.5	22/09/2016	154140-24	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	1	22/09/2016	154140-27	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	2.8	22/09/2016	154140-33	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	0.2	22/09/2016	154140-34	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	0.5	22/09/2016	154140-39	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP2	0.5	22/09/2016	154140-42	154140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.6		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TRIP2	0.5	22/09/2016	ES1621550001	ES1621550	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.2	-	<0.5		-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Field Duplicates (SOIL)
Filter: ALL

SDG				ENVIROLAB 2016-09-23T00:00:00	ENVIROLAB 2016-09-23T00:00:00		ENVIROLAB 2016-09-23T00:00:00	ALSE-Sydney 26-Sep-16	
Field ID				BH16	DUP2	**RPD**	BH16	Trip2	**RPD**
Sampled Date/Time				22/09/2016	22/09/2016		22/09/2016	22/09/2016	
Chem_Group	**ChemName**	**Units**	**EQL**						
Physical Parameters	Moisture	%	0.1 (Primary): 1 (Interlab)	17.0	16.0	6	17.0	17.0	0
	pH 1:5 soil:water1:5 soil:water	pH Units		5.3	5.0	6	5.3		
Metals	Arsenic	mg/kg	4 (Primary): 5 (Interlab)	9.0	9.0	0	9.0	10.0	11
	Cadmium	mg/kg	0.4 (Primary): 1 (Interlab)	<0.4	<0.4	0	<0.4	<1.0	0
	Chromium (III+VI)	mg/kg	1 (Primary): 2 (Interlab)	16.0	16.0	0	16.0	16.0	0
	Copper	mg/kg	1 (Primary): 5 (Interlab)	16.0	14.0	13	16.0	14.0	13
	Lead	mg/kg	1 (Primary): 5 (Interlab)	22.0	19.0	15	22.0	23.0	4
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	1 (Primary): 2 (Interlab)	2.0	2.0	0	2.0	<2.0	0
	Zinc	mg/kg	1 (Primary): 5 (Interlab)	19.0	13.0	38	19.0	21.0	10
Halogenated Benzenes	Hexachlorobenzene	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
Pesticides	Parathion	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0
Organochlorine Pesticides	4,4-DDE	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	a-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Aldrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	b-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlordane (cis)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlordane (trans)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	d-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	DDD	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	DDT	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0
	Dieldrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endosulfan I	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endosulfan II	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endosulfan sulphate	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endrin aldehyde	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	g-BHC (Lindane)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Heptachlor	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Heptachlor epoxide	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Methoxychlor	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0
Organophosphorous Pesticides	Azinophos methyl	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Bromophos-ethyl	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlorpyrifos	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Diazinon	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Dichlorvos	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Dimethoate	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Ethion	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Fenitrothion	mg/kg	0.1	<0.1	<0.1	0	<0.1		
	Malathion	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Ronnel	mg/kg	0.1	<0.1	<0.1	0	<0.1		

*RPDs have only been considered where a concentration is greater than 0 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (0-5 x EQL); 75 (5-10 x EQL); 30 (> 10 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory



Reference Material	BH05_1.0
Black Coal Tar 1	0.27
Black Coal Tar 2	0.74
Black Coal Tar 3	**0.97**
Brown Coal Tar	-0.11
Steelworks Tar 1	0.67
Steelworks Tar 2	0.42
Weathered Coal Tar	0.67
Creosote 1	0.63
Creosote 2	0.22
Weathered Creosote	0.7
Ash form Black Coal 1	**0.89**
Ash from Black Coal 2	**0.98**
Ash from Black Coal 3	**0.91**
Ash from Brown Coal	**0.89**
Bitumen	0.2
Coke	**0.9**
Waste Oil Petrol	0.41
Waste Oil Diesel	0.63
Roadseal	**0.96**

Table 3

PAH Source Anlayst Results Table 1

Data sourced from: http://www.pahsourceanalyst.com.au/

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PAH Source Analyst

Method 2:

Pyrene Normalised, Summed Difference

Key:
- **Very Good** (<1)
- **Good** (1-2)
- **Reasonable** (2-3)
- **Poor** (>3)

Reference Material	BH05_1.0
Black Coal Tar 1	8.29
Black Coal Tar 2	**2.38**
Black Coal Tar 3	**1.21**
Brown Coal Tar	15.92
Steelworks Tar 1	3.47
Steelworks Tar 2	4.2
Weathered Coal Tar	4.53
Creosote 1	6.37
Creosote 2	9.43
Weathered Creosote	4.59
Ash form Black Coal 1	**2.1**
Ash from Black Coal 2	**1.39**
Ash from Black Coal 3	**1.76**
Ash from Brown Coal	**1.84**
Bitumen	10.43
Coke	**1.4**
Waste Oil Petrol	5.14
Waste Oil Diesel	4.17
Roadseal	**1.66**

Table 4

PAH Source Anlayst Results Table 2

Data sourced from: http://www.pahsourceanalyst.com.au/

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APPENDIX C

SITE PHOTOGRAPHS

WSP | PARSONS BRINCKERHOFF	**PHOTOGRAPHIC LOG**	
	Site Location Mary Street, Hunters Hill, NSW	2270358A

Photo No.	**Date**
1	22 September 2016

Description

Photograph of the basketball court in the southeastern corner of the site facing south towards Gladesville Road.

Photo No.	**Date**
2	22 September 2016

Description

Photograph of BH07 location with waste bins in foreground and fitness centre building in background. Facing east towards Luke Street.

WSP PARSONS BRINCKERHOFF	**PHOTOGRAPHIC LOG**	
	Site Location Mary Street, Hunters Hill, NSW	2270358A

Photo No.	**Date**
3	22 September 2016

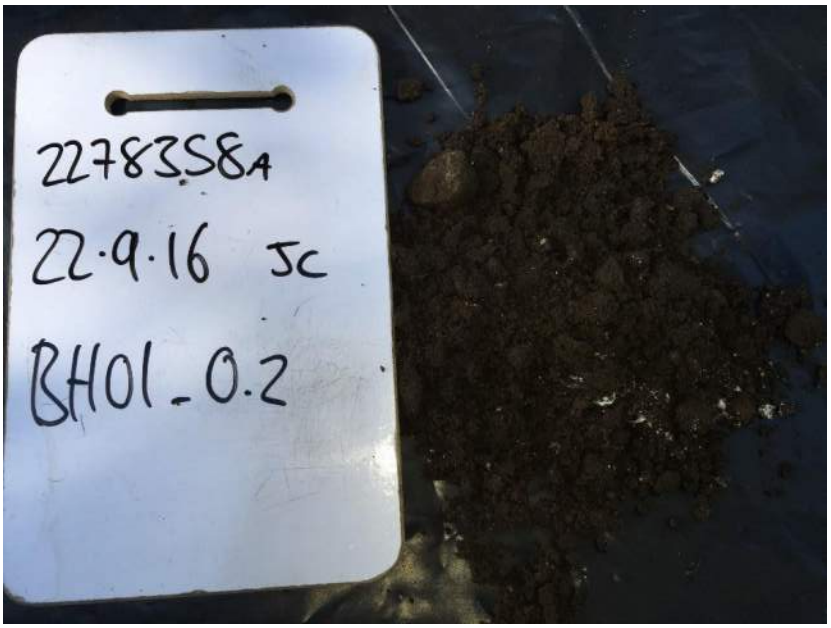
Description

Drill rig setup and soil profile of BH14 including fill material and natural clays. Facing north.

Photo No.	**Date**
4	22 September 2016

Description

Gravelly sand fill material at BH01 at 0.2mbgl.



WSP | PARSONS BRINCKERHOFF	**PHOTOGRAPHIC LOG**	
	Site Location Mary Street, Hunters Hill, NSW	2270358A

Photo No.	**Date**
5	22 September 2016

Description

Natural clay soils at BH14 at 2.0 mbgl.

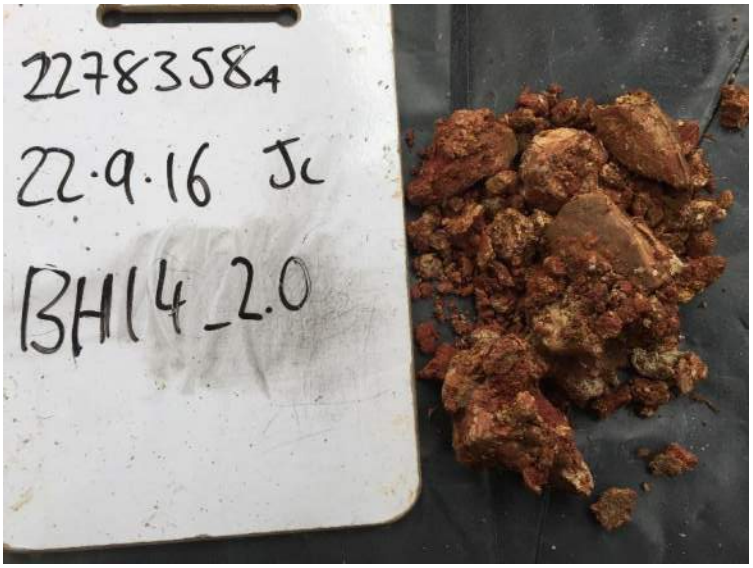


Photo No.	**Date**
6	22 September 2016

Description

Photograph facing west towards BH12 from the basketball courts.

WSP PARSONS BRINCKERHOFF	**PHOTOGRAPHIC LOG**	
	Site Location Mary Street, Hunters Hill, NSW	2270358A

Photo No.	**Date**	
7	22 September 2016	
Description Landscaped areas including native trees. Facing south towards BH02 from the front gates on Ryde Road.		

APPENDIX D

HISTORICAL AERIAL PHOTOGRAPHS

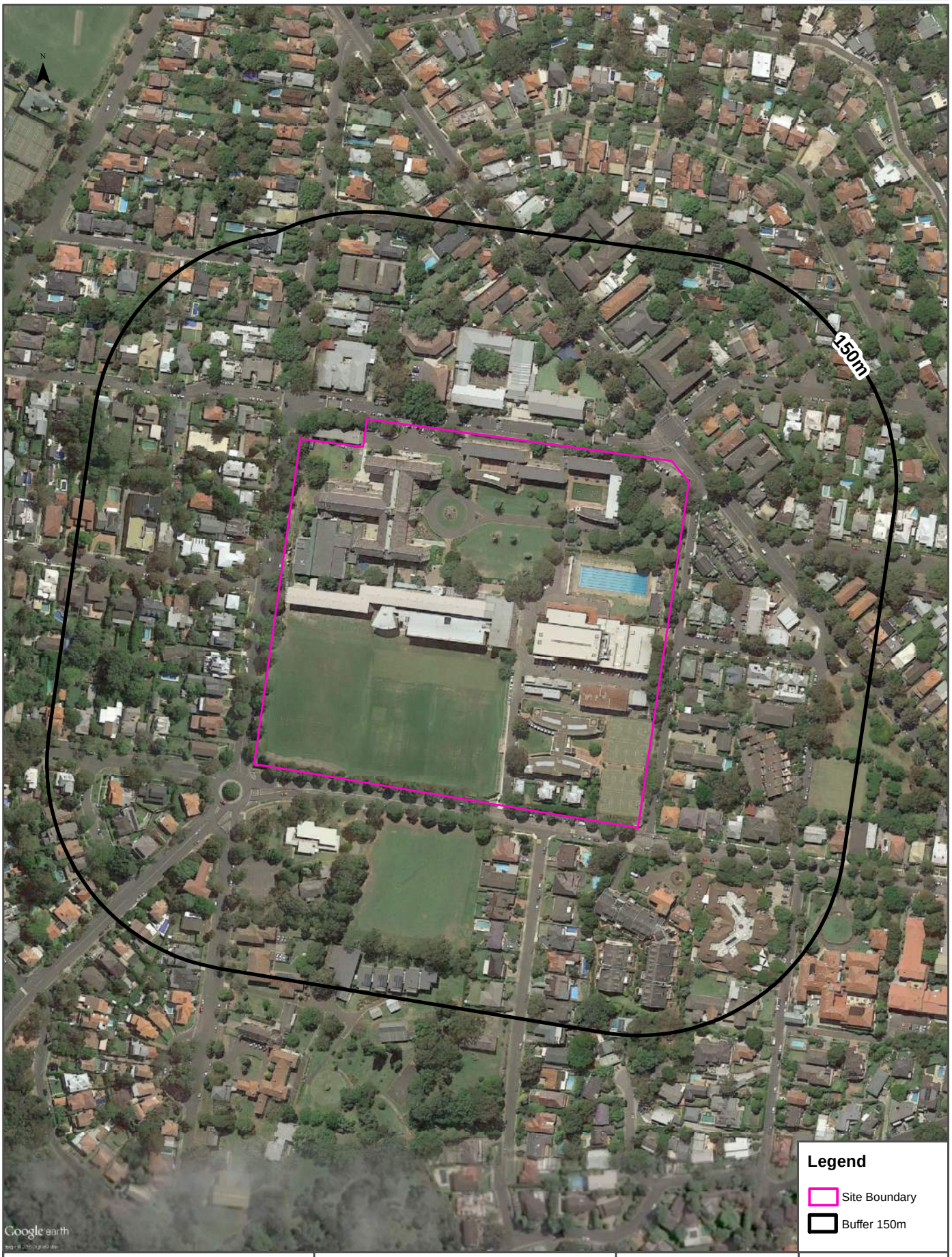
1943 Historical Aerial

Image sourced: Six Viewer Maps (online)
https://maps.six.nsw.gov.au/

WSP | PARSONS BRINCKERHOFF

Aerial Imagery 2015

Mary Street, Hunters Hill, NSW 2110



Scale: 0 25 50 100 Meters	Data Sources: Aerial Imagery © 2016 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 26September, 2016

Aerial Imagery 2007

Mary Street, Hunters Hill, NSW 2110

Scale:
0 25 50 100
Meters

Data Sources: Aerial Imagery © 2016 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 26September, 2016

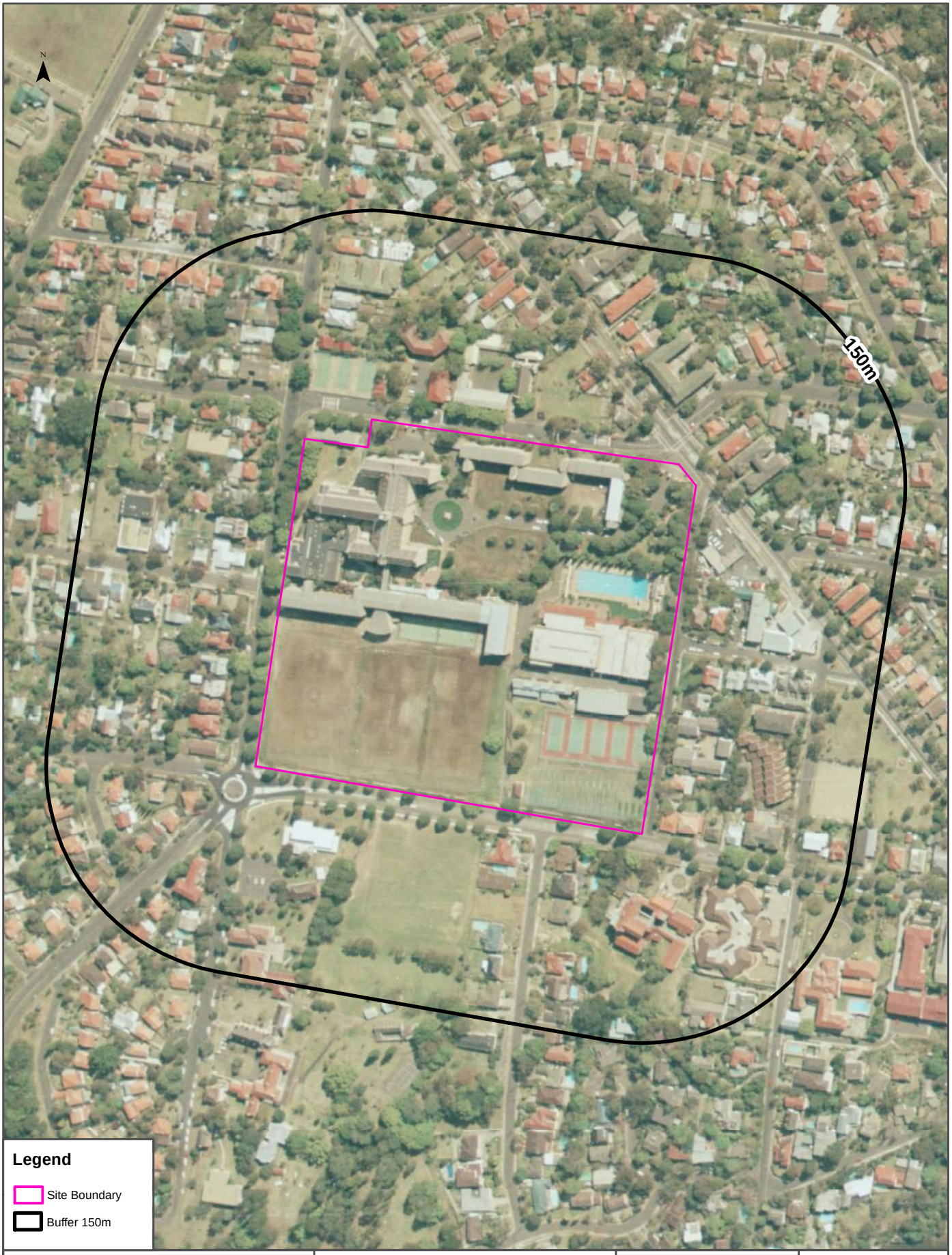
Aerial Imagery 2000

Mary Street, Hunters Hill, NSW 2110

Scale: 0 25 50 100 Meters	Data Sources: Aerial Imagery © 2016 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 26September, 2016

Aerial Imagery 1991

Mary Street, Hunters Hill, NSW 2110



Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 26September, 2016

Aerial Imagery 1982

Mary Street, Hunters Hill, NSW 2110

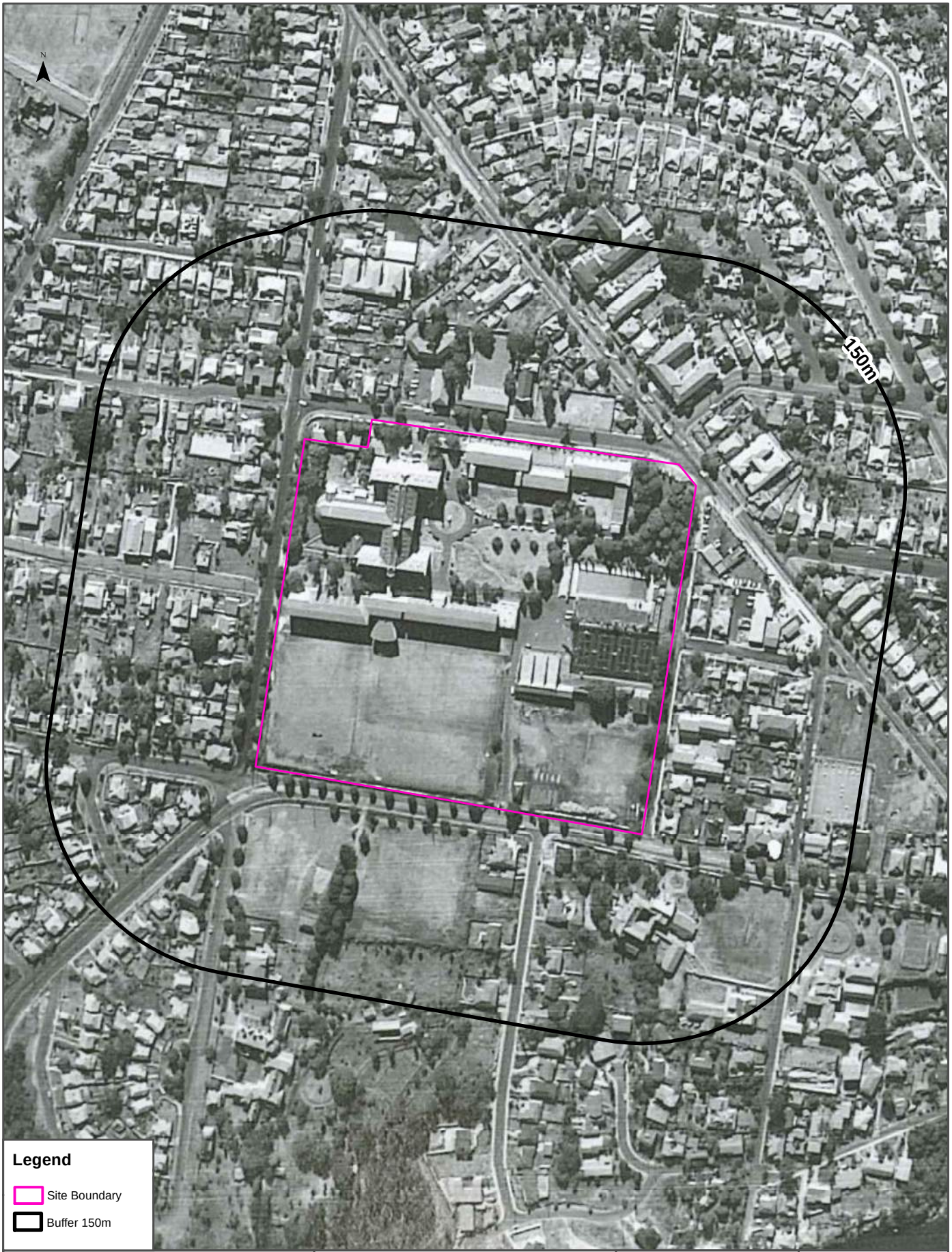
Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 26September, 2016

Aerial Imagery 1970

Mary Street, Hunters Hill, NSW 2110



Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 26September, 2016

Aerial Imagery 1965

Mary Street, Hunters Hill, NSW 2110

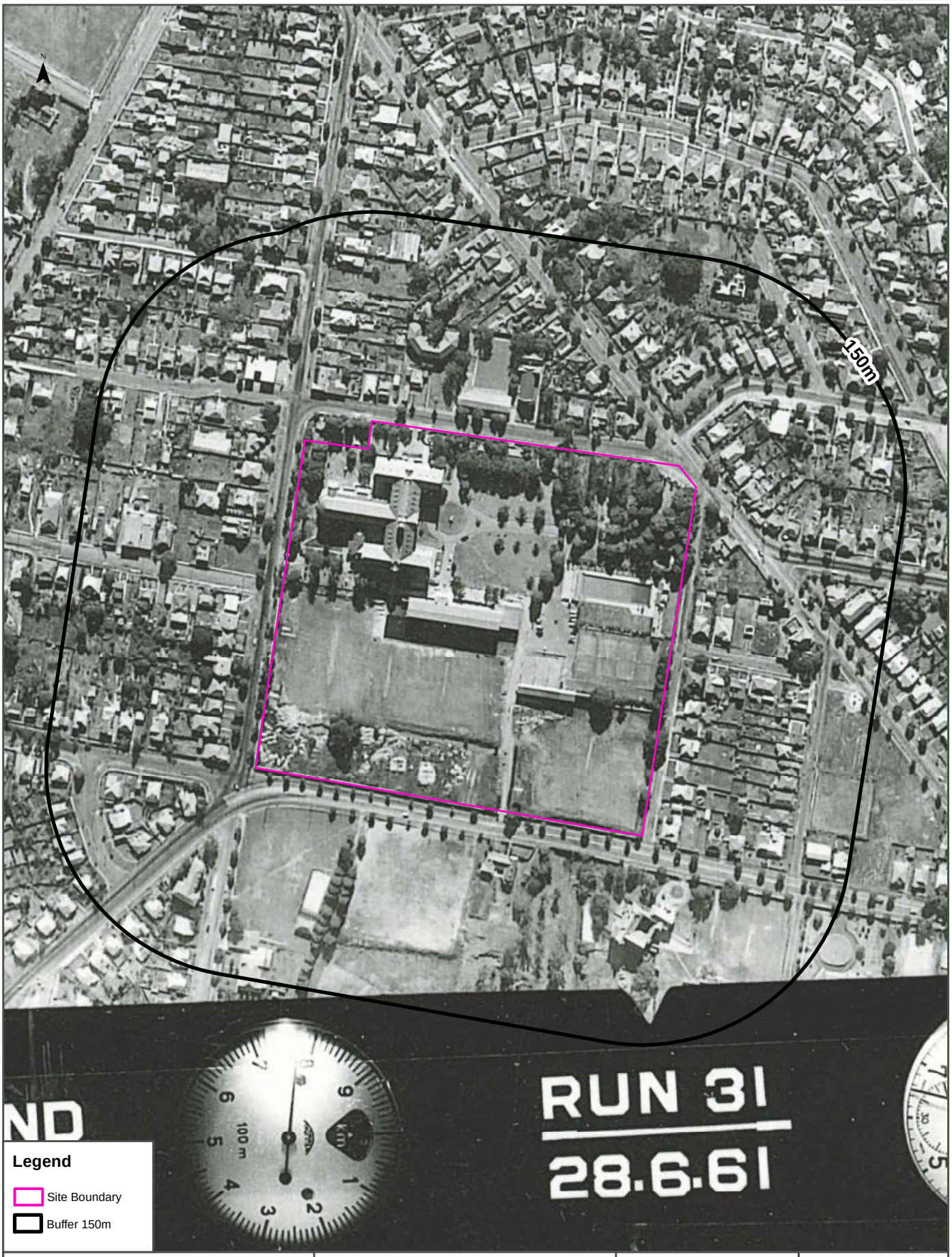
Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 26September, 2016

Aerial Imagery 1961

Mary Street, Hunters Hill, NSW 2110



Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 26September, 2016

Aerial Imagery 1956

Mary Street, Hunters Hill, NSW 2110

Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 26September, 2016

APPENDIX E

BORELOGS

WSP | PARSONS BRINCKERHOFF
Level 1, 41 McLaren Street
North Sydney NSW 2060
Office: +61 (0)2 8925 6700
www.wspgroup.com

Borehole Log — BH01

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**2.90 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327984.54**
Date Started:	**22/09/2016**	Northing:	**6255046.76**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Samples / Tests: PID ppm	ID No.	pH	Sample Method	Observations / Comments
	0.20			Fill	**FILL** - Silty SAND, dark brown / black, loose.					No odour or staining.
				Fill	**FILL** - Sandy Gravelly CLAY, brown, loose.	1.3	BH01_0.2	6.65	SFA	No odour or staining. Gravel is crushed brick, crushed sandstone, crushed concrete.
	0.50		CL	Natural	**CLAY** - orange with brown mottles, ironstone inclusions.	0.3	BH01_0.5	4.3	SFA	No odour or staining.
	1.0					0.2	BH01_1.0		SFA	
	1.5				- becoming sandstone from 1.7m.	0.6	BH01_1.8		SFA	
	1.90				**SANDSTONE**.					No odour or staining.
	2.0									
	2.5									
	2.90				**End of Hole at 2.90m** Refusal.					
	3.0									

Observations

Asbestos	No visual evidence of asbestos noted during drilling.
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.
Groundwater	No groundwater encountered during drilling.

Notes

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

WSP | PARSONS BRINCKERHOFF
Level 1, 41 McLaren Street
North Sydney NSW 2060
Office: +61 (0)2 8925 6700
www.wspgroup.com

Borehole Log — BH03

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**2.10 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327625.74**
Date Started:	**22/09/2016**	Northing:	**6254978.64**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
	0.02			Fill	**Asphalt Hardstand, Bitumen**.	dry					No odour or staining.
	0.30				**FILL** - Gravelly CLAY, dark brown / grey, soft, low plasticity.		2.2	BH03_0.2	7.85	SFA	No odour or staining. With gravel and bitumen inclusions.
	0.5		CH	Natural	**CLAY** - light brown / reddish, firm, medium to high plasticty.	moist	0.1	BH03_0.5	5.97	SFA	No odour or staining.
	1.0				- becoming lighter with yellow mottles.		0.2	BH03_1.0		SFA	
	1.5				- with sandstone fragments.		0.5	BH03_1.5		SFA	
	1.60				**Extremely Weathered SANDSTONE**.						No odour or staining.
	1.90				**Distinctly Weathered SANDSTONE**.						No odour or staining.
	2.0										
	2.10				**End of Hole at 2.10m**						
	2.5										
	3.0										

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

WSP | PARSONS BRINCKERHOFF
Level 1, 41 McLaren Street
North Sydney NSW 2060
Office: +61 (0)2 8925 6700
www.wspgroup.com

Borehole Log — BH04

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**2.80 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327932.15**
Date Started:	**22/09/2016**	Northing:	**6254957.37**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
					Grass						
	0.5			Fill	**FILL** - Sandy CLAY, light brown with black mottles, firm, medium to high plasticty.	moist	1.6	BH04_0.2	6.64	SFA	No odour or staining. With crushed sandstone inclusions.
	0.80						0.3	BH04_0.5	6.78	SFA	
	1.0			Fill	**FILL** - Sandy CLAY, brown with dark brown mottles, low to medium plasticity, loose reworked sand.	dry	0.7	BH04_1.0		SFA	No odour or staining. With crushed sandstone inclusions.
	1.5 1.60										
	2.0			Fill	**FILL** - CLAY, dark brown / grey, soft, high plasticity.	very moist	0.4	BH04_2.0		SFA	No odour or staining. Appears to be reworked topsoil.
	2.40										
	2.5			Natural	**Extremely Weathered SANDSTONE**.						No odour or staining.
	2.80				**End of Hole at 2.80m**						
	3.0										

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

WSP | PARSONS BRINCKERHOFF
Level 1, 41 McLaren Street
North Sydney NSW 2060
Office: +61 (0)2 8925 6700
www.wspgroup.com

Borehole Log — BH05

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**2.30 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327907.97**
Date Started:	**22/09/2016**	Northing:	**6255014.56**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
					Grass						
	0.30			Fill	**FILL** - Sandy CLAY, dark brown / black, soft, low plasticity, fine sand.	dry	0.1	BH05_0.2	6.30	SFA	No odour or staining.
	0.5			Fill	**FILL** - CLAY, light brown / orange, firm, medium to high plasticty, fine crushed sandstone and ironstone inclusions.	moist	0.1	BH05_0.5	6.37	SFA	No odour or staining.
	1.0			Fill			0.3	BH05_1.0		SFA	With black charcoal or bitumen inclusions from 0.6m.
	1.10										
	1.5		CH	Natural	**CLAY** - light brown / grey, firm, medium to high plasticty.	moist	0.0	BH05_1.6		SFA	No odour or staining.
	1.70										
	2.0			Natural	**Extremely Weathered SANDSTONE**.						No odour or staining.
	2.30										
	2.5				**End of Hole at 2.30m**						
	3.0										

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

WSP | PARSONS BRINCKERHOFF
Level 1, 41 McLaren Street
North Sydney NSW 2060
Office: +61 (0)2 8925 6700
www.wspgroup.com

Borehole Log — BH07

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**0.50 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327924.21**
Date Started:	**22/09/2016**	Northing:	**6254884.51**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
	0.02			Fill	**Asphalt Hardstand**. **FILL** - Sandy CLAY, dark grey / brown, soft, low plasticity.	dry	---	BH07_0.5	7.10	SFA	No odour or staining. With crushed sandstone and bitumen inclusions.
	0.50				**End of Hole at 0.50m**						
	1.0										
	1.5										
	2.0										
	2.5										
	3.0										

Observations

Asbestos	No visual evidence of asbestos noted during drilling.
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.
Groundwater	No groundwater encountered during drilling.

Notes

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

WSP | PARSONS BRINCKERHOFF
Level 1, 41 McLaren Street
North Sydney NSW 2060
Office: +61 (0)2 8925 6700
www.wspgroup.com

Borehole Log — BH08

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**1.20 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327884.49**
Date Started:	**22/09/2016**	Northing:	**6254890.88**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
	0.02			Fill	**Pavement**.	dry					
					FILL - Gravelly SAND, dark brown / black, loose.		7.1	BH08_0.2	10.80	SFA	No odour or staining. With crushed sandstone and brick inclusions.
	0.40										
	0.5				**FILL** - Sandy CLAY, light brown with dark brown mottles, soft, low plasticity, fine sand.	moist	0.6	BH08_0.5		SFA	No odour or staining. With crushed sandstone inclusions.
	0.80										
	1.0				**FILL** - Sandy CLAY, dark brown / grey, soft, low plasticity, fine sand, crushed ironstone inclusions.	moist	0.2	BH08_1.0	8.85	SFA	No odour or staining.
	1.10										
	1.20			Nat.	**Extremely Weathered SANDSTONE**.						No odour or staining.
					End of Hole at 1.20m						
	1.5										
	2.0										
	2.5										
	3.0										

Observations

Asbestos	No visual evidence of asbestos noted during drilling.
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.
Groundwater	No groundwater encountered during drilling.

Notes

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

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Borehole Log — BH09

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**1.70 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327916.89**
Date Started:	**22/09/2016**	Northing:	**6254848.01**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
	0.10			Fill	**Concrete Hardstand**.						
					FILL - Gravelly SAND, dark brown / black, loose.	moist	1.7	BH09_0.3	6.38	SFA	No odour or staining.
	1.70				**End of Hole at 1.70m**						

Observations

Asbestos	No visual evidence of asbestos noted during drilling.
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.
Groundwater	No groundwater encountered during drilling.

Notes

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

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Borehole Log — BH11

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**2.30 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327851.49**
Date Started:	**22/09/2016**	Northing:	**6254923.87**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
	0.02			Fill	**Asphalt Hardstand**.	dry					
					FILL - Gravelly SAND, dark brown / black, loose, fine sand.		0.1	BH11_0.2	10.01	SFA	No odour or staining. With crushed sandstone and gravel inclusions.
	0.5						0.2	BH11_0.5	8.20	SFA	
	0.70										
			CH	Natural	**CLAY** - light brown / reddish, firm, medium to high plasticty.	moist					No odour or staining.
	1.0						---	BH11_1.0	---	SFA	
					- becoming more grey in colour from 1.2m.						No odour or staining.
	1.5						0.1	BH11_1.5	7.07	SFA	
	1.80				**Extremely Weathered SANDSTONE**.						No odour or staining.
	2.0										
	2.30				**End of Hole at 2.30m**						
	2.5										
	3.0										

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

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Borehole Log — BH12

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**2.20 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327858.22**
Date Started:	**22/09/2016**	Northing:	**6254921.22**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
	0.10			Fill	**Asphalt Hardstand**.						
					FILL - Gravelly SAND, light brown, loose.	dry	0.1	BH12_0.2	8.77	SFA	No odour or staining. Gravel is blue metal, crushed sandstone and bitumen.
	0.50				**FILL** - CLAY, red with brown & orange mottles, ironstone inclusions.		0.1	BH12_0.5	8.48	SFA	No odour or staining. Reworked clays.
	1.0						0.1	BH12_1.0	7.50	SFA	
	1.20		SM	Natural	**Silty SAND** - brown, loose.						No odour or staining.
	1.50		CL		**Sandy CLAY** - red with brown & orange mottles, ironstone inclusions.						No odour or staining.
	2.0						0.1	BH12_2.0	6.80	SFA	
	2.10				**Extremely Weathered SANDSTONE**.						No odour or staining.
	2.20				**End of Hole at 2.20m**						
	2.5										
	3.0										

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

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Borehole Log — BH14

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**3.20 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327947.85**
Date Started:	**22/09/2016**	Northing:	**6254928.08**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	ID No.	pH	Sample Method	DUP TRIP QC	Observations / Comments
	0.02				**Pavement**.	dry	---	BH14_0.1	---	SFA	Dup1 Trip1	No odour or staining. With crushed sandstone and brick inclusions.
					FILL - Sandy CLAY, light brown / yellow, firm, low plasticity.		0.1	BH14_0.2	7.65	SFA		
	0.5						0.1	BH14_0.5	5.60	SFA		
	0.70				**FILL** - Sandy CLAY, light brown / reddish, firm, medium plasticity.	dry						No odour or staining.
	1.0			Fill			01	BH14_1.0	4.35	SFA		
	1.5											
	1.70				**CLAY** - light brown / reddish, firm, low to medium plasticity.	moist						No odour or staining.
	2.0		CL	Natural			10.7	BH14_2.0	---	SFA		
	2.5											
	2.90						6.8	BH14_2.8	4.86	SFA		
	3.0				**Extremely Weathered SANDSTONE**.							No odour or staining.
	3.20				**End of Hole at 3.20m**							

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

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Borehole Log — BH15

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**2.50 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327858.63**
Date Started:	**22/09/2016**	Northing:	**6254955.74**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	Samples / Tests: ID No.	Samples / Tests: pH	Samples / Tests: Sample Method	Observations / Comments
	0.02			Fill	**Pavement**.	dry					
					FILL - Gravelly SAND, dark brown / grey, loose.		0.4	BH15_0.2	7.40	SFA	No odour or staining. With crushed sandstone inclusions.
	0.40										
	0.5			Natural	**CLAY** - CLAY, dark brown / red, firm, high plasticity.	dry to moist	0.0	BH15_0.5	---	SFA	No odour or staining.
	1.0		CH				0.1	BH15_1.0	---	SFA	
	1.5										
	1.80										
	2.0		CL		**CLAY** - CLAY, light grey / white, low plasticity, brittle.	dry	0.1	BH15_2.0	4.52	SFA	No odour or staining.
	2.20										
	2.50				**Extremely Weathered SANDSTONE**.						No odour or staining.
					End of Hole at 2.50m						
	3.0										

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	

REUMAD

Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

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Level 1, 41 McLaren Street
North Sydney NSW 2060
Office: +61 (0)2 8925 6700
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Borehole Log — BH16

Project Name:	**St Joeseph's College ESA**	Hole Depth:	**0.60 m**
Project Number:	**2778358A**	GW Encountered:	**No**
Location / Site:	**Mark Street, Hunters Hill NSW**		
Client:			
Drill Company:	**HartGeo Pty Ltd**		
Drill Method:	**Solid Flight Auger**	Easting:	**327937.02**
Date Started:	**22/09/2016**	Northing:	**6254830.20**
Date Completed:	**22/09/2016**	Zone:	**56H**

Water Inflow	Depth (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests: PID ppm	ID No.	pH	Sample Method	DUP TRIP QC	Observations / Comments
	0.30			Fill	**FILL** - Sandy CLAY, dark brown / black, soft, medium plasticity, fine sand.	moist	0.2	BH16_0.2	5.64	SFA		No odour or staining. With sandstone and broken shale inclusions.
	0.5			Fill	**FILL** - CLAY, light brown / yellow, firm, low plasticity.	dry	0.2	BH16_0.5	4.93	SFA	Dup2 Trip2	No odour or staining. Reworked clay.
	0.60				**End of Hole at 0.60m** Refusal.							
	1.0											
	1.5											
	2.0											
	2.5											
	3.0											

Observations

Asbestos	No visual evidence of asbestos noted during drilling.
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.
Groundwater	No groundwater encountered during drilling.

Notes

REUMAD
Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Alex Ross** Date: **22/09/2016**
Checked By: **Alex Ross** Date: **12/10/2016**

APPENDIX F

CALIBRATION CERTIFICATES

CALIBRATION RECORD: TPS90 FLMV- Water Quality Meter

Date: 22.9.16
Job Number: 2278358a
Personnel: JC AK
Signature: J. [illegible]
Comments:

	pH			Conductivity µs/cm	ORP mg/L	Temp °C	DO
Standard Used	4:00	7:00					
Calibrated Result	~~4.00~~ 3:97	7:03					

Date:
Job Number:
Personnel:
Signature:
Comments:

	pH			Conductivity µs/cm	ORP mg/L	Temp °C	DO
Standard Used							
Calibrated Result							

CALIBRATION RECORD: TPS90 FLMV- Water Quality Meter

Date:
Job Number:
Personnel:
Signature:
Comments:

	pH			Conductivity µs/cm	ORP mg/L	Temp °C	DO
Standard Used							
Calibrated Result							

Date:
Job Number:
Personnel:
Signature:
Comments:

	pH			Conductivity µs/cm	ORP mg/L	Temp °C	DO
Standard Used							
Calibrated Result							

CALIBRATION RECORD
MiniRAE Lite- PID

Date	22.9.16
Job No.	227058A
Personnel	A.Ross
Signature	
Zero Calibration Reading	0.0
Calibration Gas	ISOBUTYLENE
Desired Span Calibration Reading	100.0ppm
Gas Reading After Calibration	101.5ppm

Comments

Date	
Job No.	
Personnel	
Signature	
Zero Calibration Reading	
Calibration Gas	
Desired Span Calibration Reading	
Gas Reading After Calibration	

Comments

CALIBRATION RECORD
MiniRAE Lite - PID

Date	
Job No.	
Personnel	
Signature	
Zero Calibration Reading	
Calibration Gas	
Desired Span Calibration Reading	
Gas Reading After Calibration	

Comments

Date	
Job No.	
Personnel	
Signature	
Zero Calibration Reading	
Calibration Gas	
Desired Span Calibration Reading	
Gas Reading After Calibration	

Comments

APPENDIX G

LABORATORY CERTIFICATES

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 154140

Client:

WSP Parsons Brinckerhoff
GPO Box 5394
Sydney
NSW 2001

Attention: Peter Moore, Alex Ross

Sample log in details:

Your Reference:	**2270358A, St Josephs**		
No. of samples:	44 soils		
Date samples received / completed instructions received	23/09/16	/	23/09/16

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: / Issue Date:	30/09/16	/	30/09/16
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

David Springer
General Manager

TRH in Soil (C6-C9) NEPM		
Our Reference:	UNITS	154140-15
Your Reference	----------	BH05
	-	
Depth	----------	1.0
Date Sampled		22/09/2016
Type of sample		Soil
Date extracted	-	26/09/2016
Date analysed	-	28/09/2016
TRHC$_6$ - C$_9$	mg/kg	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25
Surrogate aaa-Trifluorotoluene	%	113

svTRH (C10-C40) in Soil		
Our Reference:	UNITS	154140-15
Your Reference	----------	BH05
	-	
Depth	----------	1.0
Date Sampled		22/09/2016
Type of sample		Soil
Date extracted	-	26/09/2016
Date analysed	-	28/09/2016
$TRHC_{10}$ - C_{14}	mg/kg	<50
$TRHC_{15}$ - C_{28}	mg/kg	520
$TRHC_{29}$ - C_{36}	mg/kg	260
$TRH>C_{10}$-C_{16}	mg/kg	<50
$TRH>C_{16}$-C_{34}	mg/kg	720
$TRH>C_{34}$-C_{40}	mg/kg	100
Surrogate o-Terphenyl	%	90

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	154140-15 BH05 1.0 22/09/2016 Soil
Date extracted	-	26/09/2016
Date analysed	-	27/09/2016
Naphthalene	mg/kg	1.2
Acenaphthylene	mg/kg	4.3
Acenaphthene	mg/kg	0.4
Fluorene	mg/kg	2.3
Phenanthrene	mg/kg	35
Anthracene	mg/kg	7.6
Fluoranthene	mg/kg	37
Pyrene	mg/kg	31
Benzo(a)anthracene	mg/kg	18
Chrysene	mg/kg	14
Benzo(b,j+k)fluoranthene	mg/kg	25
Benzo(a)pyrene	mg/kg	17
Indeno(1,2,3-c,d)pyrene	mg/kg	11
Dibenzo(a,h)anthracene	mg/kg	2.0
Benzo(g,h,i)perylene	mg/kg	8.7
Benzo(a)pyrene TEQ calc (zero)	mg/kg	25
Benzo(a)pyrene TEQ calc(half)	mg/kg	25
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	25
Total Positive PAHs	mg/kg	210
Surrogate p-Terphenyl-d14	%	82

Organochlorine Pesticides in soil						
Our Reference:	UNITS	154140-1	154140-7	154140-12	154140-15	154140-18
Your Reference	----------	BH01	BH03	BH04	BH05	BH08
	-					
Depth	----------	0.2	1.0	2.0	1.0	0.2
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
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
Surrogate TCMX	%	97	99	100	99	97

Organochlorine Pesticides in soil						
Our Reference:	UNITS	154140-24	154140-27	154140-33	154140-34	154140-39
Your Reference	----------	BH11	BH12	BH14	BH15	BH16
Depth	- ----------	1.5	1.0	2.8	0.2	0.5
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
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
Surrogate TCMX	%	99	101	100	99	99

Organochlorine Pesticides in soil		
Our Reference:	UNITS	154140-42
Your Reference	----------	DUP2
	-	
Depth	----------	-
Date Sampled		22/09/2016
Type of sample		Soil
Date extracted	-	26/09/2016
Date analysed	-	27/09/2016
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Surrogate TCMX	%	100

Organophosphorus Pesticides						
Our Reference:	UNITS	154140-1	154140-7	154140-12	154140-15	154140-18
Your Reference	---------- -	BH01	BH03	BH04	BH05	BH08
Depth	----------	0.2	1.0	2.0	1.0	0.2
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
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	%	97	99	100	99	97

Organophosphorus Pesticides						
Our Reference:	UNITS	154140-24	154140-27	154140-33	154140-34	154140-39
Your Reference	---------- -	BH11	BH12	BH14	BH15	BH16
Depth	----------	1.5	1.0	2.8	0.2	0.5
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
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	%	99	101	100	99	99

Organophosphorus Pesticides		
Our Reference:	UNITS	154140-42
Your Reference	----------	DUP2
	-	
Depth	----------	-
Date Sampled		22/09/2016
Type of sample		Soil
Date extracted	-	26/09/2016
Date analysed	-	27/09/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Ethion	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Surrogate TCMX	%	100

Acid Extractable metals in soil						
Our Reference:	UNITS	154140-1	154140-7	154140-12	154140-15	154140-18
Your Reference	----------	BH01	BH03	BH04	BH05	BH08
	-					
Depth	----------	0.2	1.0	2.0	1.0	0.2
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
Arsenic	mg/kg	4	<4	6	7	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	18	21	27	65
Copper	mg/kg	9	<1	<1	2	30
Lead	mg/kg	30	15	14	21	98
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	<1	<1	2	58
Zinc	mg/kg	56	3	1	14	99

Acid Extractable metals in soil						
Our Reference:	UNITS	154140-24	154140-27	154140-33	154140-34	154140-39
Your Reference	----------	BH11	BH12	BH14	BH15	BH16
	-					
Depth	----------	1.5	1.0	2.8	0.2	0.5
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
Arsenic	mg/kg	<4	8	<4	<4	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	34	10	25	16
Copper	mg/kg	6	3	<1	28	16
Lead	mg/kg	12	39	9	9	22
Mercury	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	3	<1	79	2
Zinc	mg/kg	1	52	4	41	19

Acid Extractable metals in soil			
Our Reference:	UNITS	154140-42	154140-45
Your Reference	---------- -	DUP2	BH01 - [TRIPLICATE]
Depth	----------	-	0.2
Date Sampled		22/09/2016	22/09/2016
Type of sample		Soil	Soil
Date prepared	-	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016
Arsenic	mg/kg	9	6
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	16	9
Copper	mg/kg	14	10
Lead	mg/kg	19	35
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	2	6
Zinc	mg/kg	13	58

CEC Our Reference: Your Reference	UNITS ----------	154140-1 BH01	154140-7 BH03	154140-12 BH04	154140-15 BH05	154140-18 BH08
Depth	-	0.2	1.0	2.0	1.0	0.2
Date Sampled	----------	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
Date analysed	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
Exchangeable Ca	meq/100g	8.7	0.5	2.4	9.3	24
Exchangeable K	meq/100g	0.3	<0.1	<0.1	<0.1	0.2
Exchangeable Mg	meq/100g	1.3	1.3	1.6	1.8	1.3
Exchangeable Na	meq/100g	<0.1	<0.1	0.29	0.32	<0.1
Cation Exchange Capacity	meq/100g	10	2.0	4.3	12	26

CEC Our Reference: Your Reference	UNITS ----------	154140-24 BH11	154140-27 BH12	154140-33 BH14	154140-34 BH15	154140-39 BH16
Depth	-	1.5	1.0	2.8	0.2	0.5
Date Sampled	----------	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
Date analysed	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
Exchangeable Ca	meq/100g	1.0	3.7	0.6	19	2.5
Exchangeable K	meq/100g	<0.1	0.2	<0.1	0.2	0.2
Exchangeable Mg	meq/100g	0.70	4.0	0.48	1.5	0.68
Exchangeable Na	meq/100g	0.16	0.44	0.12	0.22	<0.1
Cation Exchange Capacity	meq/100g	2.0	8.3	1.2	20	3.4

CEC Our Reference: Your Reference	UNITS ----------	154140-42 DUP2
Depth	-	-
Date Sampled	----------	22/09/2016
Type of sample		Soil
Date prepared	-	28/09/2016
Date analysed	-	28/09/2016
Exchangeable Ca	meq/100g	1.6
Exchangeable K	meq/100g	0.2
Exchangeable Mg	meq/100g	0.46
Exchangeable Na	meq/100g	<0.1
Cation Exchange Capacity	meq/100g	2.3

Misc Inorg - Soil						
Our Reference:	UNITS	154140-1	154140-7	154140-12	154140-15	154140-18
Your Reference	----------	BH01	BH03	BH04	BH05	BH08
	-					
Depth	----------	0.2	1.0	2.0	1.0	0.2
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
Date analysed	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
pH 1:5 soil:water	pH Units	6.3	4.9	5.5	6.6	9.4

Misc Inorg - Soil						
Our Reference:	UNITS	154140-24	154140-27	154140-33	154140-34	154140-39
Your Reference	----------	BH11	BH12	BH14	BH15	BH16
	-					
Depth	----------	1.5	1.0	2.8	0.2	0.5
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
Date analysed	-	28/09/2016	28/09/2016	28/09/2016	28/09/2016	28/09/2016
pH 1:5 soil:water	pH Units	5.5	5.1	4.9	6.3	5.3

Misc Inorg - Soil		
Our Reference:	UNITS	154140-42
Your Reference	----------	DUP2
	-	
Depth	----------	-
Date Sampled		22/09/2016
Type of sample		Soil
Date prepared	-	28/09/2016
Date analysed	-	28/09/2016
pH 1:5 soil:water	pH Units	5.0

Moisture						
Our Reference:	UNITS	154140-1	154140-7	154140-12	154140-15	154140-18
Your Reference	----------	BH01	BH03	BH04	BH05	BH08
	-					
Depth	----------	0.2	1.0	2.0	1.0	0.2
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
Moisture	%	19	19	19	22	11

Moisture						
Our Reference:	UNITS	154140-24	154140-27	154140-33	154140-34	154140-39
Your Reference	----------	BH11	BH12	BH14	BH15	BH16
	-					
Depth	----------	1.5	1.0	2.8	0.2	0.5
Date Sampled		22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/09/2016	26/09/2016	26/09/2016	26/09/2016	26/09/2016
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
Moisture	%	18	22	14	20	17

Moisture		
Our Reference:	UNITS	154140-42
Your Reference	----------	DUP2
	-	
Depth	----------	-
Date Sampled		22/09/2016
Type of sample		Soil
Date prepared	-	26/09/2016
Date analysed	-	27/09/2016
Moisture	%	16

Method ID	Methodology Summary
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-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-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. 'TEQ 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. 'TEQ 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. 'TEQ 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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
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 deg C for a minimum of 12 hours.

QUALITY CONTROL TRH in Soil (C6-C9) NEPM	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/09/2016	[NT]	[NT]	LCS-6	26/09/2016
Date analysed	-			28/09/2016	[NT]	[NT]	LCS-6	28/09/2016
TRHC$_{6}$ - C$_{9}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-6	93%
TRHC$_{6}$ - C$_{10}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-6	93%
Surrogate aaa-Trifluorotoluene	%		Org-016	116	[NT]	[NT]	LCS-6	117%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/09/2016	[NT]	[NT]	LCS-13	26/09/2016
Date analysed	-			28/09/2016	[NT]	[NT]	LCS-13	28/09/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-13	94%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-13	94%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-13	82%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-13	94%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-13	94%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-13	82%
Surrogate o-Terphenyl	%		Org-003	85	[NT]	[NT]	LCS-13	70%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/09/2016	[NT]	[NT]	LCS-3	26/09/2016
Date analysed	-			27/09/2016	[NT]	[NT]	LCS-3	27/09/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-3	92%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-3	104%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-3	124%
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-3	91%
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-3	90%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(b,j +k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	LCS-3	110%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	86	[NT]	[NT]	LCS-3	94%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/09/2016	154140-1	26/09/2016 || 26/09/2016	LCS-12	26/09/2016
Date analysed	-			27/09/2016	154140-1	27/09/2016 || 27/09/2016	LCS-12	27/09/2016
HCB	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	103%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	95%
Heptachlor	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	99%
delta-BHC	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	100%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	99%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	93%
Dieldrin	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	102%
Endrin	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	89%
pp-DDD	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	91%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	LCS-12	90%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	101	154140-1	97 || 98 || RPD: 1	LCS-12	100%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/09/2016	154140-1	26/09/2016 || 26/09/2016	LCS-12	26/09/2016
Date analysed	-			27/09/2016	154140-1	27/09/2016 || 27/09/2016	LCS-12	27/09/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	LCS-12	94%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	LCS-12	99%
Dimethoate	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	LCS-12	93%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	LCS-12	98%
Malathion	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	LCS-12	86%
Parathion	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	LCS-12	118%
Ronnel	mg/kg	0.1	Org-008	<0.1	154140-1	<0.1 || <0.1	LCS-12	101%
Surrogate TCMX	%		Org-008	101	154140-1	97 || 98 || RPD: 1	LCS-12	100%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			26/09/2016	154140-1	26/09/2016 || 26/09/2016	LCS-12	26/09/2016
Date analysed	-			27/09/2016	154140-1	27/09/2016 || 27/09/2016	LCS-12	27/09/2016
Arsenic	mg/kg	4	Metals-020	<4	154140-1	4 || 8 || RPD: 67	LCS-12	104%
Cadmium	mg/kg	0.4	Metals-020	<0.4	154140-1	<0.4 || <0.4	LCS-12	98%
Chromium	mg/kg	1	Metals-020	<1	154140-1	8 || 8 || RPD: 0	LCS-12	102%
Copper	mg/kg	1	Metals-020	<1	154140-1	9 || 16 || RPD: 56	LCS-12	101%
Lead	mg/kg	1	Metals-020	<1	154140-1	30 || 37 || RPD: 21	LCS-12	98%
Mercury	mg/kg	0.1	Metals-021	<0.1	154140-1	<0.1 || <0.1	LCS-12	93%
Nickel	mg/kg	1	Metals-020	<1	154140-1	6 || 7 || RPD: 15	LCS-12	97%
Zinc	mg/kg	1	Metals-020	<1	154140-1	56 || 65 || RPD: 15	LCS-12	99%

QUALITY CONTROL CEC	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			28/09/2016	[NT]	[NT]	LCS-1	28/09/2016
Date analysed	-			28/09/2016	[NT]	[NT]	LCS-1	28/09/2016
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	100%
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	105%
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	98%
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	[NT]	[NT]	LCS-1	106%

QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			28/09/2016	154140-1	28/09/2016 || 28/09/2016	LCS-12	28/09/2016
Date analysed	-			28/09/2016	154140-1	28/09/2016 || 28/09/2016	LCS-12	28/09/2016
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	154140-1	6.3 || 6.6 || RPD: 5	LCS-12	100%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154140-42	26/09/2016 || 26/09/2016	154140-7	26/09/2016
Date analysed	-	154140-42	27/09/2016 || 27/09/2016	154140-7	27/09/2016
HCB	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	154140-42	<0.1 || <0.1	154140-7	100%
gamma-BHC	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	154140-42	<0.1 || <0.1	154140-7	91%
Heptachlor	mg/kg	154140-42	<0.1 || <0.1	154140-7	93%
delta-BHC	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	154140-42	<0.1 || <0.1	154140-7	97%
Heptachlor Epoxide	mg/kg	154140-42	<0.1 || <0.1	154140-7	96%
gamma-Chlordane	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	154140-42	<0.1 || <0.1	154140-7	90%
Dieldrin	mg/kg	154140-42	<0.1 || <0.1	154140-7	98%
Endrin	mg/kg	154140-42	<0.1 || <0.1	154140-7	83%
pp-DDD	mg/kg	154140-42	<0.1 || <0.1	154140-7	87%
Endosulfan II	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	154140-42	<0.1 || <0.1	154140-7	83%
Methoxychlor	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Surrogate TCMX	%	154140-42	100 || 99 || RPD: 1	154140-7	98%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154140-42	26/09/2016 || 26/09/2016	154140-7	26/09/2016
Date analysed	-	154140-42	27/09/2016 || 27/09/2016	154140-7	27/09/2016
Azinphos-methyl (Guthion)	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	154140-42	<0.1 || <0.1	154140-7	92%
Chlorpyriphos-methyl	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	154140-42	<0.1 || <0.1	154140-7	106%
Dimethoate	mg/kg	154140-42	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	154140-42	<0.1 || <0.1	154140-7	88%
Fenitrothion	mg/kg	154140-42	<0.1 || <0.1	154140-7	93%
Malathion	mg/kg	154140-42	<0.1 || <0.1	154140-7	86%
Parathion	mg/kg	154140-42	<0.1 || <0.1	154140-7	119%
Ronnel	mg/kg	154140-42	<0.1 || <0.1	154140-7	98%
Surrogate TCMX	%	154140-42	100 || 99 || RPD: 1	154140-7	99%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	154140-42	26/09/2016 || 26/09/2016	154140-7	26/09/2016
Date analysed	-	154140-42	27/09/2016 || 27/09/2016	154140-7	27/09/2016
Arsenic	mg/kg	154140-42	9 || 9 || RPD: 0	154140-7	84%
Cadmium	mg/kg	154140-42	<0.4 || <0.4	154140-7	88%
Chromium	mg/kg	154140-42	16 || 15 || RPD: 6	154140-7	107%
Copper	mg/kg	154140-42	14 || 14 || RPD: 0	154140-7	92%
Lead	mg/kg	154140-42	19 || 18 || RPD: 5	154140-7	92%
Mercury	mg/kg	154140-42	<0.1 || <0.1	154140-7	103%
Nickel	mg/kg	154140-42	2 || 2 || RPD: 0	154140-7	84%
Zinc	mg/kg	154140-42	13 || 12 || RPD: 8	154140-7	86%

QUALITY CONTROL CEC	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	154140-42	28/09/2016 || 28/09/2016
Date analysed	-	154140-42	28/09/2016 || 28/09/2016
Exchangeable Ca	meq/100 g	154140-42	1.6 || 1.8 || RPD: 12
Exchangeable K	meq/100 g	154140-42	0.2 || 0.2 || RPD: 0
Exchangeable Mg	meq/100 g	154140-42	0.46 || 0.50 || RPD: 8
Exchangeable Na	meq/100 g	154140-42	<0.1 || <0.1
QUALITY CONTROL Misc Inorg - Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	154140-42	28/09/2016 || 28/09/2016
Date analysed	-	154140-42	28/09/2016 || 28/09/2016
pH 1:5 soil:water	pH Units	154140-42	5.0 || 4.6 || RPD: 8
QUALITY CONTROL CEC	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	154140-7	28/09/2016 || 28/09/2016
Date analysed	-	154140-7	28/09/2016 || 28/09/2016
Exchangeable Ca	meq/100 g	154140-7	0.5 || 0.6 || RPD: 18
Exchangeable K	meq/100 g	154140-7	<0.1 || <0.1
Exchangeable Mg	meq/100 g	154140-7	1.3 || 1.4 || RPD: 7
Exchangeable Na	meq/100 g	154140-7	<0.1 || <0.1

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 154140-1 for Cu. Therefore a triplicate result has been issued as laboratory sample number 154140-45.

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
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.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	WSP / Parsons Brinkerhoff	**Client Project Name and Number:** St Josephs - 2270358A	**Envirolab Services** 12 Ashley St, Chatswood, NSW, 2067
Project Mgr:	Peter Moore		
Sampler:	Alex Ross / Jacques Chi	**PO No.:** 2270:	**Phone:** 02 9910 6200
Address:	Level 1/41 McLaren Street, North Sydney 2060	**Envirolab Services Quote No. :** 2016-R00C4	**Fax:** 02 9910 6201
		Date results required: Standard TAT	
Email:	alex.ross@wspgroup.com; peter.moore@wspgroup.com	**Or choose:** standard / 1 day / 2 day / 3 day	**E-mail:** ahie@envirolabservices.com.au
Phone:	0403 793 657 **Fax:**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	**Contact:** Aileen Hie

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	pH	Heavy Metals	Pesticides	CEC	Hold Please										Provide as much information about the sample as you can
1	BH01_0.2		Soil	X	x	x	x											
2	BH01_0.5		Soil					x										
3	BH01_1.0		Soil					x										
4	BH01_1.8		Soil					x										
5	BH03_0.2		Soil					x										
6	BH03_0.5		Soil					x										
7	BH03_1.0		Soil	X	x	x	x											
8	BH03_1.5		Soil					x										
9	BH04_0.2		Soil					x										
10	BH04_0.5		Soil					x										
11	BH04_1.0		Soil					x										
12	BH04_2.0		Soil	X	x	x	x											

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

Job No: 154140
Date Received: 23/09/16
Time Received: 11:50
Received by: HL
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by (company):	WSP / Parsons Brinckerhoff	**Received by (company):**	ELS
Print Name:	JACQUES CHOMET	**Print Name:**	HINOKO
Date & Time:	23.9.16	**Date & Time:**	23/09/16 11:50
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier
Page No:

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client: WSP / Parsons Brinkerhoff	**Client Project Name and Number:** St Josephs-2270358A	**Envirolab Services** 12 Ashley St, Chatswood, NSW, 2067
Project Mgr: Peter Moore	**PO No.:** 2270358A	
Sampler: Alex Ross / Jacques Chiomey	**Envirolab Services Quote No. :** 2016-R00C4	**Phone:** 02 9910 6200
Address: Level 1/41 McLaren Street, North Sydney 2060	**Date results required:** Standard TAT	**Fax:** 02 9910 6201
Email: peter.moore@wspgroup.com; alex.ross@wspgroup.com	**Or choose:** standard / 1 day / 2 day / 3 day	**E-mail:** ahie@envirolabservices.com.au
Phone: 0403 793 657 **Fax:**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	**Contact:** Aileen Hie

Sample information				Tests Required															Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	pH	Heavy Metals	Pesticides	CEC	PAHS	Hold Please	Please Forward to ALS for pH, Heavy Metals, CEC and Pesticides									Provide as much information about the sample as you can
13	BH05_0.2	22.9.2016	Soil						x										
14	BH05_0.5	22.9.2016	Soil						x										
15	BH05_1.0	22.9.2016	Soil	X	x	x	x	x											
16	BH05_1.6	22.9.2016	Soil						x										
17	BH07_0.5	22.9.2016	Soil						x										
18	BH08_0.2	22.9.2016	Soil	X	x	x	x												
19	BH08_0.5	22.9.2016	Soil						x										
20	BH08_1.0	22.9.2016	Soil						x										
21	BH09_1.7	22.9.2016	Soil						x										
22	BH11_0.2	22.9.2016	Soil						x										
23	BH11_0.5	22.9.2016	Soil						x										
24	BH11_1.5	22.9.2016	Soil	X	x	x	x												

Relinquished by (company): WSP Environmental	**Received by (company):** ELS	**Samples Received:** Cool or Ambient (circle one)
Print Name:	**Print Name:** H [illegible]	**Temperature Recieved at:** (if applicable)
Date & Time:	**Date & Time:** 23/09/16 11:50	**Transported by:** Hand delivered / courier
Signature:	**Signature:** [signature]	**Page No:**

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	WSP / Parsons Brinkerhoff	**Client Project Name and Number:** St Josephs-2270358A	**Envirolab Services**
Project Mgr:	Peter Moore		12 Ashley St, Chatswood, NSW, 2067
Sampler:	Alex Ross / Jacques Chiomey	**PO No.:** 2270358A	
Address:	Level 1/41 McLaren Street, North Sydney 2060	**Envirolab Services Quote No.:** 2016-R00C4	Phone: 02 9910 6200
		Date results required: Standard TAT	Fax: 02 9910 6201
Email:	peter.moore@wspgroup.com; alex.ross@wspgroup.com	**Or choose:** standard / 1 day / 2 day / 3 day	E-mail: ahie@envirolabservices.com.au
Phone:	0403 793 657 **Fax:**	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	**Contact:** Aileen Hie

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	pH	Heavy Metals	Pesticides	CEC	PAHS	Hold Please	ALS for pH, Heavy Metals, CEC and Pesticides								Provide as much information about the sample as you can
25	BH12_0.2	22.9.2016	Soil						x									
26	BH12_0.5	22.9.2016	Soil						x									
27	BH12_1.0	22.9.2016	Soil	x	x	x	x											
28	BH12_2.0	22.9.2016	Soil						x									
29	BH14_0.2	22.9.2016	Soil						x									
30	BH14_0.5	22.9.2016	Soil						x									
31	BH14_1.0	22.9.2016	Soil						x									
32	BH14_2.0	22.9.2016	Soil						x									
33	BH14_2.8	22.9.2016	Soil	x	x	x	x											
34	BH15_0.2	22.9.2016	Soil	x	x	x	x											
35	BH15_0.5	22.9.2016	Soil						x									
36	BH15_1.0	22.9.2016	Soil						x									

Relinquished by (company):	WSP Environmental	**Received by (company):**	ECS
Print Name:		**Print Name:**	HINOK
Date & Time:		**Date & Time:**	23/09/16 11:5
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier

Page No:

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	WSP / Parsons Brinkerhoff
Project Mgr:	Peter Moore
Sampler:	Alex Ross / Jacques Chiomey
Address:	Level 1/41 McLaren Street, North Sydney 2060
Email:	peter.moore@wspgroup.com; alex.ross@wspgroup.com
Phone:	0403 793 657 **Fax:**

Client Project Name and Number:	St Josephs-2270358A
PO No.:	2270358A
Envirolab Services Quote No. :	2016-R00C4
Date results required:	Standard TAT
Or choose:	standard / 1 day / 2 day / 3 day

Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201

E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	pH	Heavy Metals	Pesticides	CEC	PAHS	Hold Please	Please Forward to ALS for pH, Heavy Metals, CEC and Pesticides								Provide as much information about the sample as you can
37	BH15_2.0	22.9.2016	Soil						x									
38	BH16_0.2	22.9.2016	Soil						x									
39	BH16_0.5	22.9.2016	Soil	x	x	x	x											
40	DUP1	22.9.2016	Soil						x									
41	TRIP1	22.9.2016	Soil						x									
42	DUP2	22.9.2016	Soil	x	x	x	x											
43	TRIP2	22.9.2016	Soil							x								
~~44~~ (EMPTY)	BH08_2.0	"	Soil															
~~45~~ (FULL)	BH11_1.0	"	Soil															
44 ↗																		

Relinquished by (company):	WSP Environmental	**Received by (company):**	ALS
Print Name:		**Print Name:**	H/NOKO
Date & Time:		**Date & Time:**	23/09/16 11:50
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier

Page No:

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1621550**	Page	: 1 of 6
Client	: **PARSONS BRINCKERHOFF AUSTRALIA PTY LIMITED**	Laboratory	: Environmental Division Sydney
Contact	: PETER MOORE	Contact	: Loren Schiavon
Address	: ABN: 80 078 004 798 GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8503
Project	: St Josephs-2270358A	Date Samples Received	: 26-Sep-2016 16:30
Order number	: 2270358A	Date Analysis Commenced	: 27-Sep-2016
C-O-C number	: ----	Issue Date	: 30-Sep-2016 14:26
Sampler	: ALEX ROSS, JACQUES CHIOMEY		
Site	: ----		
Quote number	: ----		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	Trip2	----	----	----	----
			Client sampling date / time	[22-Sep-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1621550-001	--------	--------	--------	--------
				Result	----	----	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**4.9**	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	**17.0**	----	----	----	----
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	**3.1**	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	**0.9**	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	**0.3**	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	**0.2**	----	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	**6.4**	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**10**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**16**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**14**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**23**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**21**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	Trip2	----	----	----	----
				Client sampling date / time	[22-Sep-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1621550-001	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**97.0**	----	----	----	----

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)				Client sample ID	**Trip2**	**----**	**----**	**----**	**----**
				Client sampling date / time	[22-Sep-2016]	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**ES1621550-001**	**--------**	**--------**	**--------**	**--------**
					Result	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**106**	**----**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	**Low**	**High**
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES1621550**	Page	: 1 of 7
Client	: **PARSONS BRINCKERHOFF AUSTRALIA PTY LIMITED**	Laboratory	: Environmental Division Sydney
Contact	: PETER MOORE	Contact	: Loren Schiavon
Address	: ABN: 80 078 004 798 GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8503
Project	: St Josephs-2270358A	Date Samples Received	: 26-Sep-2016
Order number	: 2270358A	Date Analysis Commenced	: 27-Sep-2016
C-O-C number	: ----	Issue Date	: 30-Sep-2016
Sampler	: ALEX ROSS, JACQUES CHIOMEY		
Site	: ----		
Quote number	: ----		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 598977)									
ES1621347-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.3	7.4	1.36	0% - 20%
ES1621512-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	8.8	8.6	3.11	0% - 20%
EA055: Moisture Content (QC Lot: 598114)									
ES1621538-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	24.2	25.9	6.72	0% - 20%
ES1621546-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	14.5	15.0	3.21	0% - 50%
ED007: Exchangeable Cations (QC Lot: 601221)									
ES1621134-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	2.5	2.5	0.00	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	1.8	1.8	0.00	0% - 50%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.7	0.7	0.00	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.00	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	5.1	5.1	0.00	0% - 20%
ES1621134-016	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	3.5	3.5	0.00	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	1.1	1.1	0.00	0% - 50%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.4	0.4	0.00	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.00	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	5.1	5.1	0.00	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 598454)									
ES1621562-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	16	13.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	6	22.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	8	17.1	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	12	19.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	13	16	16.7	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 598454) - continued									
ES1621512-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	15	11.7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	11	10	12.4	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	7	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	53	46	15.7	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	114	120	5.21	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	132	113	15.3	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 598455)									
ES1621512-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 597258)									
ES1621538-003	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 597258)									
ES1621538-003	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 597258) - continued									
ES1621538-003	Anonymous	EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED007: Exchangeable Cations (QCLot: 601221)								
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	1 meq/100g	101	76	122
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	1.67 meq/100g	97.6	76	118
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.51 meq/100g	108	80	120
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.87 meq/100g	102	80	120
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----
EG005T: Total Metals by ICP-AES (QCLot: 598454)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	108	86	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.5	83	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	104	76	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	101	86	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	101	80	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	108	87	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	80	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 598455)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	85.1	70	105
EP068A: Organochlorine Pesticides (OC) (QCLot: 597258)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	69	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	65	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	67	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	68	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	65	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	67	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	69	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	105	62	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	85.5	63	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	66	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.4	64	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	104	66	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	67	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.0	67	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	69	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	108	69	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	56	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	62	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 597258) - continued								
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	94.4	66	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	64	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	95.7	54	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 597258)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	84.5	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	105	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	104	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	104	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.3	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	107	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.4	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.1	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	108	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	103	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	78.3	41	123

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 598454)							
ES1621495-012	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	106	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	103	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	108	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	113	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	112	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG035T: Total Recoverable Mercury by FIMS (QCLot: 598455)							
ES1621512-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.4	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 597258)							
ES1621538-003	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	103	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	103	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	96.5	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	89.3	70	130
		EP068: Endrin	72-20-8	2 mg/kg	90.5	70	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	98.7	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 597258)							
ES1621538-003	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	91.5	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	99.0	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	93.4	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	93.5	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	84.9	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES1621550**	Page	: 1 of 4
Client	: **PARSONS BRINCKERHOFF AUSTRALIA PTY LIMITED**	Laboratory	: Environmental Division Sydney
Contact	: PETER MOORE	Telephone	: +61 2 8784 8503
Project	: St Josephs-2270358A	Date Samples Received	: 26-Sep-2016
Site	: ----	Issue Date	: 30-Sep-2016
Sampler	: ALEX ROSS, JACQUES CHIOMEY	No. of samples received	: 1
Order number	: 2270358A	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved (EA002)							
Trip2	**22-Sep-2016**	**29-Sep-2016**	29-Sep-2016	✓	**29-Sep-2016**	29-Sep-2016	✓
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
Trip2	**22-Sep-2016**	**----**	----	----	**27-Sep-2016**	06-Oct-2016	✓
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007)							
Trip2	**22-Sep-2016**	**29-Sep-2016**	20-Oct-2016	✓	**29-Sep-2016**	20-Oct-2016	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
Trip2	**22-Sep-2016**	**27-Sep-2016**	21-Mar-2017	✓	**28-Sep-2016**	21-Mar-2017	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
Trip2	**22-Sep-2016**	**27-Sep-2016**	20-Oct-2016	✓	**28-Sep-2016**	20-Oct-2016	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
Trip2	**22-Sep-2016**	**27-Sep-2016**	06-Oct-2016	✓	**27-Sep-2016**	06-Nov-2016	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
Trip2	**22-Sep-2016**	**27-Sep-2016**	06-Oct-2016	✓	**27-Sep-2016**	06-Nov-2016	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Exchangeable Cations	ED007	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055-103	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Exchangeable Cations	ED007	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Exchangeable Cations	ED007	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	In house: Referenced to APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Moisture Content	EA055-103	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Higginson (1992) method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Envirolab

ent:	WSP / Parsons Brinkerhoff
ject Mgr:	Peter Moore
npler:	Alex Ross / Jacques Chiomey
lress:	Level 1/41 McLaren Street, North Sydney 2060
ail:	peter.moore@wspgroup.com; alex.ross@wspgroup.com
one:	0403 793 657 Fax:

Client Project Name and Number: St Josephs-2270358A

PO No.: 2270358A

Envirolab Services Quote No.: 2016-R00C4

Date results required: Standard TAT

Or choose: standard / 1 day / 2 day / 3 day

Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067
Phone: 02 9910 6200
Fax: 02 9910 6201
E-mail: ahie@envirolabservices.com.au
Contact: Aileen Hie

Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	pH	Heavy Metals	Pesticides	CEC	PAHS	Hold Please	Please Forward to ALS for pH, Heavy Metals, CEC and Pesticides								Comments: Provide as much information about the sample as you can
ES1640																		
37	BH15_2.0	22.9.2016	Soil						x									
38	BH16_0.2	22.9.2016	Soil						x									
39	BH16_0.5	22.9.2016	Soil	x	x	x	x											
40	DUP1	22.9.2016	Soil						x									
41	TRIP1	22.9.2016	Soil						x									
42	DUP2	22.9.2016	Soil	x	x	x	x											
43	TRIP2 (1)	22.9.2016	Soil							x								
(EMPTY)	BH08_2.0	"	Soil															
(Full)	BH11_1.0	"	Soil															

Environmental Division
Sydney
Work Order Reference
ES1621550

Telephone : + 61-2-8784 8555

inquished by (company):	WSP Environmental ALS
nt Name:	James Crawford
e & Time:	26.09.2016 12:15
nature:	[illegible]

Received by (company):	ALS
Print Name:	H/NOKO
Date & Time:	23/09/16 11:50
Signature:	[illegible]

Samples Received: Cool or Ambient (circle one)

Temperature Recieved at: (If applicable)

Transported by: Hand delivered / courier

Page No:

5CS 8940 ALS 26/9/16 15:30 8.9c

APPENDIX H

GEOTECHNICAL REPORT

AW GEOTECHNICAL PTY. LTD.
ABN 43 158 108 724
T [07] 3343 6500
1175 Logan Road | Holland Park QLD 4123
ausgeo.reg@ozemail.com.au |www.awgeotechnical.com

Rev B 21st November 2016
8th November 2016

WSP Environmental Pty Ltd
Level 1/41 Mclaren Street
NORTH SYDNEY NSW 2059

Our Reference **AWG44065**

Your Reference

Site Address

St Joseph's College

Mark Street

HUNTERS HILL

Commission

Geotechnical Investigation

---

1. Construction Proposal

1.1. The proposal is the construction of a new sport and cultural precinct at St Joseph's College.

1.2. At the time of writing, we had sighted preliminary plans by "LTS" (Job No.41044DI, dated 15/8/14), which outlined proposed building footprints.

1.3. We have sighted borelogs by "WSP" (Job No. 2778358A, dated 22/9/16) which details geotechnical testing completed for this project that we have based this report on.

2. Site Description

2.1. The site is on the southern side of Mark Street and at the time of testing was currently occupied by an existing school campus.

2.2. Vegetation consisted of numerous grasses and trees that we believe are within the zone of influence of the proposed development.

3. About Your Report

3.1. This geotechnical report is generally in accordance with the guidelines in AS 2870-2011. We have also appended a copy of the following paper, which illustrates the relationship between landscaping/garden maintenance and structural footings.

CSIRO "Foundation Maintenance and Footing Performance: A Homeowner's Guide" Sheet BTF 18, 2003

3.2. The statements presented in this report, including attached appendices, are intended to advise you of what should be your realistic expectations of this report and to present you with recommendations as to how to minimise risks associated with ground works for this project.

3.3. These appendices and other cautioning sections are not intended to reduce our level of responsibility but rather to ensure that all parties who may rely on this report are aware of their responsibilities each assumes in so doing.

3.4. As geotechnical consultants on this project, our responsibilities are restricted to determining the parameters of the strata encountered (within the limitations of our commission and budget) so that the design engineer can design suitable footings.

3.5. As an additional service, we have offered advice in this report to the design engineer on the most suitable type of footing for this site, but it is possible that the engineer will have his own method of support for this structure.

3.6. AS 2870-2011 contains a system of classifying soils based on the ability of the soils to change in soil moisture. These classes are (Class "E" being most severe);

CLASS "A"	CLASS "S"	CLASS "M"	CLASS "H1"	CLASS "H2"	CLASS "E"

3.7. AS 2870-2011 also has another Class ("P") for problem sites, which include both filled sites and sites with soft and collapsing soils. It should be noted that the more severe the soil conditions, the heavier and in general, the more expensive the footing system will be.

4. Testing Programme

4.1. Sixteen(16) test sites were established. TS No.1-15 with our 4WD mounted drill rig, TS No.16 with a portable hand auger due to access restrictions.

NOTE: These test sites were not formally surveyed, therefore their locations on the attached site sketch should be treated as approximate.

4.2. Numerous disturbed samples were collected and hand classified.

4.3. Three(3) tube samples were retrieved and returned to the laboratory to be tested for their shrink/swell parameters.

4.4. A pocket penetrometer (PP) was used to determine the undrained shear strength (qa) which was then converted to an undrained cohesion (ca) which in turn was used in Skempton's Theorem (1954) to determine the allowable bearing pressures.

5. Findings

5.1. The stratum encountered is recorded on the attached Log Section.

5.2. On the relevant 1:100,000 geological map this site plots within the Triassic aged Ashfield Shale.

5.3. No water table was encountered during the testing programme.

5.3.1. We did however encounter "wet/moist" layers throughout the soil profile, which may result in water seepage during excavations.

5.3.2. The absence of a water table during our onsite testing, does not exclude the possibility that water seepage will occur during or after rains where a permeable layer overlies a less permeable layer such as the natural clay based strata overlying the rock shelves.

5.3.3. Water seepage may also occur through permeable seams in the soil substrate and if encountered will only prove to be of nuisance value to a competent contractor, however adequate long term water proofing in these areas will need to be considered.

5.4. From the results of our in-situ testing, which includes DCP testing and Pocket Penetrometer readings, we believe the natural clay-based strata to have a CBR value of 2-4%.

5.5. The results of the shrink/swell tests are as follows;

TS No.	Depth (mm)	Shrink	Swell	Iss	Field Moisture	Insitu Density
3	500-800mm	3.9%	0.5%	2.3%	21.2%	2.06t/m^3
11	800-1100mm	5.4%	0.1%	3.0%	23.5%	1.98t/m^3
15	600-900mm	3.0%	2.2%	2.3%	18.9%	2.12t/m^3

5.6. We encountered filled ground down to the following depths;

TS No.	Depth	TS No.	Depth
1	500mm	9	4300mm
2	400mm	10	500mm
3	300mm	11	700mm
4	2400mm	12	1200mm
5	1100mm	13	1800mm
6	700mm	14	1700mm
7	500mm	15	400mm
8	1100mm	16	600mm

5.7. We encountered bedrock at the following depths;

TS No.	XW-Rock (Class V)	DW-Rock (Class IV)
1	1900-2900mm	2900mm
2	1400-3000mm+	NE
3	1600-2100mm	2100mm
4	2400-2800mm	2800mm
5	1700-2300mm	2300mm
6	NE**	NE
7	900-2100mm	2100mm
8	1100-1200mm	1200mm
9	4300-5100mm	5100mm
10	1000-1700mm	1700mm
11	1800-2300mm	2300mm
12	2100-2200mm	2200mm
13	3700-4700mm	4700mm
14	2900-3200mm	3200mm
15	2200-2500mm	2500mm
16	NE*	

* This test site was established with our hand auger and refused on boulders within the fill.

** Our auger refused on concrete within the stratum.

6. Conclusions

6.1. Although this development is not under the scope of AS2870-2011, most consultants find it useful to relate a site to AS2870, and in this case the appropriate AS2870-2011 classification for the site is Class "P", for the following reasons;

Reason 1: The presence of trees and the existing structure within the zone of influence of the proposed buildings and therefore constitute "Abnormal Moisture Conditions" (refer clause 1.3 of AS2870-2011).

Reason 2: We encountered filled ground deeper then the deemed to comply limits of AS2870-2011 and as we have not viewed any documentation certifying the fill to an appropriate standard (nor do we believe any exists), we have no option but to classify the fill as "uncontrolled".

6.2 Most consultants also find it useful to know the shrink/swell potential of the strata with changes in soil moisture, and from the strata encountered during our testing, we have assumed the following;

Clay: A High potential to change volume with changes in soil moisture content, then **without the "abnormal moisture" influence of the trees and existing dwelling**, we would expect the ys of the site to be in the 41-60mm (Class H1) range according to AS2870-2011.

NOTE: The effects of the onsite trees and the existing structures we believe will increase the above ys by between 30-50%, and this shall be considered in the design.

Bearing Pressures

6.3 For high level strip/pad footings, the following allowable bearing pressures are applicable;

100kPa – At all levels in the natural stiff clay-based strata

200kPa – Founded 500mm and deeper into the stiff clay-based strata

6.4 For bored piers, the following allowable bearing pressures are applicable;

250kPa – Founded 1000mm and deeper into the natural stiff clay-based strata

400kPa – Founded 500mm into the Class V XW-Rock .

750kPa – Founded at the depth our power auger refused (Class IV DW-Rock)

NOTE: It is crucial that each structure's footings are founded within the same strata.

6.5 If adhesion is to be relied upon, then the following values are applicable;

Strata/Depth	Adhesion
Top 1000mm/fill	0kPa
Natural Soil	25kPa
Bedrock	75kPa

6.6 Any features supported on the natural strata including (but not limited to) slabs, walls, fences, plumbing, paths etc will undergo differential movement. Features supported at depth will not undergo any such movement. Therefore where features including (but not limited to) slabs, walls, fences, paths, plumbing etc, transgress from one foundation strata to another or where they abut a feature founded on a different strata, a potential for long term differential movement exists. Although it is difficult to quantify this potential provision must be made in the design and construction to accommodate these differential movements.

6.7 The provisions of Section 5.6.4 of AS2870-2011 are applicable to this site.

6.8 The landscape plan must be compared with the structural plan to ensure that there will not be any adverse affects on any part of the structure, particularly as plants and watering systems can magnify the shrink/swell effect and compound the problems of features supported in or on reactive strata. The appended CSIRO brochure (while written for buildings under the scope of AS 2870-2011) offers further guidance on this subject. However for ys values of between 41-60mm, single trees must be 1.0 times their mature height away from any structural footing and for rows or clumps of trees, this distance must be increased.

6.9 At the time of our investigation, trafficability was deemed to be "fair" across the site. However it should be noted that trafficability issues may arise from disturbance of soil layers and the removal of vegetation.

6.9.1 All stakeholders should also be made aware that allowing water to pond or seep into the underlying soil layers will result in the site becoming un-trafficable quickly and therefore all relevant stakeholders should familiarise him/herself in regards to establishing adequate site drainage during excavation works.

6.9.2 The silty topsoil layer when disturbed and allowed to become saturated will make the site un-trafficable for even large machinery.

6.9.3 The onsite natural clay based strata is suitable for re-compaction, however compacting the onsite highly reactive clay based strata sufficiently enough to "shrink and swell" with changes in soil moisture will increase the design "ys" and this shall be considered in the footing design if applicable.

6.9.4 After the topsoil is stripped, if trafficability proves difficult or unfavourable weather is present, the earthworks contractor maybe required to import "rip-rap" or "subgrade" material in order to continue with construction.

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QBCC No 616675 (Site Classifier)
TCC Accreditation No. CC4047U (Engineer-Geotechnical)

7 Report Limitations

7.2 The contents of this report are based on the expertise and experience of the author, representing the company. Our commission didn't extend to slope stability, nor did it extend to testing to comply with the relevant Contaminated Land Act, however we have no evidence to suggest that the site is contaminated.

7.3 The opinions and recommendations made in this report are based on the assumption that the test results are representative of the true site conditions. Even under optimum circumstances, actual conditions may differ from those reported to exist. Economic and time constraints necessarily limit the practical extent of any investigation. We therefore cannot accept responsibility for conditions encountered on this site, outside the areas tested, which are different to those reported. Where the attached soil profiles are similar to each other, then we would expect little variation across the site, so if widely different soils are encountered then a further inspection of the site and/or further testing may be required. If the attached soil profiles are different across the site, then variations will be encountered during footing excavations. In these cases, the design engineer/client must make a decision whether to extend the geotechnical budget to do more testing or to cope with the variations during footing excavations. Regardless of the option chosen the final inspection before placement of concrete is critical and the person certifying this inspection should be competent in identification of strata.

7.4 This report may only be reproduced in full, if any doubt exists to the number of pages in this report we should be contacted. The original copies of this report are signed in blue ink.

8 References

8.2 The following papers, reports or books have been consulted in preparing this report:

- AS 2870-2011 "Residential Slabs & Footings" by Standards Australia
- AS2870-1996 Supplement 1-1996 "Residential Slabs and Footings-Construction-Commentary, (Supplement to AS2870-1996).
- AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments" by Standards Australia.
- Paul Walsh & Don Cameron "The Design of Residential Slabs and Footings" by Standards Australia 1997
- M.F. Atkinson "Structural Foundations Manual for Low-Rise Buildings" 1993
- Monograph 9 "Field Geologists Manual 4th Edition – 2001" compiled by D.A. Berkman for AIMM.
- B.G. Look and S.G. Griffiths "An Engineering Assessment of the Strength and Deformation Properties of Brisbane Rocks". AGS Journal Volume 36, no. 3 September 2001.

We believe these to be the most up to date publications available. Should other publications not listed are brought to our attention, we reserve the right to modify this report if they contain information conflicting with this report.

Log Sections

TEST SITE 1					TEST SITE 2				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – silty sand with clay				100	FILL – silty sand with clay			
200	(brn/bk)				200	(brn/bk)			
300	moist and uncontrolled				300	moist and uncontrolled			
400					400				
500					500	CLAY with gravels			
600	CLAY with gravels			250	600	(or/brn)			350
700	(or/brn)				700	moist and very stiff			
800	moist and very stiff			450	800				+600
900					900				
1000				+600	1000				
1100					1100				
1200					1200				
1300					1300				
1400					1400				
1500					1500	XW ROCK			
1600					1600	(rd/or/gy)			
1700					1700	dry and med strength			
1800					1800				
1900					1900				
2000	XW ROCK				2000				
2100	(rd/or/gy)				2100				
2200	dry and med strength				2200				
2300					2300				
2400					2400				
2500					2500				
2600					2600				
2700					2700				
2800					2800				
2900					2900				
3000	UTP DW ROCK P/A				3000	END P/A			

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 3

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – gravelly clay			
200	(brn/bk)			
300	moist and uncontrolled			
400	CLAY with gravels			
500	(or/brn)			400
600	moist and very stiff			
700				+600
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700	XW ROCK			
1800	(rd/or/gy)			
1900	dry and med strength			
2000				
2100				
2200	UTP DW ROCK P/A			
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 4

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – sandy clay			
200	(brn/bk)			
300	moist and uncontrolleds			
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500	XW ROCK			
2600	(rd/or/gy)			
2700	dry and med strength			
2800				
2900	UTP DW ROCK P/A			
3000				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 5					TEST SITE 6				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100 200 300 400 500 600 700 800 900 1000 1100	FILL – sandy clay (brn/bk) moist and uncontrolled				100 200 300 400 500 600 700	FILL – silty sand with clay (brn/bk) moist and uncontrolled			
1200 1300 1400 1500 1600 1700	CLAY with gravels (or/brn) moist and very stiff			+600	800 900 1000 1100 1200 1300 1400 1500 1600 1700	UTP CONCRETE IN FILL			
1800 1900 2000 2100 2200 2300	XW ROCK (rd/or/gy) dry and med strength				1800 1900 2000 2100 2200 2300				
2400 2500 2600 2700 2800 2900 3000	UTP DW ROCK P/A				2400 2500 2600 2700 2800 2900 3000				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 7

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – sandy clay			
200	(brn/bk)			
300	moist and uncontrolled			
400				
500				
600	CLAY with gravels			
700	(or/brn)			+600
800	moist and very stiff			
900				
1000	XW ROCK			
1100	(rd/or/gy)			
1200	dry and med strength			
1300				
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200	UTP DW ROCK P/A			
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 8

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – silty clay with sand			
200	(brn/bk)			
300	moist and uncontrolled			
400				
500				
600				
700				
800				
900				
1000				
1100				
1200	XW ROCK (gy) dry and med strength			
1300	UTP DW ROCK P/A			
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 9					TEST SITE 10				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CONCRETE				100	FILL – silty sand with clay			
200	FILL – gravelly sand with clay				200	(brn/bk)			
300	(brn/bk)				300	moist and uncontrolled			
400	moist and uncontrolled				400				
500					500				
600					600	CLAY with gravels			
700					700	(or/brn)			+600
800					800	moist and very stiff			
900					900				
1000					1000				
1100					1100	XW ROCK			
1200					1200	(rd/or/gy)			
1300					1300	dry and med strength			
1400					1400				
1500					1500				
1600					1600				
1700	(concrete debris)				1700				
1800					1800	UTP DW ROCK P/A			
1900					1900				
2000					2000				
2100					2100				
2200					2200				
2300					2300				
2400					2400				
2500					2500				
2600					2600				
2700					2700				
2800					2800				
2900					2900				
3000					3000				
3100					3100				
3200					3200				
3300					3300				
3400					3400				
3500					3500				
3600					3600				
3700					3700				
3800					3800				
3900					3900				
4000					4000				
4100					4100				
4200					4200				
4300					4300				
4400	XW ROCK				4400				
4500	(rd/or/gy)				4500				
4600	dry and med strength				4600				
4700					4700				
4800					4800				
4900					4900				
5000					5000				
5100					5100				
5200	UTP DW ROCK P/A				5200				
5300					5300				
5400					5400				
5500					5500				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 11

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – silty sand with clay			
200	(brn/bk)			
300	moist and uncontrolled			
400				
500				
600				
700				
800	CLAY with gravels			
900	(or/brn)			+600
1000	moist and very stiff			
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900	XW ROCK			
2000	(rd/or/gy)			
2100	dry and med strength			
2200				
2300				
2400	UTP DW ROCK P/A			
2500				
2600				
2700				
2800				
2900				
3000				

TEST SITE 12

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – silty sand with clay			
200	(brn/bk)			
300	moist and uncontrolled			
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300	SILTY SAND			
1400	(brn)			
1500	moist and loose			
1600	CLAY with gravels			
1700	(or/brn)			+600
1800	moist and very stiff			
1900				
2000				
2100				
2200	XW ROCK (gy) dry and med strength			
2300	UTP DW ROCK P/A			
2400				
2500				
2600				
2700				
2800				
2900				
3000				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 13

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – silty sand with clay			
200	(brn/bk)			
300	moist and uncontrolled			
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900	SILTY SAND			
2000	(brn)			
2100	moist and loose			
2200	CLAY with gravels			
2300	(or/brn)			+600
2400	moist and very stiff			
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800	XW ROCK			
3900	(rd/or/gy)			
4000	dry and med strength			
4100				
4200				
4300				
4400				
4500				
4600				
4700				
4800	UTP DW ROCK P/A			
4900				
5000				

TEST SITE 14

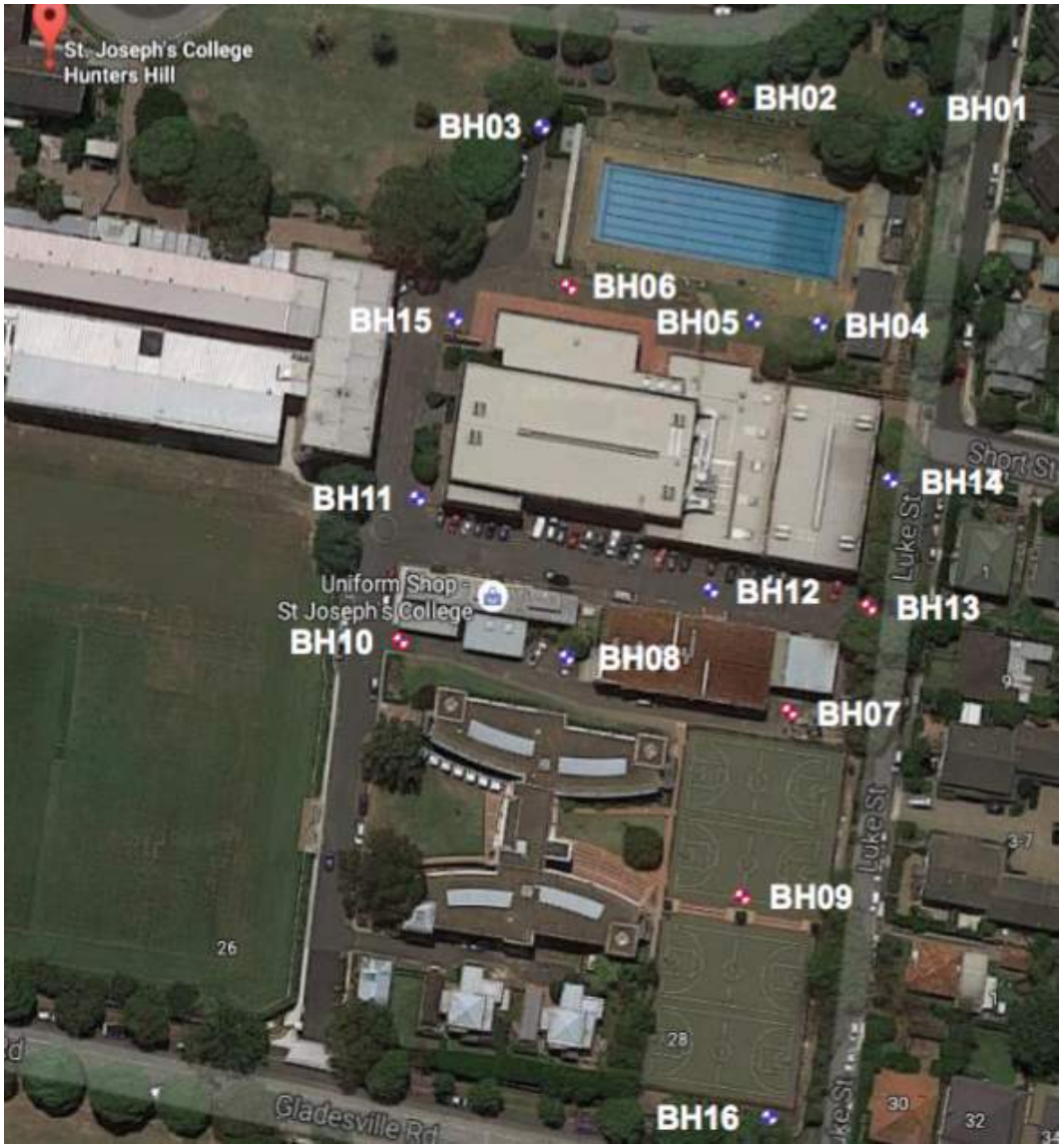
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – sandy clay			
200	(brn/bk)			
300	moist and uncontrolled			
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800	CLAY with gravels			
1900	(or/brn)			+600
2000	moist and very stiff			
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000	XW ROCK			
3100	(rd/or/gy)			
3200	dry and med strength			
3300	UTP DW ROCK P/A			
3400				
3500				
3600				
3700				
3800				
3900				
4000				
4100				
4200				
4300				
4400				
4500				
4600				
4700				
4800				
4900				
5000				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 15					TEST SITE 16				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL – silty sand with clay				100	FILL – silty clay with sand		1	
200	(brn/bk)				200	(brn/bk)		2	
300	moist and uncontrolled				300	moist and uncontrolled		1	
400					400			1	
500	CLAY with gravels				500			3	
600	(or/brn)				600			5	
700	moist and very stiff			+600	700	UTP BOULDER IN FILL P/A		7	
800					800			12	
900					900			+25	
1000					1000			utp	
1100					1100				
1200					1200				
1300					1300				
1400					1400				
1500					1500				
1600					1600				
1700					1700				
1800					1800				
1900					1900				
2000					2000				
2100					2100				
2200					2200				
2300	XW ROCK				2300				
2400	(rd/or/gy)				2400				
2500	dry and med strength				2500				
2600	UTP DW ROCK P/A				2600				
2700					2700				
2800					2800				
2900					2900				
3000					3000				

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

Site Sketch (Not to scale)



APPENDIX I

HISTORICAL DOCUMENTS

Lotsearch

Environmental Risk and Planning Report

Mary Street, Hunters Hill, NSW 2110

Report Buffer: 1000m

Report Date: 27 Sep 2016 12:59:16

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
1	Georeferenced to the site location / premise or part of site
2	Georeferenced with the confidence of the general/approximate area
3	Georeferenced to the road or rail
4	Georeferenced to the road intersection
5	Feature is a buffered point
6	Land adjacent to Georeferenced Site
7	Georeferenced to a network of features

Dataset Listing

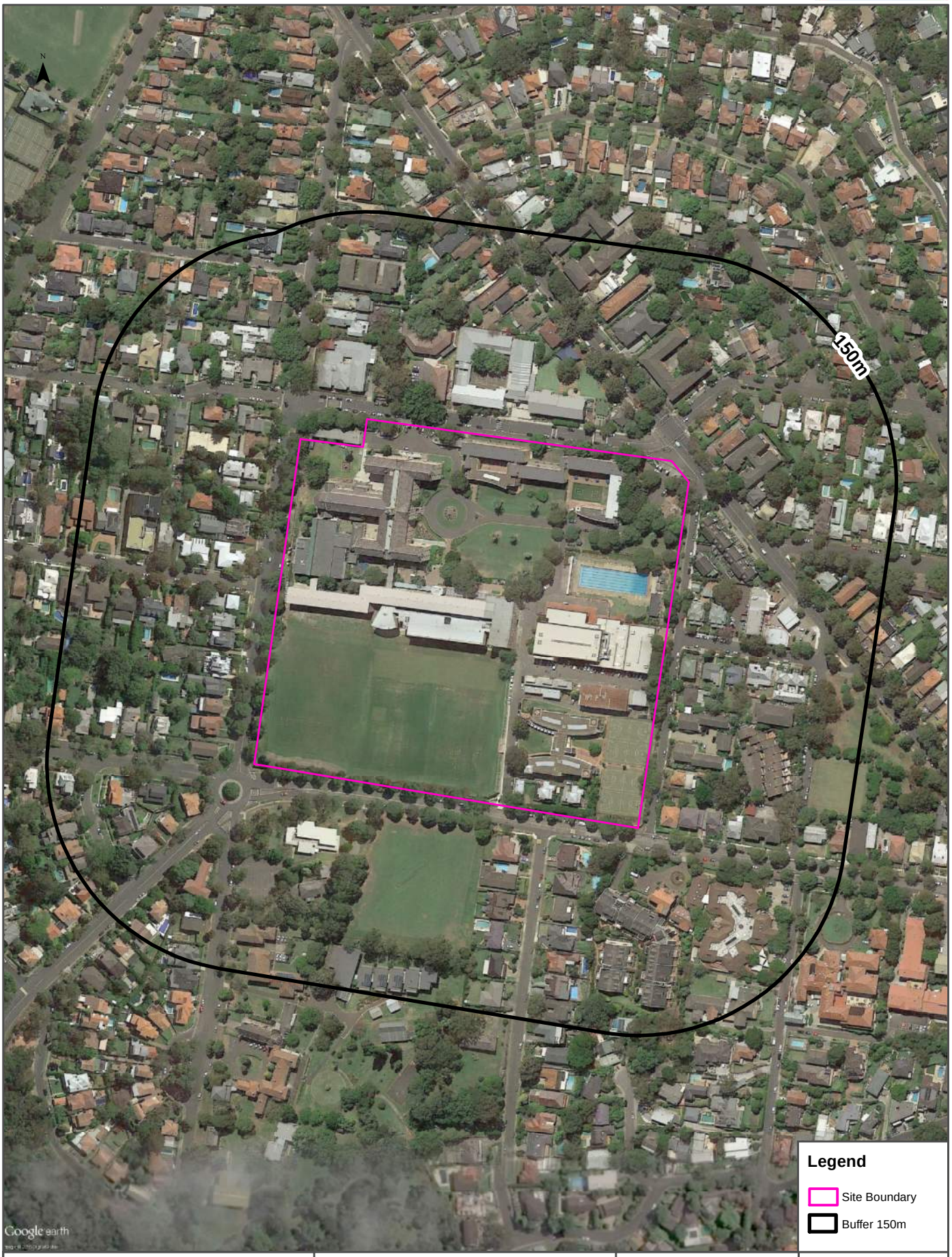
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	Land and Property Information	27/09/2016	27/09/2016	Daily	-	-	-
Topographic Data	Land and Property Information	10/04/2015	01/04/2015	As required	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	19/09/2016	30/08/2016	Monthly	0	1	2
Contaminated Land: Records of Notice	Environment Protection Authority	06/09/2016	06/09/2016	Monthly	0	0	0
Former Gasworks	Environment Protection Authority	06/09/2016	10/05/2013	Monthly	0	0	0
National Waste Management Site Database	Geoscience Australia	06/07/2016	15/11/2012	Quarterly	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	20/09/2016	20/09/2016	Monthly	0	0	0
Delicensed POEO Activities still Regulated by the EPA	Environment Protection Authority	20/09/2016	20/09/2016	Monthly	0	0	1
Former POEO Licenced Activities now revoked or surrendered	Environment Protection Authority	20/09/2016	20/09/2016	Monthly	0	0	3
UPSS Environmentally Sensitive Zones	Department of Environment, Climate Change and Water (NSW)	14/04/2015	12/01/2010	As required	1	1	1
UBD Business to Business Directory 1991	Hardie Grant			Not required	0	2	2
UBD Business Directory 1991 Motor Garages/Service Stations	Hardie Grant			Not required	0	1	2
UBD Business Directory 1970	Hardie Grant			Not required	0	4	8
UBD Business Directory 1970 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	1	9
UBD Business Directory 1950	Hardie Grant			Not required	0	11	16
UBD Business Directory 1950 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	0	9
Points of Interest	Land and Property Information	10/04/2015	01/04/2015	Annually	1	3	63
Tanks (Areas)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	0
Tanks (Points)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	0
Major Easements	Land and Property Information	11/06/2014	11/06/2014	As required	0	0	13
State Forest	Land and Property Information	11/04/2016	23/01/2015	As required	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment and Heritage	11/04/2016	31/12/2015	Annually	0	0	1
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1	1	1
Groundwater Boreholes	NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation; Commonwealth of Australia (Bureau of Meteorology) 2015	21/03/2016	01/12/2015	Annually	0	0	16
Geological Units 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	2	-	6
Geological Structures 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	1	-	1
Naturally Occurring Asbestos Potential	NSW Department of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	0	0	0
Soil Landscapes	NSW Office of Environment and Heritage	12/08/2014		None planned	1	-	6
Acid Sulfate Soils	NSW Planning and Environment	06/07/2016	19/09/2008	As required	1	-	-
Dryland Salinity Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	0	0	0
Mining Subsidence Districts	Land and Property Information	27/09/2016	27/09/2016	As required	0	0	0
SEPP 14 - Coastal Wetlands	NSW Planning and Environment	17/12/2015	24/10/2008	Annually	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features within Buffer
SEPP 26 - Littoral Rainforest	NSW Planning and Environment	17/12/2015	05/02/1988	Annually	0	0	0
SEPP 71 - Coastal Protection	NSW Planning and Environment	17/12/2015	01/08/2003	Annually	0	0	0
SEPP Major Developments 2005	NSW Planning and Environment	09/03/2013	25/05/2005	Under Review	0	0	0
SEPP Strategic Land Use Areas	NSW Planning and Environment	06/07/2016	28/01/2014	Annually	0	0	0
Local Environmental Plan - Land Zoning	NSW Planning and Environment	15/08/2016	10/07/2016	Quarterly	1	7	94
Local Environmental Plan - Minimum Subdivision Lot Size	NSW Planning and Environment	15/08/2016	10/07/2016	Quarterly	0	-	-
Local Environmental Plan - Height of Building	NSW Planning and Environment	15/08/2016	10/07/2016	Quarterly	0	-	-
Local Environmental Plan - Floor Space Ratio	NSW Planning and Environment	15/08/2016	10/07/2016	Quarterly	0	-	-
Local Environmental Plan - Land Application	NSW Planning and Environment	15/08/2016	10/07/2016	Quarterly	1	-	-
Local Environmental Plan - Land Reservation Acquisition	NSW Planning and Environment	15/08/2016	10/07/2016	Quarterly	0	-	-
State Heritage Items	NSW Planning and Environment	15/08/2016	12/03/2015	Quarterly	0	0	3
Local Heritage Items	NSW Planning and Environment	15/08/2016	10/07/2016	Quarterly	3	30	239
Bushfire Prone Land	NSW Rural Fire Service	18/08/2016	12/08/2016	Quarterly	0	0	3
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment and Heritage	08/10/2014	11/10/2013	As required	1	1	15
RAMSAR Wetlands	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	0	0	0
ATLAS of NSW Wildlife	NSW Office of Environment and Heritage	27/09/2016	27/09/2016	Daily	-	-	-

Aerial Imagery 2015

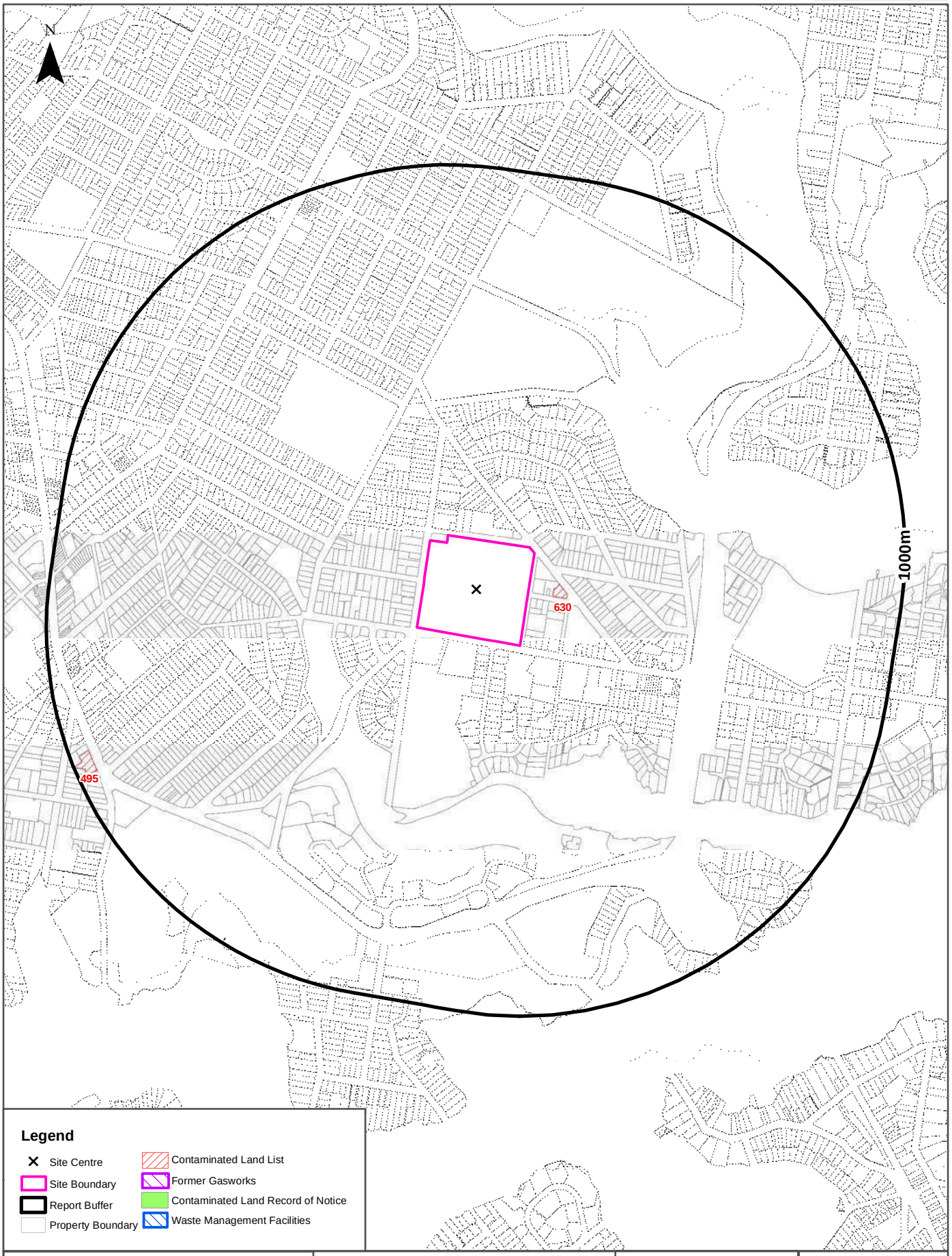
Mary Street, Hunters Hill, NSW 2110



Scale: 0 25 50 100 Meters	Data Sources: Aerial Imagery © 2016 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 26September, 2016

Contaminated Land & Waste Management Facilities

Mary Street, Hunters Hill, NSW 2110



Scale: 0 100 200 400 Meters

Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System: GDA 1994 MGA Zone 56

Date: 27September 2016

Contaminated Land & Waste Management Facilities

Mary Street, Hunters Hill, NSW 2110

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	EPA site management class	Status	Dist	Direction	LC
630	Coles Express Hunters Hill	4 Ryde Road	Hunters Hill	Service Station	Regulation under CLM Act not required	Current EPA List	66m	East	1
495	Caltex Service Station	116 Victoria Road	Gladesville	Service Station	Under assessment	Current EPA List	946m	South West	1

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

Mary Street, Hunters Hill, NSW 2110

Contaminated Land: Records of Notice

Record of Notices within the report buffer:

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

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

Former Gasworks

Former Gasworks within the report buffer:

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

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

National Waste Management Site Database

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

Site Id	Owner	Name	Address	Suburb	Postcode	Landfill	Reprocess	Transfer	Distance	Direction	LC
N/A	No records in buffer										

Wate Management Facilities Data Source: Australian Governement Geoscience Australia
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EPA Activities

Mary Street, Hunters Hill, NSW 2110

Licensed Activities under the POEO Act 1997

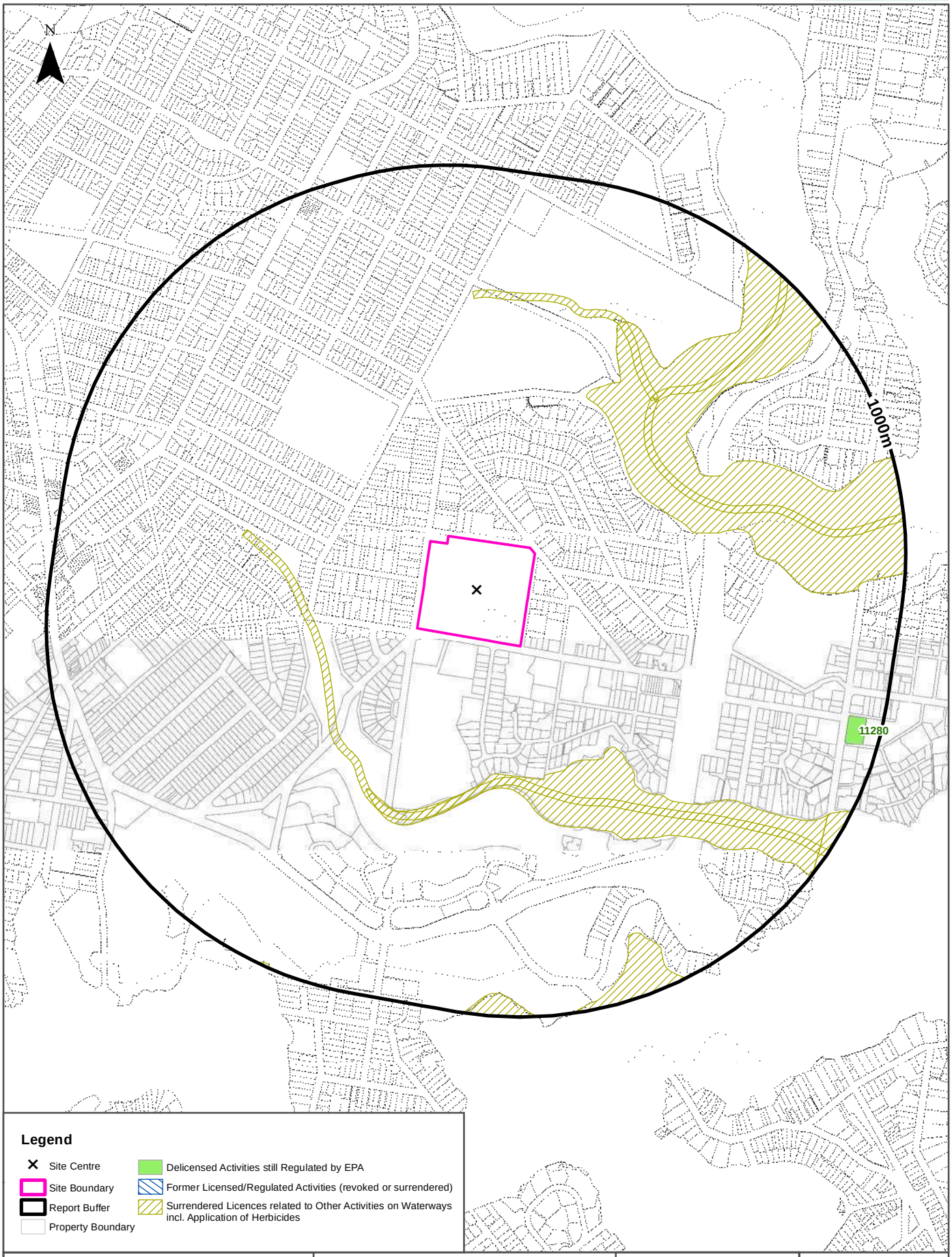
Licensed activities under the Protection of the Environment Operations Act 1997, within the report buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Mary Street, Hunters Hill, NSW 2110



EPA Activities

Mary Street, Hunters Hill, NSW 2110

Delicensed Activities still regulated by the EPA

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

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
11280	HERGLEN PTY LTD	HUNTERS HILL PRIVATE HOSPITAL	9 MOUNT STREET	HUNTERS HILL	Hazardous, Industrial or Group A Waste Generation or Storage	1	904m	East

Delicensed Activities Data Source: Environment Protection Authority

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

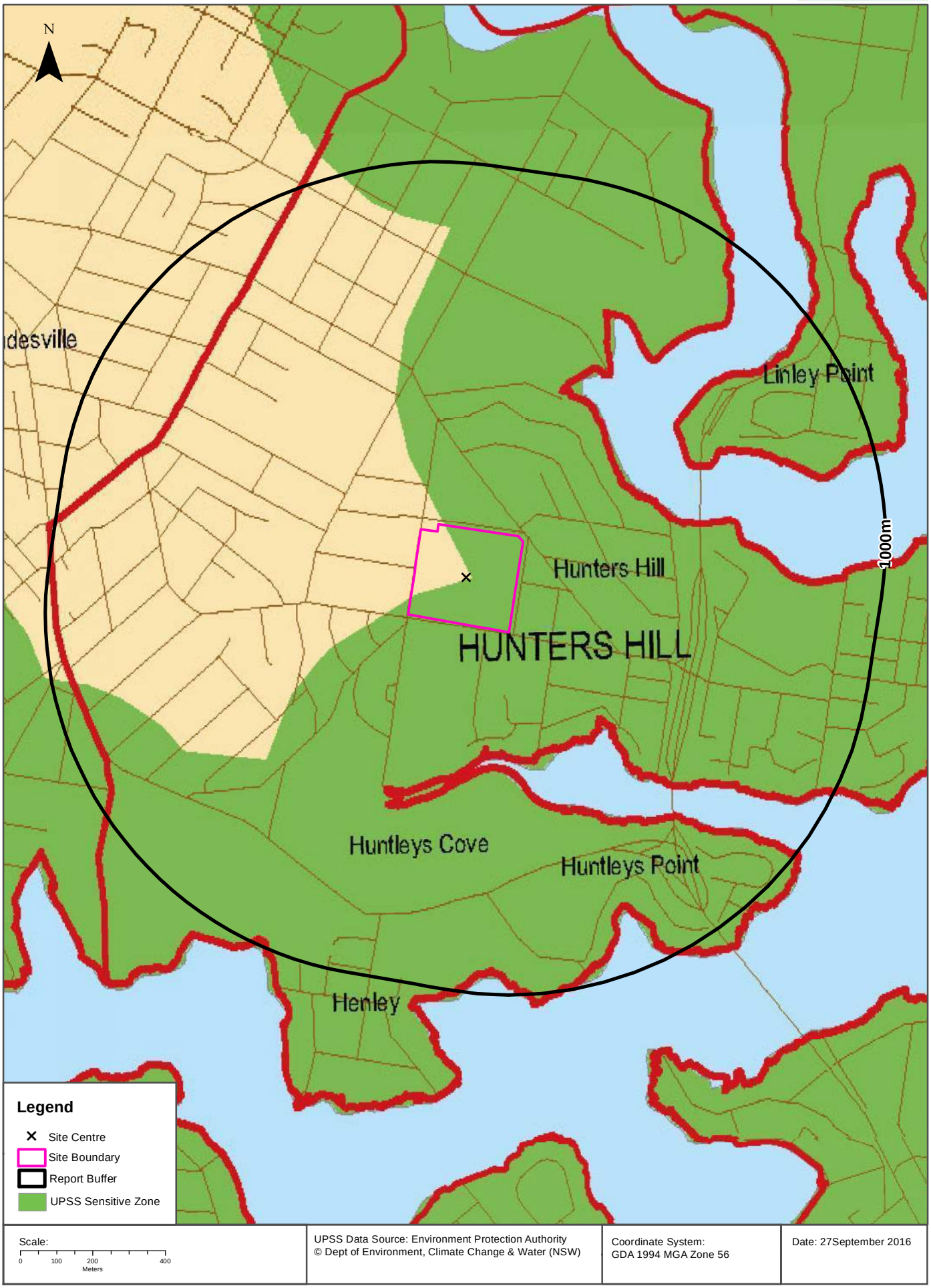
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the report buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	256m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	256m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	256m	-

Former Licensed Activities Data Source: Environment Protection Authority

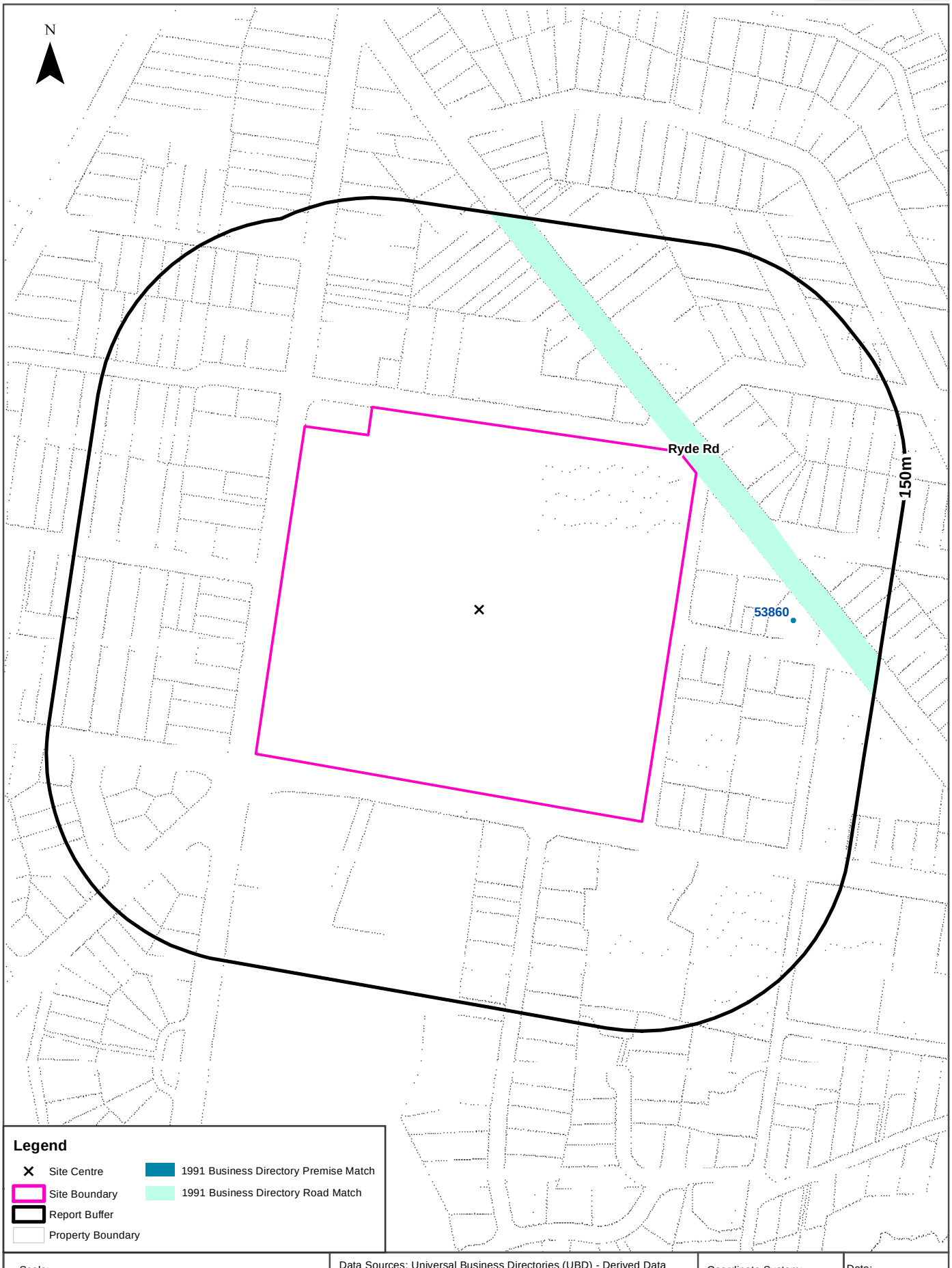
UPSS Sensitive Zones

Mary Street, Hunters Hill, NSW 2110



1991 Historical Business Directory Records

Mary Street, Hunters Hill, NSW 2110



Data Sources: Universal Business Directories (UBD) - Derived Data Licensed from Hardie Grant.
Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System: GDA 1994 MGA Zone 56

Date: 27 September 2016

Historical Business Directories

Mary Street, Hunters Hill, NSW 2110

1991 Business to Business Directory Records

Records from the 1991 UBD Business to Business Directory within 150m of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Airconditioning Automotive	Idrec Pty. Limited	Moocoolboola Service Station, Ryde Rd., Hunters Hill 2110	34142	Road Match	0m	North
Motor Garages & Service Stations	Shell Hunters Hill Auto Port	4 Ryde Rd., Hunters Hill	53860	Premise Match	83m	East

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

1991 Business Directory Motor Garages & Service Stations

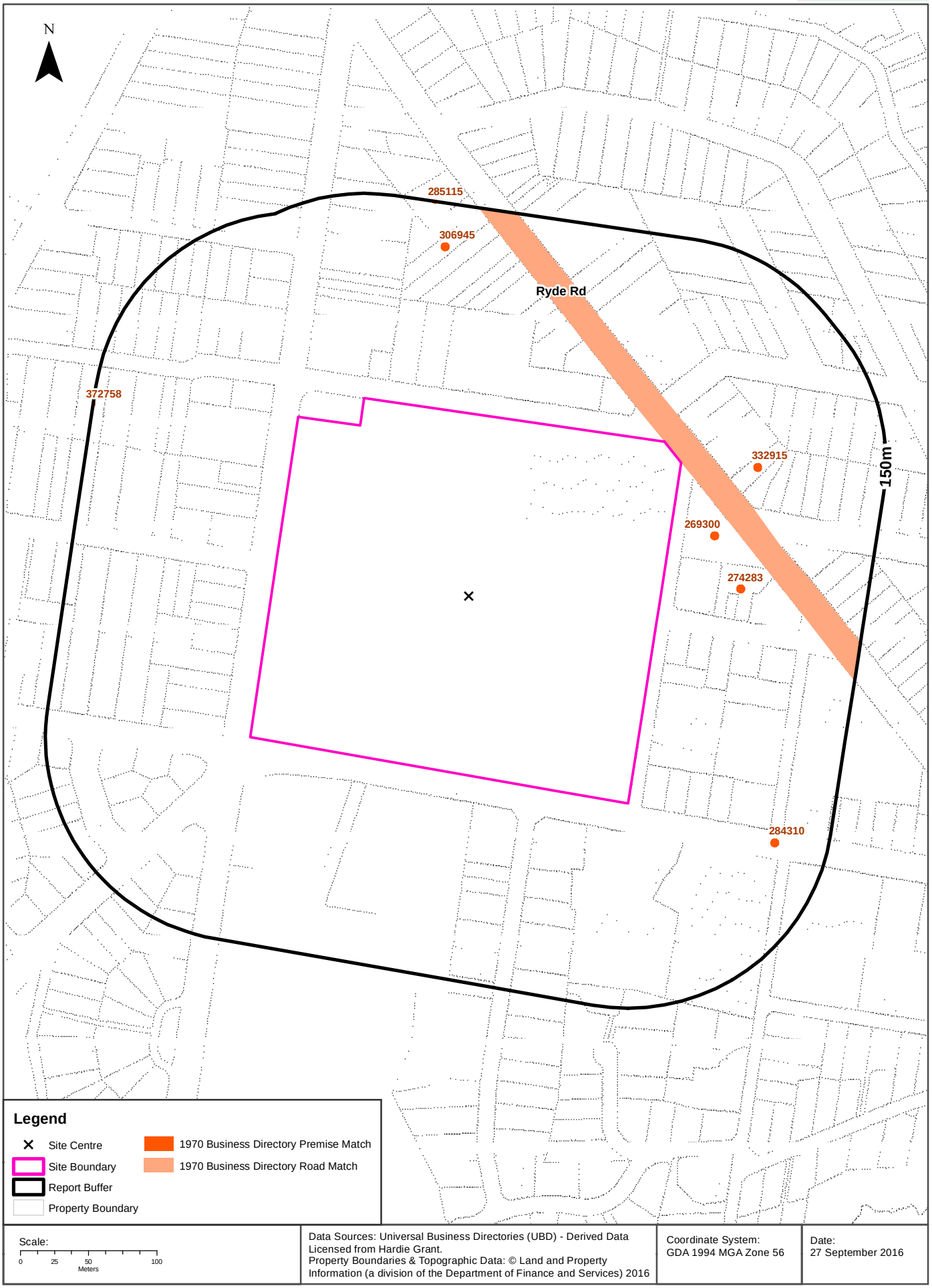
Motor Garages & Service Stations from the 1991 UBD Business Directory within 1km of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Motor Garages & Service Stations	Shell Hunters Hill Auto Port	4 Ryde Rd., Hunters Hill	53860	Premise Match	83m	East
Motor Garages & Service Stations	Cattex Gladesville Service Station	116 Victoria Rd., Gladesville. 2111	53653	Premise Match	964m	South West

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

1970 Historical Business Directory Records

Mary Street, Hunters Hill, NSW 2110



Historical Business Directories

Mary Street, Hunters Hill, NSW 2110

1970 Business Directory Records

Records from the 1970 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES & ENGINEERS (M6S6)	Moocoolboola Service Station,Ryde Rd.HUNTER'S HILL	338281	Road Match	0m	North
BOOT & SHOE REPAIRERS (B580)	Williams, J., 10 Ryde Rd., Hunters Hill	269300	Premise Match	30m	East
MIXED BUSINESSES (M408)	Hunters Hill Bus Stop Store,51 Ryde Rd.,Hunters Hill	332915	Premise Match	54m	North East
BUTCHERS-RETAIL (B860)	Park, AB& N., 6-8 Ryde Rd., Hunters Hill	274283	Premise Match	55m	East
CLUBS & SPORTING BODIES (C487)	Hunter's Hill Women's Bowling Club, Cnr Gladesville Rd & Matthew St, Hunters Hill	284310	Road Intersection	109m	South East
FRUITERERS/GREENGROCERS (F640)	Defina,J.A.,28 Ryde Rd.,Hunters Hill	306945	Premise Match	116m	North
CONCRETE CONTRACTORS-CONSTRUCTIONAL (C560)	Ward, Robert & Son, 32 Ryde Rd., Hunters Hill	285115	Premise Match	150m	North
VETERINARY SURGEONS (V150)	Ryan,W.P.,12 Mark St.,Hunters Hill	372758	Premise Match	150m	North West

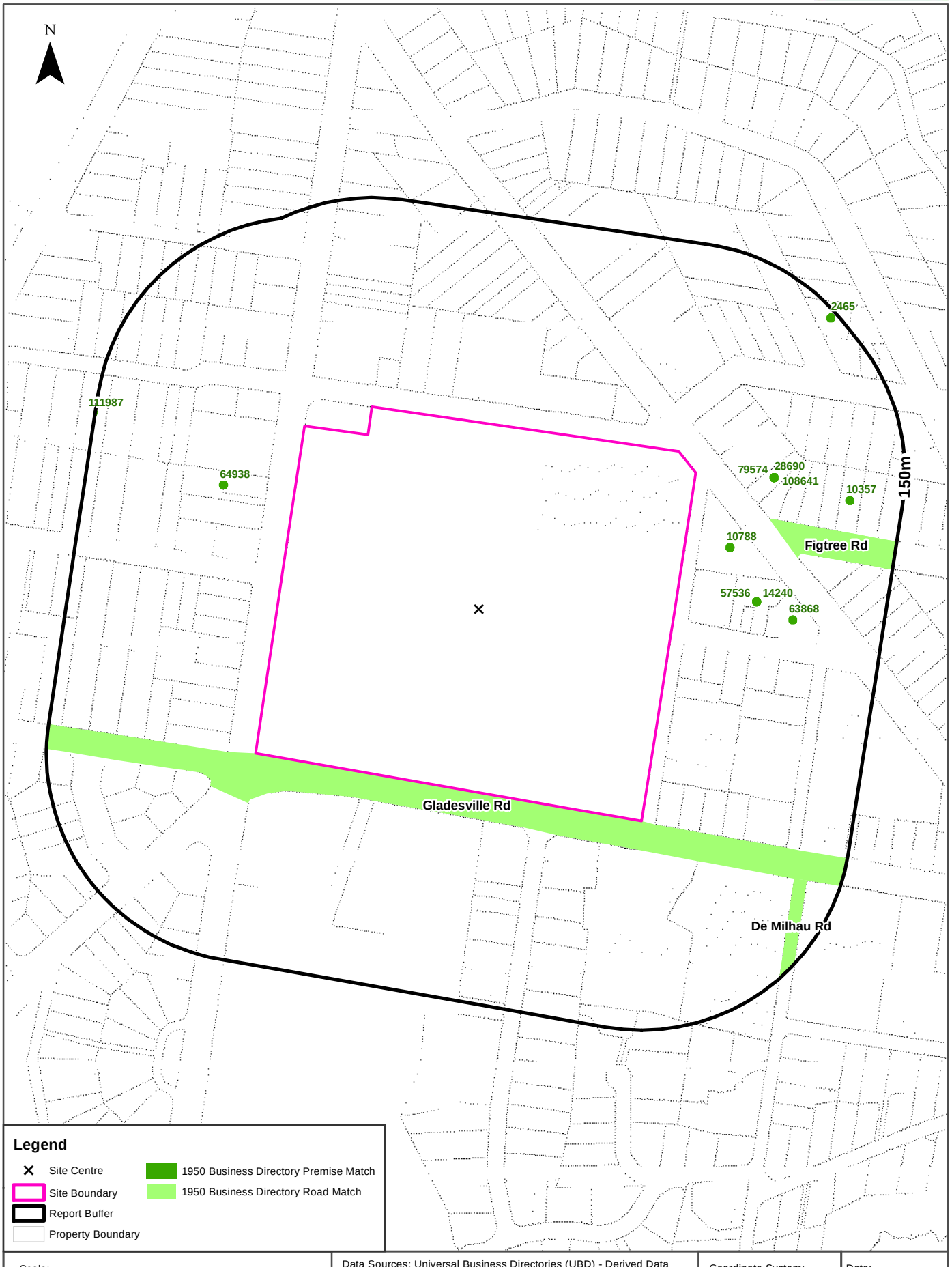
1970 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1970 UBD Business Directory within 1km of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES & ENGINEERS (M6S6)	Moocoolboola Service Station,Ryde Rd.HUNTER'S HILL	338281	Road Match	0m	North
MOTOR GARAGES & ENGINEERS (M6S6)	Tomkins,C. & A.,Rear 55 Gladesville Rd.HUNTER'S HILL	338734	Building Match	308m	South East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Howard's,Heck Garage Pty. Ltd.,55-59 Gladesville Rd.HUNTERS HILL	341218	Building Match	357m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	Hunters Hill Service Station (Mobil),73 Gladesville Rd.HUNTER'S HILL	338034	Building Match	409m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	Fillmore Service Station,107 Victoria Rd.GLADESVILLE	337804	Building Match	788m	South West
DRY CLEANERS,PRESSERS/DYERS (D710)	Prest-Rite Dry Cleaners,177 Victoria Rd.,Gladesville	292463	Building Match	929m	West
MOTOR GARAGES & ENGINEERS (M6S6)	Johnsons,Des Caitex Service Station,116 Victoria Rd.GLADESVILLE	338071	Building Match	964m	South West
MOTOR GARAGES & ENGINEERS (M6S6)	Fox,H. J. Pty. Ltd.,136-138 Victoria Rd.,GLADESVILLE	337823	Building Match	969m	West
DRY CLEANERS,PRESSERS/DYERS (D710)	Gallard,Montcalm,156 Victoria Rd.,Gladesville	292310	Building Match	996m	West

1950 Historical Business Directory Records

Mary Street, Hunters Hill, NSW 2110



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Coordinate System: GDA 1994 MGA Zone 56

Date: 27 September 2016

Historical Business Directories

Mary Street, Hunters Hill, NSW 2110

1950 Business Directory Records

Records from the 1950 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
CARRIERS & CARTAGE CONTRACTORS	Watts, L. H., Gladesville Rd., Hunters Hill	20033	Road Match	0m	South East
BOOT & SHOE REPAIRERS	Williams, J., 10 Ryde Rd., Hunters Hill	10788	Premise Match	30m	East
INSURANCE AGENTS	Morgan, T. J., 44 Mary St., Hunters Hill	64938	Premise Match	49m	North West
MIXED BUSINESSES & GENERAL STORES	Chapman, F., 51 Ryde Rd., Hunters Hill	79574	Premise Match	54m	North East
TOBACCONISTS-RETAIL	Chapman, F., 51 Ryde Rd., Hunters Hill	108641	Premise Match	54m	North East
CONFECTIONERS-RETAIL	Chapman, F., 51 Ryde Rd., Hunters Hill	28690	Premise Match	54m	North East
GROCERS-RETAIL	Goodlands Pty. Ltd., 6 Ryde Rd., Hunters Hill	57536	Premise Match	55m	East
BUTCHERS-RETAIL	Rowe, J., 8 Ryde Rd., Hunters Hill	14240	Premise Match	55m	East
SURVEYORS-QUANTITY	Shaw, C. P., Fig Tree Rd., Hunters Hill	106057	Road Match	57m	East
HOMES & INSTITUTIONS	Warawillah Home For The Blind-Deaf (The), Figtree Rd., Hunters Hill	62467	Road Match	57m	East
ICE MANUFACTURERS & VENDORS	Hunters Hill Ice Works, 4 Ryde Rd., Hunters Hill	63868	Premise Match	83m	East
BOOT & SHOE REPAIRERS	Laidlaw, T. L., 10 Figtree Rd., Hunters Hill	10357	Premise Match	110m	East
MEDICAL PRACTITIONERS	Tooth, K. H., “Paraia”, De Milhause Rd., Hunters Hill	73971	Road Match	117m	South East
MEDICAL PRACTITIONERS	Walsh, R. J., “Paraza”, De Milhaus Rd., Hunters Hill	74027	Road Match	117m	South East
ARCHITECTS	Treen W. A., 1 James St., Hunters Hill	2465	Premise Match	143m	North East
VETERINARY SURGEONS & HOSPITALS	Ryan W. P., 12 Mark St., Hunters Hill	111987	Premise Match	150m	North West

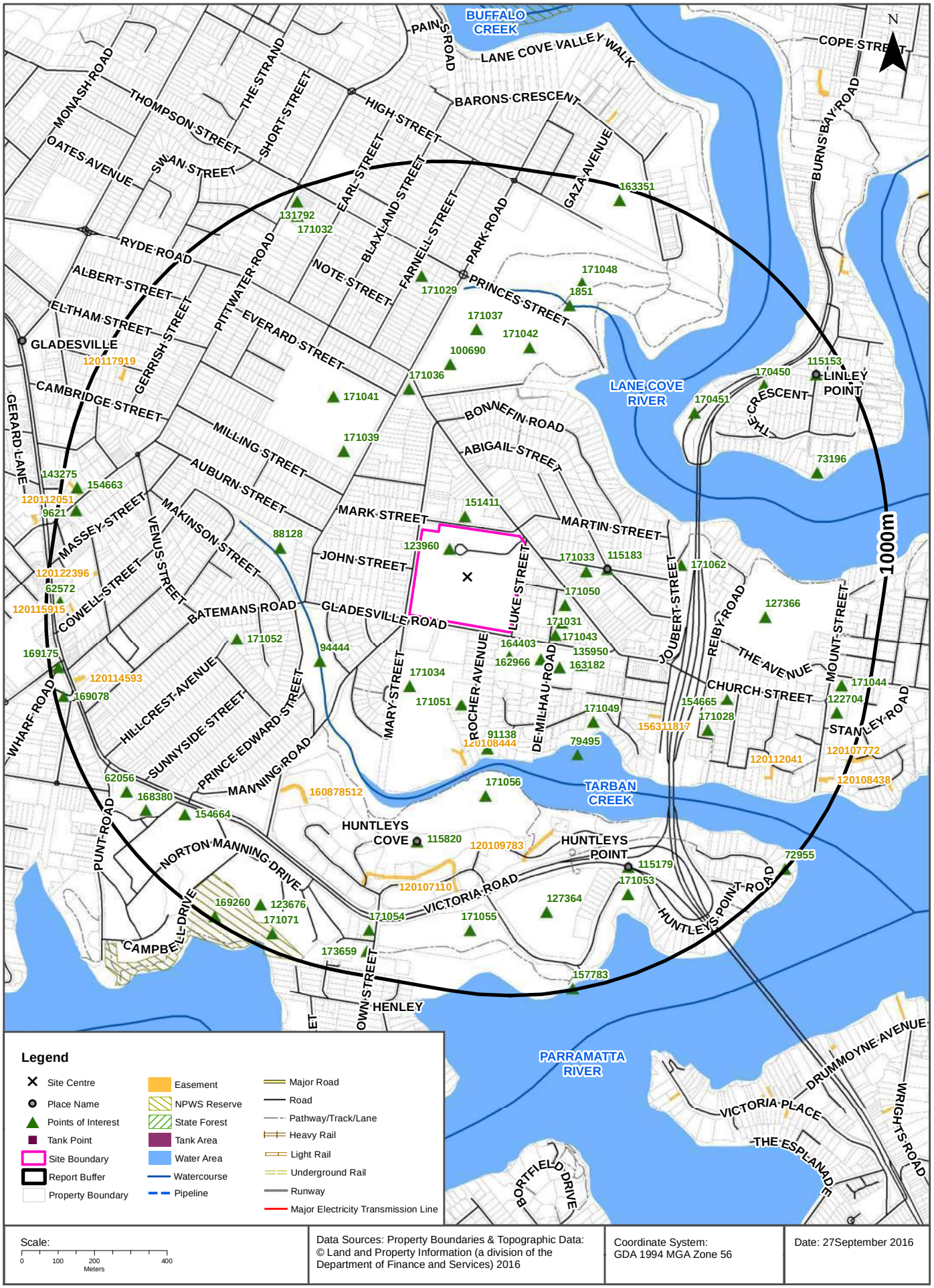
1950 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1950 UBD Business Directory within 1km of the site:

Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES &/OR ENGINEERS	Howard, Heck, 55 Gladesville Rd., Hunters Hill	83887	Premise Match	319m	South East
MOTOR SERVICE STATIONS-PETROL, Etc.	Howard, Heck, 55 Gladesville Rd., Hunters Hill	86067	Premise Match	319m	South East
MOTOR SERVICE STATIONS-PETROL, Etc.	Bell, K., 73 Gladesville Rd., Hunters Hill	85783	Premise Match	409m	South East
MOTOR GARAGES &/OR ENGINEERS	Bell. K., 73 Gladesville Rd., Hunters Hill	83442	Premise Match	409m	South East
MOTOR GARAGES &/OR ENGINEERS	Fillmore Service Station, 107 Victoria Rd., Gladesville	83745	Premise Match	788m	South West
MOTOR SERVICE STATIONS-PETROL, Etc.	Fillmore Service Station, 107 Victoria Rd., Gladesville	85959	Premise Match	788m	South West
DRY CLEANERS, PRESSERS & DYERS	Tasman Dry Cleaners. 22 Pittwater Rd., Gladesville	35760	Premise Match	856m	West
DRY CLEANERS, PRESSERS & DYERS	Gladesville Laundry (The), 177 Victoria Rd., Gladesville	35263	Premise Match	929m	West
DRY CLEANERS, PRESSERS & DYERS	Prest-Rite Dry Cleaners, 177 Victoria Rd., Gladesville	35610	Premise Match	929m	West

Topographic Features

Mary Street, Hunters Hill, NSW 2110



Topographic Features

Mary Street, Hunters Hill, NSW 2110

Points of Interest

What Points of Interest exist within the report buffer?

Map Id	Feature Type	Label	Distance	Direction
123960	High School	ST JOSEPH'S COLLEGE	0m	Onsite
151411	Primary School	VILLA MARIA CATHOLIC PRIMARY SCHOOL	33m	North
164403	Retirement Village	THE HERITAGE	67m	South East
162966	Community Home	ST ANNE'S AGED CARE	112m	South East
171031	Community Facility	HUNTERS HILL CROQUET CLUB	124m	South East
171043	Sports Field	CROQUET GREEN	137m	South East
171050	Park	FIG TREE PARK	138m	East
163182	Community Home	ST JOSEPH AGED CARE	167m	South East
171033	Place Of Worship	ANGLICAN CHURCH	181m	East
171034	Place Of Worship	CATHOLIC CHURCH	192m	South West
135950	Retirement Village	HUNTERS HILL LODGE	217m	South East
171051	Park	HEYDON PARK	219m	South
115183	Suburb	HUNTERS HILL	238m	East
94444	Park	TARBAN CREEK RESERVE	276m	South West
171039	Sports Court	TENNIS COURTS	306m	North West
91138	Park	VILLA MARIA RESERVE	324m	South
171049	Park	MURRAY-PRIOR RESERVE	336m	South East
88128	Park	Park	379m	West
79495	Bay / Inlet / Basin	TARBAN BAY	384m	South East
171036	Park	ST JOHNS PARK	384m	North
171062	Park	SAINT MALO RESERVE	436m	East
171041	Sports Field	CRICKET GROUND	441m	North West
100690	Sports Field	OVAL	442m	North
171056	Park	RIVERGLADE RESERVE	455m	South
171052	Park	HARDING MEMORIAL PLAYGROUND	479m	West
171042	Sports Field	PLAYING FIELDS	518m	North
171037	Sports Field	CRICKET GROUND	547m	North
170451	Picnic Area	CUNNINGHAMS REACH	588m	North East
171028	Community Facility	SCOUT HALL	606m	South East
115820	Suburb	HUNTLEYS COVE	611m	South
154665	Medical Centre	HUNTERS HILL COMMUNITY HEALTH CENTRE	624m	South East
1851	Waterfall	TIPPERARY FALLS	650m	North
171029	Community Facility	SCOUT HALL	686m	North

Map Id	Feature Type	Label	Distance	Direction
127366	High School	HUNTERS HILL HIGH SCHOOL	687m	East
171048	Park	BORONIA PARK RESERVE	718m	North
115179	Suburb	HUNTLEYS POINT	723m	South East
127364	High School	RIVERSIDE GIRLS HIGH SCHOOL	775m	South
170450	Park	GARRAWAY LOOKOUT	788m	North East
171053	Park	BETTS PARK	790m	South East
154664	Medical Centre	GLADESVILLE HOSPITAL COMMUNITY HEALTH	826m	South West
171055	Park	GLADESVILLE RESERVE	827m	South
73196	Headland	LINLEY POINT	828m	East
171054	Park	HENNEY COTTAGE RESERVE	873m	South
123676	Swimming Pool	Swimming Pool	896m	South West
168380	SES Facility	HUNTERS HILL SES	902m	South West
62056	Police Station	GLADESVILLE POLICE STATION	917m	South West
171044	Park	HARRY SHELLEY MEMORIAL PLAYGROUND	923m	East
122704	General Hospital	HUNTERS HILL PRIVATE HOSPITAL	925m	East
115153	Suburb	LINLEY POINT	925m	North East
171032	Place Of Worship	UNITING CHURCH	930m	North West
173659	Child Care Centre	HENLEY LONG DAY CARE CENTRE	932m	South
9621	Fire Station	GLADESVILLE FIRE STATION	948m	West
171071	Park	BEDLAM BAY PARRAMATTA RIVER REGIONAL PARK	954m	South West
143275	Library	GLADESVILLE LIBRARY	955m	West
154663	Medical Centre	GLADESVILLE COMMUNITY HEALTH CENTRE	955m	West
62572	Post Office	GLADESVILLE POST OFFICE	961m	West
163351	Community Home	HUNTERS HILL MONTEFIORE HOME	966m	North
131792	Post Office	BORONIA PARK POST OFFICE	967m	North West
169175	Monument	SHERIDAN MEMORIAL CLOCK	975m	West
169078	Place Of Worship	UNITING CHURCH	976m	West
169260	Sports Field	CRICKET OVAL	988m	South West
157783	Wharf	HUNTLEYS POINT WHARF	995m	South
72955	Headland	HUNTLEYS POINT	997m	South East

Topographic Features

Mary Street, Hunters Hill, NSW 2110

Tanks (Areas)

What are the Tank Areas located within the report 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	Capture Method	Feature Currency	Distance	Direction
N/A	No records in buffer						

Tanks (Points)

What are the Tank Points located within the report 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	Capture Method	Feature Currency	Distance	Direction
N/A	No records in buffer						

Major Easements

What Major Easements exist within the report 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
120108444	Primary	Undefined		340m	South
156311817	Primary	Right of way	2.7m	445m	South East
120109783	Primary	Undefined		556m	South
160878512	Primary	Right of way	6.5m & Var	560m	South West
120107110	Primary	Undefined		647m	South
120112041	Primary	Undefined		807m	South East
120122396	Primary	Undefined		866m	West
120114593	Primary	Undefined		909m	West
120115915	Primary	Undefined		920m	West
120117919	Primary	Undefined		922m	North West
120108438	Primary	Undefined		942m	South East
120112051	Primary	Undefined		945m	West
120107772	Primary	Undefined		992m	South East

Topographic Features

Mary Street, Hunters Hill, NSW 2110

State Forest

What State Forest exist within the report buffer?

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

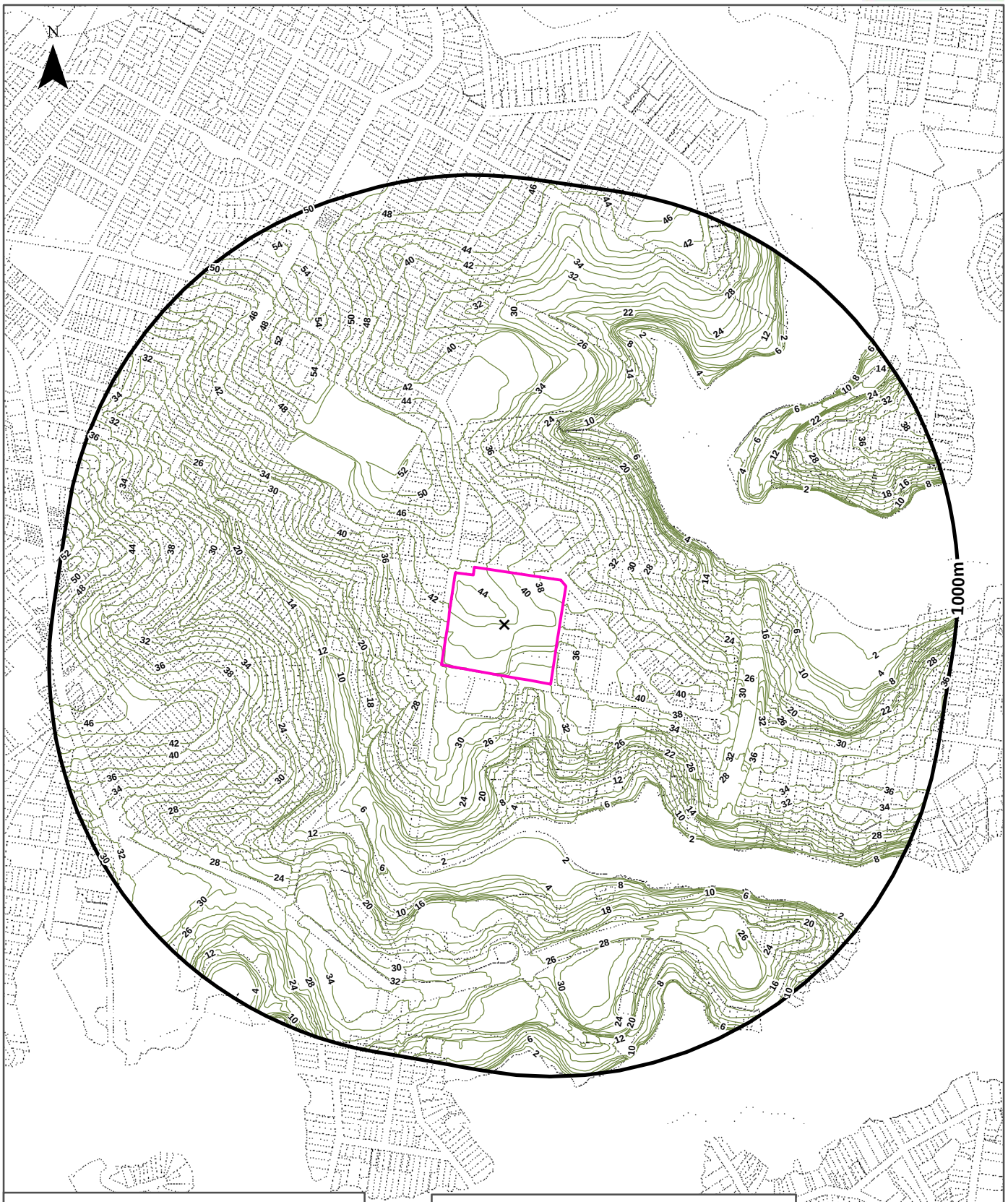
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the report buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N0645	REGIONAL PARK	Parramatta River Regional Park	25/05/2001	892m	South West

Elevation Contours (m AHD)

Mary Street, Hunters Hill, NSW 2110



Legend

- Site Centre
- 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: 0 100 200 400 Meters

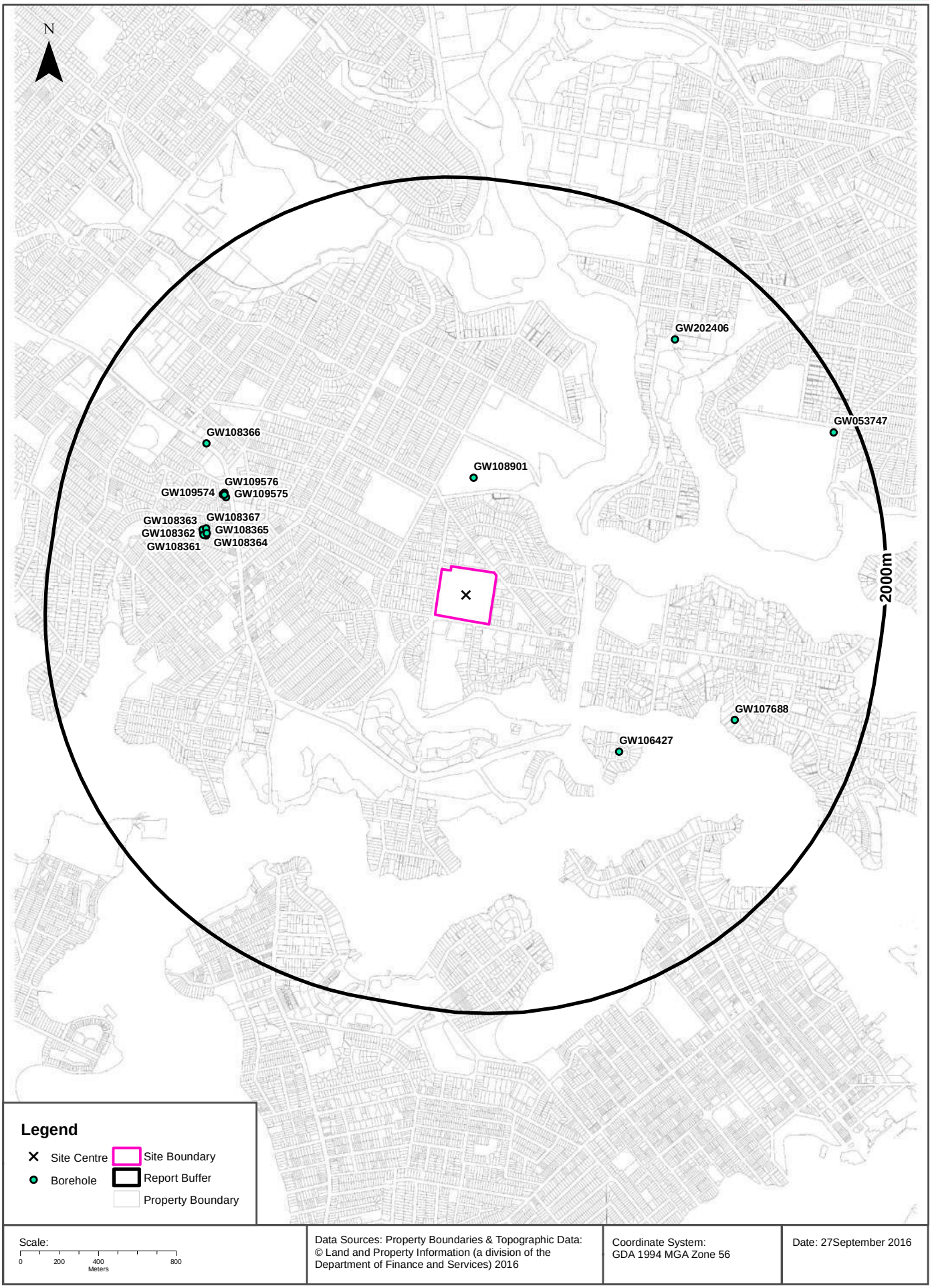
Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System: GDA 1994 MGA Zone 56

Date: 27September 2016

Groundwater Boreholes

Mary Street, Hunters Hill, NSW 2110



Hydrogeology & Groundwater

Mary Street, Hunters Hill, NSW 2110

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the report buffer:

Description
Porous, extensive aquifers of low to moderate productivity

Groundwater Boreholes

Boreholes within 2km of the site:

GW No.	Licence No	Work Type	Owner Type	Purpose	Contractor	Complete Date	Final Depth	Drilled Depth	Salinity	SWL	Yield	Elev	Dist	Dir
GW108901	10BL600805, 10BL601801, 10WA109489	Bore	Private	Recreation	Intertec Drilling Services	06/06/2008	182.50	182.50	2600	38.00	0.750		466m	North
GW106427	10BL162425, 10WA108612	Well		Domestic		01/01/1950	3.00			3.00	10.000		938m	South East
GW109575	10BL163662	Bore	Private	Monitoring	Macquarie Drilling	05/11/2002	7.50	7.50		3.23			1166m	West
GW109573	10BL163662	Bore	Private	Monitoring	Macquarie Drilling	04/11/2002	8.10	8.10		4.47			1178m	West
GW109576	10BL163662	Bore	Private	Monitoring	Macquarie Drilling	05/11/2002	8.10	8.10		3.51			1181m	North West
GW109574	10BL163662	Bore	Private	Monitoring	Macquarie Drilling	04/11/2002	9.00	9.00		4.28			1186m	West
GW108365	10BL164948	Bore				10/09/2007							1219m	West
GW108364	10BL164948	Bore				10/09/2007							1220m	West
GW108367	10BL164948	Bore				10/09/2007							1225m	West
GW108361	10BL164948	Bore		Monitoring		01/03/2005	6.00						1233m	West
GW108362	10BL164948	Bore				10/09/2007							1238m	West
GW108363	10BL164948	Bore				10/09/2007							1242m	West
GW107688	10BL164484, 10WA108888	Bore				21/12/2006							1356m	South East
GW108366	10BL164948	Bore				10/09/2007							1368m	North West
GW202406	10BL604362	Bore	Private	Monitoring		27/08/2010	6.00	6.00		2.10	40.000		1516m	North East
GW053747	10BL122120	Bore open thru rock	Private	Recreation		01/10/1982	30.50	30.50	0-500 ppm				1880m	North East

Hydrogeology & Groundwater

Mary Street, Hunters Hill, NSW 2110

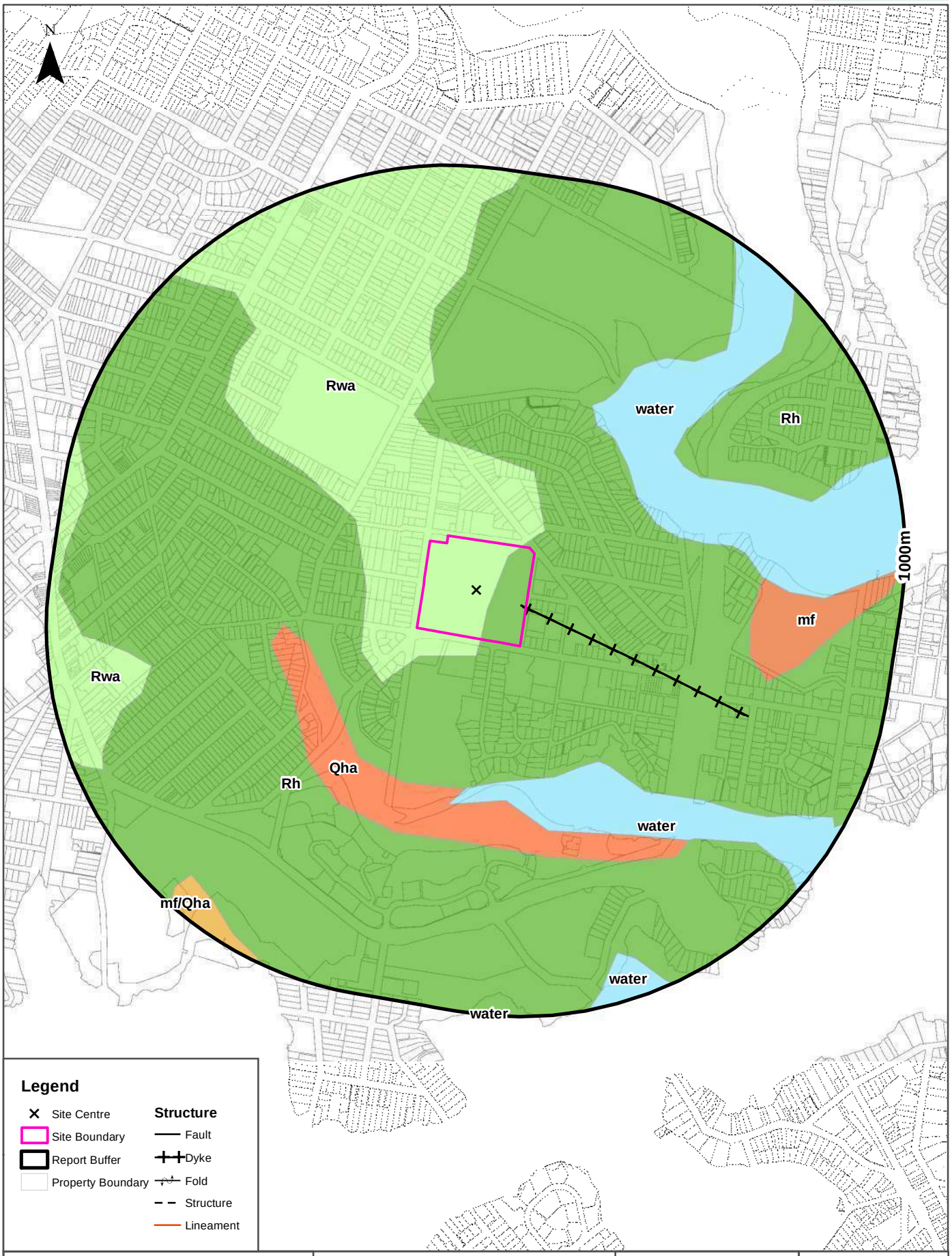
Driller's Logs

Drill log data relevant to the boreholes within 2km of the site:

Groundwater No	Drillers Log	Distance	Direction
GW108901	0.00m-1.00m FILL,SAND AND ROCKS 1.00m-9.80m SANDSTONE L/BROWN 9.80m-9.90m SANDSTONE FRACTURED 9.90m-30.30m SANDSTONE GREY 30.30m-30.40m SANDSTONE FRACTURED 30.40m-41.00m SANDSTONE GREY 41.00m-43.00m SANDSTONE SHALE BEDDING 43.00m-111.00m SANDSTONE GREY 111.00m-114.00m SANDSTONE SHALE BEDDING 114.00m-133.00m SANDSTONE GREY 133.00m-133.50m SANDSTONE FINE QUARTZ 133.50m-169.00m SANDSTONE GREY 169.00m-174.50m SANDSTONE SHALE BEDDING 174.50m-178.00m SANDSTONE FINE QUARTZ 178.00m-179.50m SANDSTONE, QUARTZ VERY SOFT 179.50m-182.50m SANDSTONE GREY	466m	North
GW109575	0.00m-0.90m FILL 0.90m-1.10m CLAY,SILTY,BROWN 1.10m-2.00m CLAY SANDY ORANGE 2.00m-5.50m SHALE,BROWN 5.50m-7.50m SHALE,WEATHERED, GREY,HARD	1166m	West
GW109573	0.00m-2.20m FILL 2.20m-4.00m CLAY 4.00m-5.00m SHALE 5.00m-8.10m SHALE VERY HARD	1178m	West
GW109576	0.00m-0.50m FILL 0.50m-1.20m CLAY 1.20m-3.00m CLAY,SANDY,WEATHERED,GREY BROWN 3.00m-6.00m SHALE,BROWN,DRY,SOFT 6.00m-8.10m SHALE DARK GREY,SOFT	1181m	North West
GW109574	0.00m-0.60m FILL 0.60m-1.10m FILL,CLAY 1.10m-1.40m FILL,SAND 1.40m-2.00m CLAY 2.00m-2.90m CLAY L/BROWN 2.90m-7.00m SHALE 7.00m-9.00m SHALE DARK GREY	1186m	West
GW202406	0.00m-0.20m Fill; Concrete 0.20m-0.65m Fill; Silty Sandy Clay, low plasticity, dark brown, fine to medium grained sand, with igneous gravel 0.65m-2.50m Sandstone; fine to coarse grained, orange & yellow 2.50m-4.00m Sandstone; as above, but light grey, brown & orange 4.00m-6.00m Sandstone; as above, but orange & grey	1516m	North East
GW053747	0.00m-0.18m Soil Sandy 0.18m-2.65m Sandstone Yellow Silty 2.65m-4.42m Sandstone Silty 4.42m-7.50m Sandstone Yellow Silty Water Supply 7.50m-11.55m Sandstone Grey 11.55m-11.89m Shale 11.89m-30.48m Sandstone Grey	1880m	North East

Geology 1:100,000

Mary Street, Hunters Hill, NSW 2110



Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System: GDA 1994 MGA Zone 56

Date: 27September 2016

Geology

Mary Street, Hunters Hill, NSW 2110

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rh	Medium to coarse grained quartz sandstone, very minor shale and laminate lenses				Triassic		Sydney	1:100,000
Rwa	Black to dark grey shale and laminate	Ashfield Shale	Wianamatta Group		Triassic		Sydney	1:100,000

What are the Geological Units within the report buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
mf	Man-made fill. Dredged estuarine sand and mud, demolition rubble, industrial and household waste.				Quaternary		Sydney	1:100,000
mf/Qha	Man-made fill (dredged estuarine sand and mud, demolition rubble, industrial and household waste) overlying silty to peaty quartz sand, silt and clay with ferruginous & humic cementation in places and common shell layers				Quaternary		Sydney	1:100,000
Qha	Silty to peaty quartz sand, silt, and clay. Ferruginous and humic cementation in places. Common shell layers				Quaternary		Sydney	1:100,000
Rh	Medium to coarse grained quartz sandstone, very minor shale and laminate lenses				Triassic		Sydney	1:100,000
Rwa	Black to dark grey shale and laminate	Ashfield Shale	Wianamatta Group		Triassic		Sydney	1:100,000
water							Sydney	1:100,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
Dyke			Sydney	1:100,000

What are the Geological Structures within the report buffer?

Feature	Name	Description	Map Sheet	Dataset
Dyke			Sydney	1:100,000

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

Naturally Occurring Asbestos Potential

Mary Street, Hunters Hill, NSW 2110

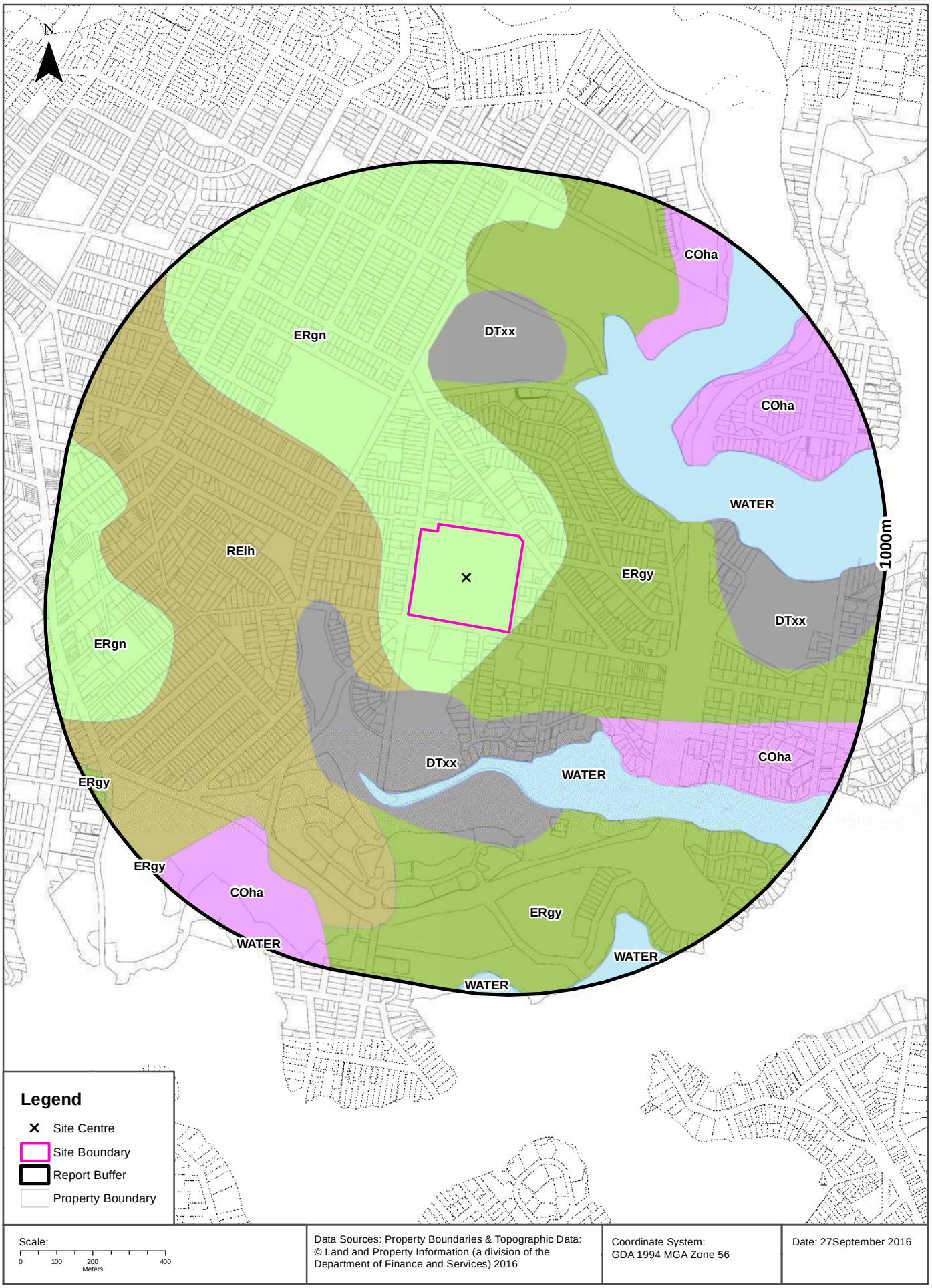
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the report 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

Mary Street, Hunters Hill, NSW 2110



Soils

Mary Street, Hunters Hill, NSW 2110

Soil Landscapes

What are the onsite Soil Landscapes?

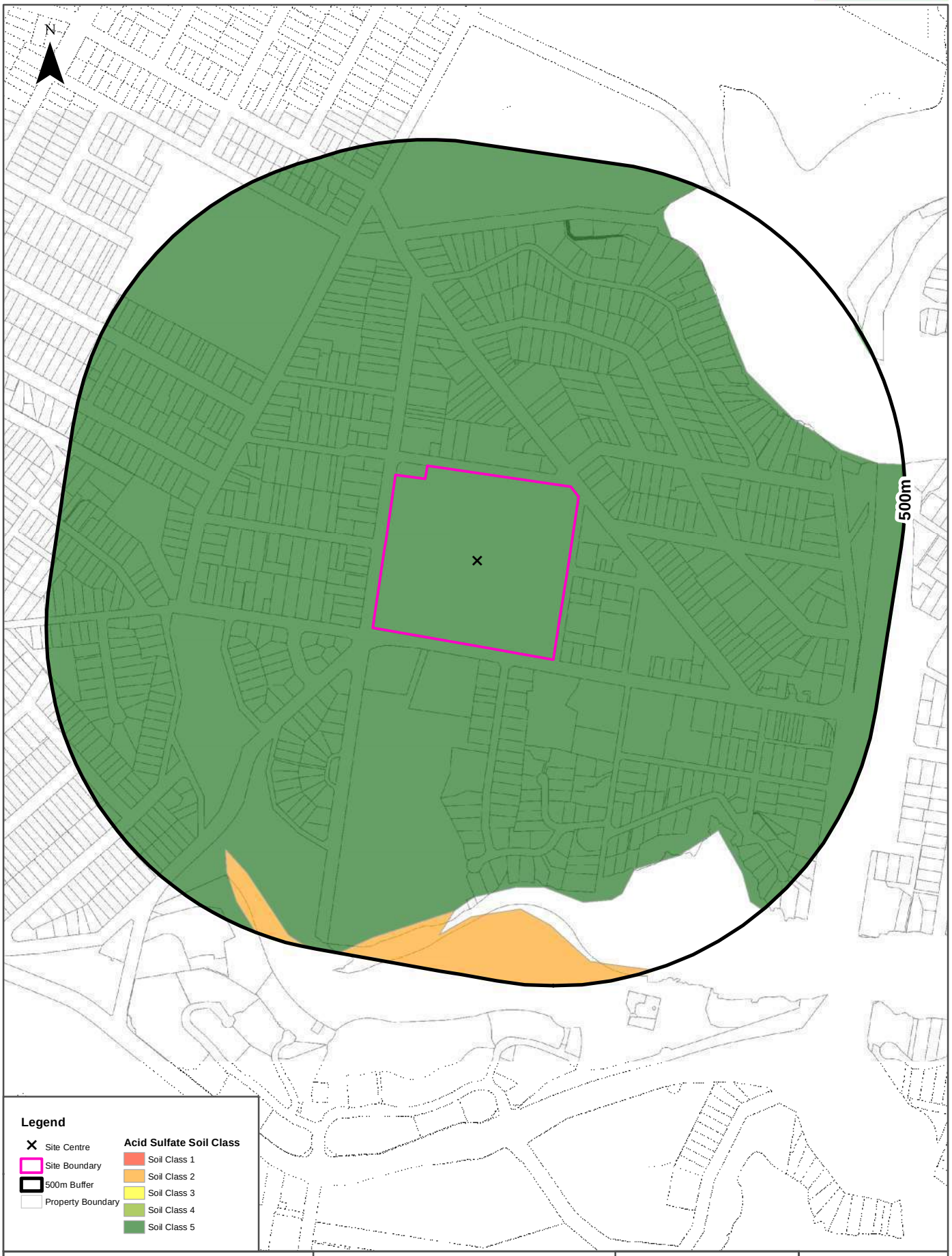
Soil Code	Name	Group	Process	Map Sheet	Scale
ERgn	GLENORIE		EROSIONAL	Sydney	1:100,000

What are the Soil Landscapes within the report buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
COha	HAWKESBURY		COLLUVIAL	Sydney	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Sydney	1:100,000
ERgn	GLENORIE		EROSIONAL	Sydney	1:100,000
ERgy	GYMEA		EROSIONAL	Sydney	1:100,000
RElh	LUCAS HEIGHTS		RESIDUAL	Sydney	1:100,000
WATER	WATER		WATER	Sydney	1:100,000

Acid Sulfate Soils

Mary Street, Hunters Hill, NSW 2110



Acid Sulfate Soils

Mary Street, Hunters Hill, NSW 2110

Acid Sulfate Soils

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

Soil Class	Description
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land which are likely to lower the watertable below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk

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

Soil Class	Description	Distance	Direction
2	Works below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered present an environmental risk	385m	South

Dryland Salinity

Mary Street, Hunters Hill, NSW 2110

Dryland Salinity

Is there Dryland Salinity data onsite?

No

Is there Dryland Salinity data within the report 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.

Mining Subsidence Districts

Mary Street, Hunters Hill, NSW 2110

Mining Subsidence Districts

Mining Subsidence Districts within the report buffer?

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

Environmental Zoning

Mary Street, Hunters Hill, NSW 2110

State Environmental Planning Policy Protected Areas

Are there any State Environmental Planning Policy Protected Areas onsite or within the report 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	No	N/A

State Environmental Planning Policy Major Developments (2005)

State Environmental Planning Policy Major Developments within the report buffer?

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

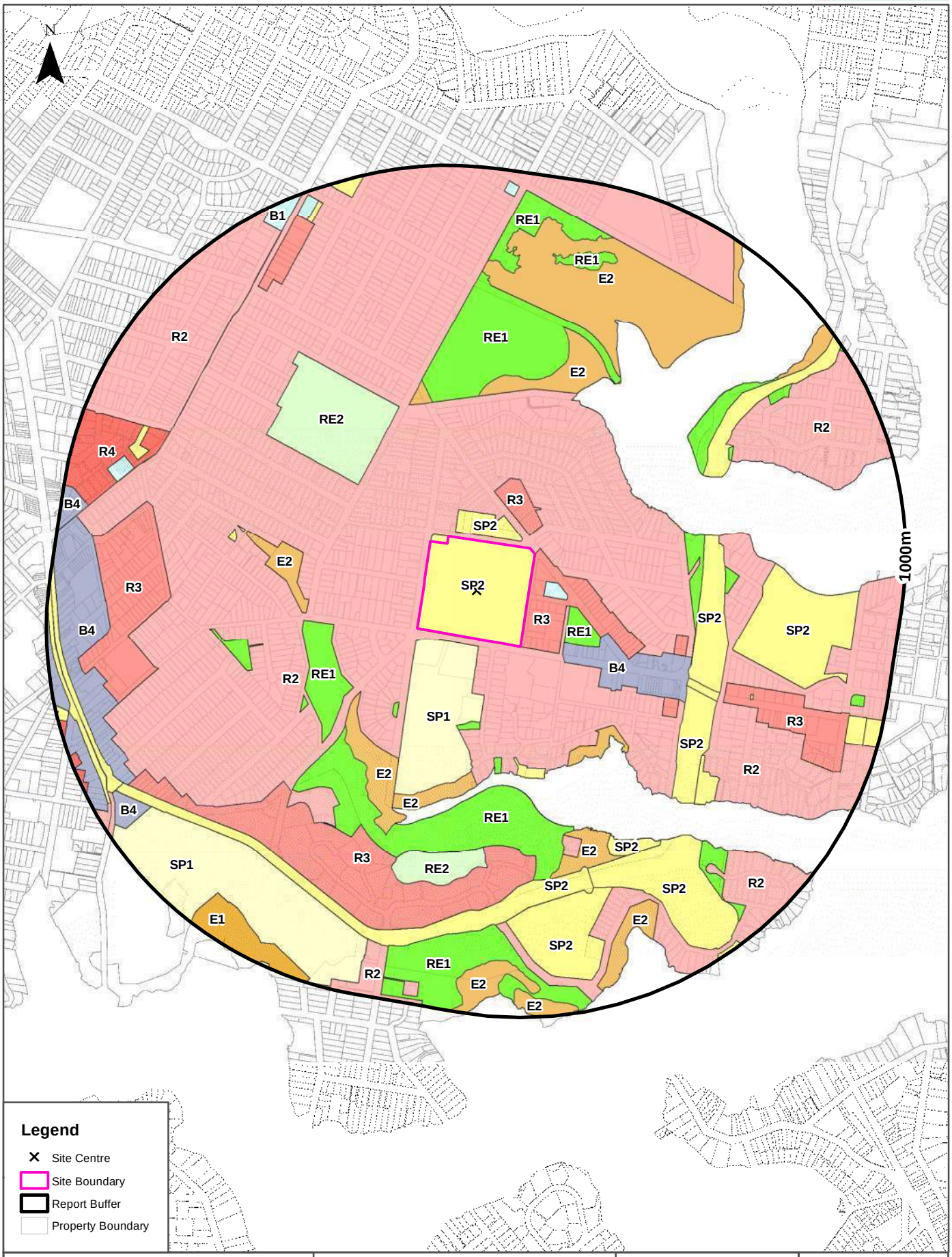
State Environmental Planning Policy Strategic Land Use Areas

State Environmental Planning Policy Strategic Land Use Areas onsite or within the report buffer?

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

LEP Planning Zones

Mary Street, Hunters Hill, NSW 2110



Local Environmental Plan

Mary Street, Hunters Hill, NSW 2110

Land Zoning

What Local Environmental Plan Land Zones exist within the report buffer?

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		0m	Onsite
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		0m	North
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		0m	East
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		15m	North
SP1	Special Activities	Place of Public Worship	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		19m	South
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		35m	North East
B1	Neighbourhood Centre		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		40m	East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		114m	East
B4	Mixed Use		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		115m	South East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		204m	South West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		220m	South
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		227m	South West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		227m	South West
RE2	Private Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		249m	North West
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		299m	South
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		302m	West
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		303m	South East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		304m	South
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		324m	South
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		354m	South
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		354m	South West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		356m	South West
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		364m	North
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		366m	North
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		386m	North
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		405m	East
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		410m	East
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		411m	South East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		419m	West
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		454m	East

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		458m	South East
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		496m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	31/07/2015		496m	North East
SP2	Infrastructure	Sewerage System	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		499m	West
SP2	Infrastructure	Road	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	31/07/2015		500m	North East
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		502m	North East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		512m	East
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		515m	South East
SP2	Infrastructure	Sewerage System	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		519m	West
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		521m	North
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		521m	South
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		539m	South West
RE2	Private Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		550m	South
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		559m	South East
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		564m	East
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		565m	East
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		569m	South East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	31/07/2015		580m	North East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	31/07/2015		585m	North East
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		618m	South
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		624m	South East
SP2	Infrastructure	Electricity Distribution	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		633m	East
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		670m	West
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		677m	South
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		694m	South East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		717m	South East
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		724m	North
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		726m	North
SP1	Special Activities	Hospital	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		741m	South West
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	31/07/2015		752m	North East
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		752m	South
R2	Low Density Residential		Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	11/09/2015	Amendment No 2	758m	North West
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		761m	South East
R4	High Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		763m	West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		766m	North
SP2	Infrastructure	Electricity Generating Works	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		797m	North West

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R3	Medium Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		802m	North West
E2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	31/07/2015		806m	North East
B1	Neighbourhood Centre		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		824m	West
B4	Mixed Use		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		828m	West
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		847m	South
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		847m	South
B4	Mixed Use		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		863m	South West
E1	National Parks and Nature Reserves		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		892m	South West
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		896m	West
RE1	Public Recreation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		902m	East
SP2	Infrastructure	Health Services Facility	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		904m	East
SP2	Infrastructure	Car Park	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		917m	North West
E2	Environmental Conservation		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		921m	South
B4	Mixed Use		Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	11/09/2015	Amendment No 2	927m	West
B1	Neighbourhood Centre		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		928m	North West
B1	Neighbourhood Centre		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		929m	North West
SP2	Infrastructure	Classified Road	Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	11/09/2015	Amendment No 2	930m	North West
B1	Neighbourhood Centre		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		933m	North
R2	Low Density Residential		Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		936m	South West
B4	Mixed Use		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		947m	South West
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		949m	East
SP2	Infrastructure	Educational Establishment	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		950m	North
R2	Low Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		951m	South West
B4	Mixed Use		Ryde Local Environmental Plan 2014	10/04/2015	10/04/2015	11/09/2015	Amendment No 2	959m	West
SP2	Infrastructure	Place of Public Worship	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		966m	West
R4	High Density Residential		Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	11/09/2015		974m	West
SP2	Infrastructure	Classified Road	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		982m	South East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	31/07/2015		987m	North East

Local Environmental Plan

Mary Street, Hunters Hill, NSW 2110

Minimum Subdivision Lot Size

What are the onsite Local Environmental Plan Minimum Subdivision Lot Sizes?

Symbol	Minimum Lot Size	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
No Data							

Maximum Height of Building

What are the onsite Local Environmental Plan Maximum Height of Buildings?

Symbol	Maximum Height of Building	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
No Data							

Floor Space Ratio

What are the onsite Local Environmental Plan Floor Space Ratios?

Symbol	Floor Space Ratio	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
No Data							

Land Application

What are the onsite Local Environmental Plan Land Applications?

Application Type	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
Included	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	12/08/2013		100

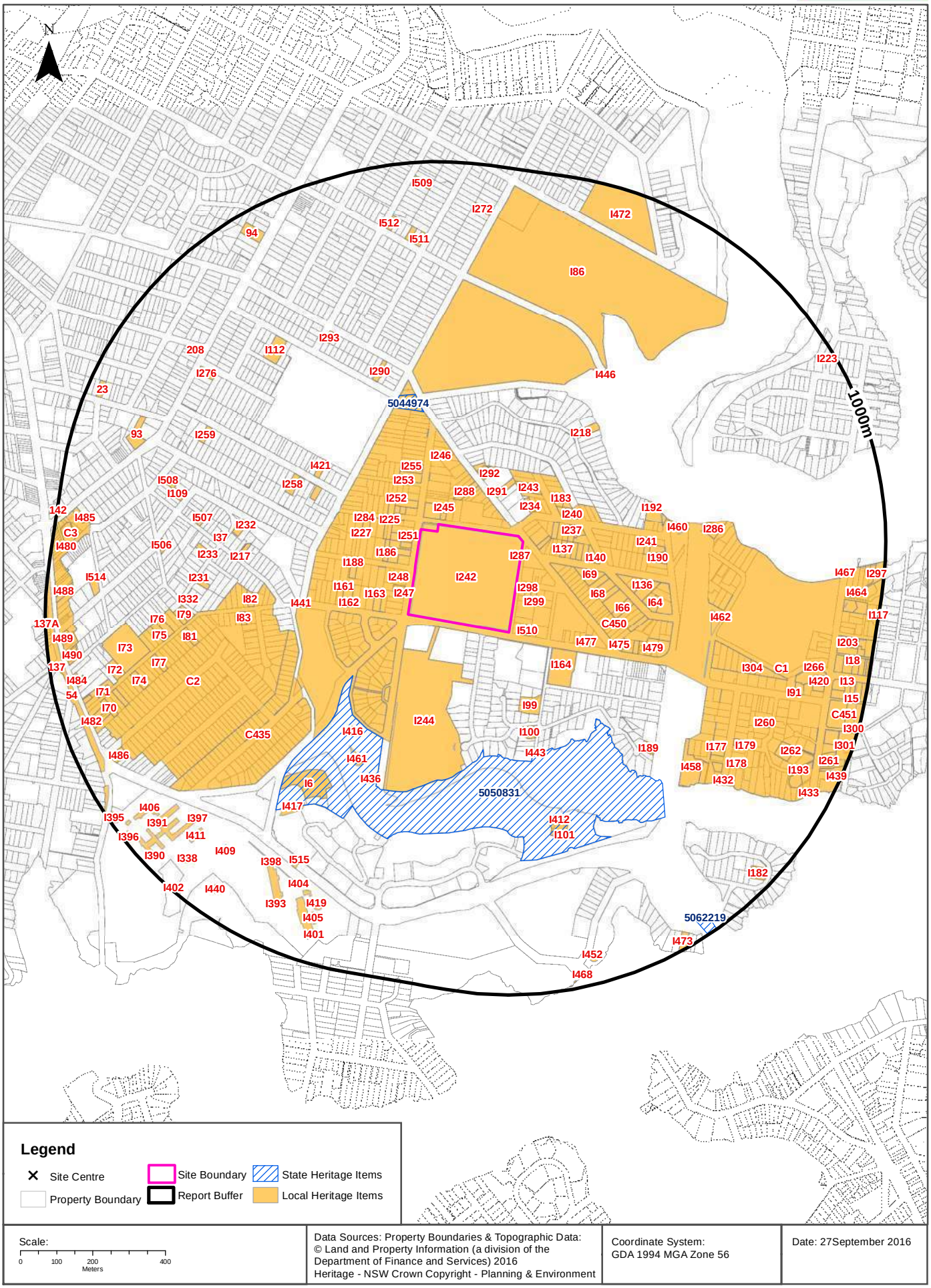
Land Reservation Acquisition

What are the onsite Local Environmental Plan Land Reservation Acquisitions?

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

Heritage Items

Mary Street, Hunters Hill, NSW 2110



Legend

✕ Site Centre	Site Boundary	State Heritage Items	
Property Boundary	Report Buffer	Local Heritage Items	

Scale: 0 100 200 400 Meters

Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016
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Coordinate System: GDA 1994 MGA Zone 56

Date: 27September 2016

Heritage

Mary Street, Hunters Hill, NSW 2110

State Heritage Items

What are the State Heritage Items located within the report buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5050831	The Priory		Hunters Hill		01720	1974	228m	South
5044974	Marika	46 Ryde Road Hunters Hill	Hunters Hill		00300	687	314m	North
5062219	Gladesville Bridge		Canada Bay		1935	2625	948m	South East

Local Heritage Items

What are the Local Heritage Items located within the report buffer?

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
C1	Hunters Hill Conservation Area No 2 - The Peninsula	Conservation Area - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	0m	Onsite
I242	St Joseph's College, including stone walls and gates	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	0m	Onsite
I287	Stone walls	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	0m	Onsite
I245	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	16m	North West
I226	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	16m	North
I244	Villa Maria church monastery and grounds	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	19m	South
I247	House, 'Dacre Villa'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	20m	West
I248	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	20m	West
I249	House, 'Viewforth'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	20m	West
I250	House, formerly 'Toorak'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	20m	North West
I251	House, 'St Elmo'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	20m	North West
I298	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	26m	East
I289	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	37m	North East
C435	Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	37m	South West

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I299	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	42m	East
I510	House, 'Leura'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	42m	South East
I187	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	52m	West
I252	House, 'Haeremai'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	60m	North West
I228	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	63m	North West
I234	House, 'Josie'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	72m	North East
C435	Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	75m	South West
I229	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	76m	North West
I288	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	76m	North
I235	House, 'Woodville'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	77m	North East
I186	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	79m	West
I163	House, 'Nobel'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	80m	West
I225	House and shop	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	81m	North West
C450	Fig Tree Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	82m	East
I230	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	87m	North West
I291	House, 'Irene'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	97m	North East
I137	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	105m	East
I237	House, 'Wairoa'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	121m	North East
I243	Moreton Bay Fig Tree	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	124m	North East
I184	House, 'Daybreak', formerly 'College View'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	124m	North East
I164	School, 'Toronto'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	126m	South East
I236	House, 'Lilyville'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	126m	North East
I253	House, 'Kentigern'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	126m	North West
C435	Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	130m	South West
I183	House, 'Richmond'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	133m	North East
I138	House, 'Stoneleigh'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	135m	East

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I238	House, 'Melba'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	137m	North East
I292	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	139m	North
I239	House, 'Dorisville'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	140m	East
I284	Moreton Bay Fig Tree	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	141m	North West
I227	House, 'Glenrosa'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	141m	North West
I240	House, 'Wainload'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	145m	North East
I254	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	147m	North West
I141	St Mark's Church (originally Figtree Chapel)	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	148m	East
I139	House, 'Shirley'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	149m	East
I294	Semi-detached house	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	150m	North
I295	Semi-detached house	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	155m	North
I255	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	158m	North West
I296	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	160m	North
I188	House, 'Cambridge'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	161m	West
I161	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	161m	West
I162	House, 'Dene Hollow'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	161m	West
I69	House, 'Kaoota'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	178m	East
I99	House, 'Paraza'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	180m	South East
I140	House, 'Cressy'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	180m	East
I246	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	180m	North
C435	Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	204m	South West
I68	House, 'Saintonge'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	207m	East
I477	House, 'St Kevins'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	210m	South East
C435	Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	229m	South West
I67	House, 'The Bungalow'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	241m	East
I100	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	263m	South

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
C450	Fig Tree Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	265m	East
I66	House, 'Cressy', formerly 'Lennah'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	270m	East
I441	Bridge, 'Pilkington's Bridge'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	284m	West
I475	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	293m	South East
I257	House, 'Loughrea'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	296m	North West
I476	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	303m	South East
I5	House, 'Marika'	Item - General	State	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	314m	North
I85	House, former boatshed	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	315m	North East
I421	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	316m	North West
C435	Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	316m	South West
I218	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	317m	North East
I65	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	321m	East
I136	House, 'Warrawillah'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	323m	East
I241	House, old stone cottage at rear	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	332m	East
C2	Hunters Hill Conservation Area No 1 - The Isler	Conservation Area - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	333m	West
I443	Wharf site	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	337m	South
I192	House, 'Cliff Cottage'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	341m	East
I416	Natural bushland, north of Tarban Creek	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	343m	South West
I478	House, 'Hillrest'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	344m	South East
I190	House, 'Coorabel'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	347m	East
I191	House, 'Annabel Lea'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	348m	East
I479	Hotel	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	358m	East
I86	Boronia Park	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	366m	North
I258	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	366m	North West
I64	House, 'Koe'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	368m	East
I388	Weir on Tarban Creek	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	397m	South West

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I459	Site of Figtree Wharf and Boatshed	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	405m	East
I460	Site of Figtree Tea Rooms and Aquatic Tea Rooms	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	405m	East
I461	Mill site	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	416m	South West
I290	House, 'Ardenclutha'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	424m	North West
I82	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	426m	West
I83	House, 'Craigends'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	446m	West
I436	Clump of paperbark trees, south of Tarban Creek on edge of the Cornflats	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	453m	South West
I217	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	457m	West
I232	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	472m	West
I189	House, 'Villa Euthella'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	477m	South East
I6	House, 'The Priory'	Item - General	State	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	490m	South West
I286	House, 'Figtree House'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	496m	East
I446	Wharf site	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	499m	North East
I412	Stone drain near the farm attendant's cottage	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	521m	South
I86	Boronia Park	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	521m	North
I101	Farm attendant's cottage and curtilage	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	521m	South
I37	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	530m	West
I462	Site of Nemba	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	541m	East
I231	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	552m	West
I233	House, 'Milton'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	562m	West
C450	Fig Tree Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	564m	East
I458	Remains of house and garden, 'Wandella'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	569m	South East
I293	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	572m	North West
I81	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	582m	West
I507	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	586m	West

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I430	House, 'Cavan'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	589m	West
I417	Row of fig trees, adjacent to Salter Street	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	593m	South West
I332	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	594m	West
I79	House, 'Omagh'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	597m	West
I112	House, 'Llanthony'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	606m	North West
I78	House, 'Tyrone'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	609m	West
I177	House, 'Drumkeerin'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	637m	South East
I259	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	640m	North West
I176	House, 'Gultrow'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	644m	South East
I76	House, 'Surrey'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	646m	West
I109	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	658m	West
I75	House, 'Laureston'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	662m	West
I175	House, 'Boswell'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	664m	South East
I304	House, 'Rocklands'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	670m	East
I77	House, 'Clifford'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	679m	West
I179	House, 'Mona'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	685m	South East
I508	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	687m	West
I506	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	689m	West
I432	Herberton Avenue Wharf	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	703m	South East
I178	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	703m	South East
I276	House, 'Summerhill', formerly 'Wellwood'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	707m	North West
I73	Stone cottage	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	718m	West
I260	House, 'Moorefield House'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	730m	South East
I515	Tunnel	Item - General	Local	Hunters Hill Local Environmental Plan 2012	20/11/2015	20/11/2015	20/11/2015	736m	South West
I74	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	742m	West

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I398	Sandstone walls in precinct C19	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	764m	South West
I511	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	767m	North
I285	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	784m	North
I393	Administration group, formerly Wards 19 and 20	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	784m	South West
I397	Workshop (west side of Victoria Road)	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	789m	South West
208	Stone marker	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	790m	North West
I404	Medical Records Department	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	793m	South West
I72	House, 'Allowah'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	797m	West
93	Substation	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	797m	North West
I266	House, 'Everley'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	799m	East
I91	House, 'Astroea'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	801m	East
I262	House, 'Kareela', formerly 'Elliston' and 'Blakewood'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	804m	South East
I403	House, Gatekeeper's Lodge	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	806m	South West
I513	House 'Trament'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	20/11/2015	20/11/2015	20/11/2015	808m	West
I409	House, 'Possum Cottage' and water closet	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	809m	South West
I411	Ward 29	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	819m	South West
I512	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	820m	North
I391	Addition to original asylum	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	822m	South West
I419	Trees, Cypress Grove	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	829m	South West
I401	Wards 17 and 18	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	830m	South West
I70	House, 'Mendip'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	845m	West
I71	House, 'Lucknow'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	846m	West
I420	House, 'Cardington'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	849m	East
I265	I.O.O.F. Hall	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	849m	East
I514	House, including pressed metal linings on walls and ceilings but excluding the curtilage	Item - General	Local	Hunters Hill Local Environmental Plan 2012	20/11/2015	20/11/2015	20/11/2015	853m	West

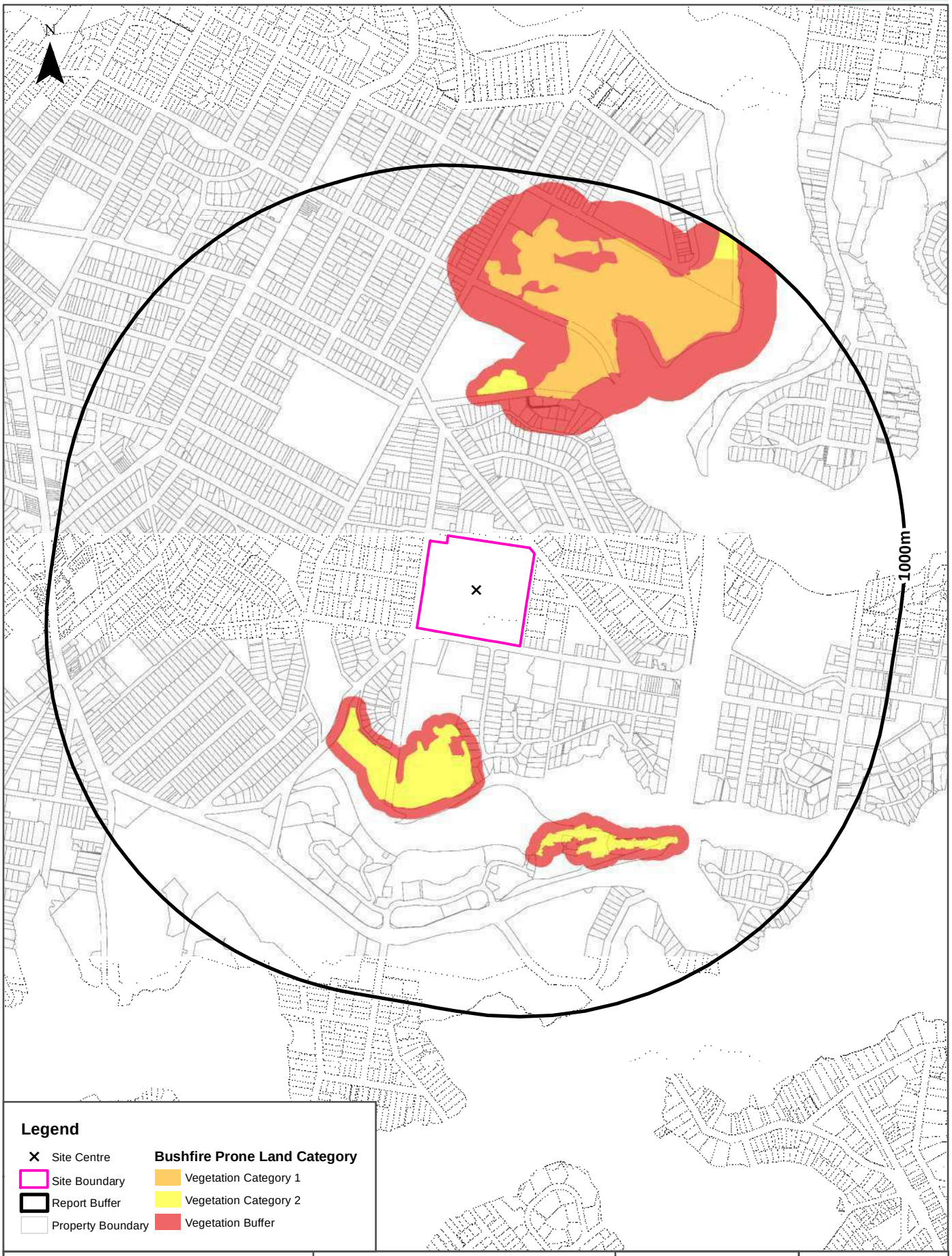
Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I405	Pottery building	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	861m	South West
I272	House, 'Yamba'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	861m	North
I472	Garden, 'Montefiore Home'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	863m	North
I486	Life saving house	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	864m	South West
I481	Houses	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	864m	West
I193	House, 'Doonbah', formerly 'Maryville'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	869m	South East
I482	Police Station, Watling	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	870m	West
I406	Provision store	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	879m	South West
I467	Wharf site	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	883m	East
I338	Southern Campus	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	897m	South West
I268	House, 'Lantana', originally 'Tregullus'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	899m	East
I267	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	900m	East
I203	House, 'Kyarra'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	900m	East
I14	Hotel, 'The Gladstone Hotel'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	900m	East
I483	Eleni's Tavern	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	900m	West
C451	Foss' Subdivision	Conservation Area - Landscape	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	902m	East
I264	House, 'Rosamond'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	902m	East
C3	Hunters Hill Conservation Area No 3 - Gladesville Village	Conservation Area - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	903m	West
I484	House, former post office	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	904m	West
94	â??Towallaâ? (house)	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	907m	North West
I297	House and surrounds, 3 fig trees, sandstone cliffs and sandstone walls	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	911m	East
I464	Trees, Port Jackson Fig, Moreton Bay Fig and Sydney Peppermint Trees	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	911m	East
I263	House, 'Winden'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	912m	South East
I440	Garden	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	913m	South West

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I452	Moreton Bay Fig Tree	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	915m	South
I485	Fire station	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	915m	West
I490	Shops/Hotel	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	915m	West
I16	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	922m	East
I509	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	924m	North
I261	House, 'Treago'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	925m	South East
I390	Quadrangular asylum ranges	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	927m	South West
I199	House, 'Rosebriar'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	927m	East
I182	Point house and garden	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	927m	South East
I488	Bank	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	927m	West
54	Great North Road	Item - General	State	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	929m	North West
I489	Shops/Hotel	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	933m	West
I433	Mount Street Wharf	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	934m	South East
I439	House, 'Formerly Alwood'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	935m	South East
I13	House, 'Berwyn'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	937m	East
I480	House, 'Dunham'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	939m	West
I18	House, 'Ardath', formerly 'Crucia'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	948m	East
I27	Hunters Hill Primary School	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	949m	East
I301	House, 'Loombah'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	950m	South East
54	Great North Road	Item - General	State	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	951m	South West
I15	House, 'Trafalgar Cottage'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	952m	East
I473	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	952m	South East
23	House	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	953m	North West
I392	House, Gatekeeper's Cottage	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	954m	South West
I204	House, 'Wyaldra'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	955m	East
C5	Gladesville Shopping Centre	Conservation Area - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	959m	West

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I223	Streetscape elements (stone steps, garden bed remnants and rocky outcrop), View Street and Burns Ba*	Item - Landscape	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/05/2015	960m	North East
I468	Remains of Gladesville Bridge	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	960m	South
I19	House, 'Iolanthe'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	966m	East
137	Memorial clock	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	967m	West
I17	House and shop	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	968m	East
I395	House, doctor's residence	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	968m	South West
I394	Punt Road gates	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	971m	South West
I396	Service buildings (between asylum and Punt Road gates)	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	975m	South West
I456	Gladesville Wharf	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	976m	South
I300	House, 'Eulbertie', formerly 'Stoneleigh' and 'Marshall House'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	976m	East
I394	Punt Road gates	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	979m	South West
I402	House, formerly the Medical Superintendent's residence	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	980m	South West
I21	Terrace	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	981m	East
I20	House, 'Ivanhoe'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	983m	East
I22	Terrace, 'Parkvilla'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	986m	East
I442	Wharf site and steps	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	987m	South
137A	Tavern	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	990m	West
142	Church	Item - General	Local	Ryde Local Environmental Plan 2014	12/09/2014	12/09/2014	10/04/2015	990m	West
I487	House	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	991m	West
I23	House, 'Badenscotch'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	992m	East
I24	House and shop	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	994m	East
I117	House, 'Maruna'	Item - General	Local	Hunters Hill Local Environmental Plan 2012	01/02/2013	12/08/2013	20/11/2015	1000m	East

Natural Hazards - Bushfire Prone Land

Mary Street, Hunters Hill, NSW 2110



Natural Hazards

Mary Street, Hunters Hill, NSW 2110

Bushfire Prone Land

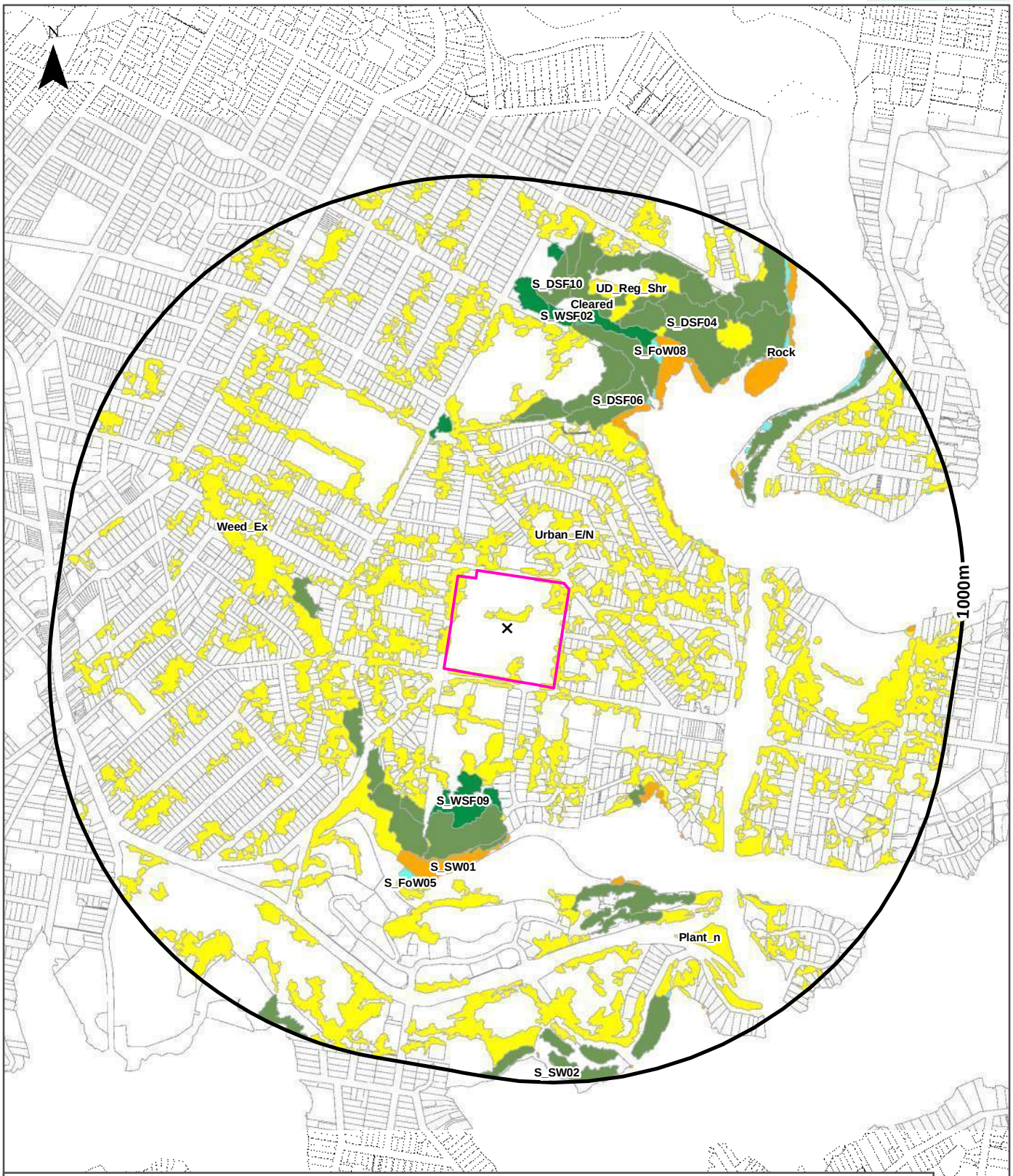
What are the nearest Bushfire Prone Land Categories that exist within the report buffer?

Bushfire Prone Land Category	Distance	Direction
Vegetation Buffer	209m	South West
Vegetation Category 2	239m	South
Vegetation Category 1	408m	North East

Bushfire Prone Land Data Reference - NSW RFS GIS Data Set

Ecological Constraints - Native Vegetation & RAMSAR Wetlands

Mary Street, Hunters Hill, NSW 2110



Legend

✕ Site Centre	Rainforest	Forested Wetlands	Grasslands	Artificial Wetlands	RAMSAR Wetlands
Site Boundary	Wet Sclerophyll Forests	Grassy Woodlands	Freshwater Wetlands	Water	
Report Buffer	Dry Sclerophyll Forests	Heathlands	Saline Wetlands	Other	
Property Boundary					

Scale: 0 100 200 400 Meters

Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016

Coordinate System: GDA 1994 MGA Zone 56

Date: 27September 2016

Ecological Constraints

Mary Street, Hunters Hill, NSW 2110

Native Vegetation

What native vegetation exists within the report buffer?

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Direction
Urban_E/N	Urban_E/N: Urban Exotic/Native			00: Not assessed	00: Not assessed	0: Not assessed	Urban Exotic/ Native	0m	Onsite
S_DSF06	S_DSF06: Coastal Sandstone Foreshores Forest			17: Pittosporum dominant	13: Weeds	2: Moderate	E.pilularis/ A.costata/ C.gummifera+/ - E.resinifera	225m	South West
S_WSF09	S_WSF09: Sydney Turpentine-Ironbark Forest	Sydney Turpentine Ironbark Forest		15: Grassy natives and exotics	31: Parkland open understorey	4: Very high	E.paniculata/ S.glomulifera+/ - E.resinifera/ E.punctata	245m	South
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90%cover	266m	West
S_SW01	S_SW01: Estuarine Mangrove Forest			00: Not assessed	00: Not assessed	0: Not assessed	Mangroves	310m	North East
Rock	Rock			00: Not assessed	00: Not assessed	0: Not assessed	Rock	318m	South East
S_FoW08	S_FoW08: Estuarine Swamp Oak Forest	Swamp Oak Floodplain Forest		00: Not assessed	00: Not assessed	0: Not assessed	C.glauca	347m	North East
S_DSF04	S_DSF04: Coastal Enriched Sandstone Dry Forest			11: Semi sheltered dry/mesic	13: Weeds	2: Moderate	E.piperita/ A.costata+/ - E.pilularis	380m	North
Plant_n	Plant_n: Plantation (native and/or exotic)			00: Not assessed	00: Not assessed	0: Not assessed	Native or Exotic Plantations	390m	North
S_SW02	S_SW02: Estuarine Saltmarsh	Coastal Saltmarsh	Subtropical and Temperate Coastal Saltmarsh (possible)	00: Not assessed	00: Not assessed	0: Not assessed	S.repens/ S.quinqueflora/ S.virginicus+/ - J.krausii	434m	South
S_FoW05	S_FoW05: Riverflat Paperbark Swamp Forest	Swamp Sclerophyll Forest on Coastal Floodplains		11: Semi sheltered dry/mesic	13: Weeds	2: Moderate	M.stypheliodes/ M.linariifolia	510m	South
S_WSF02	S_WSF02: Coastal Enriched Sandstone Moist Forest			10: Mesic/rainforest	13: Weeds	1: Low	E.pilularis/ A.costata/ C.gummifera+/ - E.resinifera	611m	North
UD_Reg_Shr	UD_Reg_Shr: Undifferentiated Regenerating Shrubs			00: Not assessed	00: Not assessed	0: Not assessed	Undifferentiated Regenerating Scrubs	671m	North
S_DSF10	S_DSF10: Hornsby Enriched Sandstone Exposed Woodland			19: Dense heath	20: Previously cleared 1943	3: High	E.haemastoma/ C.gummifera/ A.littoralis+/ - E.piperita/ E.sieberi/ A.hsipida	679m	North
Cleared	Cleared			00: Not assessed	00: Not assessed	0: Not assessed	Cleared	686m	North

Ecological Constraints

Mary Street, Hunters Hill, NSW 2110

RAMSAR Wetlands

What RAMSAR Wetland areas exist within the report 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

Mary Street, Hunters Hill, NSW 2110

ATLAS of NSW Wildlife

Endangered &Vulnerable Species on the ATLAS of NSW Wildlife database, within 10km of the site?

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Amphibia	Hylidae	Litoria aurea	Green and Golden Bell Frog	No	Endangered, Protected	Vulnerable
Amphibia	Myobatrachidae	Pseudophryne australis	Red-crowned Toadlet	No	Vulnerable, Protected	
Aves	Accipitridae	Circus assimilis	Spotted Harrier	No	Vulnerable, Protected	
Aves	Accipitridae	Hieraaetus morphnoides	Little Eagle	No	Vulnerable, Protected	
Aves	Accipitridae	Pandion cristatus	Eastern Osprey	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Anatidae	Nettapus coromandelianus	Cotton Pygmy-Goose	No	Endangered, Protected	
Aves	Anatidae	Stictonetta naevosa	Freckled Duck	No	Vulnerable, Protected	
Aves	Ardeidae	Botaurus poiciloptilus	Australasian Bittern	No	Endangered, Protected	Endangered
Aves	Ardeidae	Ixobrychus flavicollis	Black Bittern	No	Vulnerable, Protected	
Aves	Artamidae	Artamus cyanopterus cyanopterus	Dusky Woodswallow	No	Vulnerable, Protected	
Aves	Burhinidae	Burhinus grallarius	Bush Stone-curlew	No	Endangered, Protected	
Aves	Cacatuidae	Callocephalon fimbriatum	Gang-gang Cockatoo	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Cacatuidae	Callocephalon fimbriatum	Gang-gang Cockatoo population in the Hornsby and Ku-ring-gai Local Government Areas	No	Endangered Population, Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Cacatuidae	Calyptorhynchus lathami	Glossy Black-Cockatoo	No	Vulnerable, Protected, Category 2 Sensitive Species	
Aves	Charadriidae	Charadrius leschenaultii	Greater Sand-plover	No	Vulnerable, Protected	V,C,J,K
Aves	Ciconiidae	Ephippiorhynchus asiaticus	Black-necked Stork	No	Endangered, Protected	
Aves	Columbidae	Ptilinopus superbus	Superb Fruit-Dove	No	Vulnerable, Protected	
Aves	Diomedeidae	Diomedea exulans	Wandering Albatross	No	Endangered, Protected	E,J
Aves	Falconidae	Falco subniger	Black Falcon	No	Vulnerable, Protected	
Aves	Haematopodidae	Haematopus longirostris	Pied Oystercatcher	No	Endangered, Protected	
Aves	Laridae	Onychoprion fuscata	Sooty Tern	No	Vulnerable, Protected	
Aves	Laridae	Sternula albifrons	Little Tern	No	Endangered, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Meliphagidae	Anthochaera phrygia	Regent Honeyeater	No	Critically Endangered Species, Protected	Critically Endangered
Aves	Meliphagidae	Epthianura albifrons	White-fronted Chat	No	Vulnerable, Protected	
Aves	Meliphagidae	Epthianura albifrons	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	No	Endangered Population, Vulnerable, Protected	
Aves	Neosittidae	Daphoenositta chrysoptera	Varied Sittella	No	Vulnerable, Protected	
Aves	Petroicidae	Petroica boodang	Scarlet Robin	No	Vulnerable, Protected	
Aves	Petroicidae	Petroica phoenicea	Flame Robin	No	Vulnerable, Protected	
Aves	Psittacidae	Glossopsitta pusilla	Little Lorikeet	No	Vulnerable, Protected	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Aves	Psittacidae	Lathamus discolor	Swift Parrot	No	Endangered, Protected, Category 3 Sensitive Species	Critically Endangered
Aves	Psittacidae	Neophema pulchella	Turquoise Parrot	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Rostratulidae	Rostratula australis	Australian Painted Snipe	No	Endangered, Protected	Endangered
Aves	Scolopacidae	Calidris ferruginea	Curlew Sandpiper	No	Endangered, Protected	CE,C,J,K
Aves	Scolopacidae	Calidris tenuirostris	Great Knot	No	Vulnerable, Protected	CE,C,J,K
Aves	Scolopacidae	Limicola falcinellus	Broad-billed Sandpiper	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Scolopacidae	Limosa limosa	Black-tailed Godwit	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Scolopacidae	Xenus cinereus	Terek Sandpiper	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Strigidae	Ninox connivens	Barking Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Strigidae	Ninox strenua	Powerful Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto longimembris	Eastern Grass Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto novaehollandiae	Masked Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto tenebricosa	Sooty Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Mammalia	Balaenidae	Eubalaena australis	Southern Right Whale	No	Endangered, Protected	Endangered
Mammalia	Burramyidae	Cercartetus nanus	Eastern Pygmy-possum	No	Vulnerable, Protected	
Mammalia	Dasyuridae	Dasyurus maculatus	Spotted-tailed Quoll	No	Vulnerable, Protected	Endangered
Mammalia	Dasyuridae	Dasyurus viverrinus	Eastern Quoll	No	Endangered, Protected	Critically Endangered
Mammalia	Emballonuridae	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	No	Vulnerable, Protected	
Mammalia	Molossidae	Mormopterus norfolkensis	Eastern Freetail-bat	No	Vulnerable, Protected	
Mammalia	Otariidae	Arctocephalus forsteri	New Zealand Fur-seal	No	Vulnerable, Protected	
Mammalia	Otariidae	Arctocephalus pusillus doriferus	Australian Fur-seal	No	Vulnerable, Protected	
Mammalia	Peramelidae	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	No	Endangered, Protected	Endangered
Mammalia	Peramelidae	Perameles nasuta	Long-nosed Bandicoot population in inner western Sydney	No	Endangered Population, Protected	
Mammalia	Petauridae	Petaurus australis	Yellow-bellied Glider	No	Vulnerable, Protected	
Mammalia	Pteropodidae	Pteropus poliocephalus	Grey-headed Flying-fox	No	Vulnerable, Protected	Vulnerable
Mammalia	Vespertilionidae	Falsistrellus tasmaniensis	Eastern False Pipistrelle	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Miniopterus australis	Little Bentwing-bat	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Myotis macropus	Southern Myotis	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Scoteanax rueppellii	Greater Broad-nosed Bat	No	Vulnerable, Protected	
Reptilia	Dermochelyidae	Dermochelys coriacea	Leatherback Turtle	No	Endangered, Protected	Endangered
Reptilia	Varanidae	Varanus rosenbergi	Rosenberg's Goanna	No	Vulnerable, Protected	
Flora	Campanulaceae	Wahlenbergia multicaulis	Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield	No	Endangered Population	
Flora	Convolvulaceae	Wilsonia backhousei	Narrow-leafed Wilsonia	No	Vulnerable, Protected	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Flora	Elaeocarpaceae	Tetratheca glandulosa		No	Vulnerable, Protected	
Flora	Elaeocarpaceae	Tetratheca juncea	Black-eyed Susan	No	Vulnerable, Protected	Vulnerable
Flora	Ericaceae	Epacris purpurascens var. purpurascens		No	Vulnerable, Protected	
Flora	Fabaceae (Faboideae)	Dillwynia tenuifolia		No	Vulnerable, Protected	
Flora	Fabaceae (Mimosoideae)	Acacia bynoeana	Bynoe's Wattle	No	Endangered, Protected	Vulnerable
Flora	Fabaceae (Mimosoideae)	Acacia clunies-rossiae	Kanangra Wattle	No	Vulnerable, Protected	
Flora	Fabaceae (Mimosoideae)	Acacia gordonii		No	Endangered, Protected	Endangered
Flora	Fabaceae (Mimosoideae)	Acacia pubescens	Downy Wattle	No	Vulnerable, Protected	Vulnerable
Flora	Fabaceae (Mimosoideae)	Acacia terminalis subsp. terminalis	Sunshine Wattle	No	Endangered, Protected	Endangered
Flora	Grammitidaceae	Grammitis stenophylla	Narrow-leaf Finger Fern	No	Endangered, Protected, Category 3 Sensitive Species	
Flora	Haloragaceae	Haloragodendron lucasii		No	Endangered, Protected	Endangered
Flora	Lobeliaceae	Hypsela sessiliflora		No	Endangered, Protected, Category 3 Sensitive Species	Extinct
Flora	Malvaceae	Lasiopetalum joyceae		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Callistemon linearifolius	Netted Bottle Brush	No	Vulnerable, Protected, Category 3 Sensitive Species	
Flora	Myrtaceae	Darwinia biflora		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus camfieldii	Camfield's Stringybark	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus fracta	Broken Back Ironbark	No	Vulnerable, Protected	
Flora	Myrtaceae	Eucalyptus nicholii	Narrow-leaved Black Peppermint	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus pulverulenta	Silver-leafed Gum	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus scoparia	Wallangarra White Gum	No	Endangered, Protected	Vulnerable
Flora	Myrtaceae	Leptospermum deanei		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Melaleuca deanei	Deane's Paperbark	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Syzygium paniculatum	Magenta Lilly Pilly	No	Endangered, Protected	Vulnerable
Flora	Orchidaceae	Caladenia tessellata	Thick Lip Spider Orchid	No	Endangered, Protected, Category 2 Sensitive Species	Vulnerable
Flora	Orchidaceae	Genoplesium baueri	Bauer's Midge Orchid	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Orchidaceae	Pterostylis saxicola	Sydney Plains Greenhood	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Orchidaceae	Sarcochilus hartmannii	Hartman's Sarcochilus	No	Vulnerable, Protected, Category 2 Sensitive Species	Vulnerable
Flora	Poaceae	Deyeuxia appressa		No	Endangered, Protected	Endangered
Flora	Poaceae	Dichanthium setosum	Bluegrass	No	Vulnerable, Protected	Vulnerable
Flora	Proteaceae	Grevillea beadleana	Beadle's Grevillea	No	Endangered, Protected, Category 3 Sensitive Species	Endangered
Flora	Proteaceae	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	No	Vulnerable, Protected	Vulnerable
Flora	Proteaceae	Persoonia hirsuta	Hairy Geebung	No	Endangered, Protected, Category 3 Sensitive Species	Endangered
Flora	Rhamnaceae	Pomaderris prunifolia	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	No	Endangered Population	
Flora	Santalaceae	Thesium australe	Austral Toadflax	No	Vulnerable, Protected	Vulnerable

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Flora	Thymelaeaceae	Pimelea curviflora var. curviflora		No	Vulnerable, Protected	Vulnerable
Flora	Zannichelliaceae	Zannichellia palustris		No	Endangered, Protected	
Flora	Hygrophoraceae	Camarophyllopsis kearneyi		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe anomala var. ianthinomarginata		No	Vulnerable, Protected	
Flora	Hygrophoraceae	Hygrocybe aurantipes		No	Vulnerable, Protected	
Flora	Hygrophoraceae	Hygrocybe austropratensis		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe collucera		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe griseoramosa		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe lanecovensis		No	Endangered, Protected	
Flora	Hygrophoraceae	Hygrocybe reesiae		No	Vulnerable, Protected	
Flora	Hygrophoraceae	Hygrocybe rubronivea		No	Vulnerable, Protected	

Data does not include records not defined as either endangered or vulnerable, and category 1 sensitive species are also excluded. NSW Office of Environment and Heritage's Atlas of NSW Wildlife, which holds data from a number of custodians. Data obtained 27/09/2016

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28th September, 2016

PARSONS BRINCKERHOFF PTY LIMITED
Level 1, 41 McLaren Street,
NORTH SYDNEY NSW 2060

Attention: Alex Ross,

RE: **St Joseph's College,**
Mary Street,
Hunters Hill
PO No: 2270358A

Current Search

Folio Identifier 2/527024 (title attached)
DP 527024 (plan attached)
Dated 27th September, 2016
Proprietor:
TRUSTEES OF THE MARIST BROTHERS

Title Tree
Lot 2 DP 527024

Folio Identifier 2/527024

Certificate of Title Volume 10837 Folio 116

Certificate of Title Volume 8019 Folio 139

See Notes (a) to (i)

(a)	**(b)**	**(c)**
CTVol 194 Folio 69	CTVol 231 Folio 137	CTVol 274 Folio 166
****	****	****

(d)	**(e)**	**(f)**
CTVol 274 Folio 207	CTVol 542 Folio 146	CTVol 887 Folio 117
****	****	****

(g)	**(h)**	**(i)**
CTVol 1354 Folio 98	CTVol 1478 Folio 212	CTVol 1480 Folio 55
****	****	****

Summary of proprietor(s)
Lot 2 DP 527024

Year	Proprietor
	(Lot 2 DP 527024)
1988 – todate	Trustees of The Marist Brothers
	(Lot 2 DP 527024 – CTVol 10837 Fol 116)
1968 – 1988	Trustees of The Marist Brothers
	(Lots 1 to 6 Section 2 and land in DP 235 – Area 18 Acres 0 Roods 36 ¾ Perches – CTVol 8019 Fol 139)
1960 – 1968	Trustees of The Marist Brothers

See Notes (a) to (i)

Note (a)

	(Land at Hunters Hill – Area 2 Roods – CTVol 194 Fol 69)
1944 – 1960	Trustees of The Marist Brothers
1916 – 1944	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher John Murray, school teacher
1916 – 1916	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1916	Dennis Dullea, teacher James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1911	Dennis Dullea, teacher
1892 – 1911	Dennis Dullea, teacher Jules Balazuc, teacher Adrian Gareball, teacher
1885 – 1892	Charlotte Anne O'Brien, widow
1874 – 1885	Owen Eugene Macdonald, landowner

****

Note (b)

	(Land at Hunters Hill – Area 2 Roods – CTVol 231 Fol 137)
1944 – 1960	Trustees of The Marist Brothers
1916 – 1944	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher John Murray, school teacher
1916 – 1916	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1916	Dennis Dullea, teacher James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1911	Dennis Dullea, teacher
1885 – 1911	Dennis Dullea, teacher Jules Balazuc, teacher Adrian Gareball, teacher
1878 – 1885	Dennis Dullea, teacher Petrus Laboureyras, teacher Jules Balazuc, teacher
1878 – 1878	Dennis Dullea, teacher Petrus Laboureyras, teacher Jean Antoine Hippolyte Fraisse, teacher
1875 – 1878	Patrick Hayes, carter

****

Note (c)

	(Lot 1 Section 2 DP 235 – Area 11 Acres 3 Roods 3 Perches – CTVol 274 Fol 166)
1944 – 1960	Trustees of The Marist Brothers
1916 – 1944	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher John Murray, school teacher
1916 – 1916	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1916	Dennis Dullea, teacher James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1911	Dennis Dullea, teacher
1885 – 1911	Dennis Dullea, teacher Jules Balazuc, teacher Adrian Garel, teacher
1878 – 1885	Dennis Dullea, teacher Petrus Laboureyras, teacher Jules Balazuc, teacher
1877 – 1878	Dennis Dullea, teacher Petrus Laboureyras, teacher John Anthony Hippolyte Fraisse, teacher

****

Note (d)

	(Land at Hunters Hill – Area 2 Roods – CTVol 274 Fol 207)
1944 – 1960	Trustees of The Marist Brothers
1922 – 1944	John Murry, school teacher Francis O'Meara, school teacher Michael O'Donoghue, school teacher Basil Curtin, school teacher Laurence Molloy, school teacher
1913 – 1922	Ellen O'Farrell, spinster
1890 – 1913	Patrick O'Farrell, laborer
1890 – 1890	James Horton, solicitor David William Roxburgh, solicitor
1885 – 1890	Emily Marion Smith, wife of Robert Smith, solicitor
1884 – 1885	Emile Alexandre de Monchaux, shoemaker
1883 – 1884	Jane Horan, spinster
1876 – 1883	Charles Gilbert Heydon, barrister at law

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Note (e)

	(Lots 2 to 6 Section 2 DP 235 – Area 2 Acres 1 Rood 19 Perches – CTVol 542 Fol 146)
1944 – 1960	Trustees of The Marist Brothers
1916 – 1944	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher John Murray, school teacher
1916 – 1916	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1916	Dennis Dullea, teacher James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1911	Dennis Dullea, teacher
1885 – 1911	Dennis Dullea, teacher Jules Balazuc, teacher Adrian Garel, teacher
1881 – 1885	Dennis Dullea, teacher Petrus Laboureyras, teacher Jules Balazuc, teacher

****

Note (f)

	(Land at Hunters Hill – Area 1 Acre 0 Roods 2 ½ Perches – CTVol 887 Fol 117)
1944 – 1960	Trustees of The Marist Brothers
1916 – 1944	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher John Murray, school teacher
1916 – 1916	James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1916	Dennis Dullea, teacher James Clark, school teacher James Ludeke, school teacher William Reilly, school teacher
1911 – 1911	Dennis Dullea, teacher
1888 – 1911	Dennis Dullea, freeholder Jules Balazuc, freeholder Adrien Garel, freeholder

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Note (g)

	(Part Portion 89 Parish Hunters Hill – Area 2 Roods – CTVol 1354 Fol 98)
1944 – 1960	Trustees of The Marist Brothers
1922 – 1944	Laurence Molloy, school teacher Basil Curtin, school teacher Michael O'Donoghue, school teacher Francis O'Meara, school teacher John Murray, school teacher
1922 – 1922	John Murray, school teacher James Ludeke, school teacher
1905 – 1922	Richard Healy, school teacher James Ludeke, school teacher John Murray, school teacher
1901 – 1905	Christopher Farrell, tailor Frederick Campbell, school teacher

****

Note (h)

	(Part Portion 89 Parish Hunters Hill – Area 2 Roods 16 Perches – CTVol 1478 Fol 212)
1944 – 1960	Trustees of The Marist Brothers
1922 – 1944	Laurence Molloy, school teacher Basil Curtin, school teacher Michael O'Donoghue, school teacher Francis O'Meara, school teacher John Murray, school teacher
1922 – 1922	John Murray, school teacher James Ludeke, school teacher
1903 – 1922	Richard Healy, school teacher James Ludeke, school teacher John Murray, school teacher
1903 – 1903	Daniel Morrissey, gentleman

****

Note (i)

	(Part Portion 89 Parish Hunters Hill – Area 1 Rood 21 ¾ Perches – CTVol 1480 Fol 55)
1960 – 1960	Trustees of The Marist Brothers
1959 – 1960	John Joseph O'Malley, labourer
1948 – 1959	Daisy Adeline O'Malley, widow
1945 – 1948	John Joseph O'Malley, (jnr)
1937 – 1945	John Joseph O'Malley, postal official
1929 – 1937	James Thomas O'Malley, commissioner of native affairs and control
1903 – 1929	Edward O'Maley, gardener

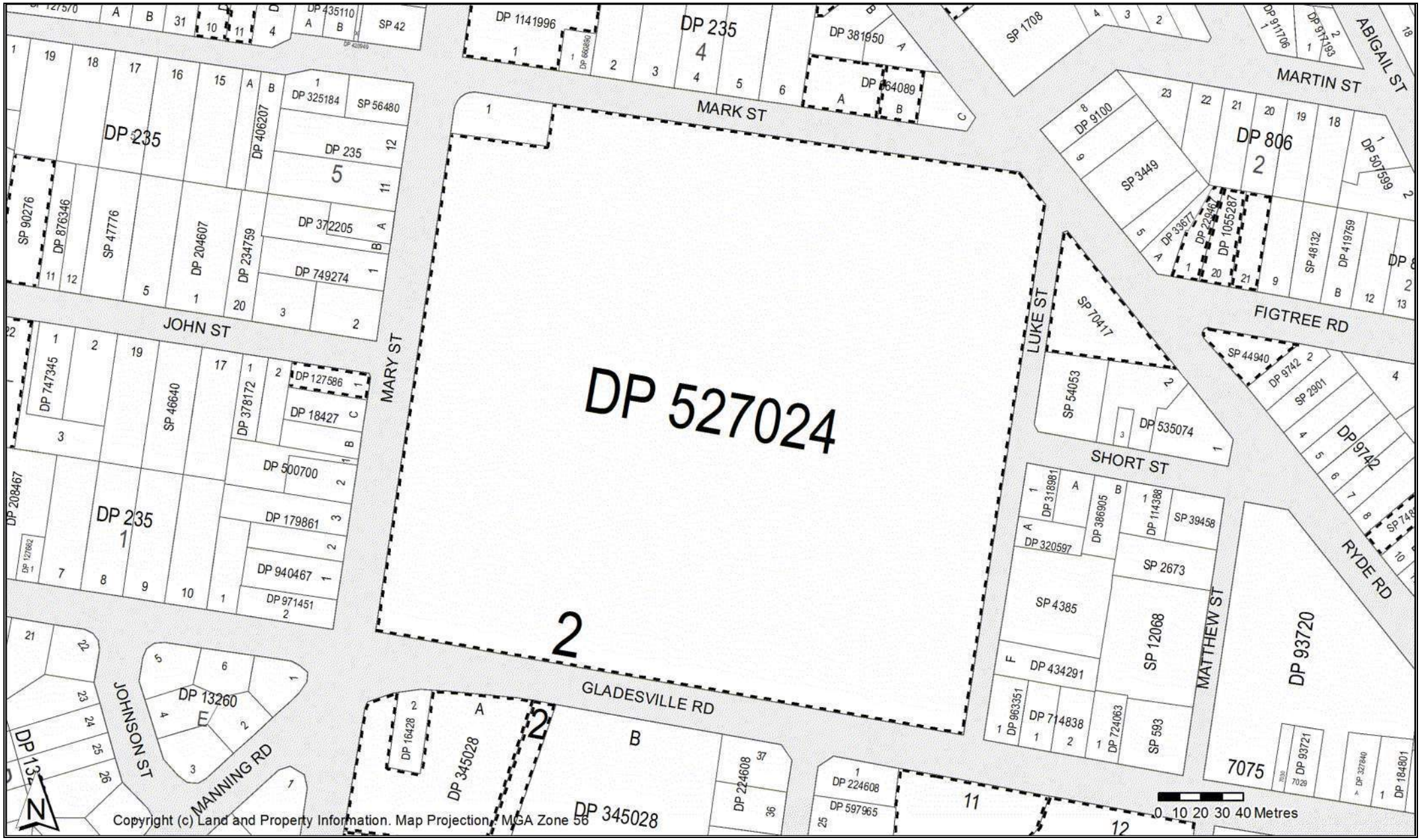
****

Cadastral Records Enquiry Report

Ref : parsons - hunters hill

Requested Parcel : Lot 2 DP 527024 **Identified Parcel :** Lot 2 DP 527024

Locality : HUNTERS HILL **LGA :** HUNTERS HILL **Parish :** HUNTERS HILL **County :** CUMBERLAND



	Status	Surv/Comp	Purpose
DP235			
Lot(s): 22 Section : 1			
DP1057773	REGISTERED	SURVEY	REDEFINITION
DP127586			
Lot(s): 1			
DP18427	HISTORICAL	SURVEY	UNRESEARCHED
DP229467			
Lot(s): 1			
DP1050386	UNNECESSARY	SURVEY	SUBDIVISION
DP1055287	REGISTERED	SURVEY	SUBDIVISION
DP345028			
Lot(s): A			
DP1201316	WITHDRAWN	SURVEY	SUBDIVISION
DP364089			
Lot(s): A, B			
DP1157163	REGISTERED	SURVEY	EASEMENT
DP527024			
Lot(s): 2			
DP1218563	REGISTERED	SURVEY	EASEMENT
DP550463			
Lot(s): 2			
DP1201316	WITHDRAWN	SURVEY	SUBDIVISION
DP846102			
Lot(s): 11, 12			
DP266987	REGISTERED	SURVEY	EASEMENT
DP1002223			
Lot(s): 13			
DP208467	HISTORICAL	SURVEY	SUBDIVISION
DP1026430			
Lot(s): 2			
DP859299	HISTORICAL	SURVEY	CONSOLIDATION
DP1055287			
Lot(s): 20, 21			
DP33677	HISTORICAL	SURVEY	UNRESEARCHED
DP1050386	UNNECESSARY	SURVEY	SUBDIVISION
Lot(s): 20			
DP229467	HISTORICAL	SURVEY	SUBDIVISION
DP1141996			
Lot(s): 1			
DP127609	HISTORICAL	COMPILATION	DEPARTMENTAL
DP370956	HISTORICAL	SURVEY	UNRESEARCHED
DP905915	HISTORICAL	COMPILATION	UNRESEARCHED
DP1182549			
Lot(s): 10, 11			
DP650292	HISTORICAL	COMPILATION	DEPARTMENTAL
DP650587	HISTORICAL	COMPILATION	DEPARTMENTAL
DP1085372	REGISTERED	SURVEY	CONSOLIDATION
SP44940			
SP84537	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN
SP70417			
DP1053379	HISTORICAL	SURVEY	SUBDIVISION
SP74833			
DP9742	HISTORICAL	SURVEY	UNRESEARCHED
DP1078710	REGISTERED	SURVEY	REDEFINITION
SP87453			
DP9100	HISTORICAL	SURVEY	UNRESEARCHED
DP1179838	REGISTERED	SURVEY	CONSOLIDATION
SP88490			
DP9742	HISTORICAL	SURVEY	UNRESEARCHED
DP1186858	REGISTERED	SURVEY	CONSOLIDATION

Requested Parcel : Lot 2 DP 527024 **Identified Parcel :** Lot 2 DP 527024

Locality : HUNTERS HILL **LGA :** HUNTERS HILL **Parish :** HUNTERS HILL **County :** CUMBERLAND

	Status	Surv/Comp	Purpose
SP90276			
DP235	HISTORICAL	COMPILATION	UNRESEARCHED
DP1193700	REGISTERED	SURVEY	REDEFINITION
SP87495	WITHDRAWN	UNAVAILABLE	STRATA PLAN

Caution: For all **ACTIVITY PRIOR to SEPT 2002** you must refer to the RGs Charting and Reference Maps.

Requested Parcel : Lot 2 DP 527024 **Identified Parcel :** Lot 2 DP 527024

Locality : HUNTERS HILL **LGA :** HUNTERS HILL **Parish :** HUNTERS HILL **County :** CUMBERLAND

Plan	Surv/Comp	Purpose
DP235	COMPILATION	UNRESEARCHED
DP806	COMPILATION	UNRESEARCHED
DP9100	SURVEY	UNRESEARCHED
DP9742	SURVEY	UNRESEARCHED
DP12139	SURVEY	UNRESEARCHED
DP13260	SURVEY	UNRESEARCHED
DP16428	SURVEY	UNRESEARCHED
DP18427	SURVEY	UNRESEARCHED
DP26725	SURVEY	UNRESEARCHED
DP33677	SURVEY	UNRESEARCHED
DP93720	COMPILATION	DEPARTMENTAL
DP93721	COMPILATION	DEPARTMENTAL
DP114388	COMPILATION	DEPARTMENTAL
DP127586	COMPILATION	DEPARTMENTAL
DP127662	COMPILATION	DEPARTMENTAL
DP179861	COMPILATION	UNRESEARCHED
DP184801	SURVEY	UNRESEARCHED
DP202571	SURVEY	SUBDIVISION
DP204607	SURVEY	SUBDIVISION
DP208467	SURVEY	SUBDIVISION
DP224608	SURVEY	SUBDIVISION
DP229467	SURVEY	SUBDIVISION
DP234759	SURVEY	SUBDIVISION
DP318981	SURVEY	UNRESEARCHED
DP320597	SURVEY	UNRESEARCHED
DP325184	COMPILATION	UNRESEARCHED
DP326205	SURVEY	UNRESEARCHED
DP327840	SURVEY	UNRESEARCHED
DP345028	SURVEY	UNRESEARCHED
DP353006	SURVEY	UNRESEARCHED
DP364089	SURVEY	UNRESEARCHED
DP372205	COMPILATION	UNRESEARCHED
DP378172	SURVEY	UNRESEARCHED
DP381950	SURVEY	UNRESEARCHED
DP386905	SURVEY	UNRESEARCHED
DP405849	SURVEY	UNRESEARCHED
DP406207	SURVEY	UNRESEARCHED
DP419759	COMPILATION	UNRESEARCHED
DP420949	COMPILATION	UNRESEARCHED
DP434291	SURVEY	UNRESEARCHED
DP435110	SURVEY	UNRESEARCHED
DP500700	COMPILATION	SUBDIVISION
DP507599	COMPILATION	SUBDIVISION
DP527024	SURVEY	SUBDIVISION
DP535074	SURVEY	SUBDIVISION
DP550463	SURVEY	SUBDIVISION
DP597965	SURVEY	SUBDIVISION
DP652804	COMPILATION	DEPARTMENTAL
DP660890	COMPILATION	DEPARTMENTAL
DP714838	SURVEY	SUBDIVISION
DP724063	COMPILATION	DEPARTMENTAL
DP747345	SURVEY	SUBDIVISION
DP749274	SURVEY	SUBDIVISION
DP846102	SURVEY	SUBDIVISION
DP876346	SURVEY	SUBDIVISION
DP911706	COMPILATION	UNRESEARCHED
DP917193	COMPILATION	UNRESEARCHED
DP940467	COMPILATION	UNRESEARCHED
DP953052	COMPILATION	UNRESEARCHED
DP963351	SURVEY	UNRESEARCHED
DP971451	COMPILATION	UNRESEARCHED
DP1002223	SURVEY	SUBDIVISION
DP1026430	SURVEY	SUBDIVISION
DP1055287	SURVEY	SUBDIVISION
DP1067211	COMPILATION	DEPARTMENTAL
DP1141996	SURVEY	CONSOLIDATION
DP1182549	COMPILATION	SUBDIVISION
SP42	COMPILATION	STRATA PLAN
SP593	COMPILATION	STRATA PLAN

Requested Parcel : Lot 2 DP 527024 **Identified Parcel :** Lot 2 DP 527024

Locality : HUNTERS HILL **LGA :** HUNTERS HILL **Parish :** HUNTERS HILL **County :** CUMBERLAND

Plan	Surv/Comp	Purpose
SP1708	COMPILATION	STRATA PLAN
SP2673	COMPILATION	STRATA PLAN
SP2901	COMPILATION	STRATA PLAN
SP3449	COMPILATION	STRATA PLAN
SP4385	COMPILATION	STRATA PLAN
SP12068	COMPILATION	STRATA PLAN
SP39458	COMPILATION	STRATA PLAN
SP44940	COMPILATION	STRATA PLAN
SP46640	COMPILATION	STRATA PLAN
SP47776	COMPILATION	STRATA PLAN
SP48132	COMPILATION	STRATA PLAN
SP54053	COMPILATION	STRATA PLAN
SP56480	COMPILATION	STRATA PLAN
SP70417	COMPILATION	STRATA PLAN
SP74833	COMPILATION	STRATA PLAN
SP87453	COMPILATION	STRATA PLAN
SP88490	COMPILATION	STRATA PLAN
SP90276	COMPILATION	STRATA PLAN

[redacted]

10837116

NEW SOUTH WALES

[redacted]ICATE OF TITLE

[redacted]PERTY ACT, 1900, as amended.

Application No.300

Prior Title Vol.8019 Fol.139

Vol. 10837 Fol. 116

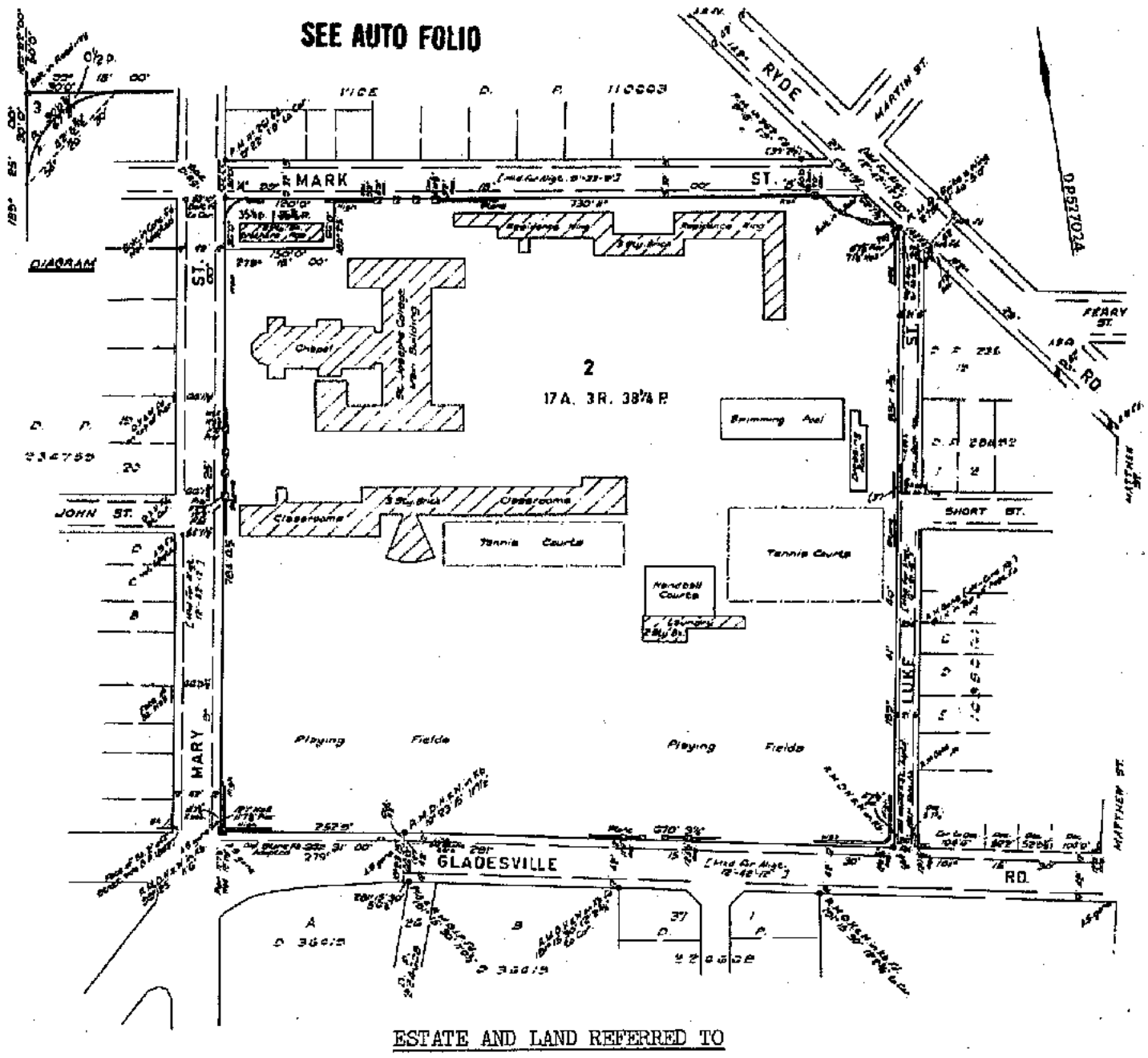
MA Edition issued 12-7-1968

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 M.Flint

Registrar General.

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

S

Estate in Fee Simple in Lot 2 in Deposited Plan 527024 at Hunters Hill in the Municipality of Hunters Hill Parish of Hunters Hill and County of Cumberland being part of Portions 89 and 90 separately granted to Mary Reiby on 15-12-1835.

FIRST SCHEDULE (continued overleaf)

TRUSTEES OF THE MARIST BROTHERS.

SECOND SCHEDULE (continued overleaf)

GR4 1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
M 2. Mortgage No.H503506 to Commonwealth Trading Bank of Australia. Entered 12-12-1960.
MC 3. Mortgage No.K413166 to Commonwealth Savings Bank of Australia. Entered 25-8-1966.

Registrar General.

V. C. N. BLIGHT, GOVERNMENT PRINTER

Vol. 10837 Fol 116 *

FIRST SCHEDULE (continued)

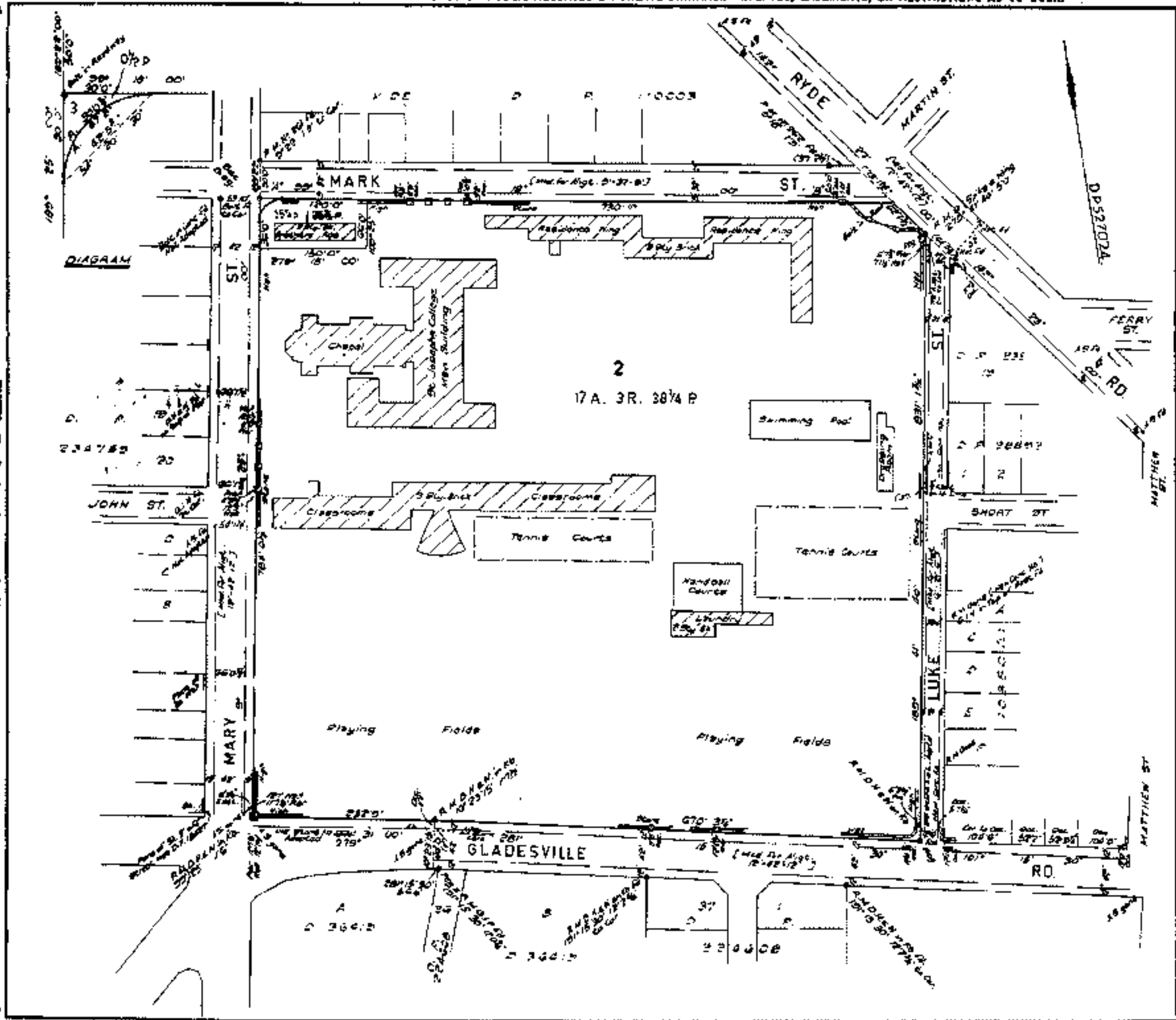
REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar-General
	NATURE	NUMBER	DATE		

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
NATURE	NUMBER	DATE						

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

Plan Form 3—TO BE USED WHERE IT IS INTENDED TO DEDICATE PUBLIC ROADS OR PUBLIC RESERVES OR CREATE DRAINAGE RESERVES, EASEMENTS, OR RESTRICTIONS AS TO USER.



WARNING: Plan Drawing only to appear in this space.

WARNING: Creasing or folding will lead to rejection.

Substituted Plan
D. P. 527024 (E)

Registered: [redacted] 5-7-1968

C.A. 967/810 of 27·6·66

Title System: Torrens

Purpose: Subdivision

Ref. Map: Hunters Hill Sht. 6

Last Plans: D.P. 235 and Hunters Hill Sht. 6

PLAN OF SUBDIVISION OF THE LAND COMPRISED IN CERT OF TITLE VOL. 8019 FOL. 136

Scale: 100 ft. to an inch

Mun./Shire: Hunters Hill

Locality: Hunters Hill

Parish: Hunters Hill

County: Cumberland

I, Keith Brown of 320 Pacific Highway Lane Cove a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulations, 1933, and was completed on ...

Signature: K. Brown

Surveyor registered under Surveyors Act, 1929, as amended

Statements of intention to dedicate public roads or public reserves or create drainage reserves, easements, or restrictions as to user.

(Signatures and Seals to appear in panel provided.)

It is intended to dedicate Lot 3 to the Public for Road Widening

SURVEYOR'S REFERENCE: 8147/1628

SIGNATURES AND SEALS ONLY.

William G. Walsh Provincial

Member.

Clyde B. Radford Member.

[redacted]

Council Clerk's Certificate.

I hereby certify that—

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans); and

*(b) the requirements of section 3… of the Metropolitan Water, Sewerage, and Drainage Act, 1924 as amended, Hunter District Water, Sewerage, and Drainage Act, 1938 as amended,

have been complied with by the applicant in relation to the proposed Subdivision (insert "new road" or "subdivision") set out herein.

Subdivision No. 967 Town Clerk Certificate No 810

Date June 27 1966.

(Signature) W. Phillips
Council Clerk

*This part of certificate to be deleted where the application is only for the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Metropolitan Water Sewerage and Drainage Board and the Hunter District Water Board.

†Delete if inapplicable.

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 527024

FEET	INCHES	METRES
-	0 1/2	0.013
-	2	0.051
-	3	0.076
-	6	0.152
-	7 1/2	0.191
1	9	0.533
5	6 1/4	1.683
5	7 3/4	1.721
6	-	1.829
6	3 1/2	1.918
6	6	1.980
6	7 1/4	2.013
7	-	2.134
7	1 1/4	2.165
7	6	2.286
8	8	2.642
9	-	2.743
9	2	2.794
9	3	2.819
11	0 1/4	3.359
11	6	3.505
11	7 1/4	3.537
11	7 1/2	3.543
11	9 1/2	3.594
11	10	3.607
11	11	3.632
12	-	3.658
12	1	3.683
12	1 1/2	3.696
12	1 3/4	3.702
12	2 3/4	3.727
12	3	3.734
12	3 1/2	3.747
12	4 1/2	3.772
12	4 3/4	3.778
14	3 1/4	4.350
21	-	6.401
21	6	6.553
30	-	9.144
30	0 7/8	9.166
32	-	9.754
33	-	10.058
36	-	10.973
37	2 1/2	11.341
42	-	12.802
42	5 3/4	12.948
44	11 1/4	13.697
47	3	14.376
50	-	15.240
52	4	15.900
52	9 1/4	16.085
53	10	16.408
54	1 1/2	16.497
57	1 3/4	17.494
66	-	20.117
66	0 1/2	20.130
73	1 1/2	22.289
104	-	31.699
104	6	31.852
120	-	36.576
150	-	45.720
252	9	77.038
670	3 1/4	204.299
730	11	222.785
784	0 1/2	238.976
831	1 3/4	253.323

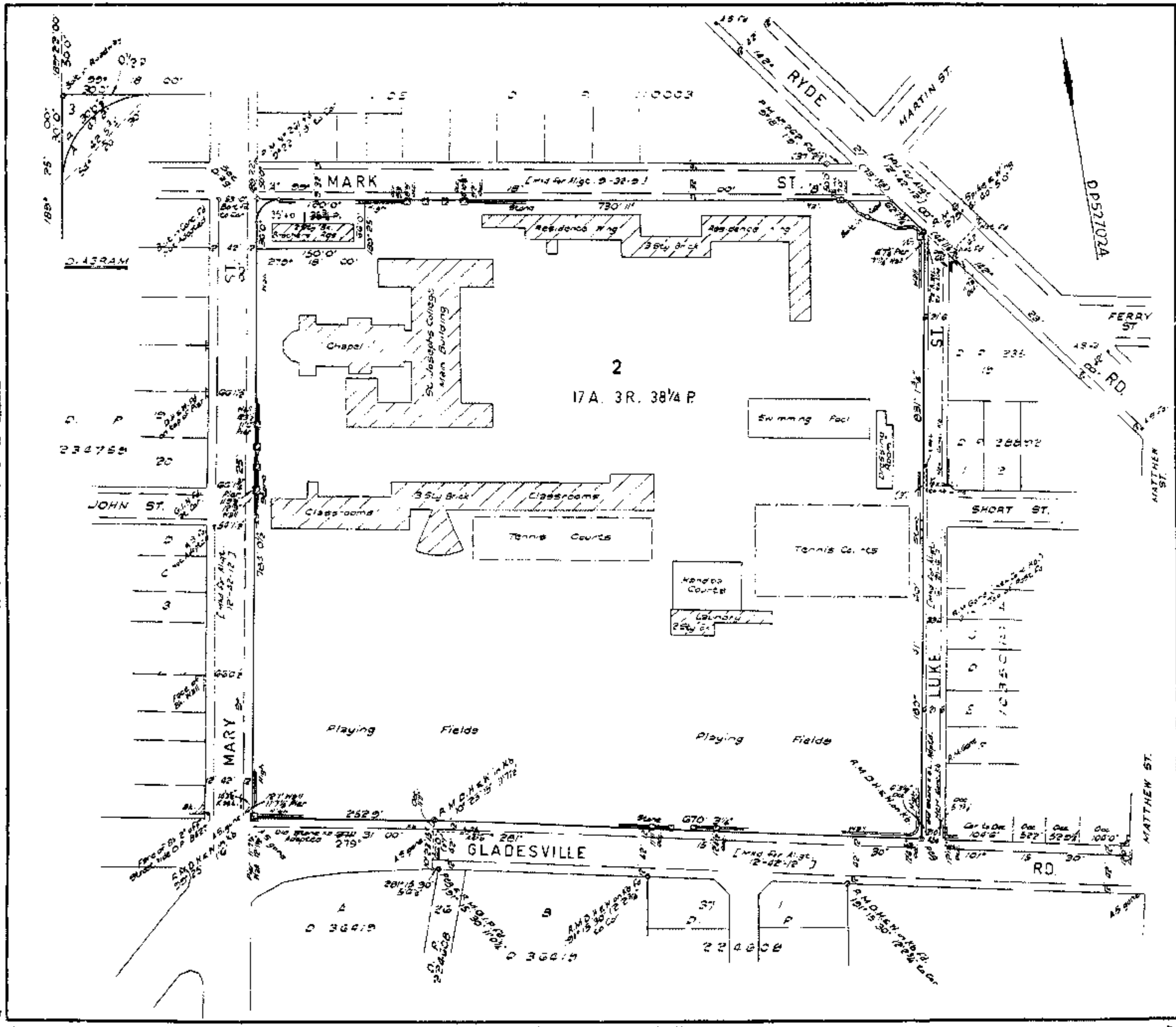
AC RO P	SQ M
- - 35 1/4	891.6

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 527024 CONTINUED

AC RO P	HA
17 3 38 1/4	7.28

Plan Form 3 — TO BE USED WHERE IT IS INTENDED TO DEDICATE PUBLIC ROADS OR PUBLIC RESERVES OR CREATE DRAINAGE RESERVES, EASEMENTS, OR RESTRICTIONS AS TO USER.



Substituted Plan D. P. 527024(E)

Registered: 5-7-1968

C.A. 967/810 of 27-6-66

Title System: Torrens

Purpose: Subdivision

Ref. Map: Hunters Hill Sht. 6#

Last Plans: D.P. 235# and Hunters Hill Sht. 6

PLAN OF SUBDIVISION OF THE LAND COMPRISED IN CERT OF TITLE VOL 8019 FOL 139

Scale: 100 ft. to an inch

Mun./Shire

City: Hunters Hill

Locality: Hunters Hill

Parish: Hunters Hill

County: Cumberland

I, Keith Brown

of 326 Pacific Highway Lane Cove

a surveyor registered under the Surveyors Act, 1929, as amended hereby certify that the survey represented in this plan

is accurate and has been made by me (2) under my immediate supervision in accordance with the Survey Practice Regulations, 1933, and was completed on 28th March 1966

Signature: K. Brown

Surveyor registered under Surveyors Act 1929, as amended.
Datum Line of Azimuth: A - B

Statements of intention to dedicate public roads or public reserves or create drainage reserves, easements, or restrictions as to user.

(Signatures and Seals to appear in panel provided.)

It is intended to dedicate Lot 3 to the Public for Road Widening

OFFICE USE ONLY.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION.

WARNING. Plan Drawing only to appear in this space.

SURVEYOR'S REFERENCE. 814/1626

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/9/2016 8:31AM

FOLIO: 2/527024

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 10837 FOL 116

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
5/5/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
27/5/1993	I367656	DISCHARGE OF MORTGAGE	
27/5/1993	I367657	DISCHARGE OF MORTGAGE	EDITION 1
8/12/2009	AF177322	CAVEAT	
23/3/2016	DP1218563	DEPOSITED PLAN	EDITION 2
24/3/2016	AK314310	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 2/527024

SEARCH DATE	TIME	EDITION NO	DATE
27/9/2016	8:30 AM	2	23/3/2016

LAND

LOT 2 IN DEPOSITED PLAN 527024
AT HUNTERS HILL
LOCAL GOVERNMENT AREA HUNTER'S HILL
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP527024

FIRST SCHEDULE

TRUSTEES OF THE MARIST BROTHERS

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 DP1218563 EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 2.5 & 5.3 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1218563
3 DP1218563 RIGHT OF CARRIAGEWAY VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1218563

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***